

Determining the impact of an antiretroviral stewardship team on the care of HIV-infected patients admitted to an academic research institution

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BACKGROUND

- The incidence of antiretroviral-related errors associated with orders in the inpatient setting has been reported as high as 70%.¹⁻³
- There is a paucity of data regarding the impact of collaboration amongst physicians and pharmacists on inpatient antiretroviral management.^{4,5} To date, there have been few studies that focus on interdisciplinary patient review as the primary intervention.^{6,7}
- At Temple University Hospital, an antiretroviral stewardship team comprising 1) an HIV pharmacist specialist, 2) an Infectious Diseases attending physician, and 3) associated learners evaluates patients admitted to the hospital with active orders for antiretrovirals, enters a standardized note into the patient's chart demonstrating medication reconciliation and recommendations, and performs daily profile review during the hospitalization.

OBJECTIVE

To evaluate the effects of an antiretroviral stewardship team, comprised of an HIV pharmacist specialist, Infectious Diseases attending physician, and associated learners on identifying and correcting inpatient antiretroviral-related errors.

METHODS

Single center, retrospective cohort (Jul. 1, 2017 – Dec. 31, 2017)

- Inclusion criteria:** Patients 18 years and older with at least one antiretroviral ordered during hospitalization.
- Exclusion criteria:** Antiretroviral usage for an indication other than HIV infection treatment (e.g. Hepatitis B) or for prophylaxis.
- Outcome measures:** Number of interventions made by the antiretroviral stewardship team, number of admissions with errors, risk factors for errors, and cost savings.
- Risk factors** were analyzed by a multivariable logistic regression via IBM SPSS Statistics for Windows, version 22.0.
- Cost savings** were estimated by the clinical intervention documentation system Clinical Measures[®] (©MedKeeper).

RESULTS

297 admissions were evaluated

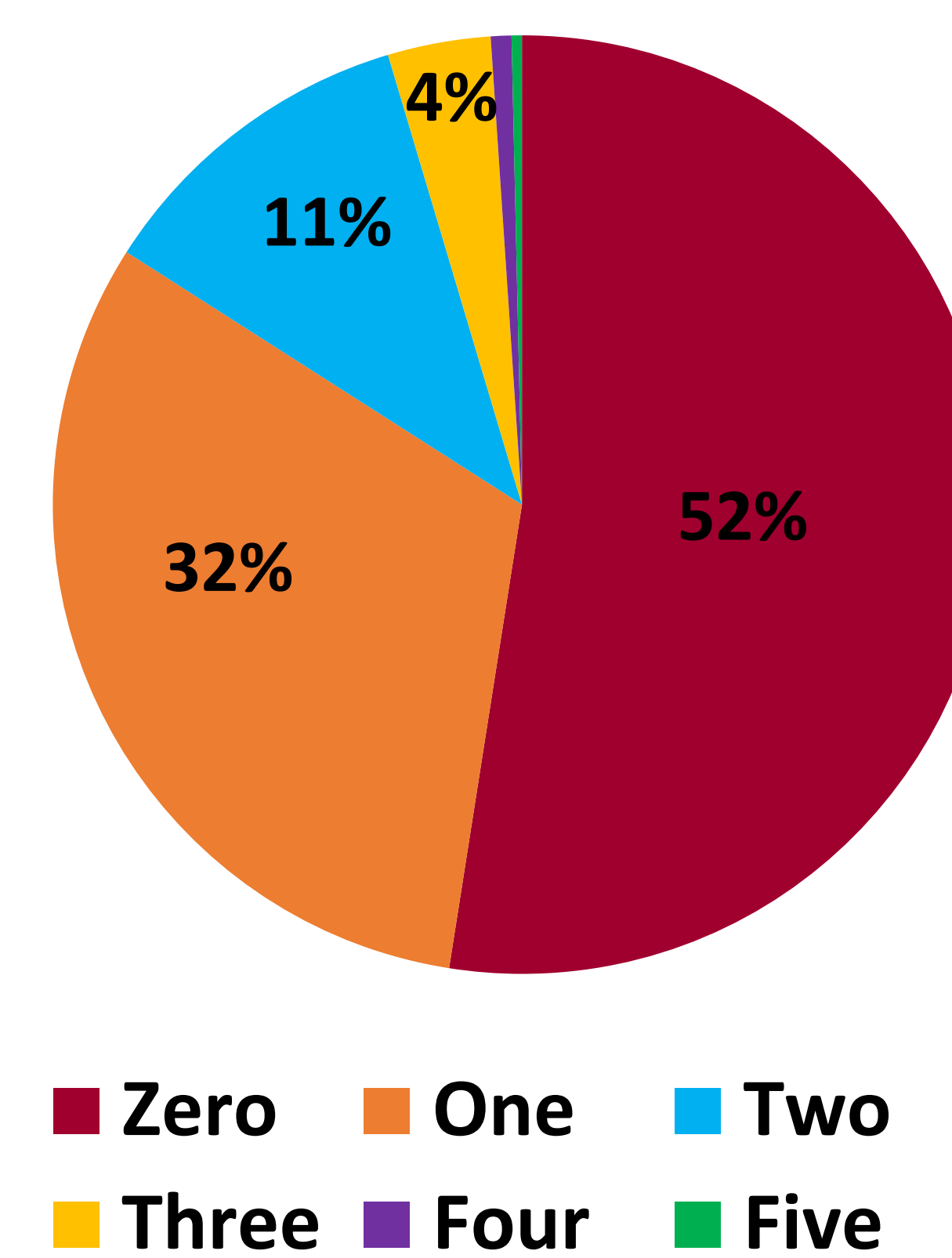
- 15 excluded
 - Hepatitis B (n=9)
 - PrEP (n=6)

196 interventions were made

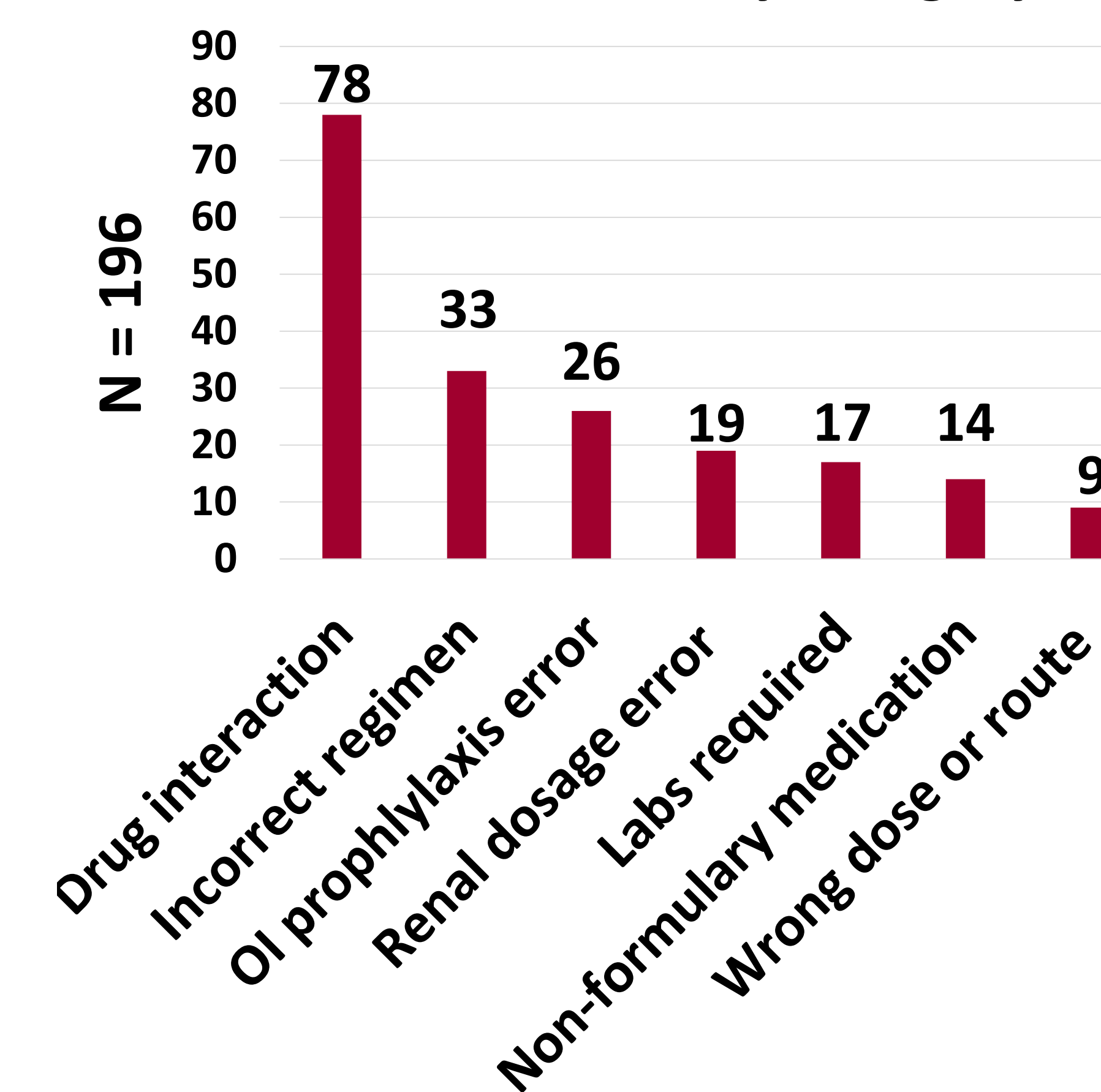
- 48% (134/282) of admissions had at least one intervention made

Total cost savings from interventions made were equal to \$137,040

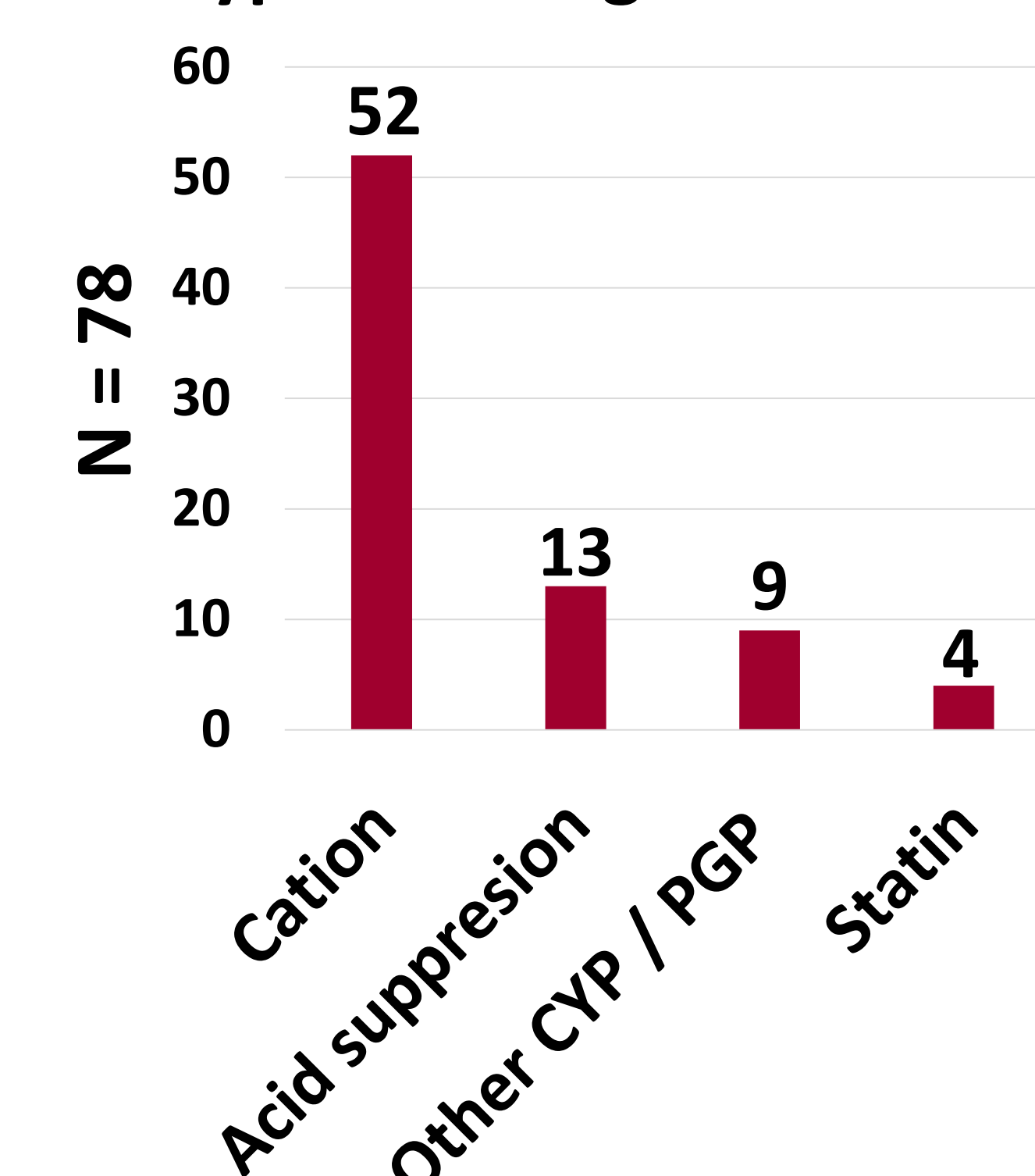
Number of Interventions per Admission



Interventions by Category



Types of Drug Interactions



STATISTICAL ANALYSIS

Univariate Analysis

Variable	No Intervention (N = 148)	Intervention (N = 134)	P-Value
Non-Institutional Outpatient Provider	70 (47.3)	80 (59.7)	0.037
Male	78 (52.7)	74 (55.2)	0.671
Age ≥ 45 Years	129 (87.2)	106 (79.1)	0.070
Intensive Care Unit Service	4 (2.7)	16 (11.9)	0.003
Medical-Surgical Service	136 (91.9)	111 (82.9)	0.021
Change in GFR	5 (3.4)	16 (11.9)	0.006
NNRTI	34 (23.0)	22 (16.4)	0.168
PI	22 (14.9)	32 (23.9)	0.055
INSTI	111 (75.0)	100 (74.6)	0.943
NRTI Sparing	7 (4.7)	2 (1.5)	0.178
Multi-Tablet Home Regimen	81 (54.7)	92 (68.7)	0.016
Multi-Tablet Inpatient Regimen	114 (77.0)	115 (85.8)	0.059
CD4 Count < 200 cells/mm ³	20 (13.5)	36 (26.8)	0.005
Days Reviewed	2 [1 – 3]	3 [1 – 5]	0.032

Multivariable Analysis

Variable	OR [95% CI]	P-Value
Non-Institutional Outpatient Provider	1.890 [1.136 – 3.143]	0.014
Intensive Care Unit Service	3.836 [1.192 – 12.340]	0.024
Change in GFR	3.332 [1.144 – 9.710]	0.027
CD4 < 200 cells/mm ³	1.196 [1.015 – 3.617]	0.045
Multi-Tablet Inpatient Regimen	1.768 [0.916 – 3.412]	0.090

CONCLUSION

Antiretroviral stewardship teams optimize patient care through identification and correction of antiretroviral-related errors. Non-institutional outpatient providers, intensive care unit admission, changes in GFR, and CD4 counts < 200 cells/mm³ put patients at high risk for error. Once identified, correction then provides cost savings.

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DISCLOSURES

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