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Outcomes associated with the creation of an inpatient pharmacy-led outpatient parenteral antimicrobial therapy (OPAT) service to facilitate transitions of care

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BACKGROUND

- We previously demonstrated that standardizing the documentation of the outpatient parenteral antimicrobial therapy (OPAT) plan led to improved post-discharge outcomes.[1]
- As part of an ongoing quality improvement initiative, this study investigated whether centralizing OPAT documentation to an infectious diseases (ID) pharmacist led to improved documentation, shorter lengths of stay, and further improvements in post-discharge outcomes.

METHODS

Study Design

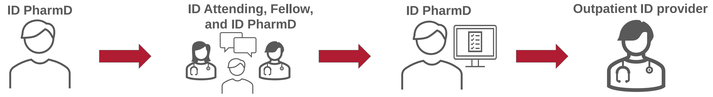
- Single-center, retrospective
- Multiphase quality improvement
- Cross-over design
- June 2021 to March 2022

Gen ID Team	Phase 1		Phase 2
Team 1	Pre-intervention Jun 2021-Aug 2021	Team 1 Intervention Sep 2021-Dec 2021	Post-intervention Jan 2022-Mar 2022
Team 2	Pre-intervention Jun 2021-Dec 2021		Team 2 Intervention Jan 2022-Mar 2022

Pre-intervention (Provider) vs. Intervention (Pharmacist)

- Pre-intervention: OPAT notes written by ID physicians and fellows
- Intervention: Pharmacy-led OPAT note documentation, focused on completeness and timeliness
  - Other workflow processes involved with OPAT remained unchanged

Description of Pilot and Workflow



ID Pharmacist	General ID Consult team	OPAT consult order	Outpatient ID Clinic
• Assumed responsibility for documenting OPAT notes • Monday – Friday • Normal work hours	• Determined which patients needed final OPAT plan • Occurred daily during weekday morning meetings	• Documented OPAT note • Scheduled follow-up visits • ID attending co-signed the finalized note	• Received the forwarded OPAT plan from ID PharmD • Saw patients at outpatient follow-up visit

Inclusion Criteria

- Adults ≥ 18 years seen by an ID Consult team during hospital stay
- Discharged from University of Utah (U of U) Heath on an intravenous antibiotic
- Outpatient follow-up with an ID provider at U of U Health ≤ 60 days of hospital discharge

Exclusion Criteria

- Patients without an initial scheduled follow-up appointment with the ID Clinic
- Discharged to facilities where follow-up is outside of the U of U Health ID Clinic
- Transferred to an outside hospital, discharged to hospice, or left against medical advice
- Discharged by the Transplant ID consult service
- Patients taking long-term oral antibiotics

PRIMARY OUTCOME

- **Hospital length of stay (LOS) in days**

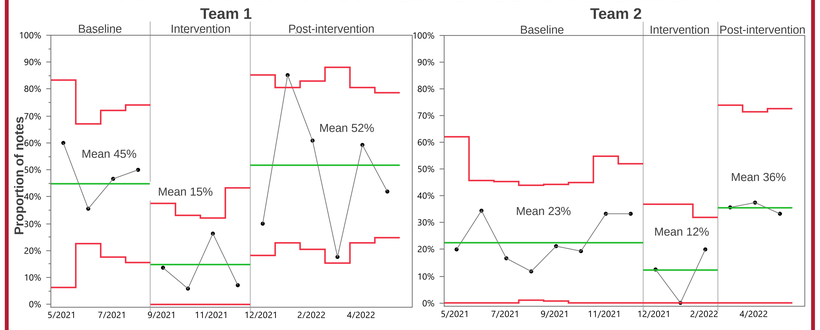
SECONDARY OUTCOMES

- **All-cause mortality or hospital readmission up to 30 days after hospital discharge**
- **% of patients who had laboratory parameters checked within 10 days of discharge**
- **ID Clinic appointment no show visits within 60 days of discharge**
- **Time from OPAT Note documentation to discharge**

RESULTS

Characteristic	Total (n = 350)	Pharmacist (n = 75)	Provider (n = 275)
Age, mean (SD)	56 (15)	57 (16)	56 (15)
Male sex, n (%)	206 (59)	38 (51)	168 (61)
White race, n (%)	276 (79)	60 (80)	216 (79)
Hispanic ethnicity, n (%)	39 (11)	7 (9)	32 (12)
Charlson comorbidity index, median (IQR)	3 (1-5)	3 (0-5)	3 (1-6)
Discharged to Home Health, n (%)	219 (63)	44 (59)	175 (64)
Intervention phase, n (%)			
Baseline	148 (42)	0 (0)	148 (54)
Team 1 Pilot	122 (35)	47 (63)	75 (27)
Team 2 Pilot	80 (23)	28 (37)	52 (19)
OPAT Antimicrobial, n (%)			
Beta-lactam	273 (78)	63 (84)	210 (76)
Vancomycin	105 (30)	20 (27)	85 (31)
Primary hospital service, n (%)			
Internal medicine	205 (59)	45 (60)	160 (58)
Orthopaedics	59 (17)	15 (20)	44 (16)
Cardiology/Cardiothoracic Surgery	27 (8)	3 (4)	24 (9)
Other	59 (17)	12 (16)	47 (17)

P CHART – NOTES WITHOUT ALL "PERFECT CARE" ELEMENTS

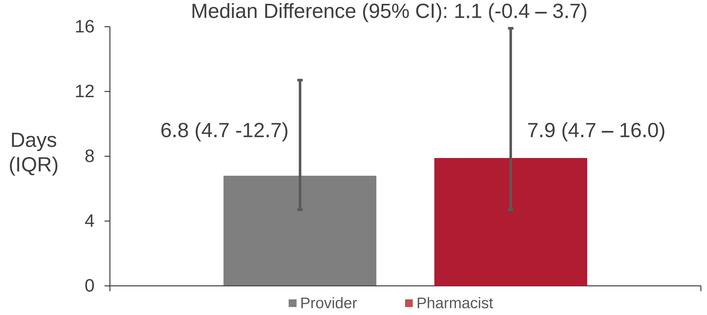


Outcome	Pharmacist (n=75)	Provider (n = 275)	Median Difference (95% Confidence Interval)
Time from OPAT note documentation to discharge; median days (IQR)	2.1 (0.5-6.9)	0.6 (0.1-3.4)	**1.4 (0.6-3.1)**

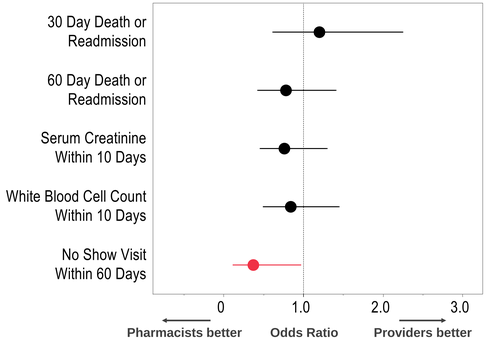
RESULTS

HOSPITAL LENGTH OF STAY

Median Difference (95% CI): 1.1 (-0.4 – 3.7)



SECONDARY OUTCOMES



CONCLUSIONS

- OPAT note documentation occurred earlier in relation to discharge in the pharmacist group.
- Documentation quality improved during the pharmacy-led pilots; however, improved OPAT note documentation did not translate into shorter hospital LOS.
- ID Clinic no-show visits were significantly less likely in the pharmacist group. Other post-discharge outcomes were similar between pharmacist and provider patients.

DISCLOSURES

- Russell Benefield has an active investigator-initiated research grant from Paratek Pharmaceuticals

REFERENCES

1. Certain L, Benefield RJ, Newman M, et al. A quality initiative to improve post-discharge care for patients on outpatient parenteral antimicrobial therapy. Open Forum Infect Dis. 2022; ofac199.

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