

Economic value of a clinical pharmacist in the Emergency Department

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Background: Medication errors (MEs) and other drug related problems (DRPs) are common issues on hospital admission. These MEs and DRPs can cause preventable adverse drug events (pADEs) resulting in patient harm with a significant additional cost. The aim of this study was to determine the economic value and the cost-benefit of a clinical pharmacist CP in the ED by applying a theoretical model (University of Sheffield School of Health and Related Research – SCHARR).

Methods: This retrospective, single-center, observational study was carried out in the ED of a university hospital. Since October 2016, 1 FTE CP is dedicated to the ED. Patient-specific recommendations recorded by the CP during a 1 month period were observed. On admission to the ED, the CP carried out a standardized medication reconciliation and medication review determining pADEs. The most important pADE for each patient was selected and classified for its potential to cause harm using severity rating methods. The net cost avoidance was calculated according to the SCHARR model. We took into account the lower cost limit of the SCHARR model and current inflation.

Results: During 1 month (18 weekdays), the CP recorded recommendations for 136 patients (>18 years) admitted to the ED. On ED admission, medication reconciliation was performed for 98 patients with a median of 4 (IQR 2-7) discrepancies/patient. A medication review for both chronic medication and medication prescribed at hospital admission was performed ($n=109$ and $n=98$ respectively). Only the CP' interventions leading to the most important pADE for each patient were taken into account for the calculation of the cost avoidance. We classified 18 (14.8%) DRPs, 66 (54.1%) DRPs, 37 (30.3%) DRPs and 1 (0.8%) DRP as a pADE with minor or no harm, significant pADE, serious pADE and at least as a severe, life-threatening or fatal pADE, respectively. According to the SCHARR model, this contributed to a net cost avoidance of €40 940. We documented 5 (4.1%) discrepancies without DRP, 53 (43.4%) discrepancies linked to a DRP and 64 (52.5%) DRPs without discrepancy with a cost avoidance of respectively €303, €17 734 and €31 003. The benefit:cost ratio was 5.05:1.

Conclusion: A CP, integrated in a multidisciplinary ED team, has an important economic value. Furthermore, the CP enhances medication quality and safety by preventing discrepancies in the chronic medication and by the identification of DRPs on admission at the ED.