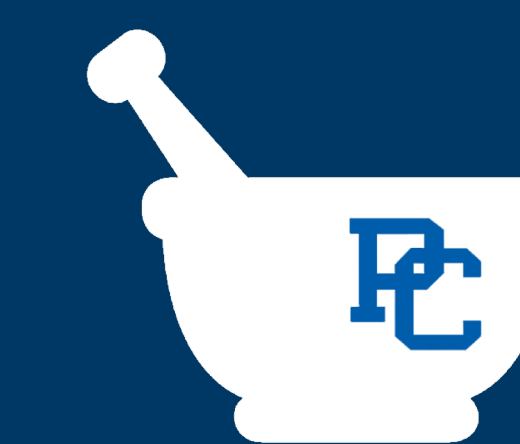


Impact of Pharmacist Counseling at Discharge

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BACKGROUND

- Hospital readmission rates can be greatly affected by the inclusion of discharge counseling.
- In 2009, nearly 20% of Medicare patients were readmitted within 30 days (Jencks 2009).
- Current literature evaluates the short-term consequences of discharge counseling but lacks data for longer timeframes.

OBJECTIVE

- The purpose of this systematic review is to find compelling evidence regarding how the implementation of pharmacist discharge counseling affects the number of readmissions post-discharge.

METHODS

- Two investigators independently utilized EBSCOhost and USNLM databases to identify articles meeting the inclusion criteria.
- Inclusion criteria:
 - >18 years old
 - Human subjects
 - English Language
 - Pharmacist-led discharge counseling
- Search terms:
 - psychiatry, discharge counseling, patient education, readmission rates, medication reconciliation, and pharmacist

RESULTS (In progress)

Table. Pharmacist-led Discharge Counseling Literature Results

Study year	Study characteristics	Patient population	Intervention	Outcome(s)/Notes
Al-Rashed 2002	• Prospective, randomized controlled trial • Duration: 3 months • N=83 (43 intervention)	• ≥65 years • Prescribed ≥4 routine medications • Discharged to home • Mental score greater than 7/10	• Medicine reminder cards • Pharmacist discharge counseling	• Drug knowledge at 15-22 days and 3 months post-discharge: knowledge of drug uses, interval, and dose were significantly higher in intervention group for both time points (p<0.01) • Compliance at 15-22 days and 3 months post-discharge: significantly higher in intervention group for both time points (p<0.001) • Unplanned GP visits or readmissions at 15-22 days and 3 months post-discharge: significantly higher (p<0.05) in control group for both time points
Koehler 2009	• Randomized, controlled pilot • Duration: 3 months • N=41 (20 intervention)	• ≥70 years • Prescribed ≥5 routine medications • ≥3 chronic comorbid conditions • Require assistance with ≥1 ADL • Reside at home or in assisted living	• Medication reconciliation and counseling by clinical pharmacist • Condition specific education/enhanced discharge planning • Phone follow-up	• Hospital RA and/or ED visit at 30 days: significantly less in intervention group (38% vs.10%), p=0.03 • Hospital RA and/or ED visit at 60 days: NSD • Length of stay in days: Not powered to detect difference • Note: of patients who were readmitted, the time to RA was significantly longer in the intervention group (36.2 days vs. 15.7 days, p=0.05)
Tomko 2013	• Retrospective controlled trial • Duration: 13 months • N=2868 (504 intervention)	• Acute psychiatry • ≥18 years • Many co-morbid substance use disorders • Discharge to home	• Initial fill of psychiatric medications • Pharmacist discharge counseling	Rapid RA (within 30 days of discharge): • 2008-2009 (control): 4.97% • 2009-2010 (control): 4.90% (p=0.02) • 2010-2011 (total): 3.71% • 2010-2011 (excluded): 4.83% (p=0.004) • 2010-2011 (intervention): 2.38%
Tedesco 2015	• Prospective, historical control trial • Duration: 5 months • N=79 (34 intervention) • **18 had only phone follow-up, 16 had phone and FTF**	• ≥65 years • Medicare as primary insurer	• Phone-follow up by pharmacy including: • Medication reconciliation • Review discharge instructions • Scheduling follow-up appointments • FTF follow-up with pharmacist	Same hospital readmissions within 30 days: • NSD in total intervention Vs. control (14.7% Vs. 26.7%, p=0.27) • NSD in phone only intervention Vs. control (27.8% Vs. 26.7%) • Trend toward significantly less readmissions in phone + FTF intervention Vs. control (0% Vs. 26.7%, p=0.05)
Bell 2016	• Randomized, controlled trial • Duration: 6 months • N=851 (423 intervention)	• ≥18 years • Hospitalized for ACS or ADHF	• Pharmacist-assisted medication reconciliation • Inpatient pharmacist counseling • Low-literacy adherence aids • Phone follow-up after discharge	• Time to first unplanned healthcare event: NSD • RA or ED visits within 30 days: NSD • Intervention reduced early, unplanned healthcare utilization among patients with inadequate health literacy level (p=0.03)
Zemaitis 2016	• Prospective historical control • Duration: 6 months • N=690 (465 intervention)	• All patients admitted to general medicine unit • (Excluded if transferred, expired, left AMA, or discharged to hospice)	• Pharmacy medication counseling • Pharmacist patient education • Phone follow-up (24-72 hours post-discharge)	30-day RA rates: significantly lower in intervention group (18% vs. 24.7%, p=0.009)
Aniemeke 2017	• Retrospective controlled trial • Duration: 3 months • N=89 (44 intervention)	• ≥18 years • Admitted to adult medicine service • Classified as high-risk for hospital RA within 30 days	• Clinical pharmacist performed medication reconciliation • Pharmacist discharge counseling • Verbal and written medication education	• 3-day RA rates: NSD • 30-day RA rates: NSD • 3-day ED visits: NSD • 30-day ED visits: NSD • Number of days to first RA or ED visit: NSD
Feldman 2018	• Prospective controlled trial • Duration: 12 months • N=985 (555 intervention)	• Adult general medicine inpatients • Patients at high risk for RA	• Pharmacist medication reconciliation, medication related problem identification, medication education • First fill program • Phone follow-up (8 days and 25 days)	• 30-day same hospital RA: significantly lower RA rates in intervention group (8.1% Vs. 21.4%, p<0.001) • 30-day any hospital RA in subsample of patients with Medicare Fee for Service: NSD • Note: RA risk factors were significantly higher in the intervention group
Ip et. al, 2018	• Prospective, historical control • Duration: 3 months • N=85 (43 intervention)	• ≥ 65 years • Discharge from medical rehab wards • Hospital for ACS, HF and/or stroke • Discharged with ≥5 routine medications	• Pharmacist medication reconciliation • Pharmacist discharge counseling	• Unplanned healthcare utilization 30-days post-discharge: significantly lower in intervention group (25.6% Vs. 47.6%, p=0.035) • Low medication adherence significantly decreased after counseling (-64.9%, p<0.05) • Medium adherence significantly increased (+34.7%, p=0.001) • High adherence significantly increased (+30.1%, p=0.004)
Shull 2018	• Retrospective controlled trial • Duration: 12 months • N=1059 (305 full interventions, 216 partial intervention)	• Admitted as inpatients to study hospital • Medicare FFS was primary insurer • Discharged to private residence • Known to be alive for ≥30 days	Medication REACH Intervention: • Medication reconciliation • Patient-centered education • Assess to care • Medication therapy management and counseling • Weekly phone follow-up	Unplanned RA within 30 days: full intervention significantly less RA Vs. control (9.8% Vs. 20.4%, p<0.001)
Thurston et al. 2018	• Prospective, historical control trial • Duration: 18 months • N=362 (211 intervention)	• Primary admission diagnosis of HF • High risk for 30-day readmission	• Medication reconciliation • Medication cost/formulary review • Medication discharge counseling • Self-monitoring resources provided • Phone follow-up	• 30-day RA: significantly lower rate of readmissions in intervention group (21.3% Vs. 33.7%, p=0.046) • Rate of high medication adherence significantly increased in intervention group (32% to 49%, p<0.001) • Rate of low medication adherence significantly decreased in intervention group (32% to 6%, p<0.05) • Note: significant differences in baseline characteristics (E<40%, renal disease, and beta blockers)

ACS: acute coronary syndromes; ADHF: acute decompensated heart failure; ADL: activities of daily living; ADR: adverse drug reaction; AMA: against medical advice; ED: emergency department; EF: ejection fraction; FTF: Face-to-face; GP: General Practitioner; HF: heart failure; NSD: No significant difference RA: Readmission

DISCUSSION

- Preliminary results suggest that Pharmacist-led discharge counseling may decrease patient readmittance rates
- Patients with the most notable decrease in readmissions were subject to additional therapies alongside discharge counseling
- The absence of data post-discharge after 30-days heightens the importance of extending the timeframe to evaluate readmissions at 6 months, 1-year, and 2-years post discharge.

REFERENCES

See poster attachment.

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