A Review of Interventions to Reduce Polypharmacy in the Elderly: 
Lost in Translation?

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Statement of Problem

- Potentially inappropriate prescribing represents a significant risk to patients, including emergency department visits and hospitalizations
- Evidenced based criteria, such as the Beers and START/STOP criteria, have had difficulty being implemented into everyday practice
- Medication safety interventions (MSIs) designed to implement these practices have had inconsistent results, particularly when measuring emergency department visits and hospitalizations as the primary outcome

Objective

- To assess the extent to which the literature described and explored factors relevant to successful intervention implementation.

Materials and Methods

Design: Narrative review of high quality studies of medication safety interventions with older adults.


Inclusion Criteria:

- RCT or prospective cohort study design
- Medication Safety Intervention
- Involved the elderly in their study population
- Measured ED visits and/or hospitalization rates as outcome measures
- Had completed results

Exclusion Criteria:

- Limited to a single disease condition

Analysis:

- Included articles were analyzed for discussion of factors relevant to implementation, as defined by the Consolidated Framework for Implementation Research (CFIR)
- Each implementation factor, and their assigned CFIR domain, was independently identified by 2 reviewers and disagreements were resolved by discussion
- Process measures and intermediate outcomes were also identified

Results

Study Findings:

- Studies included hospital (n=4), skilled nursing (n=2), and outpatient (n=4)
- Intervention types included medication review (n=7), and clinical decision support (n=2)
- 1/10 MSIs improved ED visits and/or hospitalization rates (after post-hoc analysis)

Attention to implementation process:

- 6/10 papers discussed implementation factors that could be identified in the CFIR but very few of the potential factors in CFIR were touched upon (see Chart)
- 8/10 studies presented process measures / intermediate outcomes but this was done in an inconsistent way (see Table)

CFIR Constructs and Factors Identified

- Intervention Characteristics
  - Evidence Strength and Quality
    - Intervention limited to 5 high-risk meds
- Outer Setting
  - Patient Needs and Resources
    - ADLs in surgical patients
    - Pre-intervention trial difference
- Facilitating conditions
  - Networks and Communication
    - Pharmacist interaction
    - Physician-Pharmacist relationship
    - Available Resources
    - Logistic stress on pharmacist—Time per patient

Conclusion

- Translational gap: Our review of high quality MSI studies confirms that evidenced based practices have difficulty being translated into the clinical setting
- Unclear impact of MSIs: Most studies failed to show an impact on hospitalizations and ED visits
- Process of implementation not adequately addressed: Therefore, a possible explanation for the lack of clear impact of MSIs the outcomes measured is that their effect was lost in translation.

Future Implications

- A systematic approach: Studies should be designed with appreciation for the role of the implementation process. This may provide more fruitful analysis as well as providing benchmark process measures for future comparison.
- Multi-pronged analysis: A combination of patient outcomes, process outcomes, and qualitative analysis can be used synergistically to fully evaluate the implementation process
- CFIR as a tool: CFIR can be applied to medication safety interventions to accomplish these goals.

References