

The Effect of Antidepressant Treatment
on HIV and Depression Outcomes:
Results from the SLAM DUNC
Randomized Controlled Trial

Brian W. Pence, PhD MPH

Associate Professor

Department of Epidemiology, UNC-Chapel Hill

10th Int'l Conf. on HIV Treatment & Prevention Adherence

Miami, FL, June 30, 2015

Motivation

- Depression
 - is highly prevalent
 - and predicts worse adherence, outcomes
- Does depression treatment improve adherence and HIV outcomes?
 - Meta-analysis: Yes (Sin 2013)
 - RCTs of CBT and adherence support: Yes (Safren 2009, 2012; Simoni 2013)
 - RCTs of antidepressants: No (Pyne 2011; Tsai 2013)

The SLAM DUNC Study

Strategies to Link Antidepressant and Antiretroviral Management at Duke, UAB, NOC, and UNC

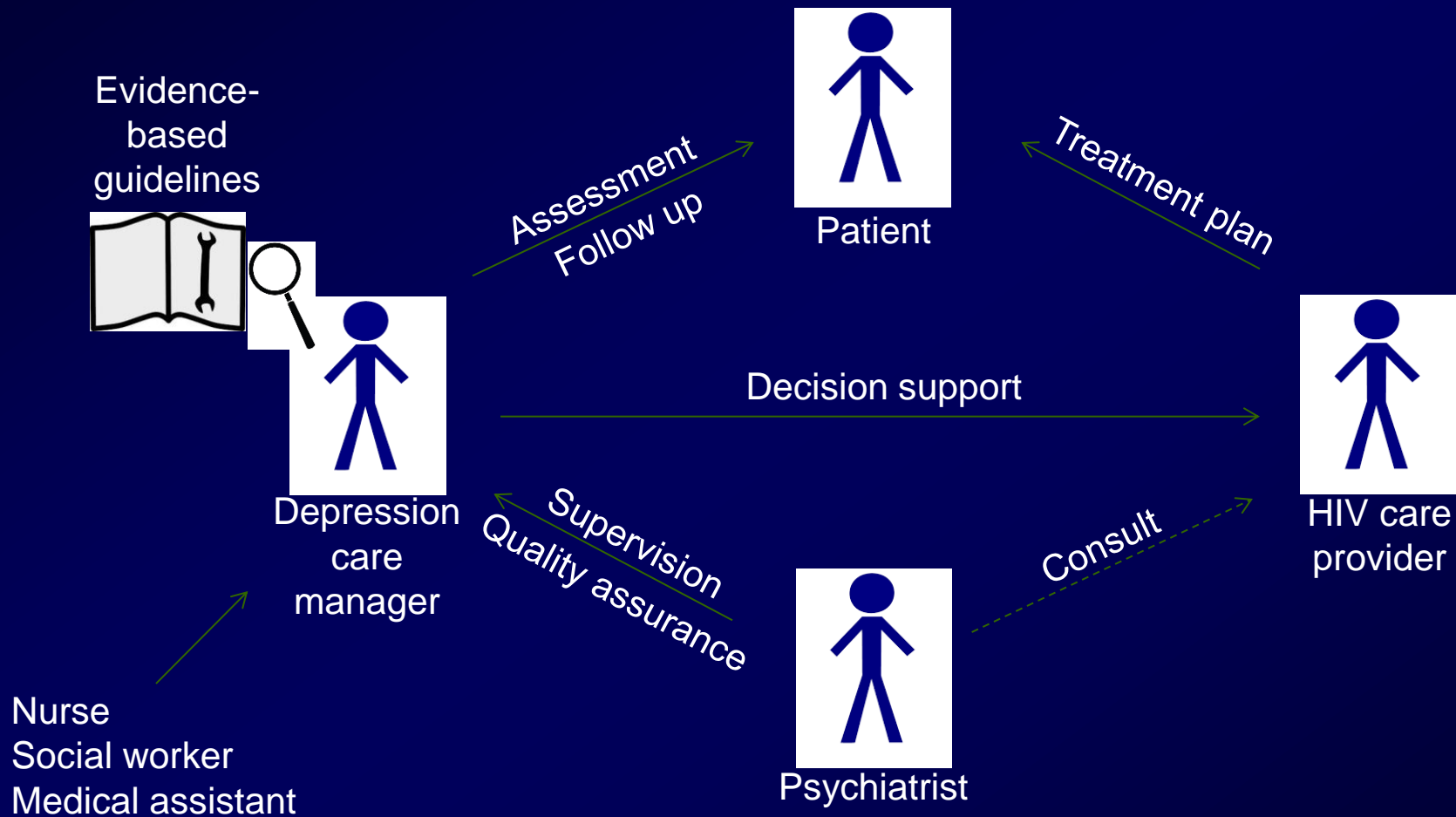
Key questions:

1. Will high-quality antidepressant treatment improve ARV adherence and clinical outcomes?
2. Can evidence-based antidepressant management be integrated efficiently and effectively into HIV care?

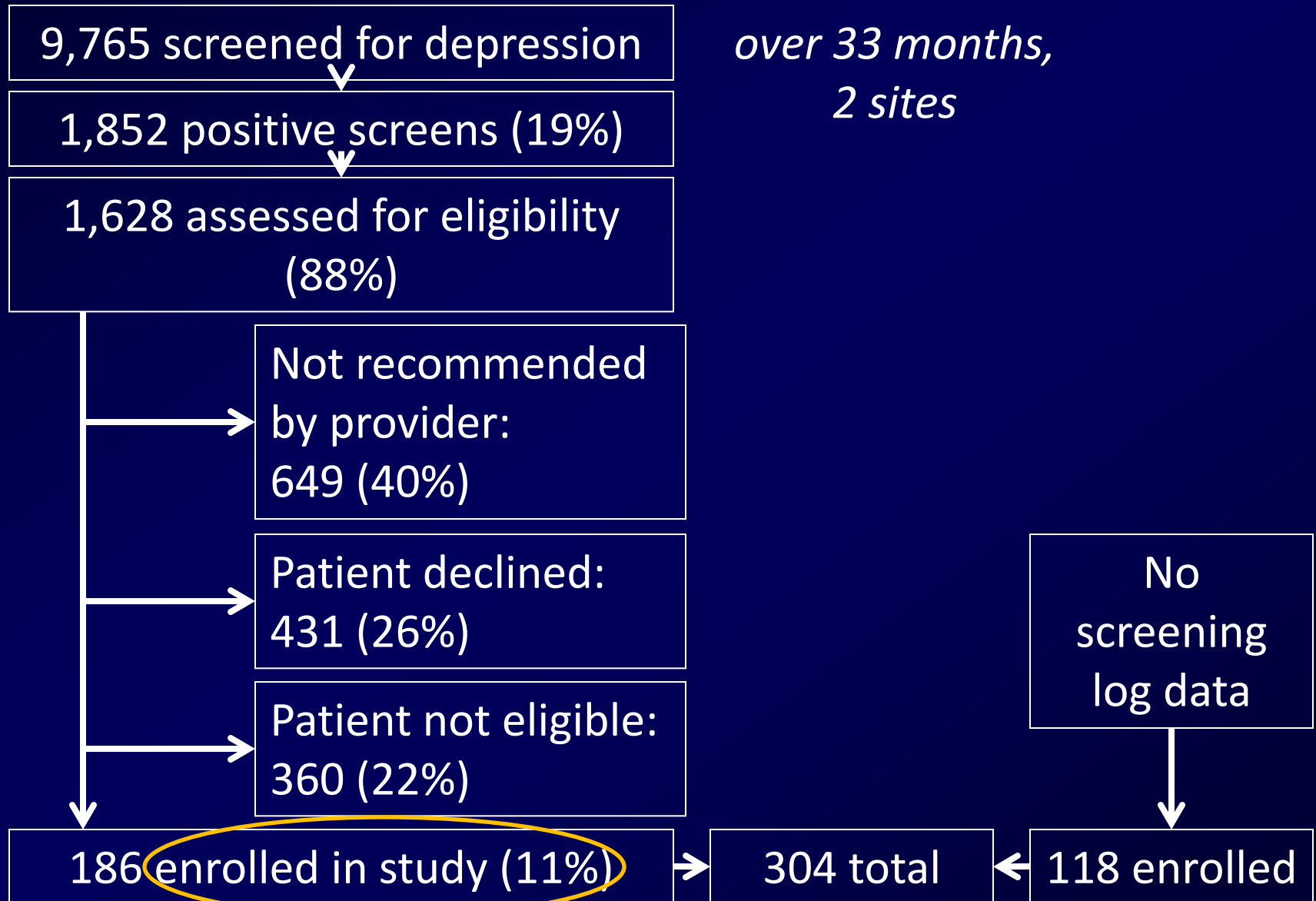
SLAM DUNC Study

- **Population:** HIV clinic attendees with current major depression
- **Sites:** Duke ID; UAB 1917 Clinic; Northern Outreach Clinic; UNC ID
- **Follow-up:** 12 months
- **Primary Outcome:** ARV adherence at 6 months (unannounced pill count)
- **Intervention:** Measurement-Based Care Depression Care Managers provide decision support to HIV providers to ensure adequate antidepressant prescription and management
- **Comparison:** Usual care

Measurement-Based Care



Enrollment

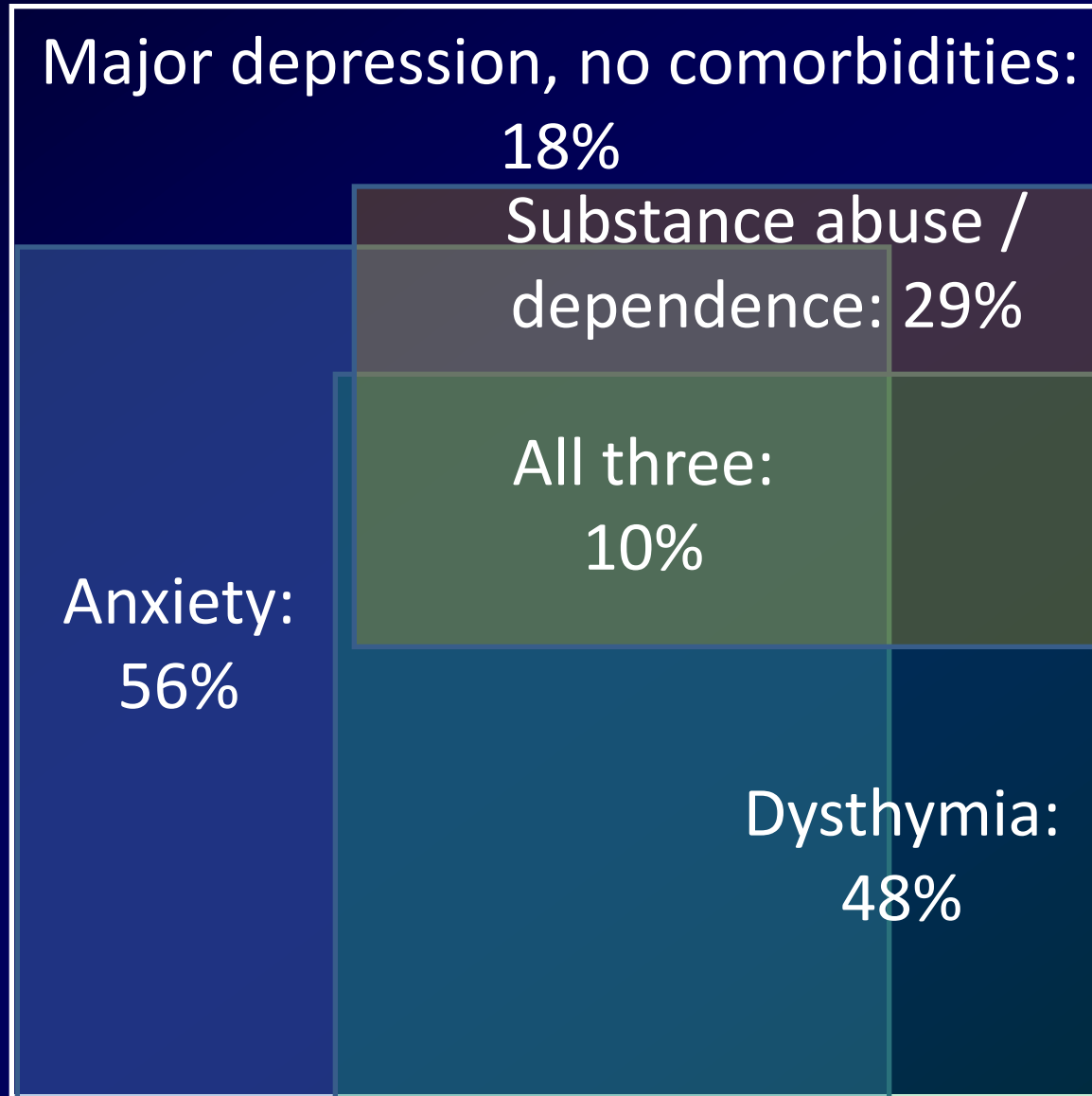


Who enrolled?

	Intervention (n=149)	Usual Care (n=155)
	Mean (SD) or %	
Age, years	43 (10)	45 (10)
Male gender	75%	65%
Black non-Hisp.	56%	68%
CD4, cells/mm ³	607 (371)	569 (354)
VL < 48 c/mL	72%	69%
ARV adherence*	86% (23%)	87% (22%)

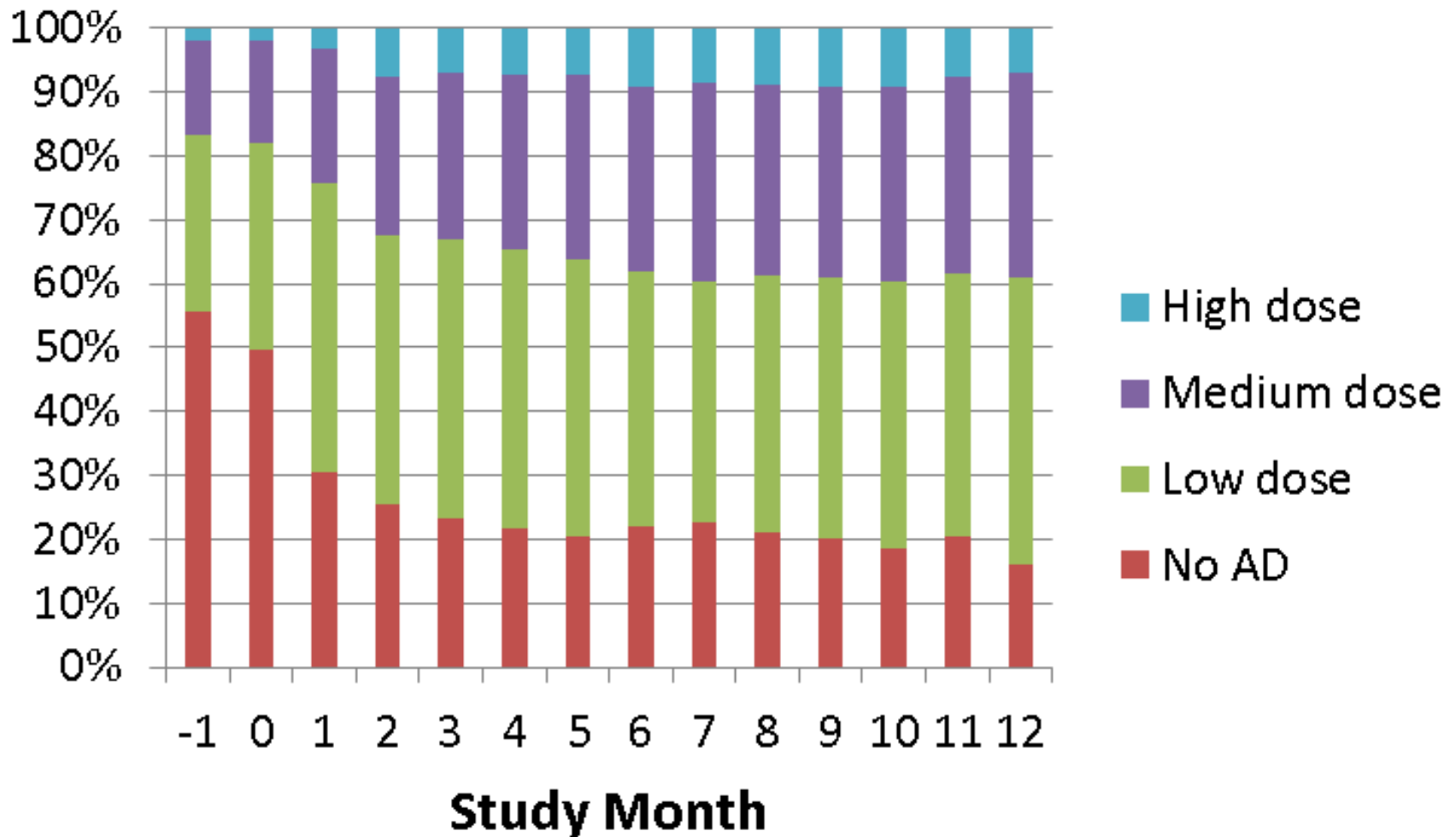
* Self report, past 30 days, visual analog scale

Psychiatric comorbidities



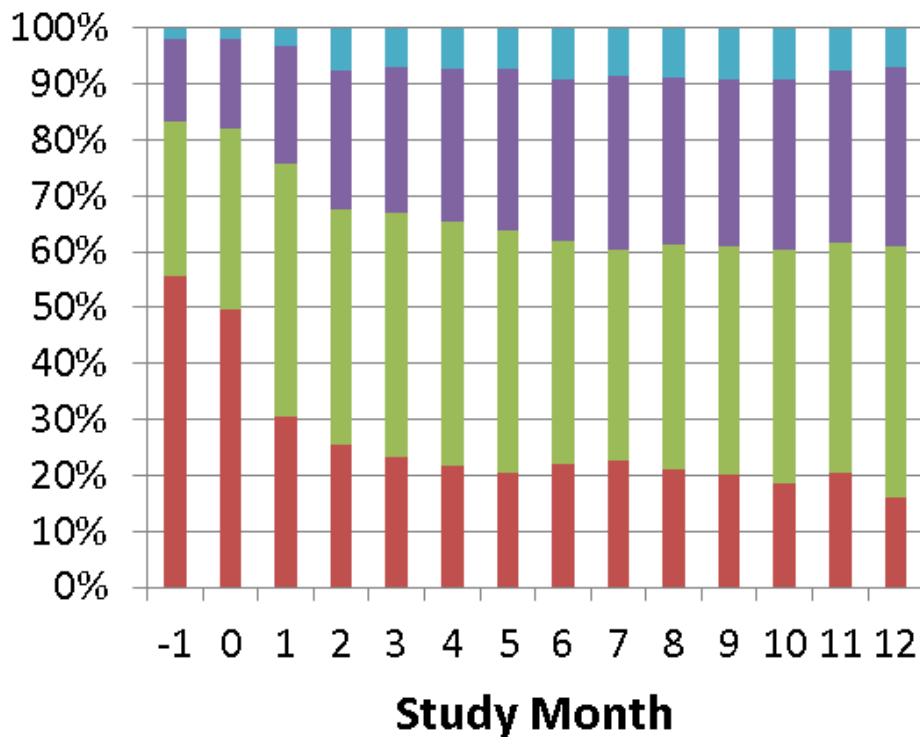
SLAM DUNC study enrollees (n=304)

Antidepressant prescription and dosing Intervention arm participants (n=149)

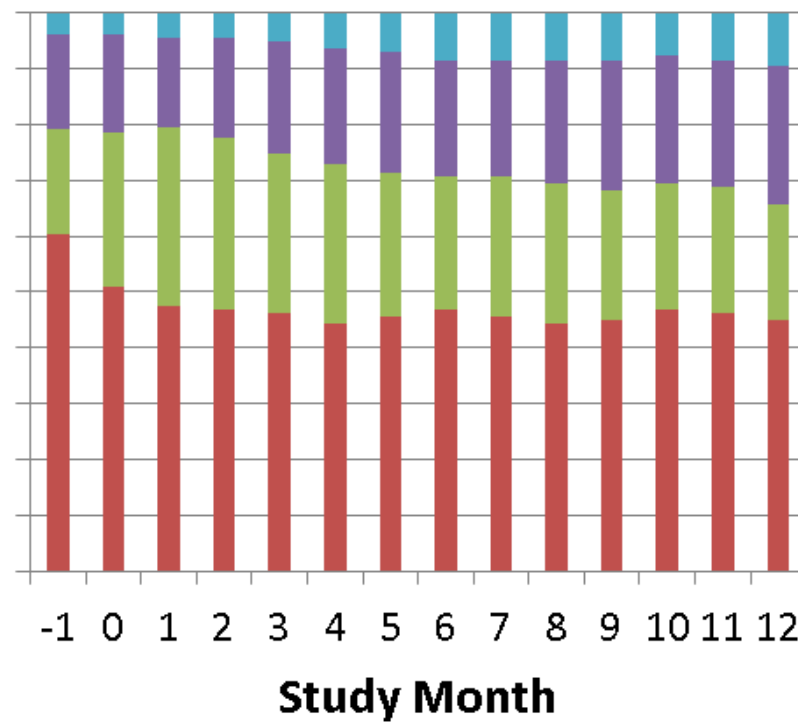


Comparing antidepressant prescription and dosing between arms

Intervention arm (n=149)



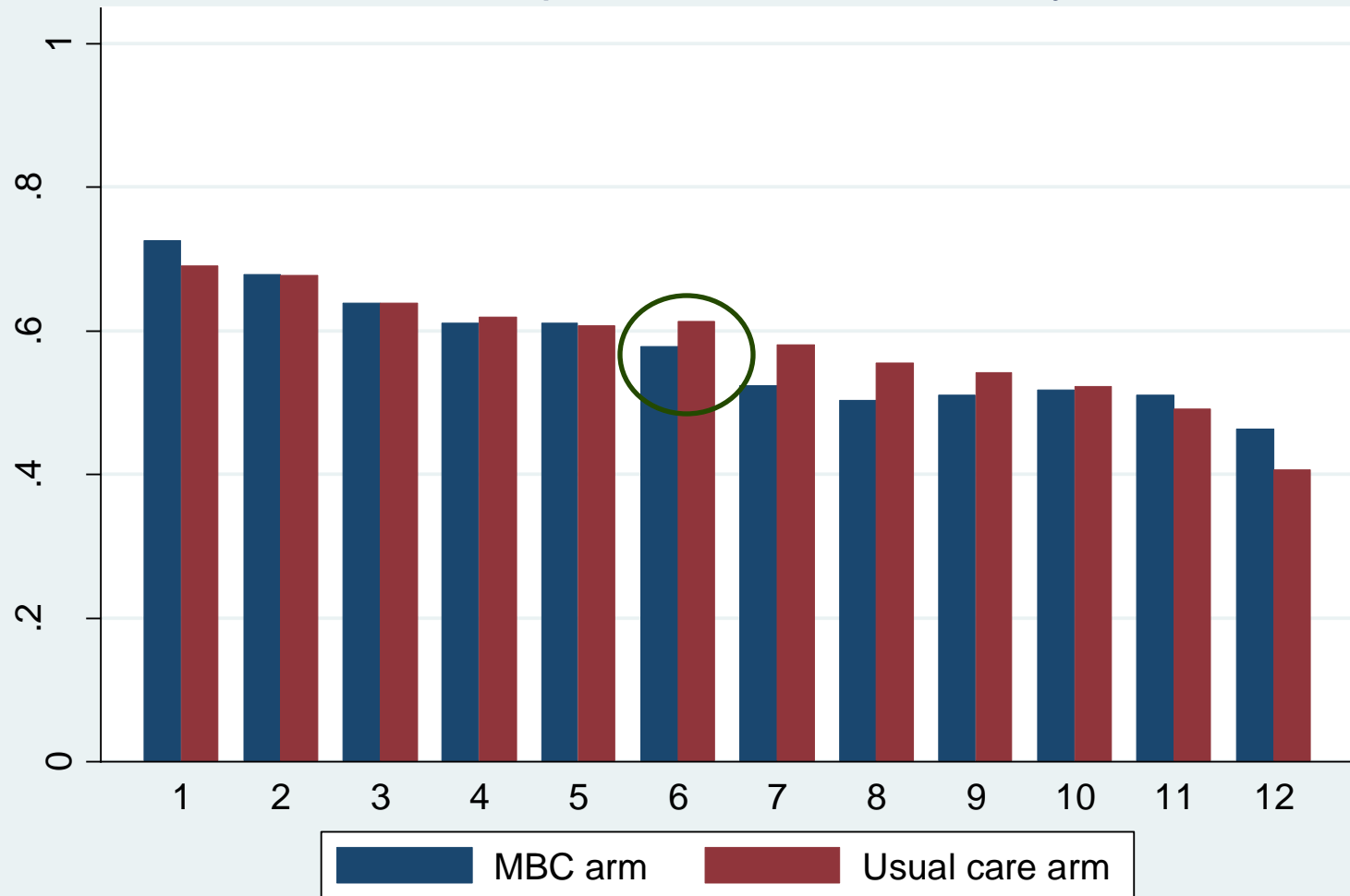
Usual care arm (n=155)



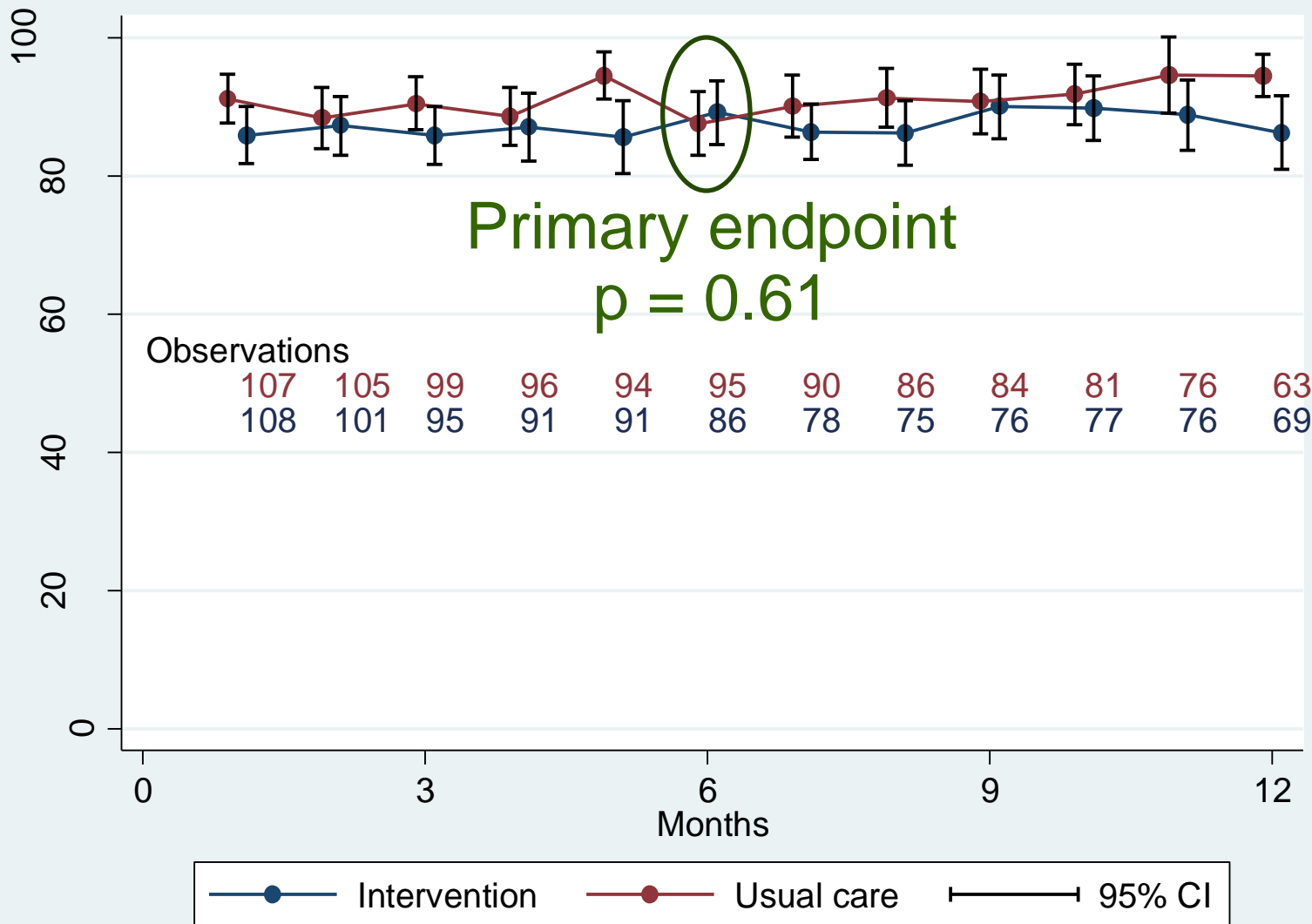
■ No AD ■ Low dose ■ Medium dose ■ High dose

Retention

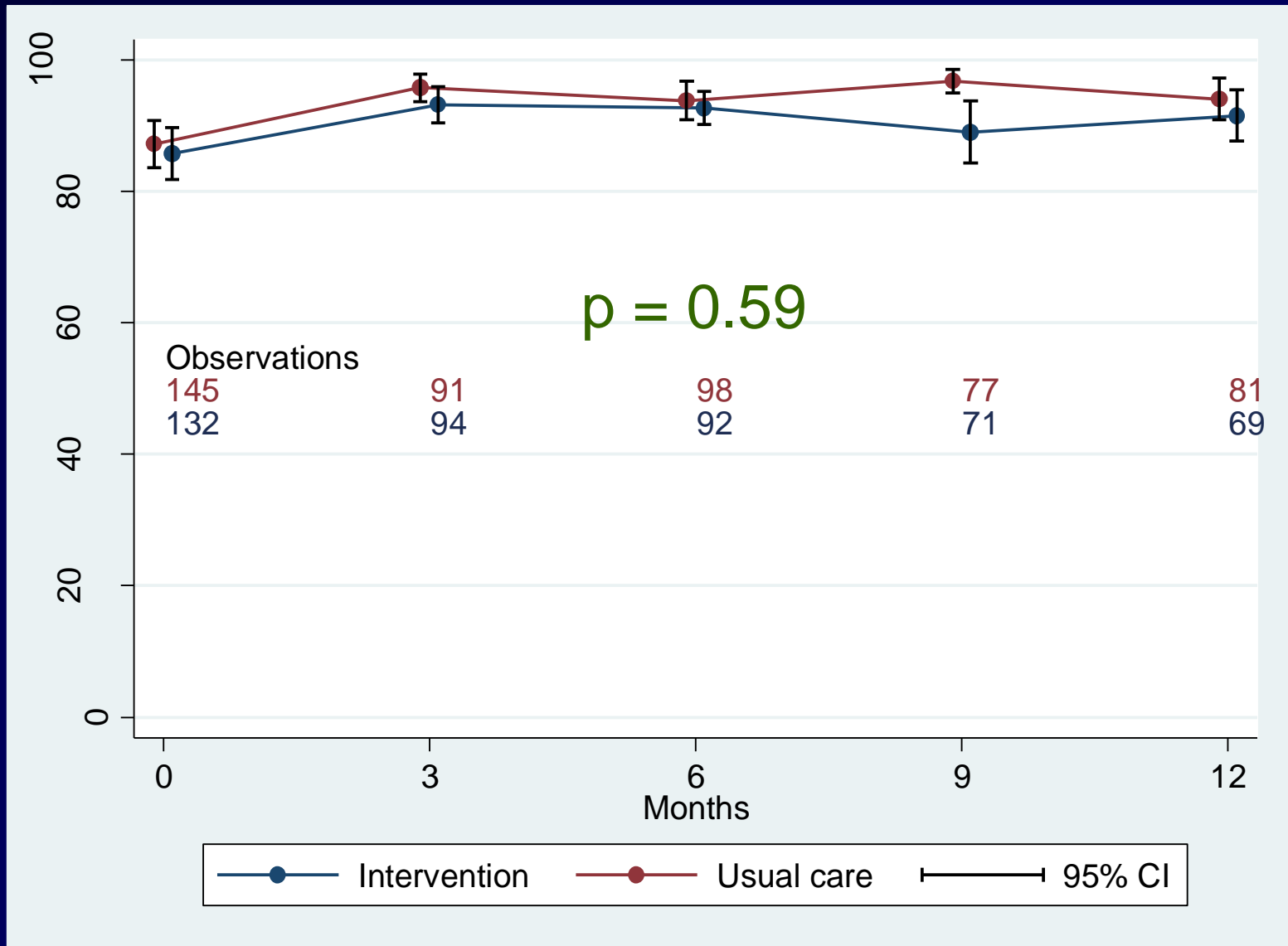
Retention for pill count adherence, by month



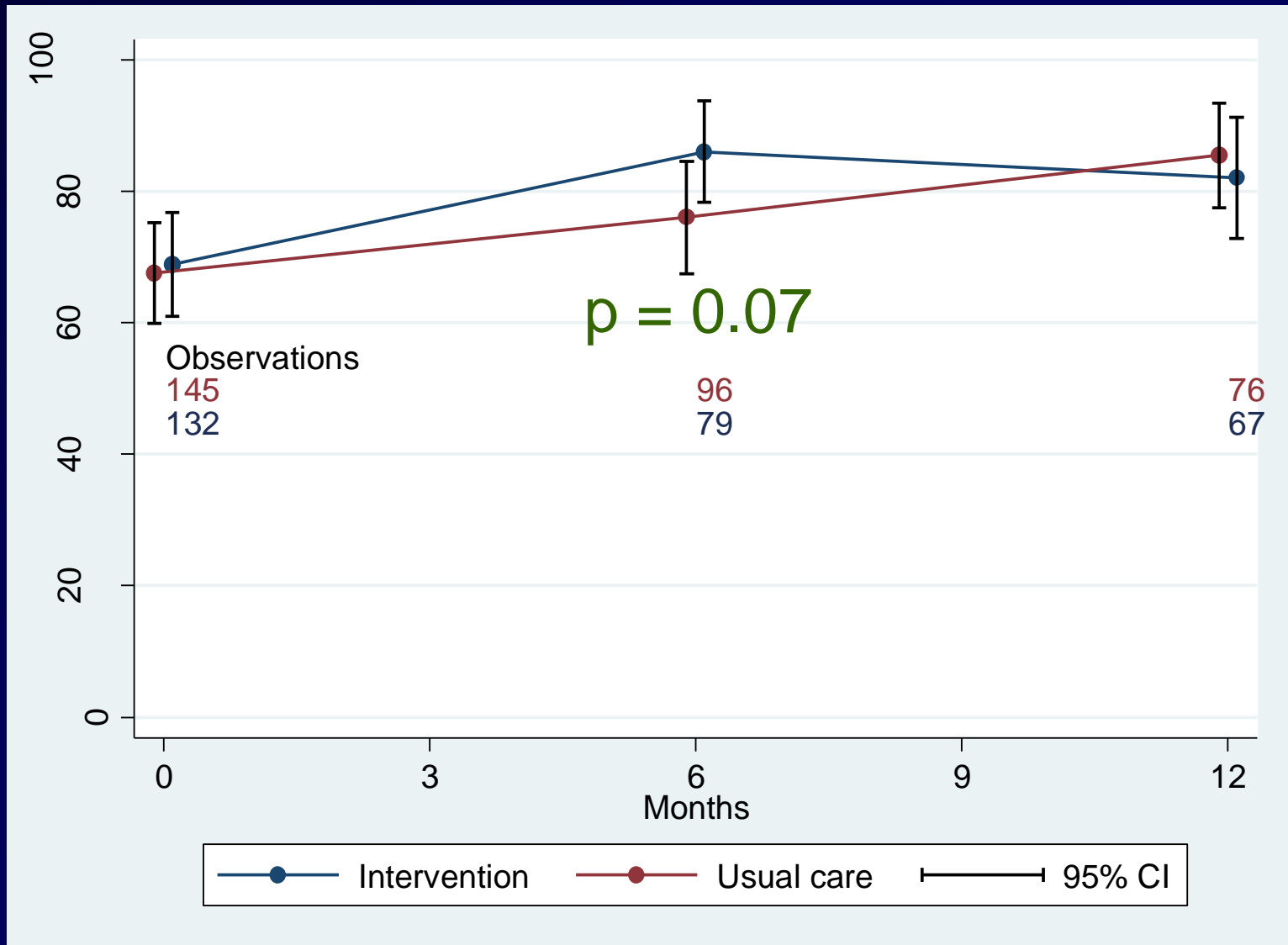
Adherence (pill count) over time



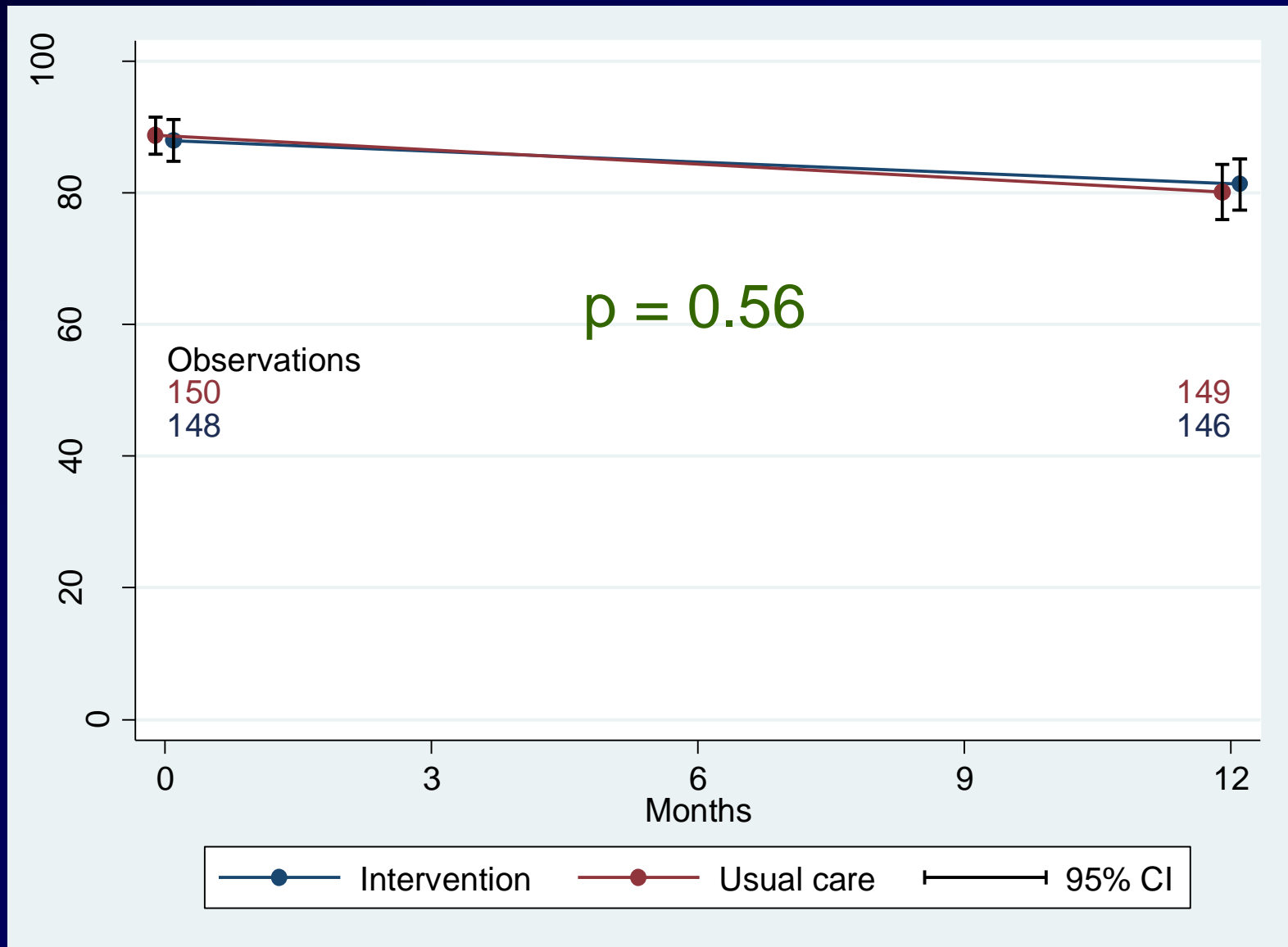
Adherence (self report) over time



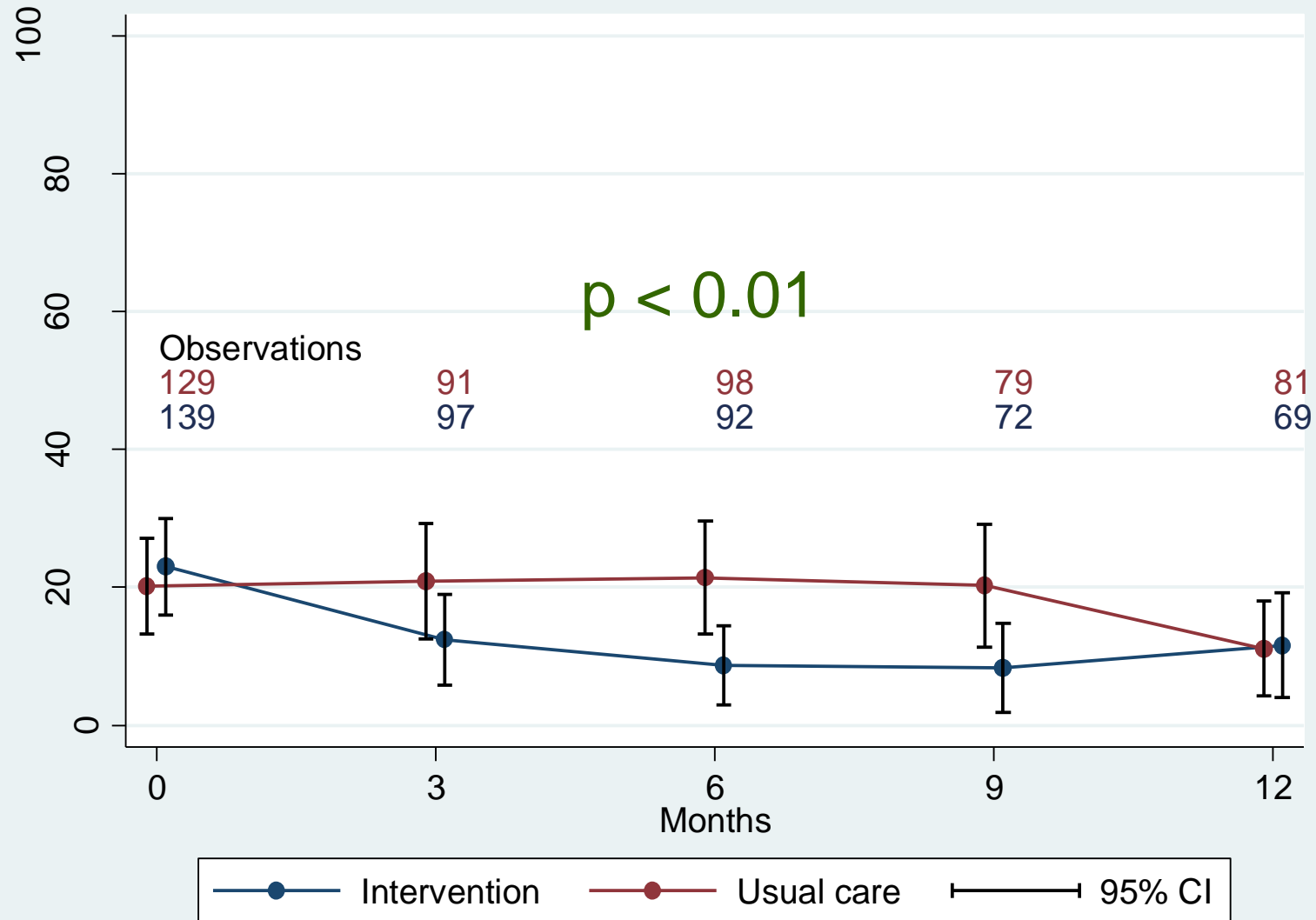
Virologic suppression over time



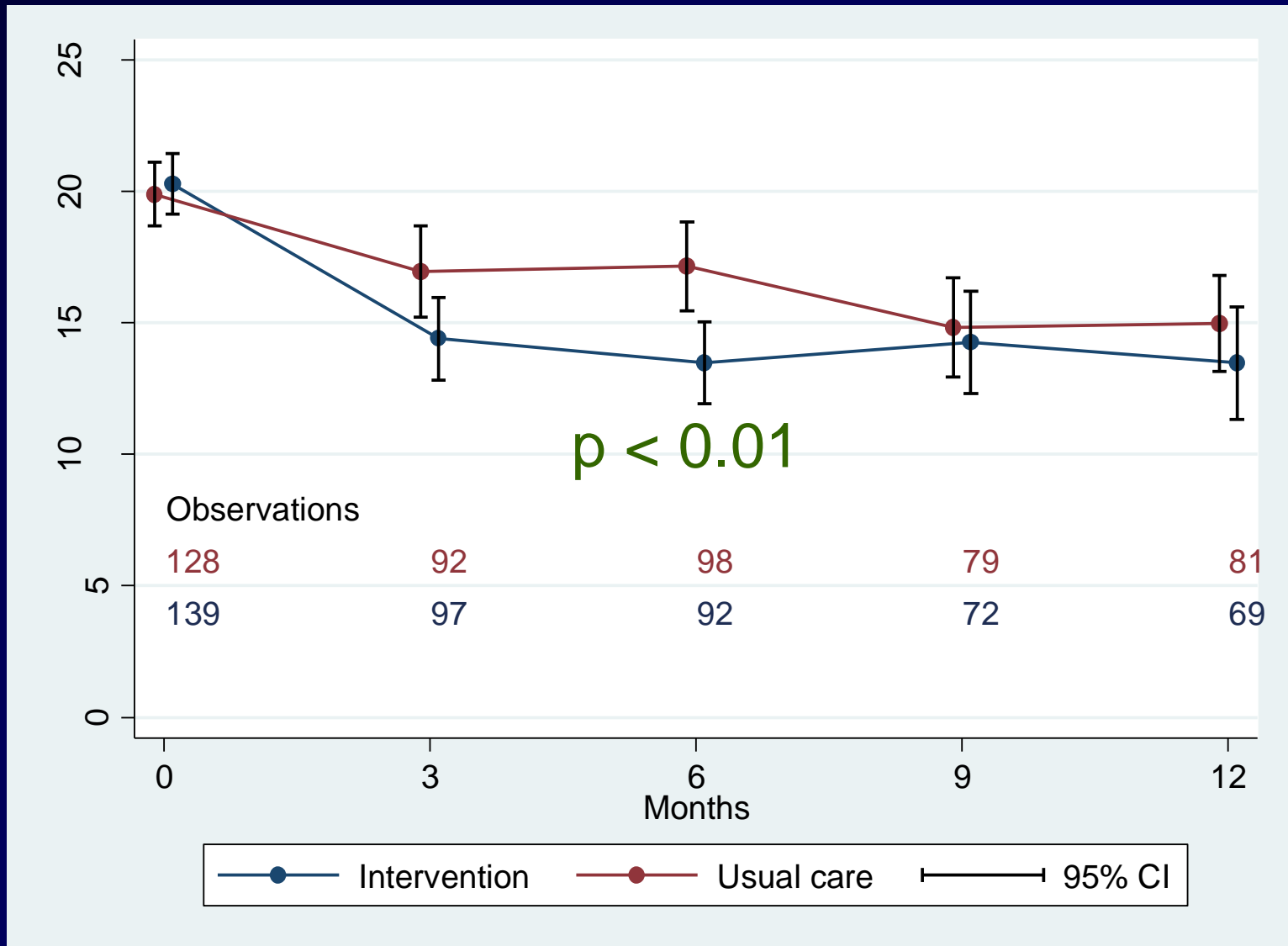
Appointment adherence over time



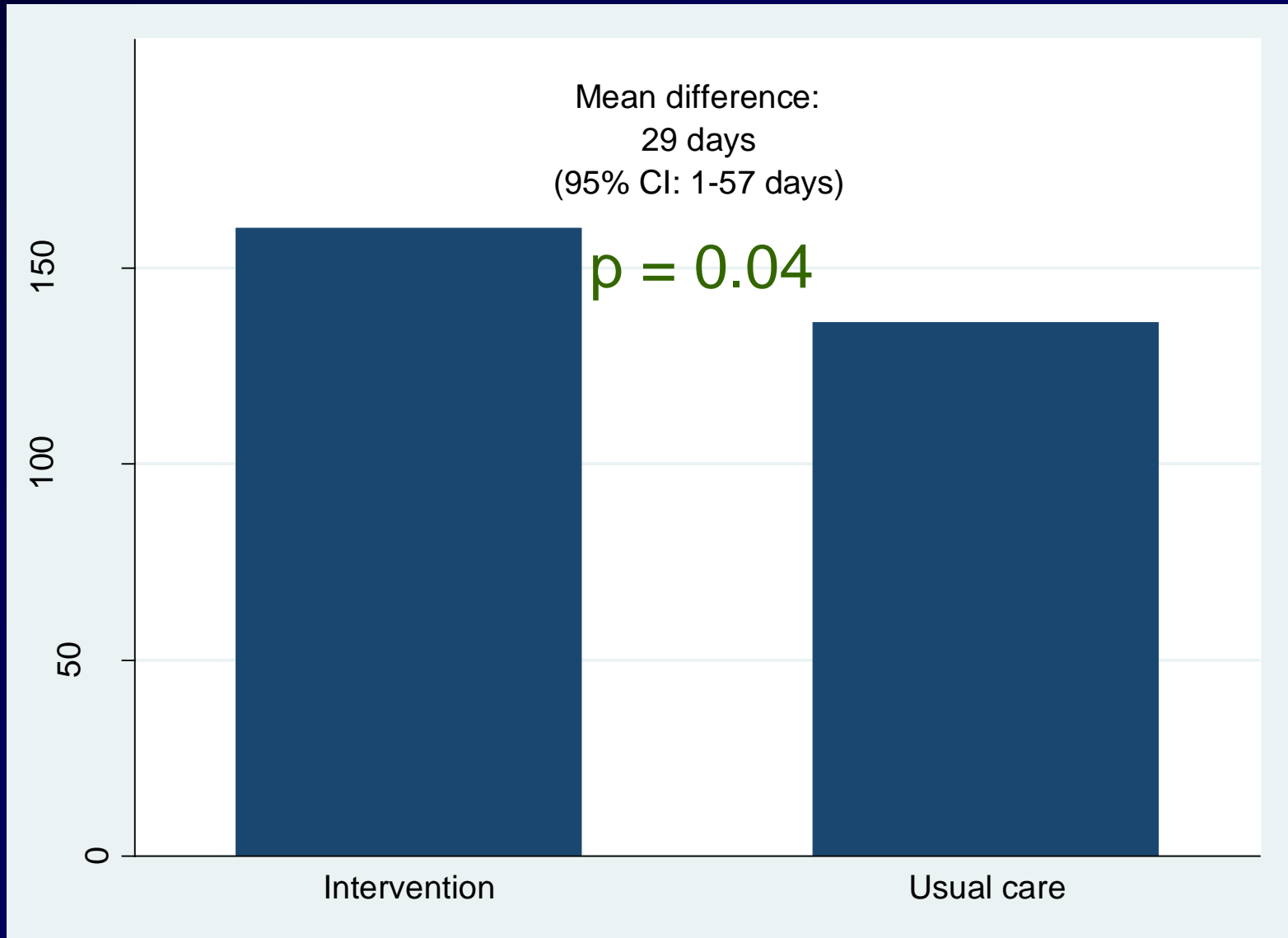
Suicidality over time



Depression scores over time



Depression-Free Days



Interpretation

Can evidence-based antidepressant management be integrated efficiently and effectively into HIV care?

→ Yes

- Well received, implemented faithfully
- Appears to have increased AD initiation, dose escalation
- Reduced depression morbidity, shortened duration of depression

Interpretation

Will high-quality antidepressant treatment improve adherence and clinical outcomes?

→ No

(in these general clinic populations)

- No impact on HIV measures

Why?

- Participants not selected for low adherence
 - Goal was to estimate effect of clinic-wide integration of depression treatment
 - Ceiling effect?
- 89% of depressed patients did not enroll
 - Who was willing to enroll?
 - A lot of unaddressed psychological distress
- Anxiety / PTSD / substance use comorbidities?

Further directions?

- Could combination of counseling and medications
 - reach more patients
 - address comorbidities / adherence
 - increase impact?
- Could motivational interviewing enhance engagement in mental health treatment?

Many thanks to...

Funders: NIMH Office on AIDS; NIMH / NINR R01MH086362; CFARs at Duke, UNC, UAB (P30AI50410, P30AI064518, P30AI027767)

Site leads / co-investigators:

Overall: Brad Gaynes

UAB: Michael Mugavero,
James Willig,
Jim Raper,
Teena McGuinness

UNC: Byrd Quinlivan,
Amy Heine

Duke: Nathan Thielman,
Julie Adams,
Kristen Shirey,
Chris Conover,
Liz Turner

NOC: Michelle Ogle

Many other staff

Providers and clinical staff

Patients

References

- Adams JL, Gaynes BN, McGuinness T, Modi R, Willig J, Pence BW. Treating depression within the HIV "medical home": a guided algorithm for antidepressant management by HIV clinicians. *AIDS patient care and STDs*. 2012;26(11):647-654.
- Gaynes BN, O'Donnell J, Nelson E, et al. Psychiatric comorbidity in depressed HIV-infected individuals: common and clinically consequential. *Gen Hosp Psychiatry*. 2015;37(4):277-282.
- Pence BW, Gaynes BN, Williams Q, et al. Assessing the effect of Measurement-Based Care depression treatment on HIV medication adherence and health outcomes: rationale and design of the SLAM DUNC Study. *Contemp Clin Trials*. 2012;33(4):828-838.
- Pence BW, Quinlivan EB, Heine A, Edwards M, Thielman NM, Gaynes BN. When "need plus supply" does not equal demand: challenges in uptake of depression treatment in HIV clinical care. *Psychiatr Serv*. 2015;66(3):321-323.
- Pence BW, Gaynes BN, Adams JL, Thielman NM, Heine A, Mugavero MJ, McGuinness T, Raper JL, Willig JH, Shirey KG, Ogle M, Turner EL, Quinlivan EB. "The Effect of Antidepressant Treatment on HIV and Depression Outcomes: The SLAM DUNC Randomized Trial." *AIDS*: In press, 2015. PMID: In progress. Pyne JM, Fortney JC, Curran GM, et al. Effectiveness of collaborative care for depression in human immunodeficiency virus clinics. *Arch Intern Med*. 2011;171(1):23-31.
- Safren SA, O'Cleirigh C, Tan JY, et al. A randomized controlled trial of cognitive behavioral therapy for adherence and depression (CBT-AD) in HIV-infected individuals. *Health Psychol*. 2009;28(1):1-10.
- Safren SA, O'Cleirigh CM, Bullis JR, Otto MW, Stein MD, Pollack MH. Cognitive behavioral therapy for adherence and depression (CBT-AD) in HIV-infected injection drug users: a randomized controlled trial. *J Consult Clin Psychol*. 2012;80(3):404-415.
- Simoni JM, Wiebe JS, Saucedo JA, et al. A preliminary RCT of CBT-AD for adherence and depression among HIV-positive Latinos on the U.S.-Mexico border: the Nuevo Dia study. *AIDS and behavior*. 2013;17(8):2816-2829.
- Sin NL, Dimatteo MR. Depression Treatment Enhances Adherence to Antiretroviral Therapy: a Meta-Analysis. *Ann Behav Med*. 2013.
- Teerenstra S, Melis RJ, Peer PG, Borm GF. Pseudo cluster randomization dealt with selection bias and contamination in clinical trials. *J Clin Epidemiol*. 2006;59(4):381-386.
- Tsai AC, Karasic DH, Hammer GP, et al. Directly observed antidepressant medication treatment and HIV outcomes among homeless and marginally housed HIV-positive adults: a randomized controlled trial. *Am J Public Health*. 2013;103(2):308-315.

Summary of related RCTs

Safren 2009; Safren 2012;
Simoni 2013

- Impact on ARV adherence
- Poorer adherence / viral control at baseline
- Depression and adherence counseling

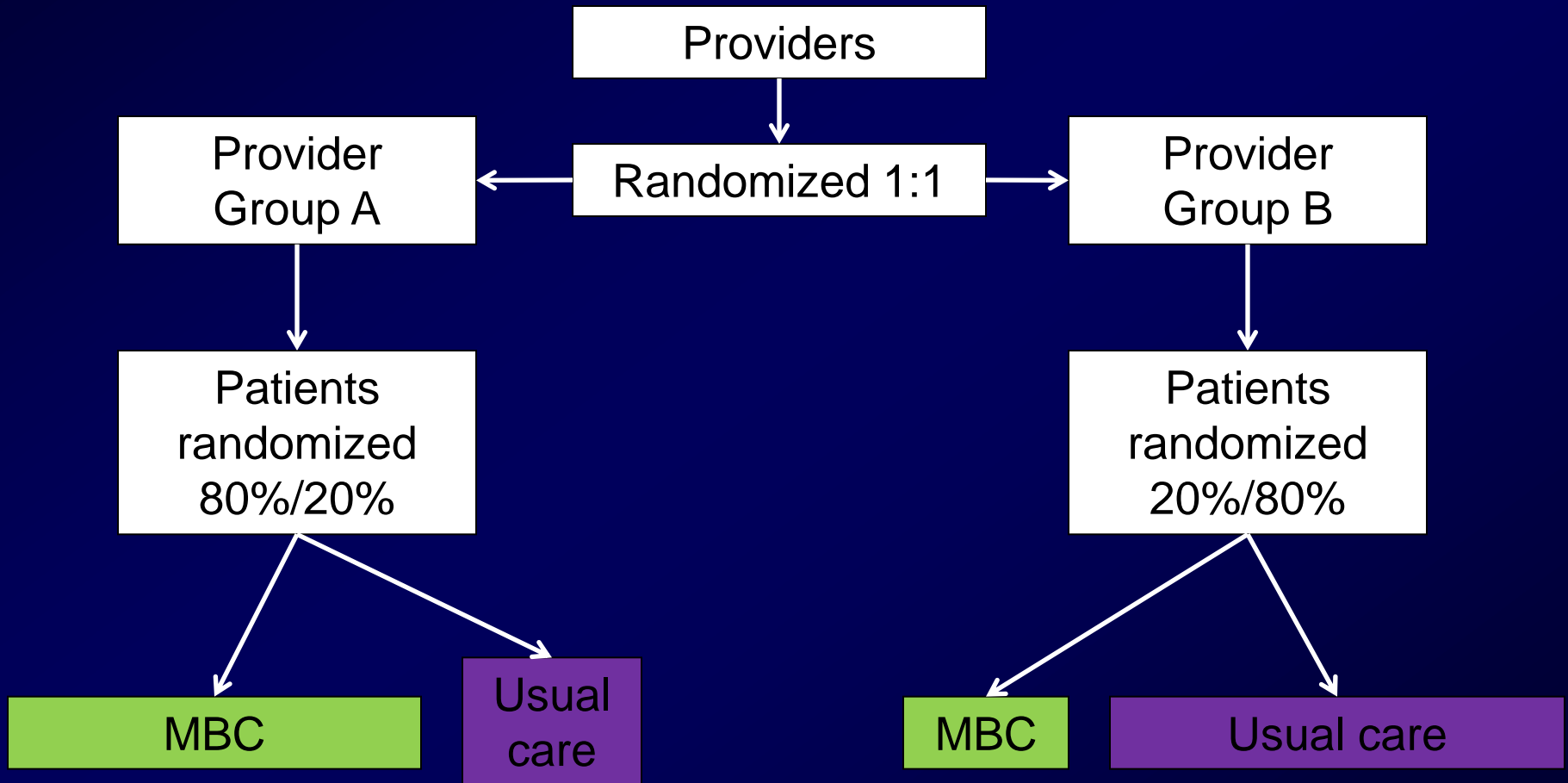
Pyne 2011; Tsai 2013;
Pence 2015

- No impact on ARV adherence
- Better adherence / viral control at baseline
- Depression treatment was primary focus

Randomization

- Tension in design: Randomize patients or providers?
 - If randomizing patients:
Potential for contamination
 - If randomizing providers:
Potential for referral bias

Decision: Pseudo-Cluster Randomization



Missing data had minimal impact on effect estimates

	Effect estimate at 6 months: Intervention vs. usual care	
	Crude	Corrected
ARV adherence, pill count (%)	1.6% (-4.9, 8.2)	1.4% (-3.9, 6.7)
Kept visit proportion* (%)	1.2% (-4.5, 6.9)	1.2% (-2.9, 5.2)
Depressive severity (0-50)	-3.7 (-6.0, -1.4)	-3.7 (-5.6, -1.7)
Mental health QOL (0-100)	4.0 (0.4, 7.5)	3.8 (-0.1, 7.8)

* Over 12 months

Predictors of retention

- Retention associated with baseline...
 - ARV adherence, VL, CD4, appt adherence
 - Depressive severity
 - Self efficacy, coping
 - Alcohol / substance use
- Retention NOT associated with
 - Study arm
 - Site
 - Demographics

What have we learned?

- Reach could still be expanded
- Patients are psychiatrically (and medically) complex
- DCM model is definitely feasible and perceived as high-value
- Providers are generally on board and convinced of importance, but need support

Provider perspectives

“I’ve always known [depression care is] an important part of the care but I think just having the support, especially of the counseling team in the clinic readily available, immediately accessible has been a huge addition to the clinic. Because I am not confident that antidepressants alone are adequate for the types of depression that we frequently see. They need a supportive environment. The ones who have come away happiest have regular meetings, regular support with the SD staff.”

Provider perspectives

“[Adherence is] a hard thing to change. I don’t think there’s going to be a huge effect but I think that probably there were enough people who responded that there was a difference. ...

Adherence is influenced by so many things that ... are not even under the control of the person, that I think it’s going to be very hard to show a tremendous difference. But I think it’s going to be helpful for a lot of people and we may learn that there’s certain people that it’s helpful for just like any intervention.”

Provider perspectives

“[Integration of MBC into the clinic] was probably the biggest achievement. ... Originally I think there was a lot of resistance, you know, how are we going to have this happen. But I think it’s been great and I think we’ll miss having the care manager in the clinic and providing that support and safety net that you can go to and ask questions and be a resource. “

Patient perspectives

“The program really did help me a lot be open up with myself to realize I wasn’t hurting nobody but myself and . . . basically I can say it has helped me a lot to be able to open up and talk to someone and not hide things that’s going on in my life.”

Patient perspectives

“I can say, thanks to that SLAM DUNC program, it helped me a lot because it taught me how to deal with people, it started teaching me anyway how to deal with life on [life’s] terms”

SLAM DUNC: Measurement-Based Care

