

#Adherence2014



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#397

A tablet-computer clinical intervention to support antiretroviral adherence: initial results of the MedCHEC randomized trial

Allen L. Gifford,^{1,2,3} Sarah E. McDannold,^{1,3} D. Keith McInnes,^{1,3}
Julie Devasia,³ Joel Reisman,³ Mark Glickman,^{1,3} Matthew B. Goetz^{4,5}

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¹Boston University School of Public Health, ²Boston University School of Medicine, ³Edith Nourse Rogers Memorial VA Hospital, ⁴VA Greater Los Angeles Healthcare System, ⁵University of California, Los Angeles



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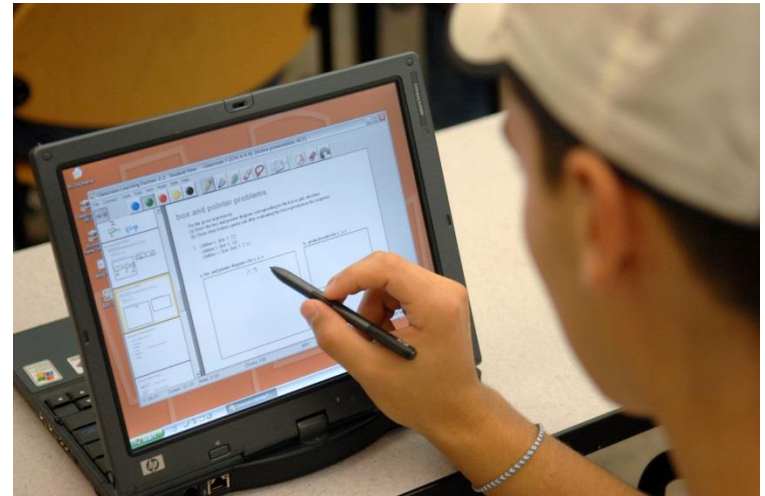
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Background

- ▶ Tablet computers are in our homes, in our workplaces, and increasingly, in healthcare settings
- ▶ They are convenient, familiar to patients, and relatively inexpensive
- ▶ Audio computer-assisted self-interview (aCASI) can be used to assess patients in routine care, including adherence behaviors (McInnes 2013, Kozak 2012)



Background

- ▶ Tablet computer assessment of HIV adherence behaviors could improve patient outcomes
 - ▶ Improve clinician information – consistent, customizable, and less patient response bias
 - ▶ Educate and motivate patients
- ▶ Randomized trial of aCASI tablet computer assessment has not been conducted in HIV care settings
- ▶ Delivery of computer-assisted adherence assessments to providers did not improve antiretroviral (ARV) adherence (Wilson et al 2010)

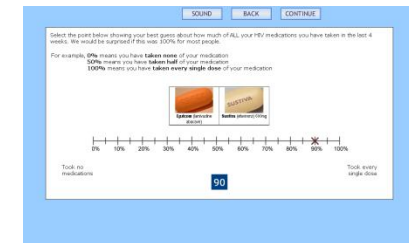
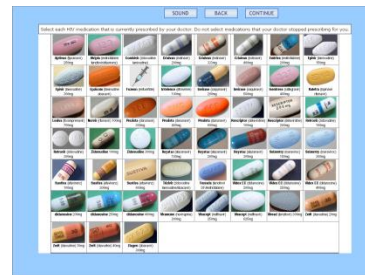
Medication for Chronic HIV Education and Collaboration - *MedCHEC*

MedCHEC

Patient
education/motivation

Doctor
information/communication

Clinic
linkage to adherence care



MedCHEC[®] Provider Report

Patient: Stewart, Jessica Assessment date: 11/20/2018

Summary: Problems Identified. Adherence care management recommended.
Alert: Patient reports needing medication help.

The patient is in the MedCHEC program, for Adherence Care management contact: Wendy Rossen email: Wendy.Rossen@uic.edu phone: (312) 479-3711 X4813

Medication	Medication Reconciliation	Adherence Rating Scale	Self-Reported Adherence %
Epivir	✓	Very good	90%
efavirenz abt089	✓	Fair	74%

Adherence to HIV Meds Overall¹

Medication	Adherence Rating Scale	Self-Reported Adherence %
Overall	Good	90%

Medication Barriers

- Patient missed medications because he/she thought it was a good idea to take a break from medications.

Med and Substances	Severity	Score	Normal Range
Depression (PHQ-9)	none	0	<= 5
Alcohol (AUDIT)	Medium alcohol problem	8	< 7
Four week BICL drug use	---	---	---
Drug abuse ² : No drug problem	---	---	---

1. Indicates any discrepancy between prescribed and reported prescription drug therapy.
2. Overall adherence based on patient self-reported adherence.

This patient is enrolled in the MedCHEC study, a randomized controlled trial. This page contains confidential information for the patient's healthcare and adherence support team.

**Adherence Care Manager
(pharmacist or nurse)**

Research Hypotheses

- ▶ Compared to control, patients assigned to the MedCHEC intervention will
 - ▶ have better antiretroviral adherence
 - ▶ be more accurately assessed for ARV nonadherence by their providers
 - ▶ receive better adherence counseling
 - ▶ achieve better viral suppression (secondary hypothesis)

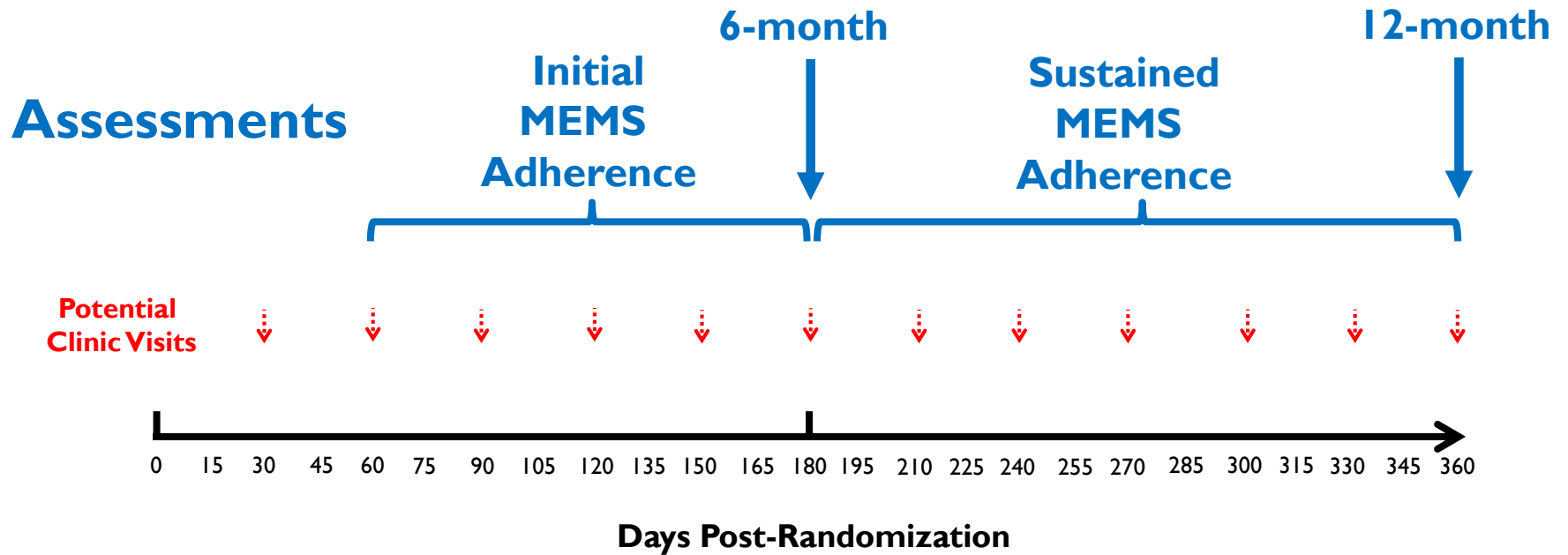
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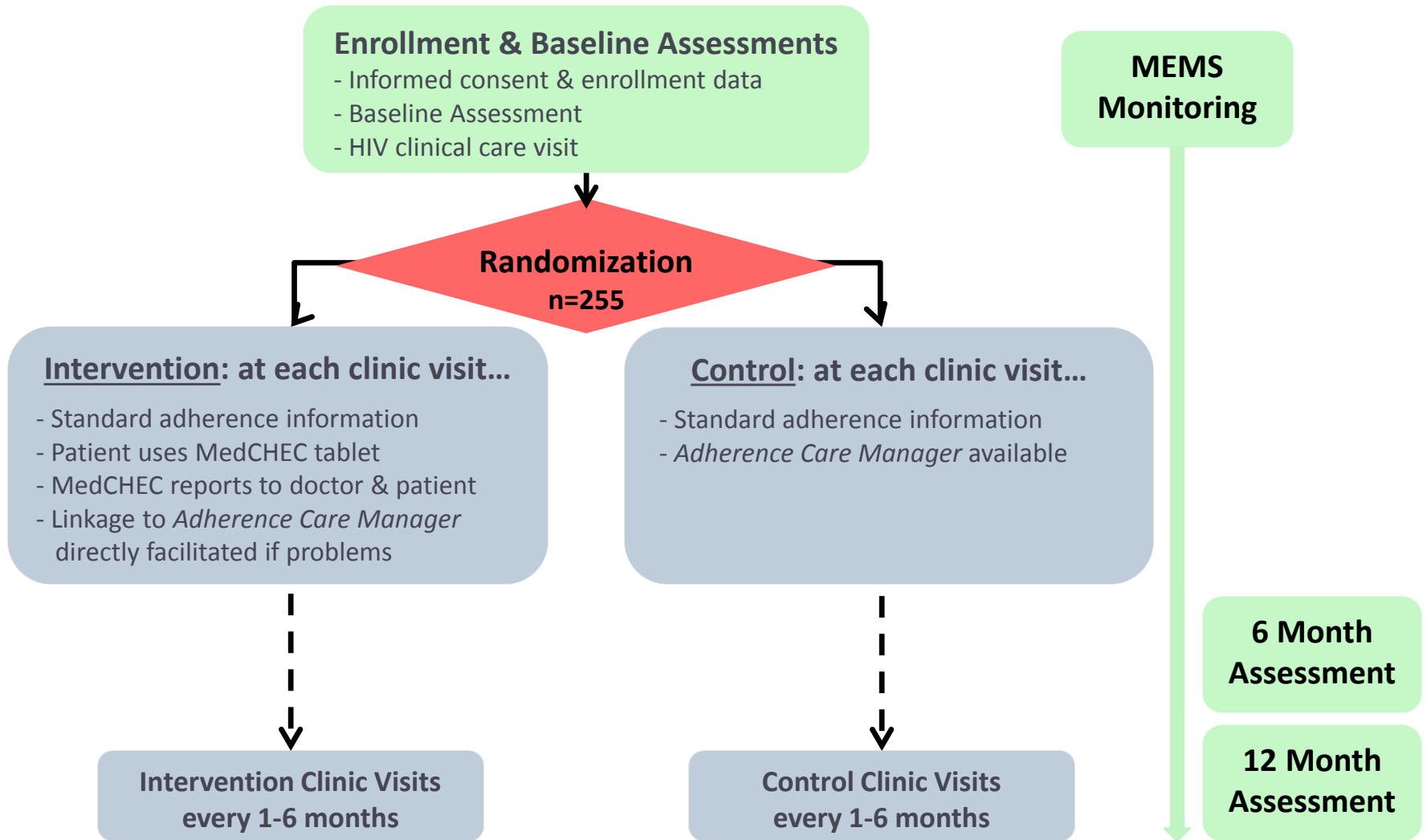
Methods

- ▶ Adult HIV+ patients in care at 3 urban U.S. ID clinics
 - ▶ English language and adequate cognitive function
 - ▶ VA Boston, VA Greater Los Angeles, and Boston Medical Center
 - ▶ on, or starting antiretrovirals
- ▶ Outcome assessments at 6 months (initial effect) and 12 months (sustained effect)
- ▶ Adherence measured with electronic monitoring devices (MEMS), and computed *Doses Taken*, and *Doses on Time*
- ▶ Mixed random/fixed-effects models of adherence over time as function of baseline adherence, intervention arm, covariates

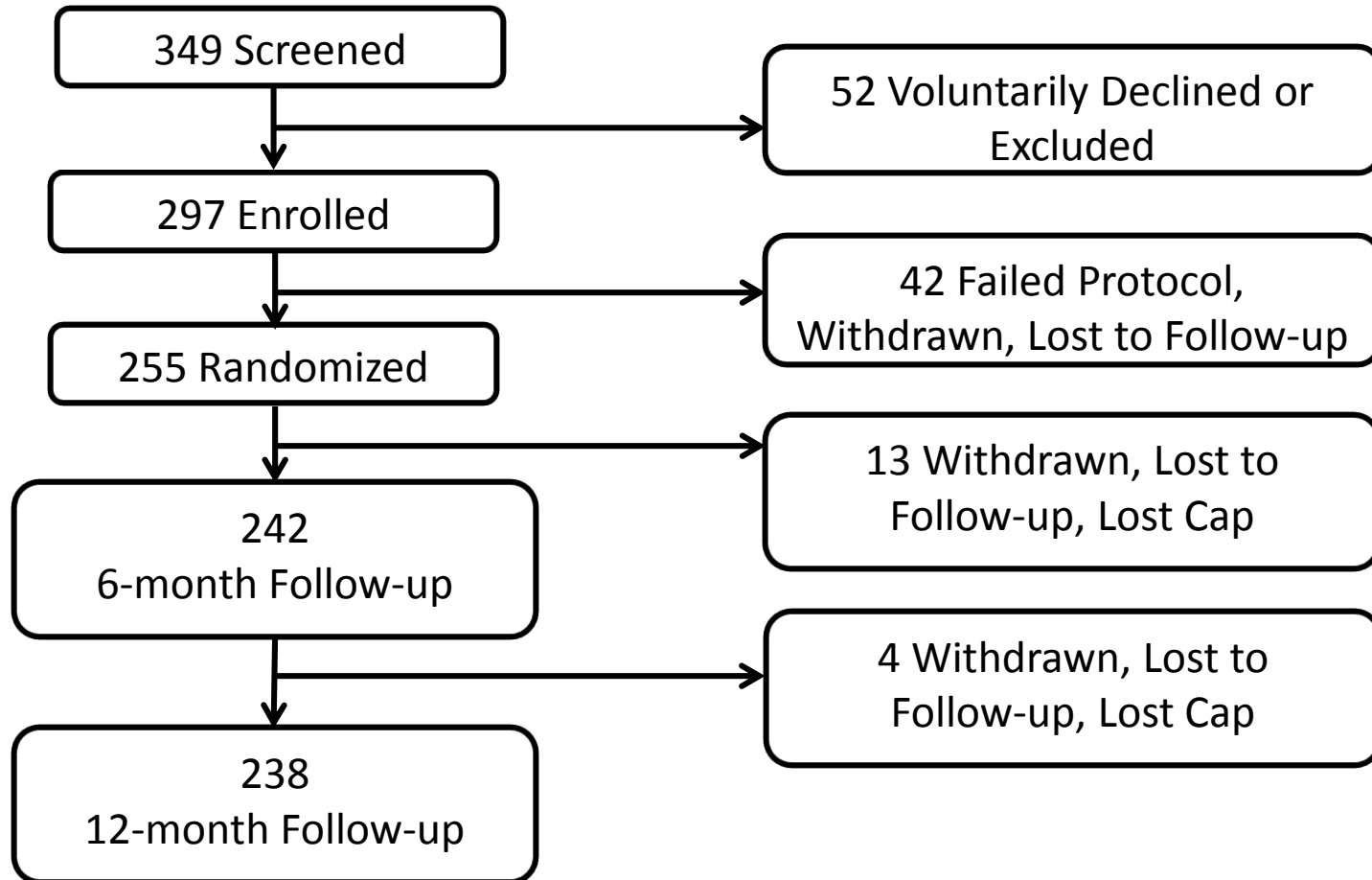
Outcomes Measurement



MedCHEC Study



Enrollment and Progress (CONSORT)



Randomized Participants (n=255)

	Intervention (n=128) n (%) or mean (SD)	Control (n=127) n (%) or mean (SD)
Mean Age (years)	52.3 (9.9)	51.1 (9.7)
Male Sex	101 (78.9)	106 (83.5)
Black	71 (55.5)	82 (64.6)
White	41 (32.0)	30 (23.6)
Other	16 (12.5)	15 (11.8)
Hispanic	16 (12.5)	10 (7.9)
IVDU	29 (22.8)	31 (24.4)
MSM	43 (33.6)	38 (29.9)
Heterosexual	46 (35.9)	43 (33.9)
Other/Unknown	10 (7.8)	15 (11.8)
Mean Comorbidities	2.1 (1.9)	2.0 (2.1)
Viral Load <75	92 (80.7)	86 (76.1)
Viral Load ≥75	22 (19.3)	27 (23.9)
CD4 0-200	15 (12.5)	18 (15.9)
CD4 201-500	58 (48.3)	51 (45.1)
CD4 ≥501	47 (39.2)	44 (38.9)
Single Pill ARV Regimen	28 (21.9)	34 (26.8)
Multi-pill Regimen	100 (78.1)	93 (73.2)

Effects of MedCHEC on ARV Adherence

Mean Difference over Time

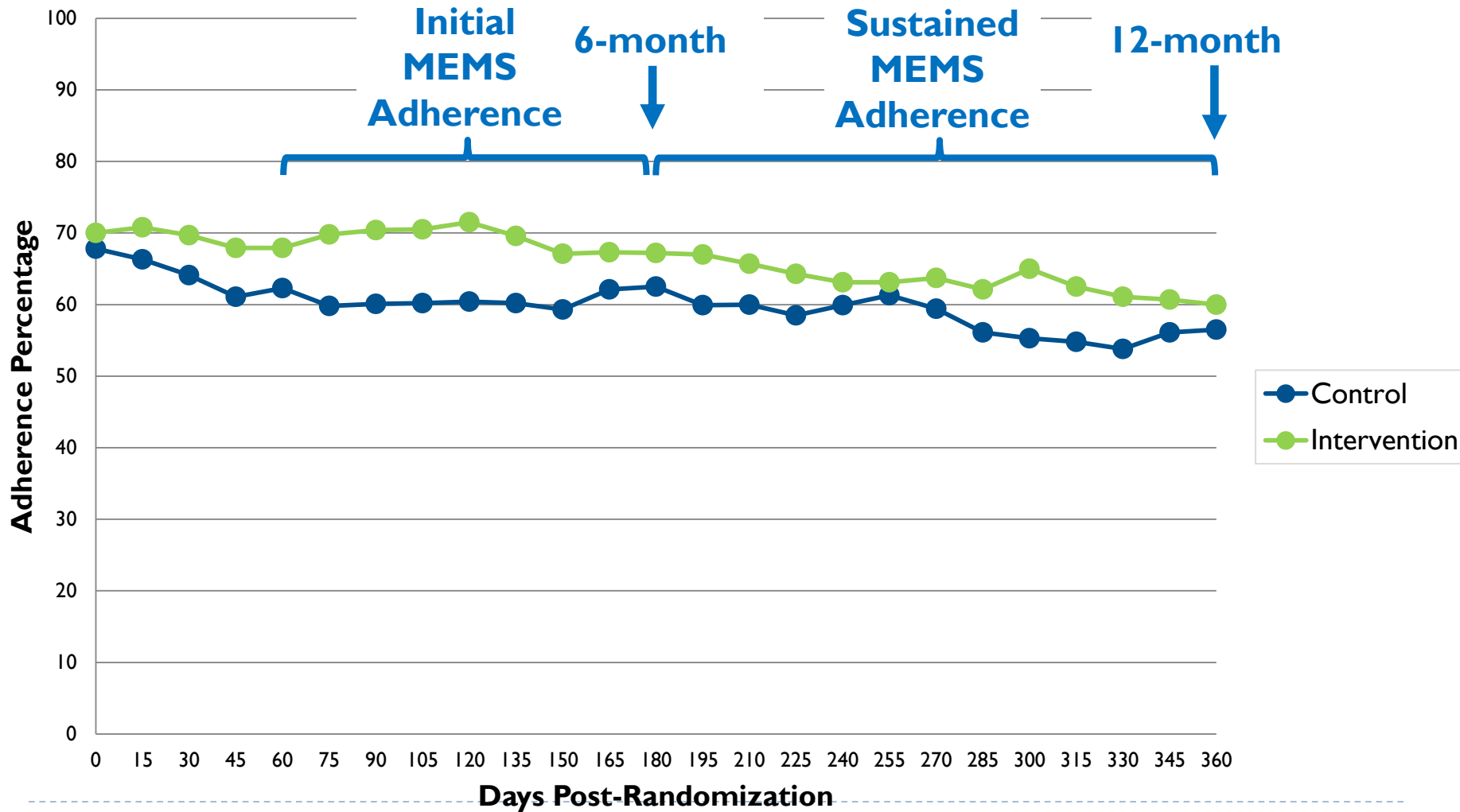
	Initial Adherence (2-6 mos)		Sustained Adherence (6-12 mos)	
	% Difference (95% CI)	p value	% Difference (95% CI)	p value
Doses Taken	11.4% (2.9%, 19.8%)	0.008	0.5% (-12.4%, 13.4%)	---

Effects of MedCHEC on ARV Adherence

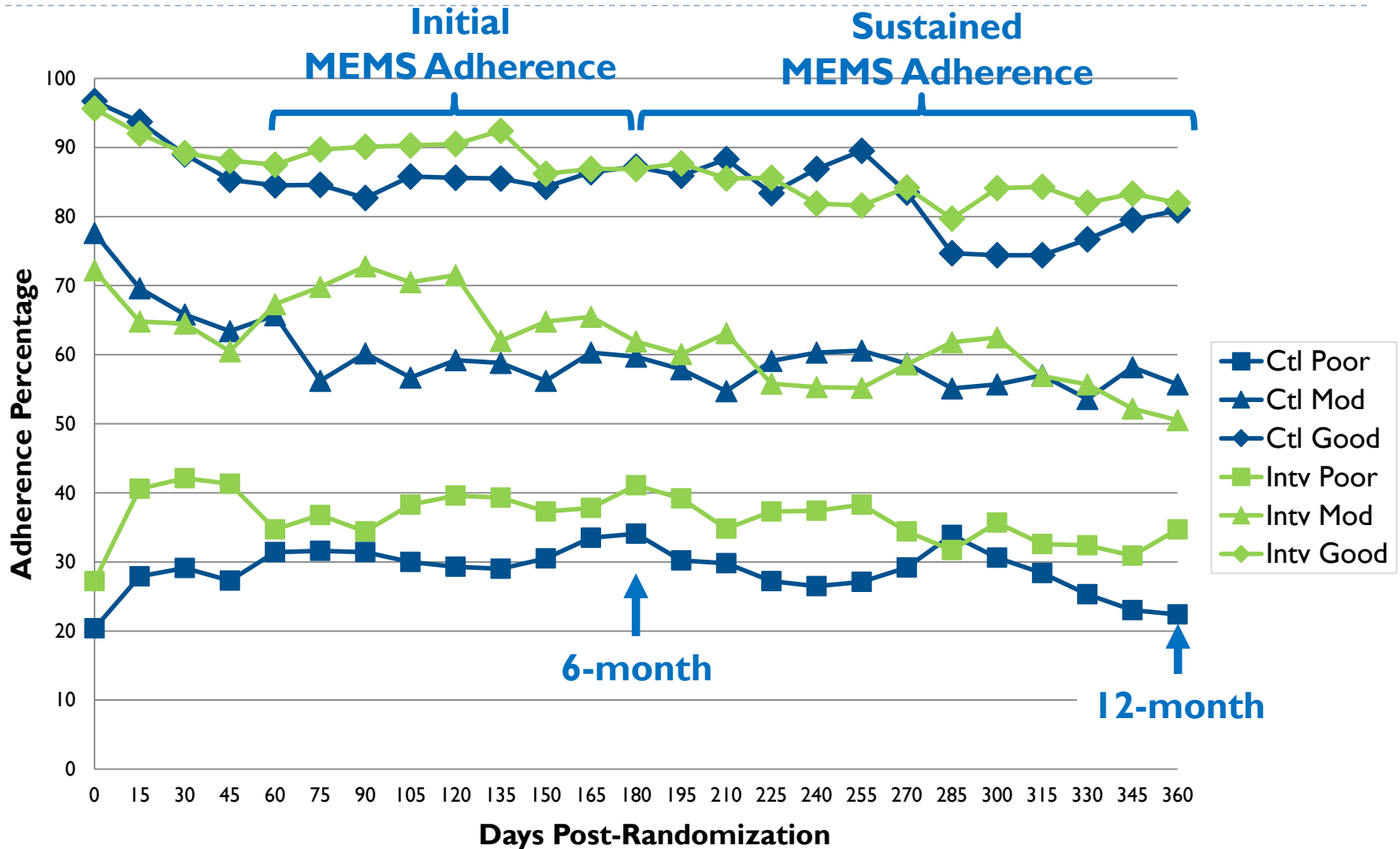
Mean Difference over Time

	Initial Adherence (2-6 mos)		Sustained Adherence (6-12 mos)	
	% Difference (95% CI)	p value	% Difference (95% CI)	p value
Doses Taken	11.4% (2.9%, 19.8%)	0.008	0.5% (-12.4%, 13.4%)	---
Doses on Time	8.5% (2.0%, 15.1%)	0.011	1.2% (-6.7%, 9.1%)	---

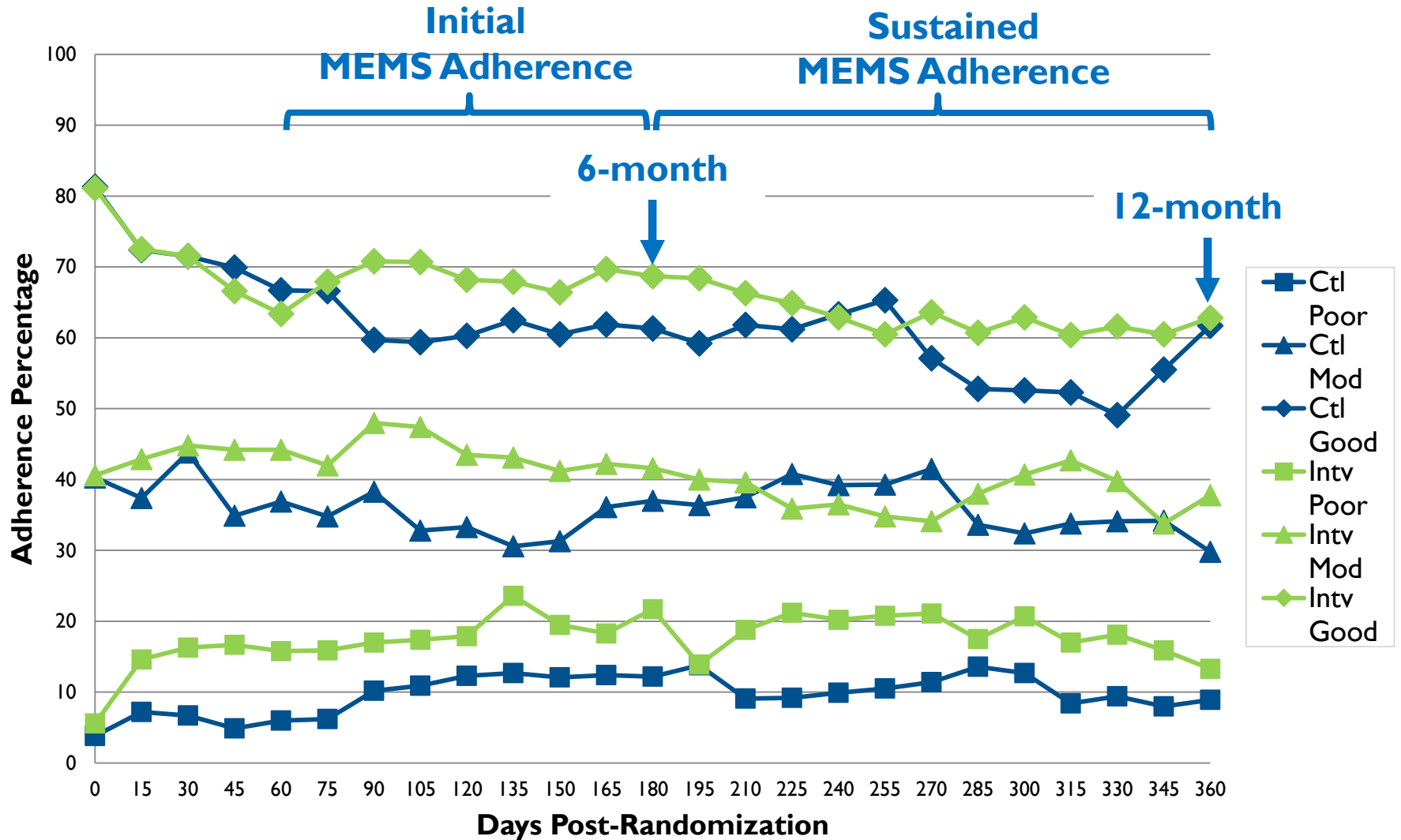
ARV Adherence: Doses Taken



Doses Taken, by baseline adherence status



Doses on Time,* by baseline adherence status



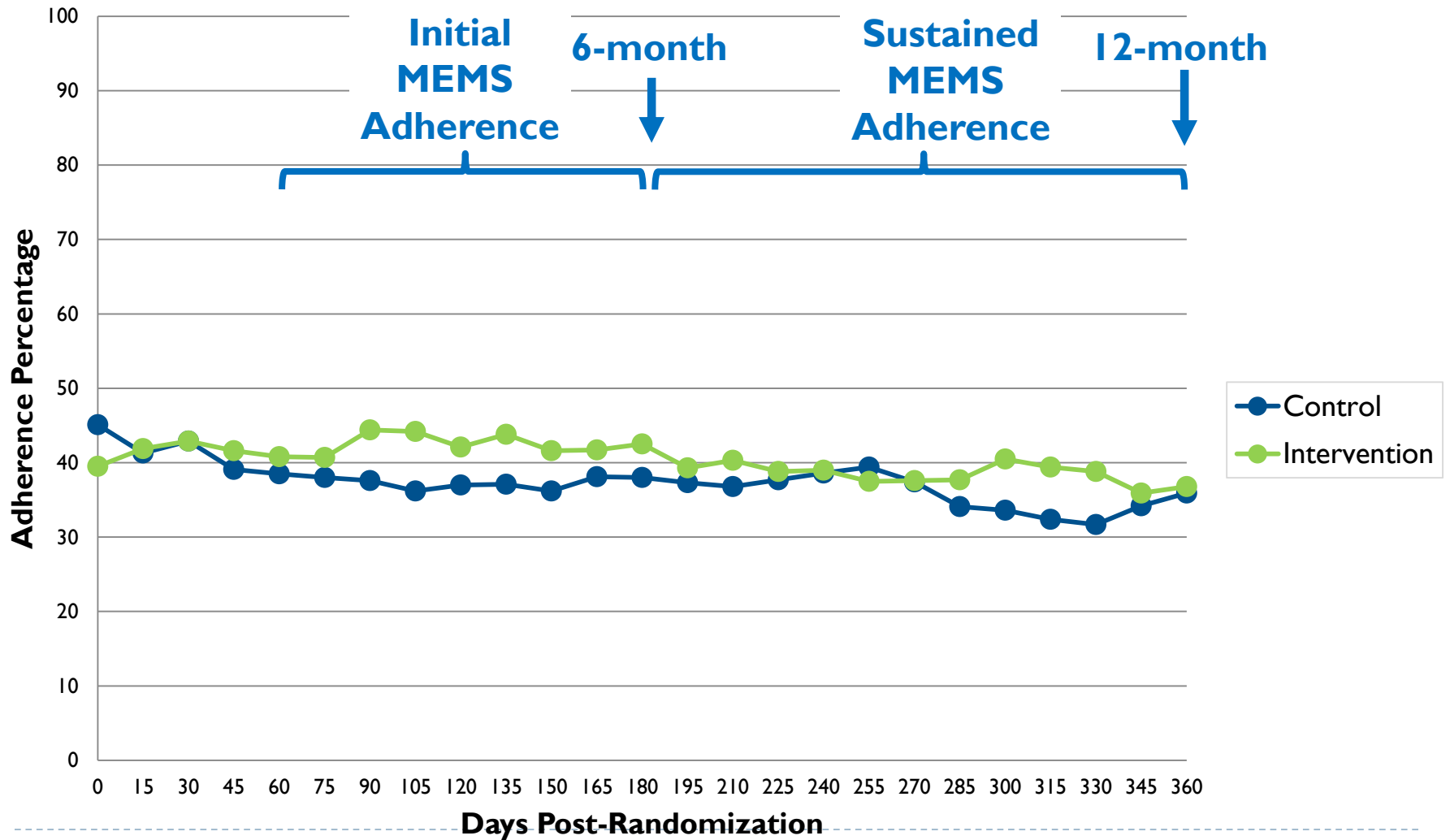
* Adherent if dose taken within +/-2 hours of correct time

Conclusions

- ▶ MedCHEC (tablet computer patient assessment, information feedback to doctors, and linkage to adherence care manager) led to significant initial ARV adherence improvement in doses taken, and doses taken on time.
- ▶ Initial improvements in adherence were not sustained.
- ▶ Future analyses will look at effects of the intervention on accuracy of doctors' adherence assessment, receipt of adherence counseling, and viral load.

Questions

ARV Adherence: Doses on Time*



* Adherent if dose taken within +/-2 hours of correct time

Collaborative Provider-Patient Adherence Framework

