2081. Low 30-Day Hospital Readmission Rates in Medicare Patients Receiving Outpatient Parenteral Antimicrobial Therapy (OPAT) in Physician Office Infusion Centers

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Background. The Hospital Readmissions Reduction Program was established under the Affordable Care Act in 2012 to reduce payments to hospitals (hosp) with excess readmissions. Standardized readmission measures include all-cause unplanned readmissions within 30 days of hosp discharge, regardless of initial diagnosis. To avoid penalties, post-acute care, including OPAT, must have a neutral or favorable impact on 30-day hosp readmissions (30-dHR). We assessed 30-dHR for Medicare (MCR) patients receiving OPAT in 30 physician office infusion centers (POICs).

Methods. All records of MCR patients were identified that were discharged from hosp to 15 national ID POICs. From those, 200 records were randomly selected and reviewed for unplanned 30-dHR. Additional data extracted were demographics, Charlson comorbidities index (CCI), infection diagnosis, therapy and reasons for readmission. The 30-dHR was compared with national average estimates obtained from the Medical Expenditure Panel Survey (MEPS) database. Multivariate logistic regression was performed with P < 0.05 being statistically significant.

Results. Mean pt age was 73.25 years (range: 65–97) with 56% males. Infections included bone and joint (34%), genitourinary (16%), complicated skin and skin structure (15%), bacteremia (13%), respiratory (10%), intra-abdominal (7%), endocarditis (2.5%), and central nervous system (2.5%) with a mean OPAT duration of 21 ± 18 days. Overall, 30-dHR rate was 11% (n = 22). Median days from initial hosp discharge to readmission was 13 (range: 2–28). Reasons for 30-dHR included disease exacerbation unrelated to infection (n = 7, 32%), worsening infection (n = 6, 27%), adverse drug reaction (n = 5, 23%), new infection (n = 3, 14%), and line complication (n = 1, 4%). A logistic regression model (Table 1) indicates that 30-dHR rates reported in MEPS are significantly higher than observed for patients treated with OPAT in POICs after adjustment for age, gender, CCI and initial diagnosis (OR = 3.16, 95% CI: 1.89–5.28, P < 0.0001).

Conclusion. Patients receiving OPAT in POICs had significantly lower 30-day HRs compared with a national average, and in a more comorbid population. Our data suggest that continuous oversight of patients by ID physicians and infusion center staff in the POIC setting may prevent hospital readmissions.

Table 1. Multivariate Logistic Regression of 30-Day Hospital Readmission Rates in Study Cohort (POIC) vs. National Average Estimates (Comparator).

| Variable | POIC | Comparator* | Odds Ratio | 95% Confidence Interval (CI) | p-Value |
|----------|------|-------------|------------|-----------------------------|---------|
| Visits (POIC) | 201(11%) | 902(28%) | 0.21 | <0.0001 |
| Age (mean) | 73.5(7) | 79.5(1) | 0.866 |
| Gender (male) | 112 | 362 | 0.681 |
| Rate of infection (%) | 2.8(7) | 2.1(7) | 1.09 |
| Infection diagnosis (%) | 11.9(7) | 9.6(7) | 0.866 |
| Bone and joint | 20(10) | 47(13) | 0.43 | 0.82-2.20 | 0.109 |
| Respiratory and blood | 2.5(7) | 14(4) | 0.07 | 0.47-4.86 | 0.996 |
| Bacteremia | 3(2) | 11(3) | 0.27 | 1.78-4.74 | 0.317 |
| Cholecystitis | 2(1) | 15(5) | 0.13 | 0.57-2.14 | 0.025 |
| Central nervous system | 5(3) | 25(8) | 0.20 | 0.09-0.47 | 0.0001 |
| Gastrointestinal | 11(6) | 31(10) | 0.36 | 0.18-0.74 | 0.009 |
| Genitourinary | 3(2) | 17(5) | 0.18 | 0.08-0.41 | 0.0001 |
| Infections (rate of infection) | 1.9(7) | 1.3(7) | 0.10 | 0.05-0.21 | 0.0001 |

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2082. Evaluation of Outpatient Parenteral Antimicrobial Therapy (OPAT) Processes and Outcomes Among Patients Within an Integrated Health System

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Successful management of outpatient parenteral antimicrobial therapy (OPAT) optimizes outcomes and reduces cost. We examined (i) local OPAT processes and outcomes, (ii) whether OPAT constraints favoring once daily antibiotic promonotherapy vs. multimicrobial therapeutic choices, and (iii) whether these data could drive OPAT improvements.

Methods. Patients ≥ 18 years of age who received > 48 hours of OPAT at five infusion centers within a single health-system from January 1, 2018 to March 1, 2018 were eligible for review. The following patient- and treatment-level data were collected:

- age, gender, drug allergies, laboratory studies and frequency, OPAT indication, infection source, pathogen(s), antibiotic sensitivities, antibiotic therapy and duration, electronic order set used, prescriber specialty, evidence of failed prior oral or intravenous (IV) therapy and IV access type.
- The primary outcome was OPAT success: the clinical resolution of the infection without relapse within 30 days of antibiotic therapy completion.
- Secondary outcomes included change in antibiotic therapy due to lack of clinical improvement, adverse drug reactions and IV access complications. A sub-analysis of patients who received ceftriaxone and/or etampenem was also performed. OPAT practice was compared with 2018 Infectious Diseases Society of America OPAT guidelines.

Results. A total of 108 patients were evaluated. Patient demographics, treatment and outcomes are shown in Table 1. The most common OPAT indications were bone/joint, bacteremia and skin infection. Third-generation cephalosporins, carbapenems and ceftriaxone were most commonly prescribed. In 34.3% and 24.2% of ceftriaxone and etampenem cases, respectively, β-lactam therapy could have been utilized. Assessment of prior failed antibiotic therapy, patient allergies and pathogen-site pair ing found 28.7% of patients were eligible for oral therapy upon OPAT initiation.

Conclusion. Several components of our local OPAT aligned with current guidelines. Initial OPAT patient selection may benefit from added scrutiny. Given the high volume of once daily antibiotics administered for convenience there is an internal opportunity to facilitate multi-daily infusions.

Table 1. Patient Demographics, Treatment and Outcomes

| Demographics | Male | Female gender |
|--------------|------|---------------|
| Mean Age     | 55   |               |
| Age ≥ 65 years of age | 51 (67.0) | 50 (46.3) |

Treatment

- Weekly laboratory studies ordered (85.78%)
- Infectious Diseases Prescriber (87.05%)
- Electronic OPAT order set used (108.00%)
- > 1 Intravenous antibiotic used (39.17%)
- Oral antibiotic therapy prescribed after OPAT (32.00%)
- Peripherally inserted central venous catheter access (87.02%)
- IV access removed after OPAT (104.98%)

Primary Outcome

- OPAT success (94.07%)

Secondary Outcomes

- Change in intravenous antibiotics during OPAT (33.12%)
- Adverse drug reaction during OPAT (35.13%)
- Intravenous access complications (3.28%)

All data are presented as no. (%) unless otherwise noted: OPAT, outpatient parenteral antimicrobial therapy

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2083. A Targeted Remote Audit and Feedback Intervention Utilizing a Local Non-ID Trained Pharmacist

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Background. Tele Stewardship (tASP) is a developing model for hospitals without local ID expertise. We report results of a tASP initiative using a hospital’s local non-ID trained pharmacist to conduct etampenem (erta) audit and feedback (A&F).

Methods. Evaluation of erta use before and after implementation of a collaborative A&F process from October 2018 to March 2019. A central ID physician and ID pharmacist with EMR access reviewed charts of patients receiving erta Mon-Fri by phone with a local Critical Care trained pharmacist. Advice was given to the local pharmacist on when and how to intervene. The local pharmacist made all interventions. Acceptance rates and time involved were recorded. Usage was tracked as DOT/1,000 PD of inpatient usage. No other new local ASP interventions were undertaken during this time.

Results. 120 erta orders were reviewed. Figure 1 reveals usage before and after implementation. Median usage dropped 55%. Median purchasing cost decreased by 73%. 51 unique patients received erta in the month prior to intervention, and 35 patients per month on average received erta afterwards. 30 providers ordered erta in the month prior to intervention, and 17 providers per month on average ordered erta afterwards. The overall intervention acceptance rate was 86%, and Figure 2 shows the...
breakdown of accepted interventions. Figure 3 describes the indications for use of erta orders after intervention started. Figure 4 shows changes in other antibiotics during this time. During this time, no patients were identified that later needed a carbapenem restarted or suffered harm due to this intervention. The average daily time required was 15 minutes for the central team and 22 minutes for the local pharmacist.

**Conclusion.** Using a remote collaboration with a local pharmacist, we showed a marked decrease in the use of one targeted antimicrobial. The time commitment was minimal, and no patient harm was identified. Tele-stewardship utilizing local non-ID trained pharmacists can be a significant tool for improving antimicrobial use in community hospitals. tASP’s should monitor for compensatory increase in other broad-spectrum antibiotics. Further local education regarding proper management of UTIs and other common conditions may provide additional improvements in use of erta.

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2084. Implementation of a Diagnostic Stewardship Algorithm by Bedside Nurses to Reduce Unnecessary Urinary Cultures in Hospitalized Adult Patients
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**Background.** Urine cultures (UCx) are often ordered in patients without symptoms of urinary tract infection. A pilot study was conducted to assess the impact of a nurse-driven UCx diagnostic stewardship intervention for adult inpatients.

**Methods.** We interviewed eight nurses to determine the feasibility of a nurse-driven UCx stewardship intervention. Based on their feedback, an algorithm with appropriate indications for UCx was developed (Figure 1) and approved by physicians and nurses for piloting on a 24-bed medicine unit at The Johns Hopkins Hospital. UCx orders/100 patient-days (PD) were trended with statistical process charts in the intervention and a control unit. Nurses used the algorithm to guide discussions with ordering providers and to suggest instances where UCx may be unnecessary (“intervention”). Nurses were educated on an antibiotic (abx) use safety and appropriate testing during live sessions prior to algorithm implementation. Two study team members reviewed all UCx ordered in the intervention unit 12 months before and 6 months after the intervention for appropriateness based on algorithm criteria. Feedback on UCx order appropriateness and case-based discussion were provided to nurses via in-person meetings post intervention. Data were compared using the χ² or the Mann–Whitney test as appropriate. The rate of UCx orders before and after the intervention were compared using a standard incident ratio (IRR).

**Results.** With algorithm implementation, the mean rate of UCx orders/100 PD decreased from 2.7 to 1.8 (39% decrease) in the intervention unit (IRR 0.61, 95% confidence intervals (CI) 0.45–0.82, P = .16). Mean UCx order rates in the control unit were 2.49 and 2.99, respectively (Figure 2). Characteristics of patients reviewed for appropriateness were similar between the two study periods: median age 63 (IQR 39, 74) vs. 56 (IQR 45, 76), female sex 65% vs. 61%, on hemodialysis 7% vs. 11%, urinary catheter present 20% vs. 29%. The proportion of inappropriate UCx decreased from 59% (98/165) to 50% (32/64) (P = .16). There were 8 and 1 cases of asymptomatic bacteriuria inappropriately treated in the pre- and post-intervention periods, respectively (42 and 7 abx days).

**Conclusion.** With the appropriate training and tools, nurses can steward UCx and reduce unnecessary testing and abx use.