



The Impact of Medication Reconciliation on Discrepancies and All-cause Readmission Among Hospitalized Patients with Chronic Kidney Disease: A Quasi-Experimental Study

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Background & Goals

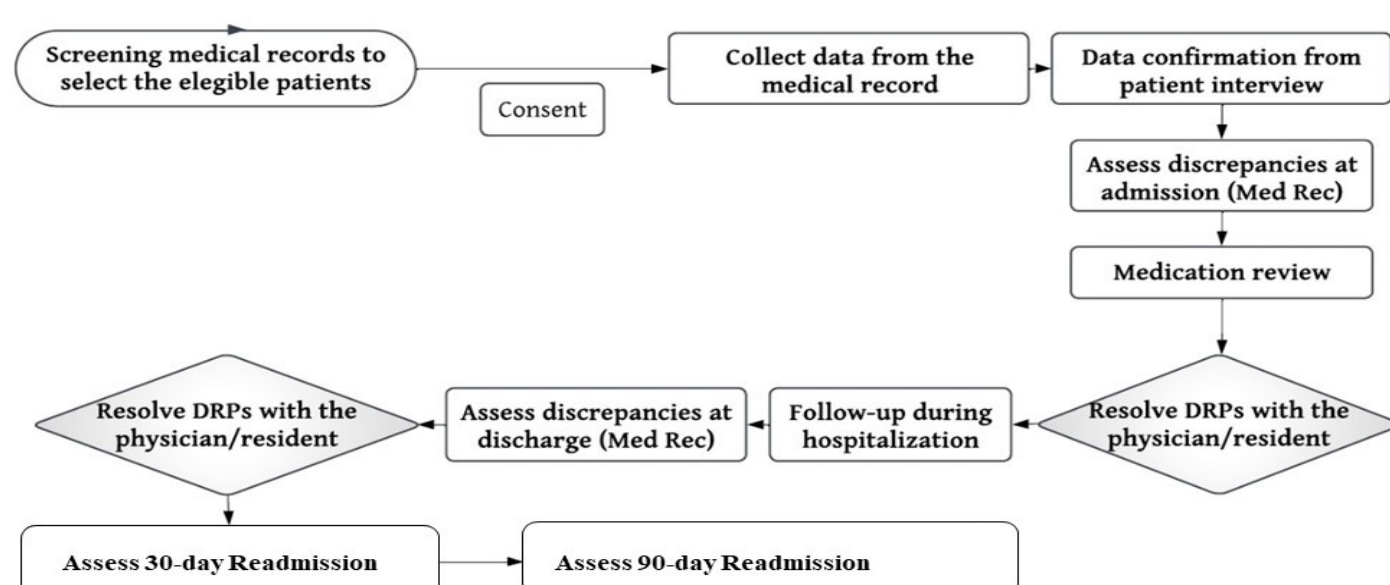
- Chronic kidney disease (CKD) can expose patients to a high risk of drug-related problems (DRPs), including medication discrepancies.
- Medication reconciliation (MedRec) identifies and resolves drug discrepancies throughout the transitions of care in order to improve medication management.
- Medication discrepancies are part of DRPs and defined as unexplained alterations between medication lists at transitions of care, and may result from poor MedRec.
- This study aimed to evaluate the impact of medication reconciliation supplemented with medication review on the number of medication discrepancies at discharge and clinical outcomes among CKD patients.

Methods

| | Retrospective control group | Intervention group |
|--|--|--|
| Sample size | 181 | 142 |
| Time frame | 2015-2019 | Feb-May 2023 |
| Purpose | ~ Prevalence of discrepancies. ~ 30-day readmissions ~ 90-day readmissions | ~ Prevalence of discrepancies and other DRPs ~ 30-day readmissions ~ 90-day readmissions |
| Type of service | Medication reconciliation (retrospectively) | Supplemented medication reconciliation |
| Sources for medication reconciliation | At admission | |
| | MR & pharmacy database | Patient interview & MR |
| | Prescriptions 6 months before admission vs. AMOs & hospital medications | Home medications vs. AMOs & hospital medications |
| | At discharge | |
| | MR & pharmacy database | MR & pharmacy database |
| | Prescriptions at discharge vs. Prescriptions 9 months post-discharge | BPMH & last hospital medications vs. Discharge prescription & summaries |

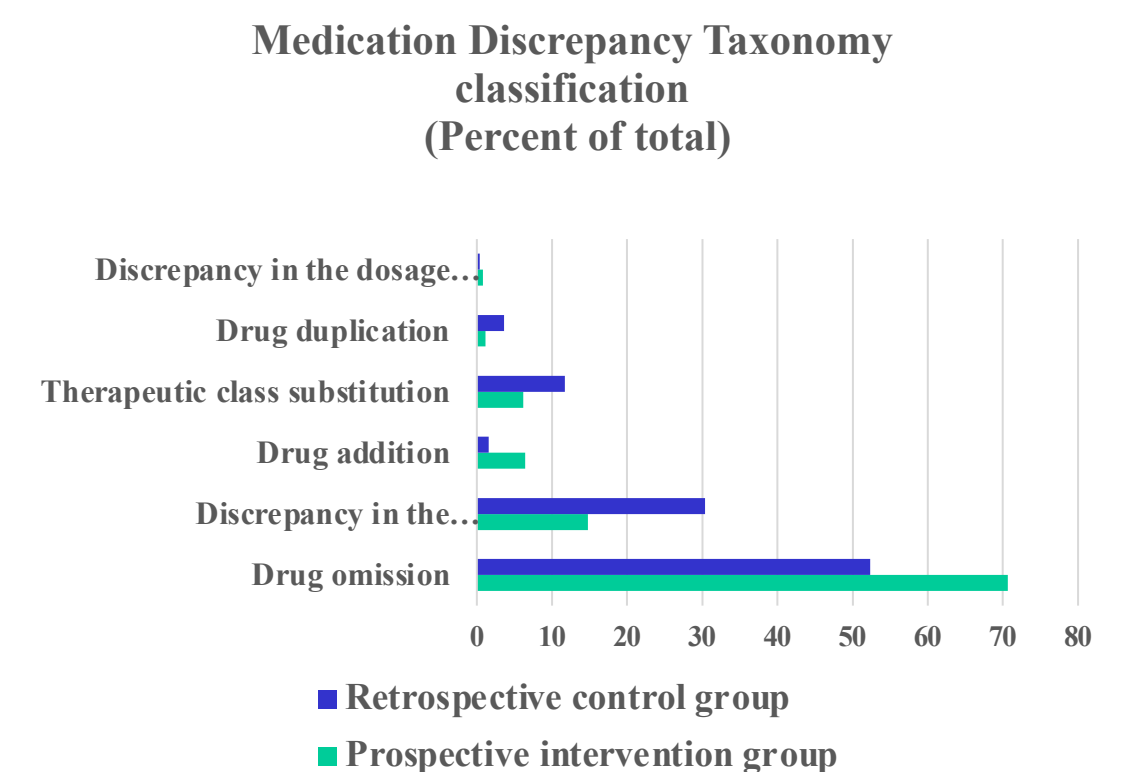
AMOs: admission medication orders, MR: medical records, BPMH: best possible medication history

Supplemented MedRec Process Flow



Prevalence of Discrepancies in CKD patients

- Patients' age was 57.2±16 years old in the interventional group, and 62.5±15.8 in the retrospective group.
- Patients were CKD stages 2-5, >50% were on dialysis.
- Average number of discrepancies per admission was about 2.5 in both groups.



Predictors of the Decrease in Discrepancy Numbers between Admission and Discharge

| Decrease in discrepancies | Coefficient | 95% CI | | P value |
|---------------------------|-------------|--------|------|---------|
| Intervention group | 1.66 | 1.07 | 2.26 | <0.001 |
| Age | -0.01 | -0.03 | 0.02 | 0.554 |
| Male gender | 0.02 | -0.56 | 0.61 | 0.936 |
| CCI | 0.07 | -0.09 | 0.22 | 0.411 |
| Dialysis | 0.32 | -0.24 | 0.87 | 0.263 |
| BMI | | | | |
| Overweight | 0.11 | -0.60 | 0.83 | 0.760 |
| Obese | 0.29 | -0.36 | 0.94 | 0.384 |
| Married | 0.28 | -0.64 | 1.20 | 0.548 |

Predictors of All-Cause Readmissions 90-Days after Discharge

| All cause readmission | Odds ratio | 95% CI | | P value |
|---------------------------|------------|--------|------|---------|
| 90-day readmission | | | | |
| Intervention group | 0.41 | 0.23 | 0.72 | 0.002 |
| Age | 1.00 | 0.98 | 1.02 | 0.902 |
| Male gender | 0.69 | 0.40 | 1.19 | 0.180 |
| CCI | 1.03 | 0.89 | 1.19 | 0.699 |
| Dialysis | 1.18 | 0.69 | 2.01 | 0.547 |
| BMI | | | | |
| Overweight | 1.06 | 0.56 | 2.02 | 0.862 |
| Obese | 0.71 | 0.38 | 1.32 | 0.279 |
| Married | 1.21 | 0.52 | 2.86 | 0.657 |

Conclusions

- CKD inpatients are very susceptible to DRPs. The current findings suggest that MedRec with medication review service can reduce discrepancy numbers at discharge as well as readmission rates in CKD patients.
- Multidisciplinary healthcare team that integrates clinical pharmacist is highly recommended for better health outcomes among inpatients with CKD.

Impact on Practice

- Activating the role of clinical pharmacist in providing MedRec can decrease medication discrepancies and enhance clinical outcomes particularly in hospitalized CKD patients.
- Designing and implementing an effective interprofessional collaborative approach in the hospital settings might boost the benefits achieved from transition-of-care services.

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