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Efficacy of an evidence-based ARV adherence intervention for China

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HIV/AIDS in China

Total: 780,000



- Heterosexual 47%
- MSM 17%
- IDU 28%
- Blood sellers 7%
- Mother to child 1%

HIV/AIDS in China

- National prevalence low, but significant in some areas.
- Diverse and evolving.
- Sexual transmission
 - 33% in 2006
 - 76% in 2011



Study Sites: Hunan Province

湖南



- 11th largest province of China, situated in the central south.
- Population >65 million
- Commercial sex work and injection drug use are highly prevalent.

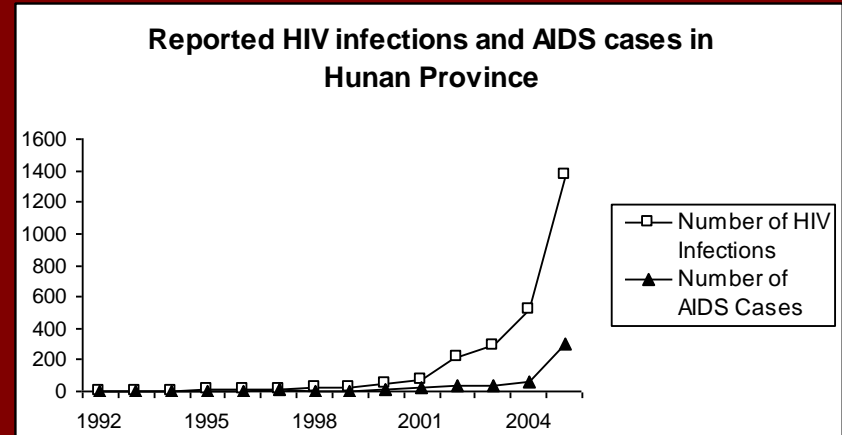
The Birthplace of a Leader



AIDS in Hunan Province

Through 2010: 10,794

- Patients are:
 - Rural
 - Poor
 - 40% IDU



Free Treatment China CARES

First line

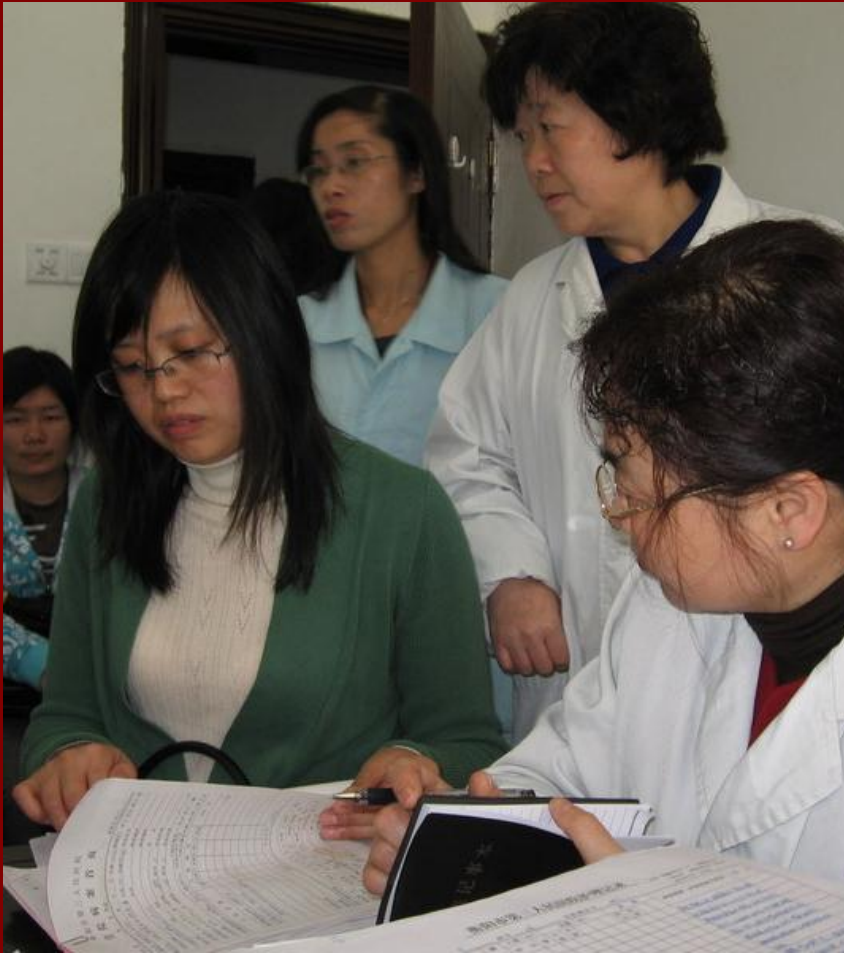
- AZT + 3TC + NVP or EFV
- D4T + 3TC + NVP or EFV

Second line

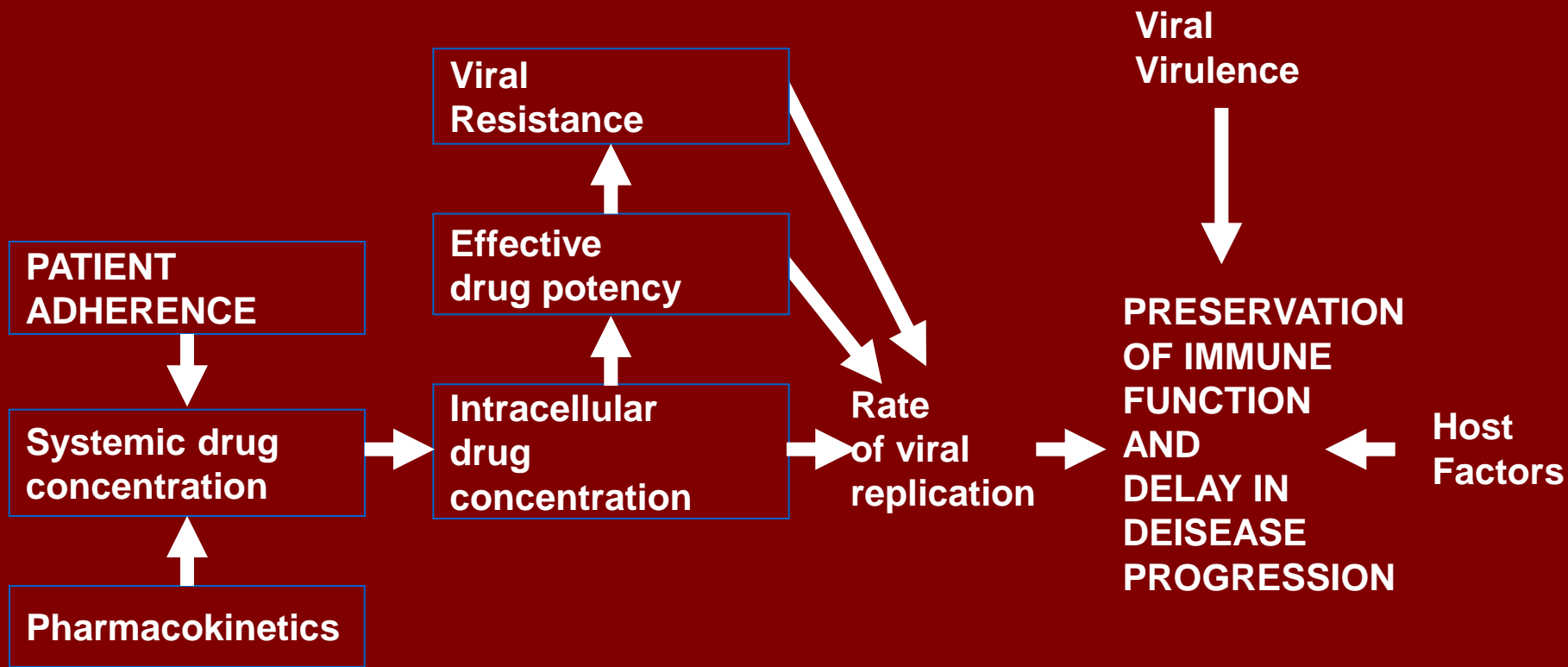
- LPV/r + 3TC + AZT
- LPV/r + 3TC + TDF

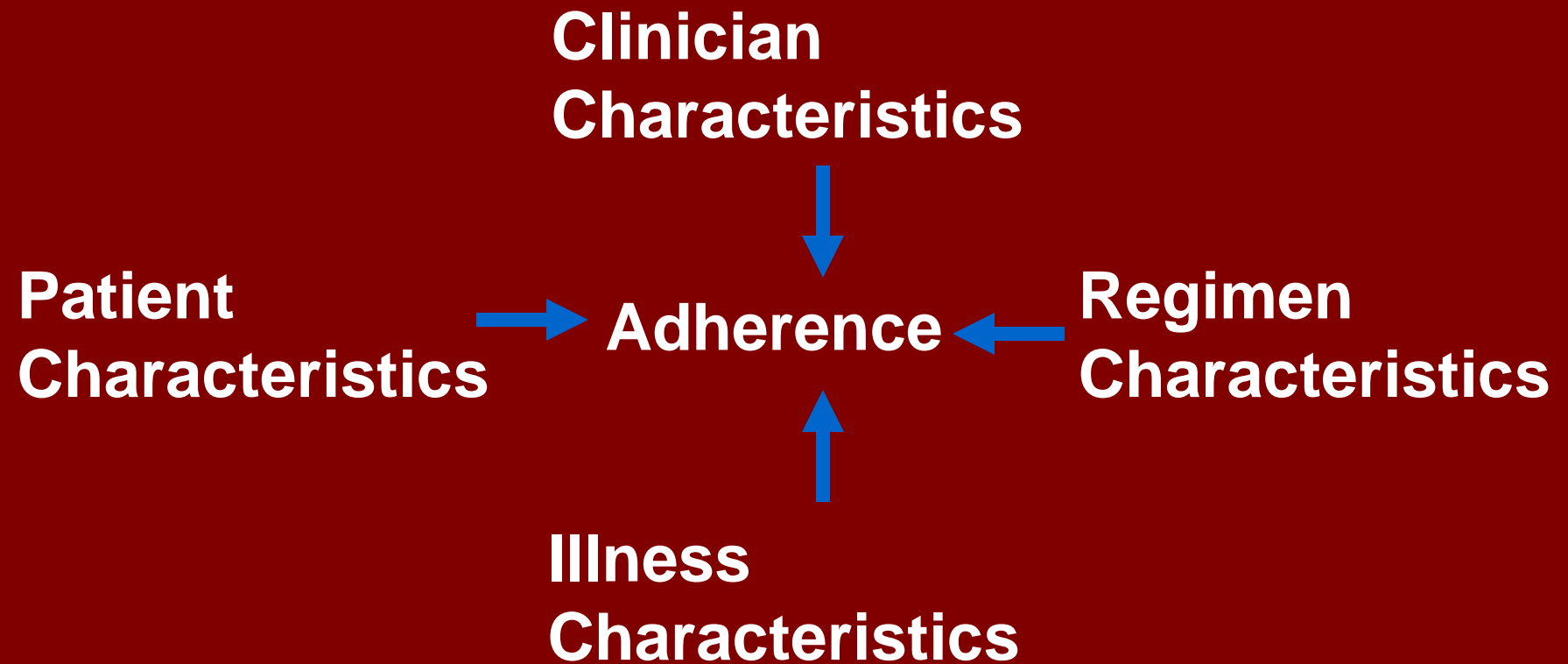


HIV/AIDS in Hunan Province



- Medication adherence is a challenge
- Evidence-based interventions to support adherence are limited and were developed for use in different social, cultural, and economic environments.





Why Make Home Visits?

Patients don't live in clinics

People take medications at home

Clinics are not normal places

Context is key to understanding

The hierarchy of knowledge changes the relationship

A venerable (and living) nursing tradition

Role of Nurse

- **Professional information expertise**
- **Clinical assessment**

Role of Peer Educator

- **Provides additional perspective**
- **Someone who has experience and dealt with many problems the patient may be facing**
- **Helps bridge the gap**
- **Facilitates participatory dialogue**

ATHENA Intervention

(Adherence Through Home Education and Nursing Assessment)

- A home-based adherence intervention delivered by a nurse and peer educator team.
- Demonstrated efficacy in the northeastern U.S. in a randomized controlled trial.



ATHENA

Conceptual Framework

- Freirian philosophy
 - Well suited to Chinese culture
 - Emphasizes community context
 - Known in China

Process

Action

Reflection

Action



Adaptation

ATHENA to Ai Sheng Nuo





Adaptation



- The ADAPT-ITT Model
 - 8 sequential steps
 - Qualitative and quantitative data
- Patients, health care workers, families



Love, Life, Promise



- Ai Sheng Nuo
 - Family emphasis
 - Decreased frequency of home visits
 - More structured patient education
 - Option for group activities

Methods

- Randomized controlled trial
 - July 2010 – August 2012
- Randomized to intervention or control
 - Intervention: Monthly visits and interim phone contact plus standard clinic support for 6 months
 - Control: Standard clinic support

Subjects: Eligibility

- ARVs prescribed by China CARES
- Detectable viral load at baseline
- Self-reporting adherence <90% to prescribed ARVs or to pre-ARV medications (TMP-SMX, multi vitamins)

Measures

- Adherence: 7-day visual analogue scale
- Social Support Rating Scale (Chinese)
- Center for Epidemiological Studies Depression Scale (Chinese)
- HIV/AIDS Related Stigma Scale (Chinese)
- HIV-RNA

Data collection

- Data were collected in structured face-to-face interviews conducted at the time of a regularly scheduled clinical visit.
- Information regarding ARV regimen, treatment duration, time of diagnosis, CD4 count and HIV-RNA from medical record review.
- Baseline, 6 months, 12 months

Results: Subjects

N = 110

Presumed HIV transmission routes

- 36% IDU
- 40% Heterosexual contact
- 11% MTM sexual contact
- 2% Transfusion
- 11% Unclear

CD4 <350 mm/3 98%

Demographics

Male: 82 (72%)

Age

< 30 32 (28%)

30 – 45 57 (50%)

> 45 25 (22%)

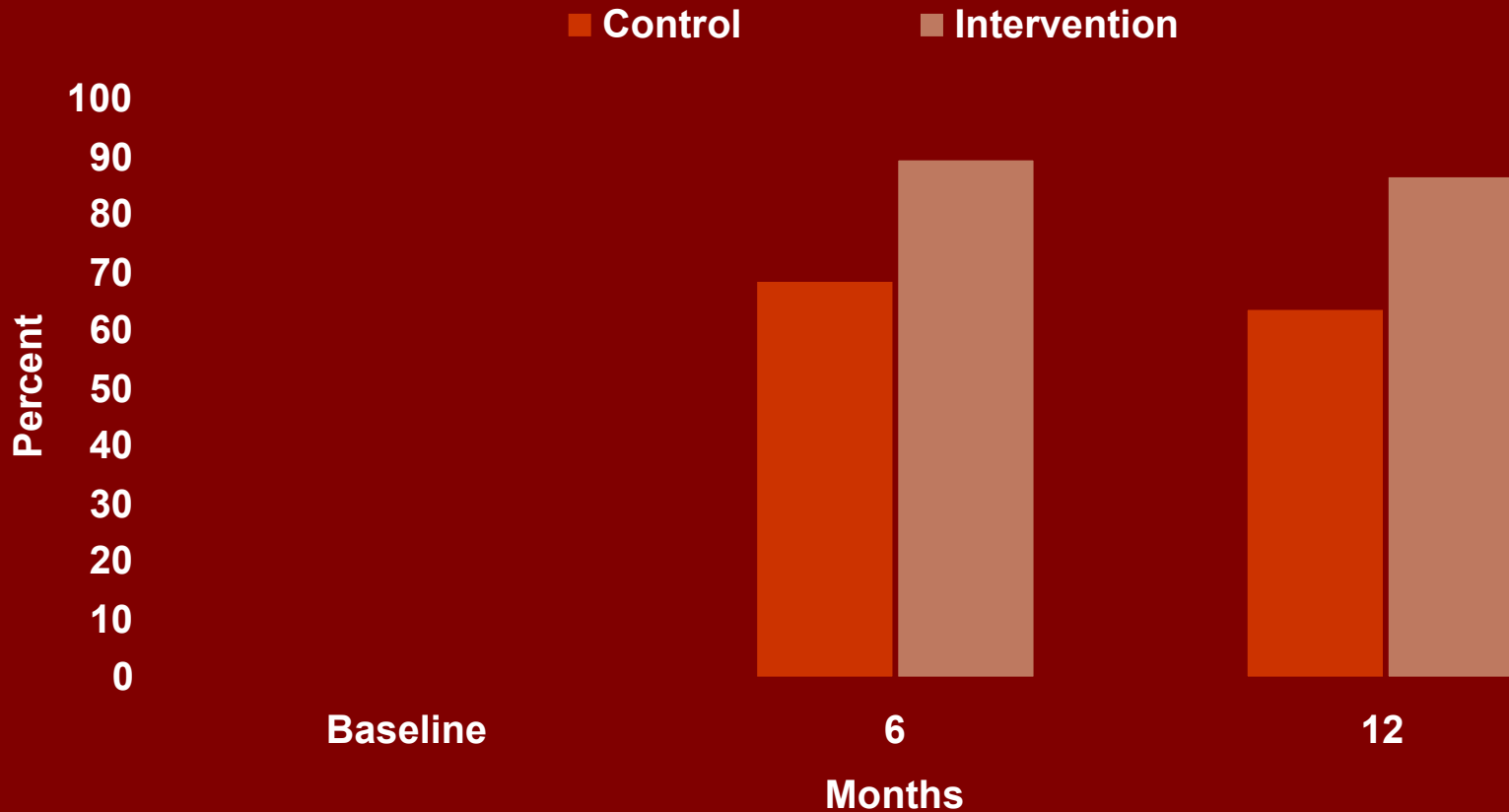
Married 59 (52%)

High school or college 46 (40%)

Stably Employed 32 (28%)

Results

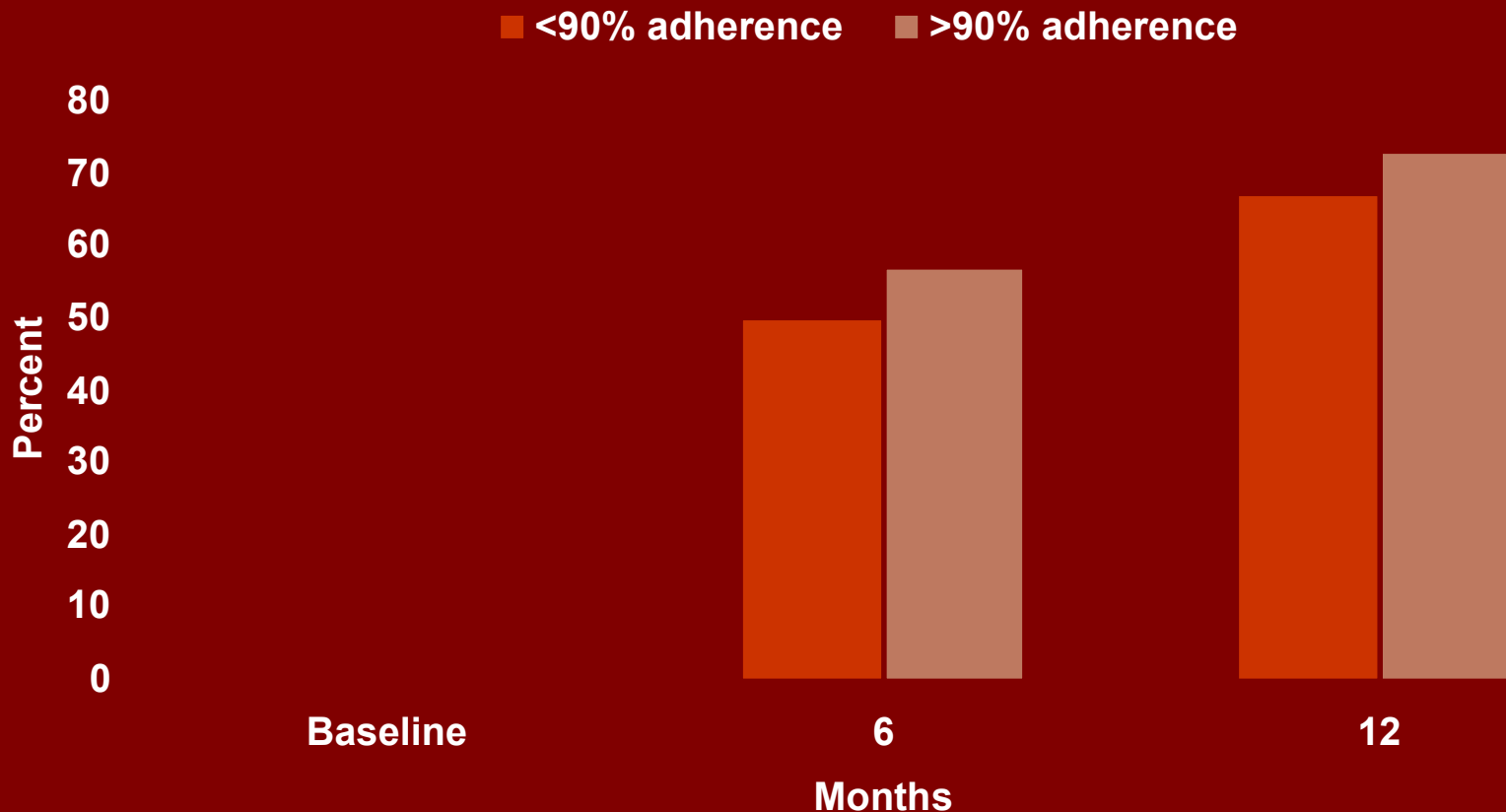
Adherence by Group



A greater proportion of subjects in the intervention group had adherence greater than 90% at both time points compared to the control group. The difference over time is significant (Extended Mantel-Haenszel Test: 8.8, $p=.003$)

Results

Undetectable Viral Load by Adherence



The proportion of subjects with UD VL increased in both groups over the course of the study. A larger proportion of subjects reporting >90% adherence had UD VL, but the difference was not statistically significant.

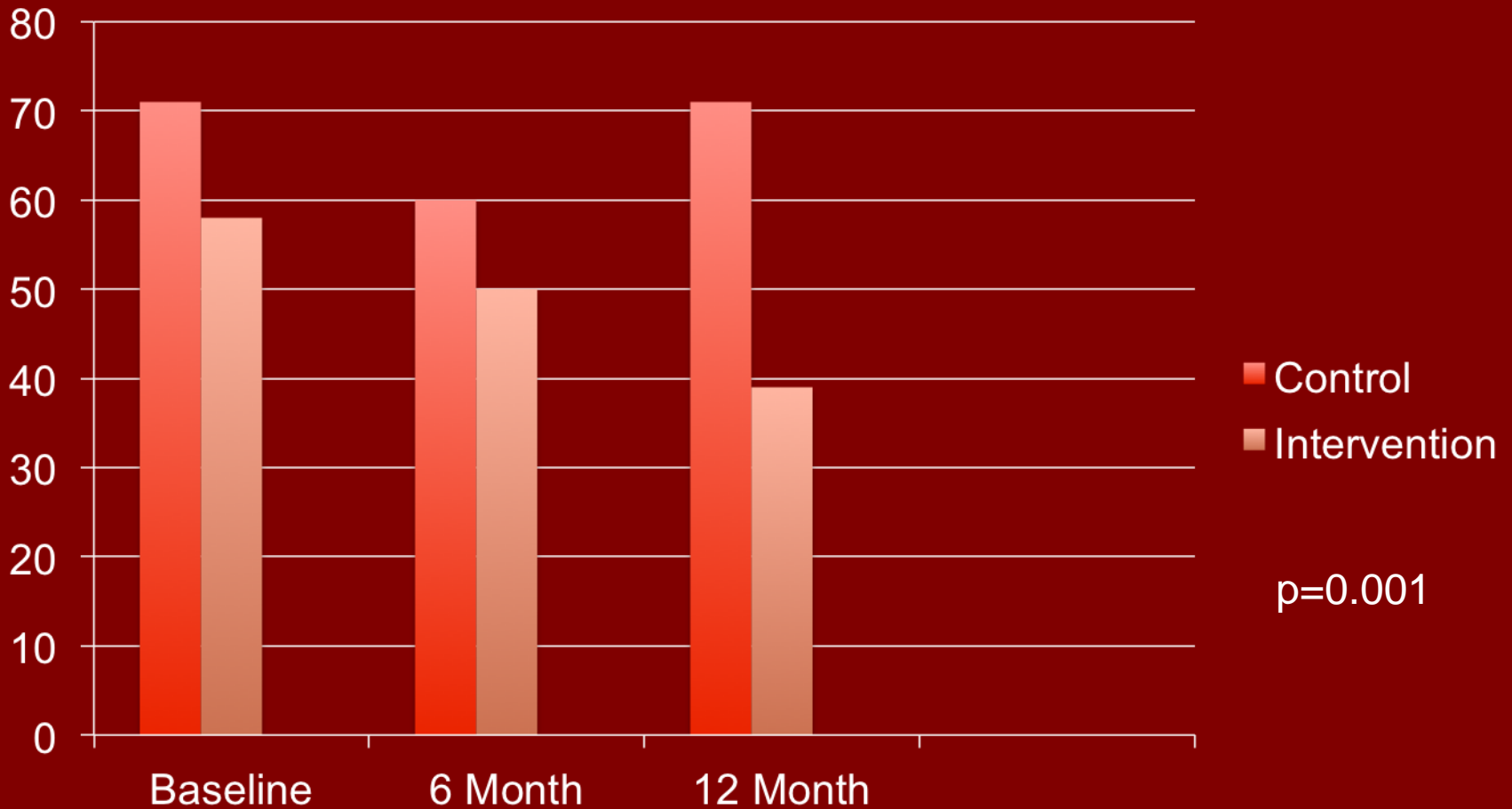
Results

Depressive symptoms at baseline

- **66% scored 16 or greater on the CESD-C**
- **Those in the ARV prep treatment stage were more likely to report significant depressive symptomatology than those for whom ARV had already been prescribed.**
(OR = 2.84, 95% CI 1.26, 6.38; p = 0.01)

Depressive Symptoms

Proportion with CES-D >16 by group



Conclusions

- A home-nursing intervention improved ARV adherence at 6 months and the effect was sustained at 12 months.
- The home-nursing intervention also was associated with fewer depressive symptoms.

Other findings

- Adherence barriers identified:
 - Medication side effects
 - Fear of disclosure
 - Knowledge deficits
 - Poor family relationships



Future Directions



- Logistics: Mobile communication technology.
 - Population of China: 1.3 Billion
 - Number of cell phones: 1 Billion
- Content: address mental health issues, especially depression.
- Cost of intervention.

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