Emergency Department Utilization during Self-administered Outpatient Parenteral Antimicrobial Therapy

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Introduction

Self-care programs are increasingly being recognized as effective models of patient-centered care. An example of self-care is self-administered outpatient parenteral antimicrobial therapy (S-OPAT), whereby patients requiring extended courses of intravenous antimicrobial treatment for complex infections are trained to administer antibiotics themselves at home via a peripherally inserted central catheter (PICC) without the use of expensive infusion equipment. Standard forms of health-care associated outpatient parenteral antimicrobial therapy (H-OPAT) include administration at home with home health nursing assistance, at a skilled nursing facility or an infusion center. These options are, however, not available to uninsured patients due to high costs.

S-OPAT was introduced at Parkland, a safety-net hospital in Dallas County, Texas, for uninsured medically stable patients to transition care from hospital to home. We previously published data demonstrating that S-OPAT resulted in substantial cost savings to the health care system, improved clinical outcomes and had high patient satisfaction rates. The question remains if programs such as S-OPAT, which shift care from hospital to home and from health care provider to self-care, result in increased utilization of emergency department (ED) services due to unmet needs. This question is especially pertinent as interest in adopting S-OPAT is growing, especially in resource poor settings and countries.

Methods

We conducted a retrospective review of electronic medical records of 944 S-OPAT patients from our previous study between fiscal years 2009-2013, and determined emergency department (ED) visits and hospital admissions due to OPAT-related causes. Results: 944 patients were treated with S-OPAT. Patients were more likely to be male (62%), non-English-speaking (37%), lack insurance (61%), and have diabetes (21%). Of the 944 patients on S-OPAT, 99 patients (10.5% of the total cohort) presented at least once to the ED for S-OPAT-related causes. Fifty-one patients (5.4% of the total cohort) were admitted to the hospital, with a mean length of stay of 8 days. Conclusions: Our analysis confirms that transferring patients from hospital to home for self-administration of intravenous antibiotics is not associated with a compensatory increase in ED visits related to antimicrobial treatment.

Keywords: Emergency department; Outpatient; Utilization

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60 days). The reasons for visits and admissions were designated as S-OPAT-related if they were due to PICC dysfunction or infection, lack of response to antibiotics, or antibiotic-related adverse events.

**Results**

944 patients were treated with S-OPAT. Patients were more likely to be male (62%), non-English-speaking (37%), lack insurance (61%), and have diabetes (21%). Of the 944 patients on S-OPAT, 99 patients (10.5% of the total cohort) presented at least once to the ED for S-OPAT-related causes. Fifty-one patients (5.4% of the total cohort) were admitted to the hospital, with a mean length of stay of 8 days [Table 1].

**Discussion**

The ED utilization by patients engaged in S-OPAT did not increase, and was much lower compared to published rates of ED utilization associated with H-OPAT settings. In a single center, retrospective study, of the 104 patients in an H-OPAT program, 43% visited the ED, while 26% were readmitted. The vast majority of these were infection or OPAT related. In another single center retrospective study, 207/782 (26%) patients in H-OPAT were readmitted within 30 days and 76% admissions were infection or OPAT related. The low rates of ED visits and hospital admissions, in our study, are particularly pertinent given the complex social determinants of our uninsured patient population.

Our study has a few limitations. There is the possibility of misclassification bias for subjects who did not use our ED. However, the probability of this is low since the majorities of patients are uninsured and usually receive care at our county hospital. Secondly, we did not analyze how many ED visits were truly urgent or emergent in nature versus those which could have been safely evaluated in a clinic setting.

**Conclusion**

Our analysis of ED utilization confirms that transferring patients from hospital to home for self-administration of intravenous antibiotics is not associated with a compensatory increase in ED visits related to antimicrobial treatment. Future research is necessary to identify predictors for ED utilization among S-OPAT patients.

**Conflict of Interest**

All authors disclose that there was no conflict of interest.

**References**


