

PACTR RESULTS SUMMARY

Study Title: Implementation and Assessment of a Medication Therapy Management Program in HIV Patients at High Risk of Adverse Drug Events at Khartoum, Sudan

1. PARTICIPANT FLOW

A total of 1,452 eligible patients were assessed for inclusion between March 2020 and January 2025. After exclusions, 1,149 participants were randomized into three arms:

- **Usual Care (Control):** 380 participants
- **Basic MTM:** 382 participants
- **Enhanced MTM:** 387 participants

Retention: 92.3% completed 6-month follow-up (n=1,060)

- Usual Care: 352/380 (92.6%)
- Basic MTM: 354/382 (92.7%)
- Enhanced MTM: 354/387 (91.5%)

2. BASELINE CHARACTERISTICS

Characteristic	Usual Care (n=380)	Basic MTM (n=382)	Enhanced MTM (n=387)
Age (mean ± SD)	42.3 ± 10.1	43.1 ± 9.8	41.9 ± 10.5
Gender (Female)	215 (56.6%)	220 (57.6%)	221 (57.1%)
Comorbidities (mean)	4.2 ± 1.3	4.3 ± 1.4	4.1 ± 1.5
Medications (mean)	9.5 ± 2.8	9.7 ± 3.1	9.4 ± 2.9
Baseline Viral Suppression	201 (52.9%)	205 (53.7%)	208 (53.7%)

No significant differences between groups ($p > 0.05$)

3. PRIMARY OUTCOME: MEDICATION ADHERENCE ($\geq 95\%$ at 6 Months)

Group	Adherence Rate	Odds Ratio vs. Control	p-value
Usual Care	52.9%	Reference	-
Basic MTM	75.1%	2.71 (2.02-3.64)	<0.001
Enhanced MTM	81.4%	3.92 (2.88-5.34)	<0.001

4. SECONDARY OUTCOMES

Viral Load Suppression (<200 copies/mL) at 6 Months

Group	Suppression Rate	Odds Ratio vs. Control	p-value
Usual Care	55.3%	Reference	-
Basic MTM	72.0%	2.08 (1.56-2.78)	<0.001
Enhanced MTM	79.8%	3.22 (2.38-4.36)	<0.001

5. ADVERSE EVENTS

Outcome	Usual Care	Basic MTM	Enhanced MTM	p-value
Participants with ≥ 1 ADE	146 (38.4%)	107 (28.0%)	80 (20.7%)	<0.001
Total ADEs reported	321	198	134	-
ADEs per patient (mean \pm SD)	1.8 \pm 1.5	1.2 \pm 1.1	0.9 \pm 0.8	<0.001

Outcome	Usual Care	Basic MTM	Enhanced MTM	p-value
≥1 Emergency Visit	89 (23.4%)	62 (16.2%)	45 (11.6%)	<0.001
≥1 Hospitalization	45 (11.8%)	28 (7.3%)	18 (4.7%)	0.001

Most Common ADEs: Gastrointestinal (42%), Dermatological (28%), Neurological (18%)

6. HEALTHCARE COSTS (Mean per patient, 6 months)

Cost Component	Usual Care	Basic MTM	Enhanced MTM
Hospitalization	\$142	\$89	\$61
Emergency Visits	\$78	\$53	\$38
MTM Program Cost	\$0	\$45	\$65
Total Cost	\$629	\$607	\$594

7. PATIENT SATISFACTION (Scale 1-5, mean ± SD)

Domain	Usual Care	Basic MTM	Enhanced MTM	p-value
Overall Satisfaction	3.1 ± 0.9	4.4 ± 0.6	4.7 ± 0.5	<0.001
Pharmacist Communication	3.0 ± 1.0	4.5 ± 0.7	4.8 ± 0.4	<0.001

8. CONCLUSION

Pharmacist-led MTM significantly improved medication adherence, reduced adverse drug events, enhanced viral suppression, and decreased healthcare utilization among high-risk HIV patients in Khartoum, Sudan. The Enhanced MTM protocol yielded the greatest benefits. Findings support integration of MTM into routine HIV care in resource-limited settings.