Impact of Inpatient Automatic Therapeutic Substitutions on Post-Discharge Medication Prescribing

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Background. Automatic therapeutic substitution (ATS) is the act of pharmacist-led therapeutic interchange, in which patients are transitioned from a non-formulary pre-admission home medication to an equivalent formulary medication upon hospital admission. The value and role of ATS protocols utilized in hospitals has increased over time, as these are able to streamline formularies, improve inpatient pharmacy workflow, and contribute to cost-saving initiatives. Although ATS protocols offer benefits to pharmacy departments, the impact on patients is less clear. If medications are not reconciled at the time of discharge, then use of ATS protocols may lead to medication duplications or omissions, which could result in adverse outcomes or adherence issues. The objective of this study was to assess the impact of pre-identified ATS protocol use during inpatient admission on therapeutic duplications and omissions post-discharge.

Methods. This was a single center, retrospective, cohort study, which included adult patients who received a pre-identified ATS upon admission from June 2015 to May 2016. The primary outcome was the overall incidence of therapeutic duplications or omissions at the time of discharge. The secondary outcome was the incidence of duplications or omissions at time of discharge in moderate-to-high readmission risk patients with complete pharmacist-led discharge services compared to moderate-to-high readmission risk patients with incomplete pharmacist-led discharge services.

Results. A total of 760 potential ATS protocol encounters were identified; 71 of these encounters were excluded, as they did not utilize ATS protocols during inpatient admission. Therefore, 689 ATS protocol encounters were assessed for appropriate reconciliation, duplication or omission at time of discharge. The incidence of ATS protocol encounter related duplications or omissions at the time of discharge was 9% (n = 62). Of the 689 ATS protocol encounters, 287 were assessed for the secondary outcome, which focused on moderate-to-high readmission risk patients. The rate of ATS protocol encounter related duplications or omissions at time of discharge was 10% (n = 19) in the complete discharge services group and 8% (n = 8) in the incomplete discharge services group (P = 0.6763).

Conclusion. Overall, this study identified a high rate of appropriate reconciliation of ATS protocols at time of discharge, which illustrates ATS protocols can be a safe medication management strategy if implemented and utilized appropriately in the inpatient setting. There are opportunities to ensure ATS protocols continue to be an effective strategy, specifically through pharmacist-led efforts to improve discharge medication reconciliation as 9% of ATS protocol encounters were incorrectly reconciled to home medications at time of discharge.