

Implementation of a standardized OPAT SmartForm was associated with improved post-discharge outcomes.

Laura Certain, MD, PhD, Russell Benefield, PharmD, BCPS-AQ ID, Frank Thomas, MD, MBA

PROBLEM: The outpatient parenteral antimicrobial therapy (OPAT) plan was frequently omitted or incompletely communicated during transitions of care at our institution.

INTERVENTION: A standardized OPAT documentation tool (SmartForm) was developed in our electronic health record system for use by our inpatient Infectious Disease (ID) consult service.

The SmartForm

The screenshot shows the 'Outpatient Prolonged Antimicrobial Therapy (OPAT) Recommendations' form. It includes sections for:

- Antimicrobial therapy (IV/PO)
- IV access (PICC, tunneled line, dialysis access, midline, none, unknown/TBD)
- IV Antimicrobial Rx to be prescribed at discharge (dropdown menu with options like ampicillin, ceftriaxone, meropenem, etc.)
- Duration of IV Rx (Days/Weeks)
- Last date of IV Rx will be on (calendar)
- PO Antimicrobial Rx to be prescribed at discharge (dropdown menu with options like amoxicillin, fluconazole, rifampin, etc.)
- Duration of PO Rx (Days/Weeks)
- Last date of PO Rx will be on (calendar)
- Lab monitoring (checkboxes for creatinine, CBC with diff, ALT, BMP, CMP, vancomycin trough, CK, ESR, CRP, lactic acid)
- Infected Disease Outpatient Follow-up (Provider, Follow up on date, Clinic)

RESULTS

Post-intervention patients were younger but otherwise similar.

	Pre-Intervention (n = 74)	Post-Intervention (n = 231)	P-value
Age, average (SD)	60.0 (14.4)	55.6 (16.1)	0.03
Sex, male, n (%)	49 (66.2)	130 (56.3)	0.13
Charlson comorbidity index, median (IQR)	3 (1-7)	3 (1-6)	0.19
Discharge destination, n (%)			0.04
Home Health	40 (54.1)	148 (64.1)	
Infusion Center	14 (18.9)	20 (8.7)	
SNF	20 (27.0)	63 (27.3)	
Primary payor, n (%)			0.34
Medicare	37 (50.0)	92 (39.8)	
Commercial	22 (29.7)	93 (40.3)	
Medicaid	12 (16.2)	39 (16.9)	
Workers Comp	2 (2.7)	2 (0.9)	
Self-pay	1 (1.4)	5 (2.2)	

METHODS: Pre- vs post-intervention comparison of

- Documentation of an OPAT progress note
- Enrollment in the OPAT program
- Outpatient laboratory monitoring frequency
- Sixty-day unplanned hospital readmissions

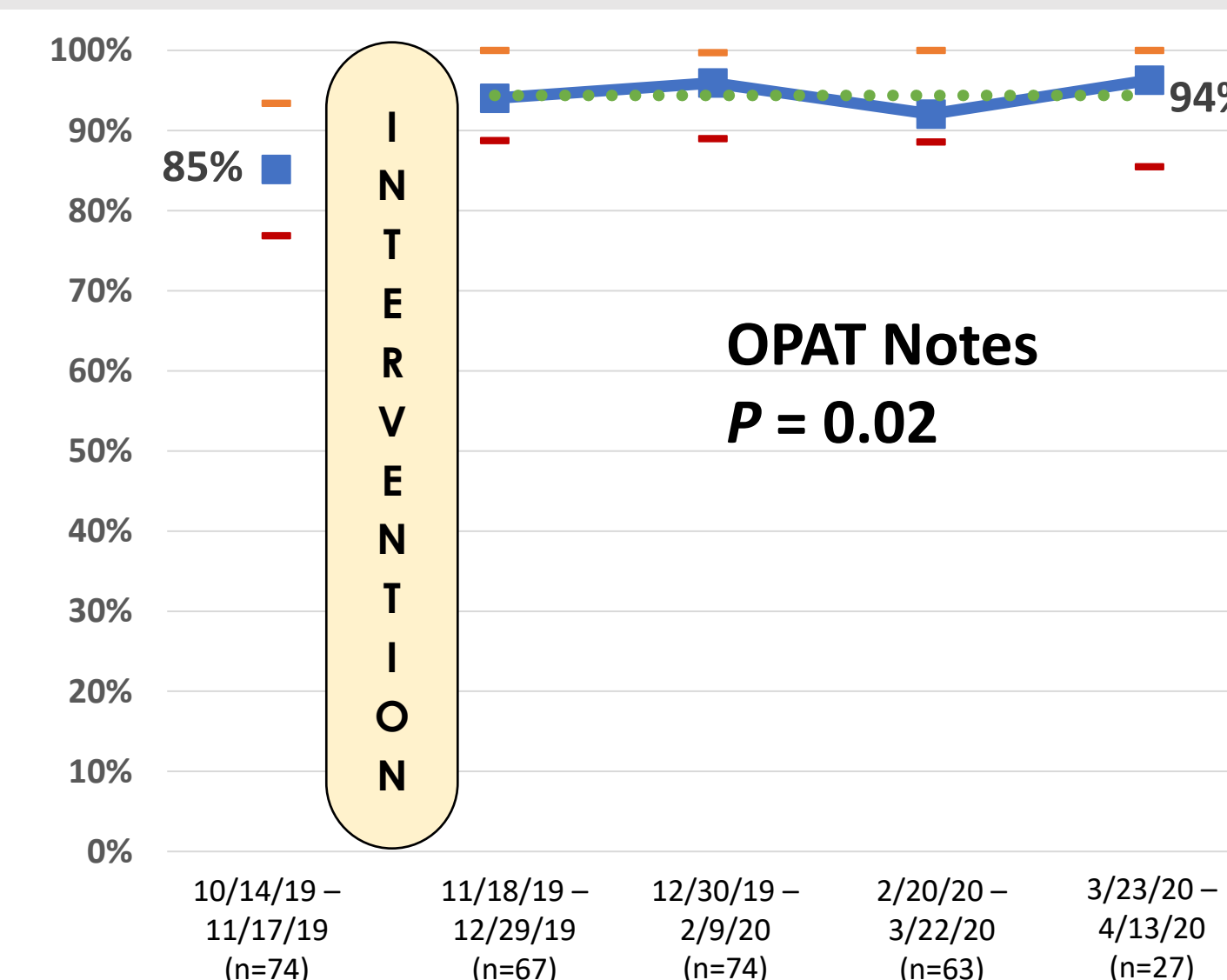
STATISTICAL ANALYSIS: Patient groups from pre- and post-intervention were compared using the chi-square statistic. A multivariate regression was done to analyze the effect of the intervention on readmissions controlling for potential confounders. A p-value <0.05 was considered statistically significant.

Link to univariate and multivariate analyses.

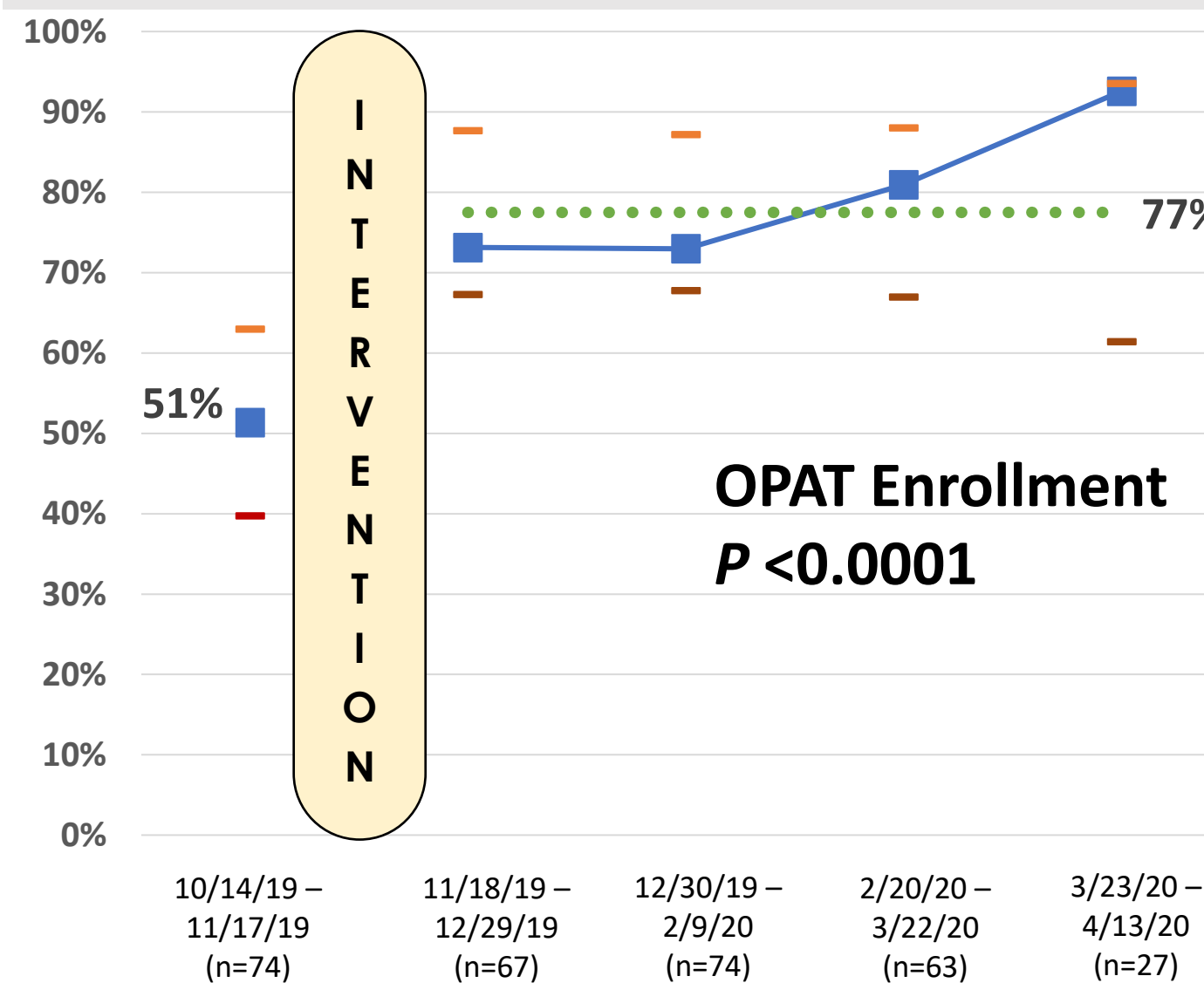


Post-intervention: more OPAT notes, more patients enrolled in OPAT...

P-Chart - Average Percentage of Patients Discharged With an OPAT Note Before and After Implementation of an OPAT SmartForm

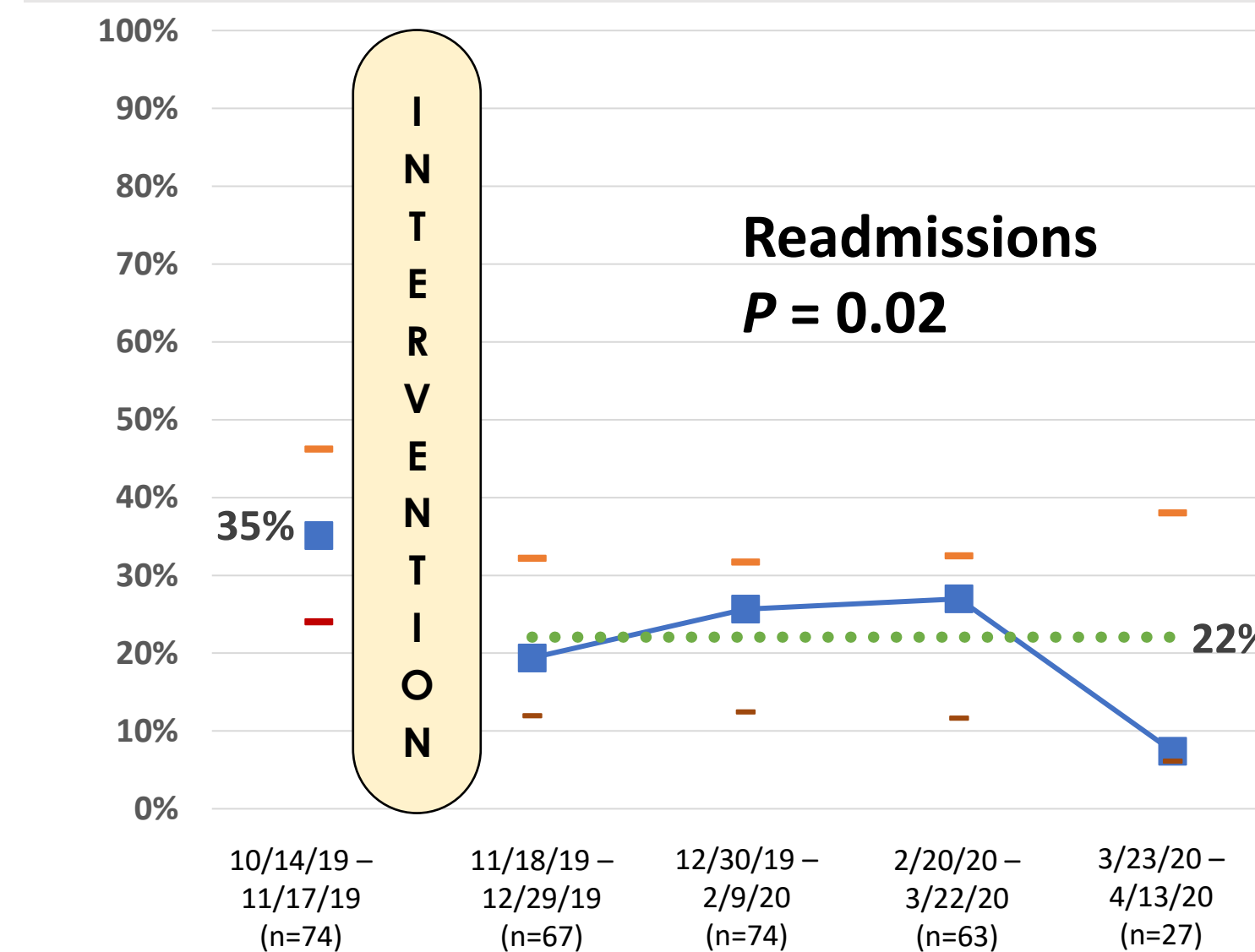


P-Chart - Average Percentage of Patients Enrolled in OPAT Before and After Implementation of an OPAT SmartForm



Fewer readmissions.

P-Chart - Average Percentage of Patients with Unplanned 60-day Readmissions Before and After Implementation of an OPAT SmartForm



CONCLUSION: Implementation of an OPAT SmartForm was associated with improved documentation, increased enrollment in the OPAT program, and reduction in hospital readmissions. There was no change in laboratory monitoring (data not shown).