HIV Prevention Trials Network

TLC-PLUS

HPTN 065

Effect of Financial Incentives on Linkage to Care and Viral Suppression: HPTN 065 (TLC-Plus) Study

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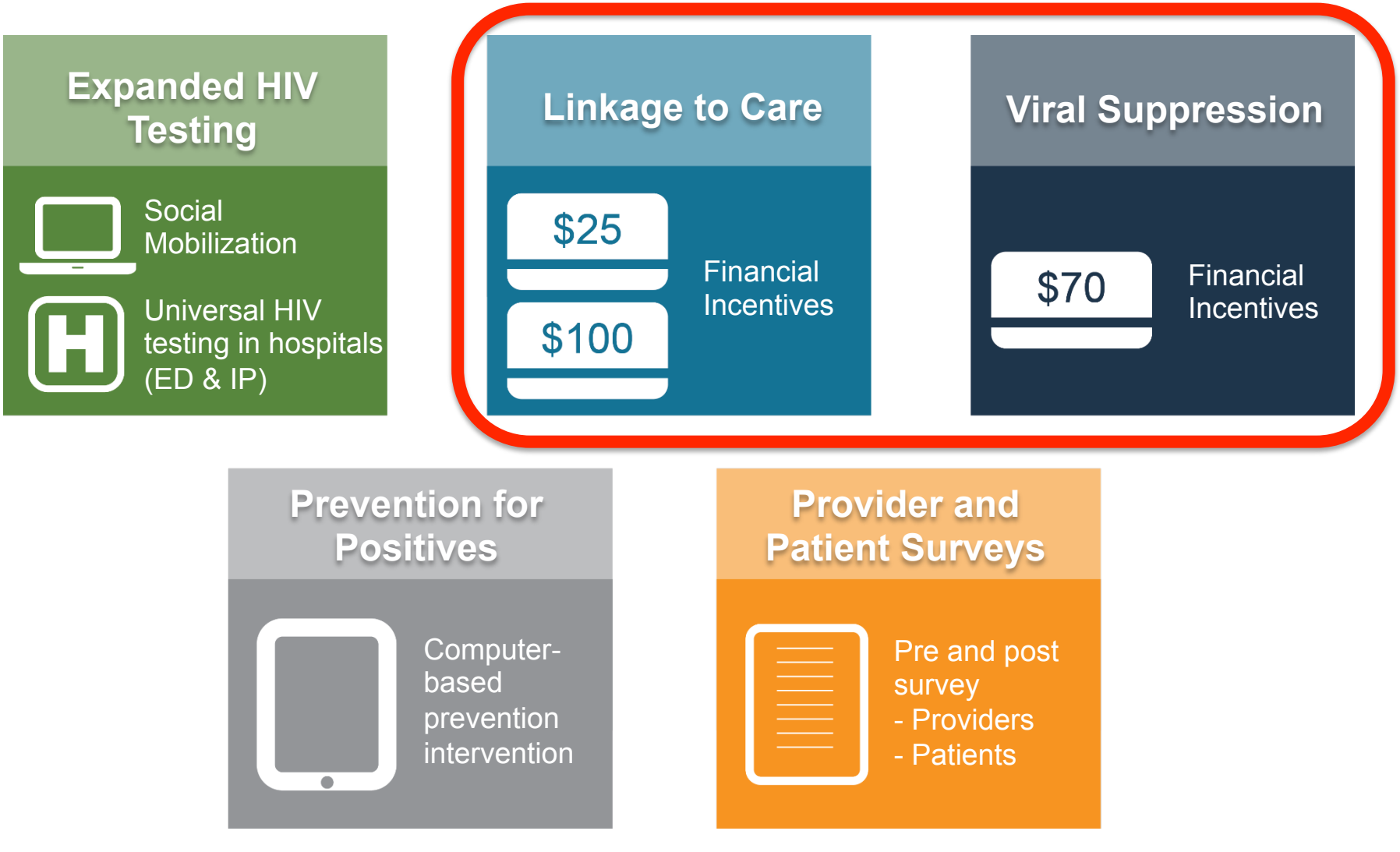
Introduction

- Use of antiretroviral therapy has been shown to be efficacious for prevention of HIV transmission

- HPTN 065 was designed to determine the feasibility of the test, link and treat strategy for prevention of HIV transmission in the US

HPTN 065 Study Components



Objectives

- Determine the feasibility and effectiveness of financial incentives (FI)
  - On **linkage to care (L2C)** of HIV-positive individuals from HIV test to HIV care sites within three months
  - On **viral suppression (VS)** (<400 copies/ml) in patients in HIV care

Methods


Bronx
Test / Care Sites
18
20
INTERVENTION
COMMUNITIES:
Bronx, NY
Washington DC
DC
Test / Care Sites
19
19

Randomization

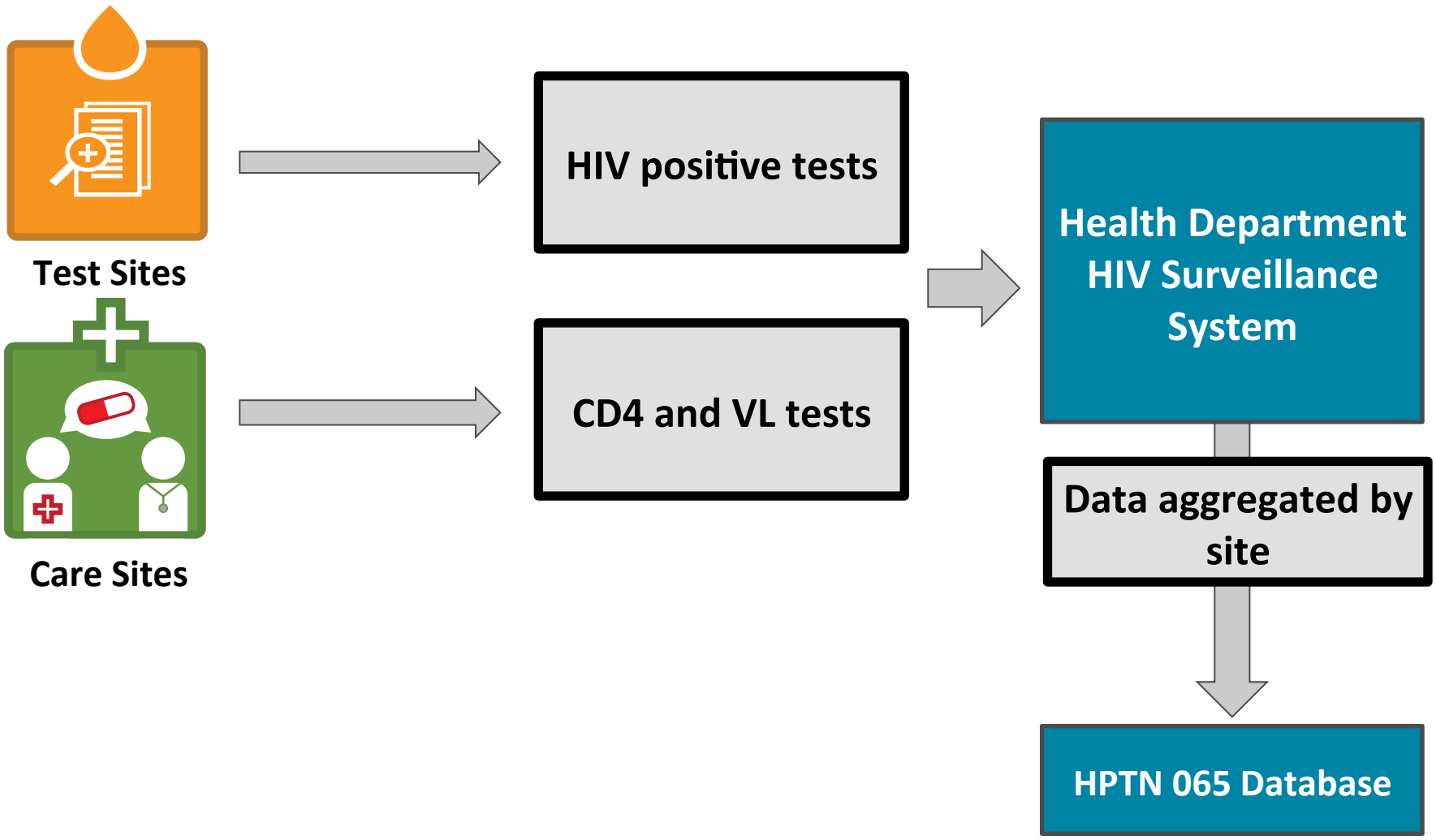
- HIV test sites were randomized to financial incentives (FI) versus standard of care (SOC) balanced by baseline:
  - Number of HIV positive individuals and
  - Linkage to care at 3 months at the site

- HIV care sites randomized to FI or SOC balanced by baseline:
  - Number of HIV patients and
  - Viral suppression (VS) at the site

Financial Incentives

- HIV test sites assigned FI:
  - Individuals found to be HIV positive received a L2C coupon
  - Coupons could be redeemed at HIV care sites within 3 months for:
    - $25 gift card for getting follow-up lab tests done and
    - $100 gift card at completion of provider encounter with development of care plan
- HIV care sites assigned FI:
  - Patients engaged in care and with VS (<400 copies/ml) received $70 gift card
  - A maximum of one gift card could be given every 3 months
- Amount of FI was determined in consultation with study community advisory group, providers and other stakeholders

HIV Surveillance System



Study Outcomes as Measured via Surveillance System

- **L2C**: CD4/VL within 3 months of HIV+ test
- **VS:**
  - **Overall**: VL<400 copies/ml in patients in HIV care (i.e. with at least 2 CD4/VL in the last 15 months)
  - **VS at peak of intervention**: VL <400 copies/ml in the last quarter 2012 (18 months from start of intervention)
  - **Four subgroups were pre-specified for VS analyses**: Community (Bronx, NY/DC), baseline VS (<median/>median), size of site (<median/>median), type of site (hospital/community)
- **Continuity of care (CC)**: CD4/VL in at least 4 of last 5 quarters

Statistical Methods

- **L2C:** All cases Oct 2011 – Dec 2012; logistic regression weighted by number of HIV positive persons at site, adjusted for baseline L2C and accounting for correlation within a site

- **VS and CC**: All visits Jan 2012 – Mar 2013; linear regression for proportion VS, weighted by number of patients at site, adjusted for baseline VS and accounting for repeated site measures over time

- **VS at peak of intervention** (18 months): Oct – Dec 2012

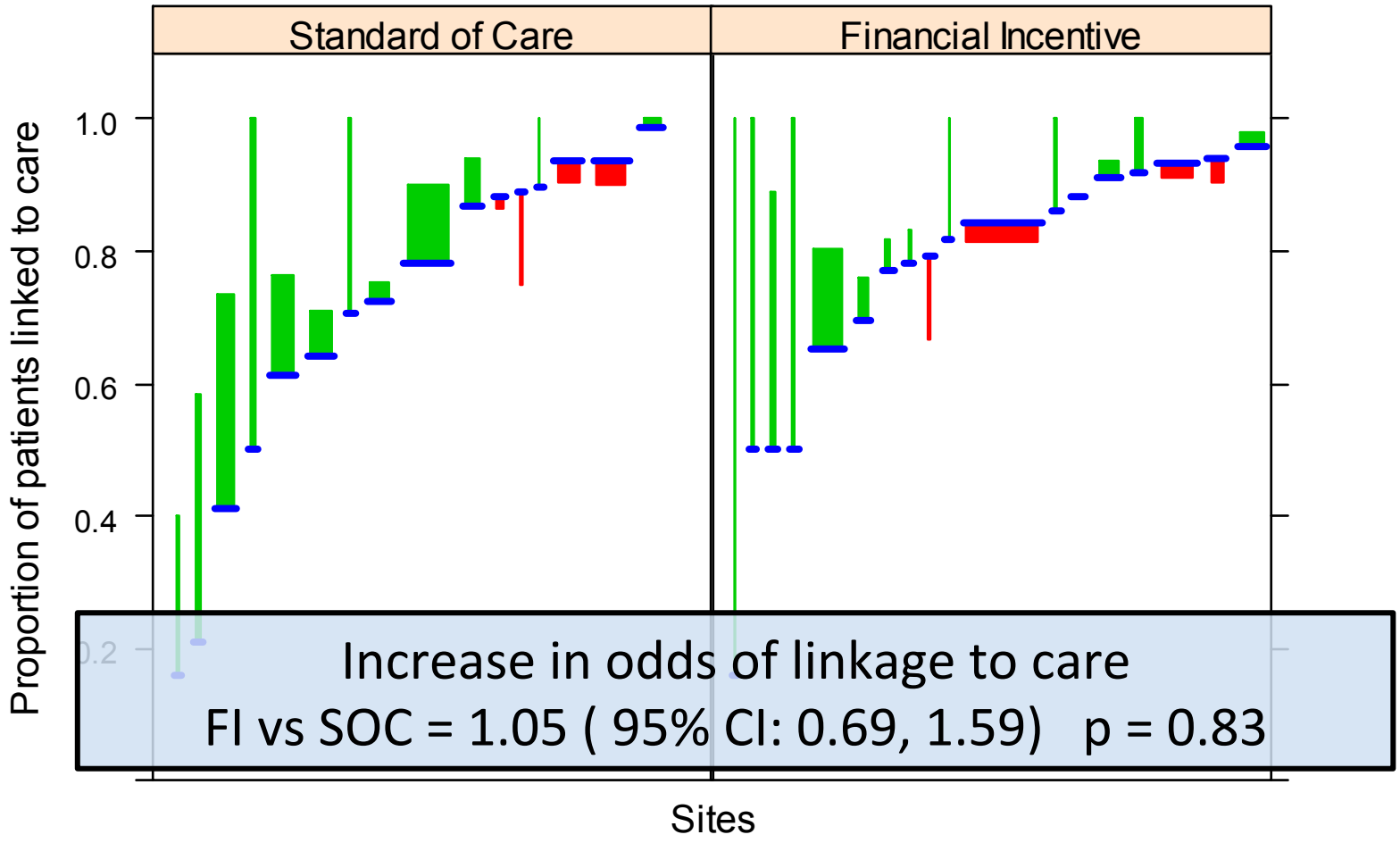
RESULTS

L2C Intervention

Characteristics	Bronx, NY	Washington, DC	Total
HIV+ Diagnoses (15 mo)	**357**	**752**	**1,109**
Men	63%	77%	**72%**
MSM	30%	60%	**48%**
Black	47%	68%	**60%**
Hispanic	49%	13%	**27%**
<25 years	16%	24%	**21%**
Coupons dispensed (24 mo)	**238**	**823**	**1,061**
Coupons redeemed	194 (82%)	644 (78%)	838 (79%)

79% (838/1061) of the coupons were redeemed for both the $25 and $100 gift cards

Change in Linkage to Care, by Test Site



Sites within each arm ordered by baseline L2C

Blue line is baseline L2C

Bar indicates mean change for each site: **green = increase**, **red = decrease**

Width of bar is relative to number of patients testing HIV positive at site

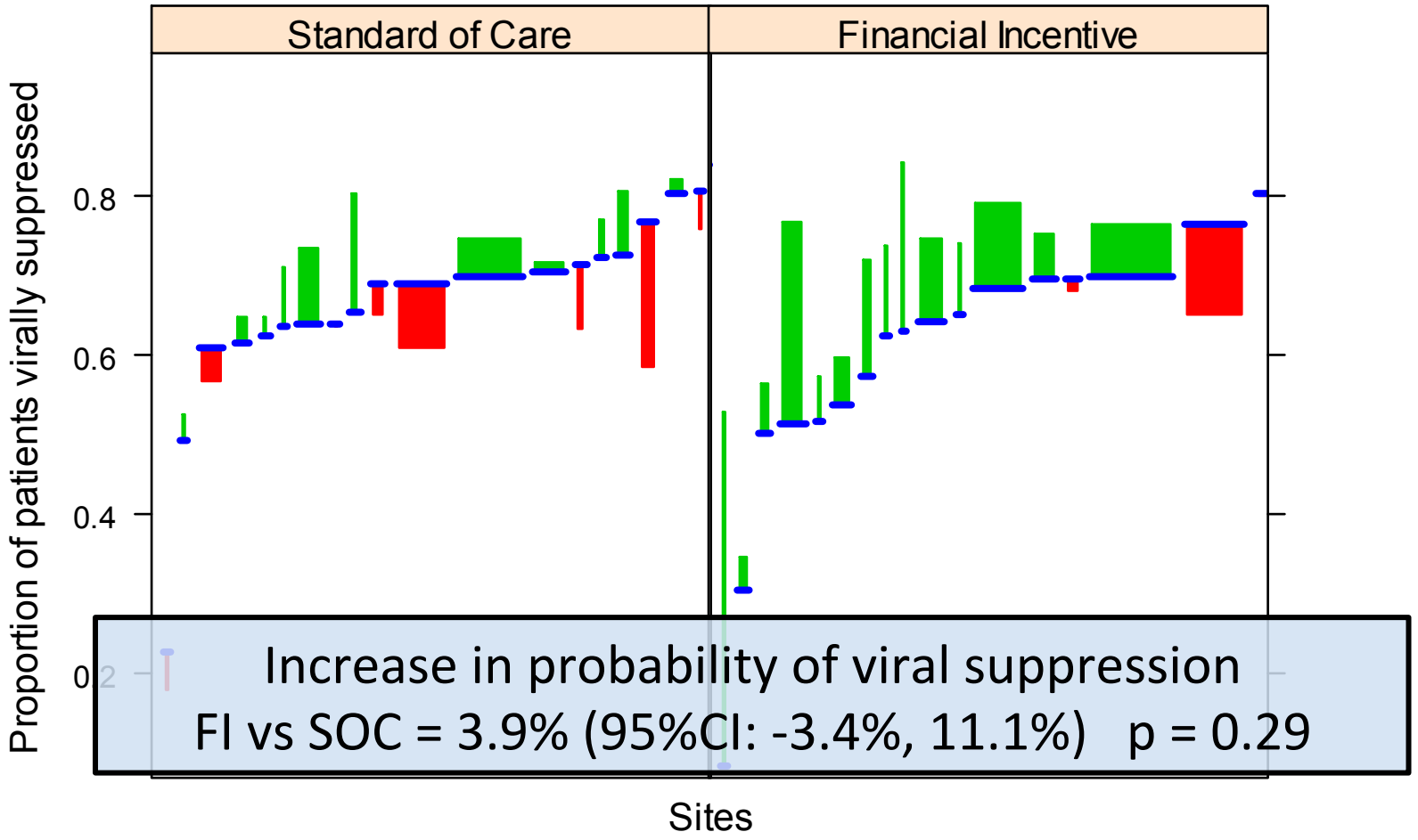
Mean HIV positives per HIV test site: 33, Geometric mean: 16 per site

VS Intervention

- Total of 19,185 patients in care (10,455 in Bronx, NY and 8,720 in DC)
  - At 17 hospitals and 20 community sites

- There were 9,641 patients eligible for gift cards
- There were 49,650 visits qualified for gift cards
  - **A total of 39,359 gift cards dispensed**

Change in Proportion with VS, by Site



Sites within each arm ordered by baseline VS

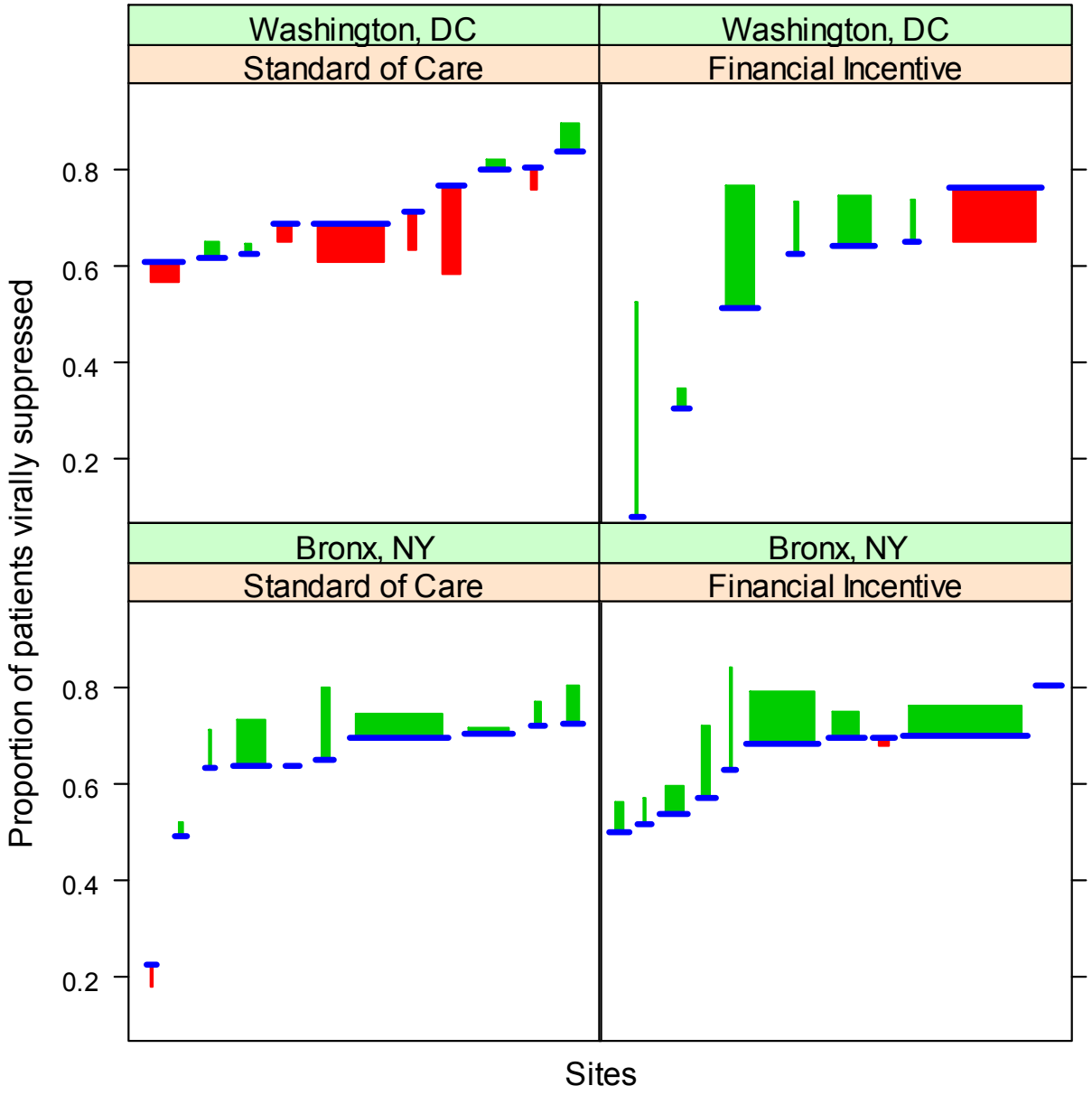
Blue line is baseline VS

Bar indicates mean change for each site: **green = increase**, **red = decrease**

Width of bar is relative to number of patients in care at the site

Mean number of HIV patients in care per site: 438, geometric mean: 243/site

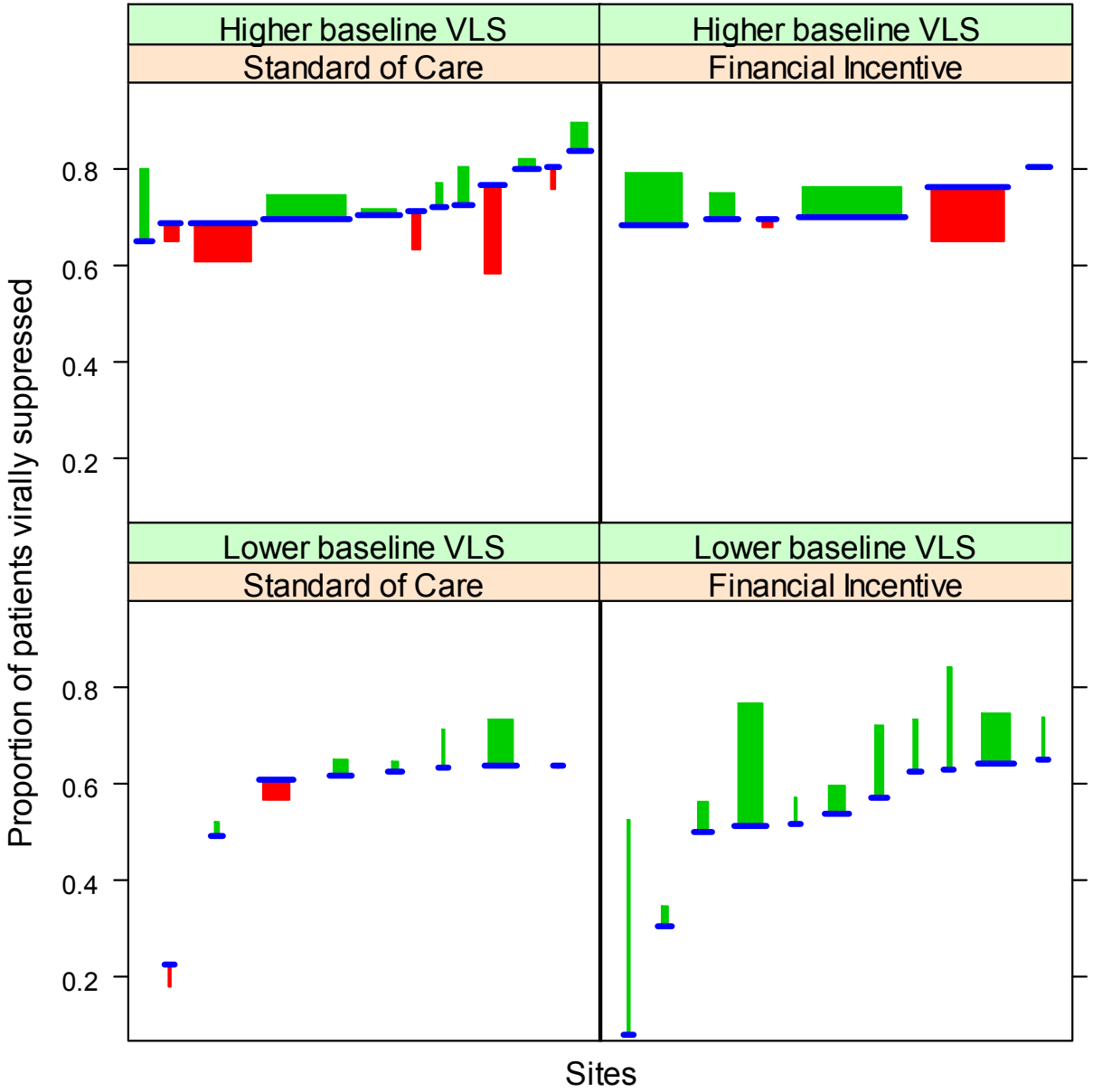
Change in Proportion with VS, by Community



DC: Increase in VS
FI vs SOC = 3.8%
95% CI (-6.7%, 14.3%)
p = 0.48

Bronx, NY: Increase in VS
FI vs SOC = 1.7%
95% CI (-1.3%, 4.7%)
p = 0.27

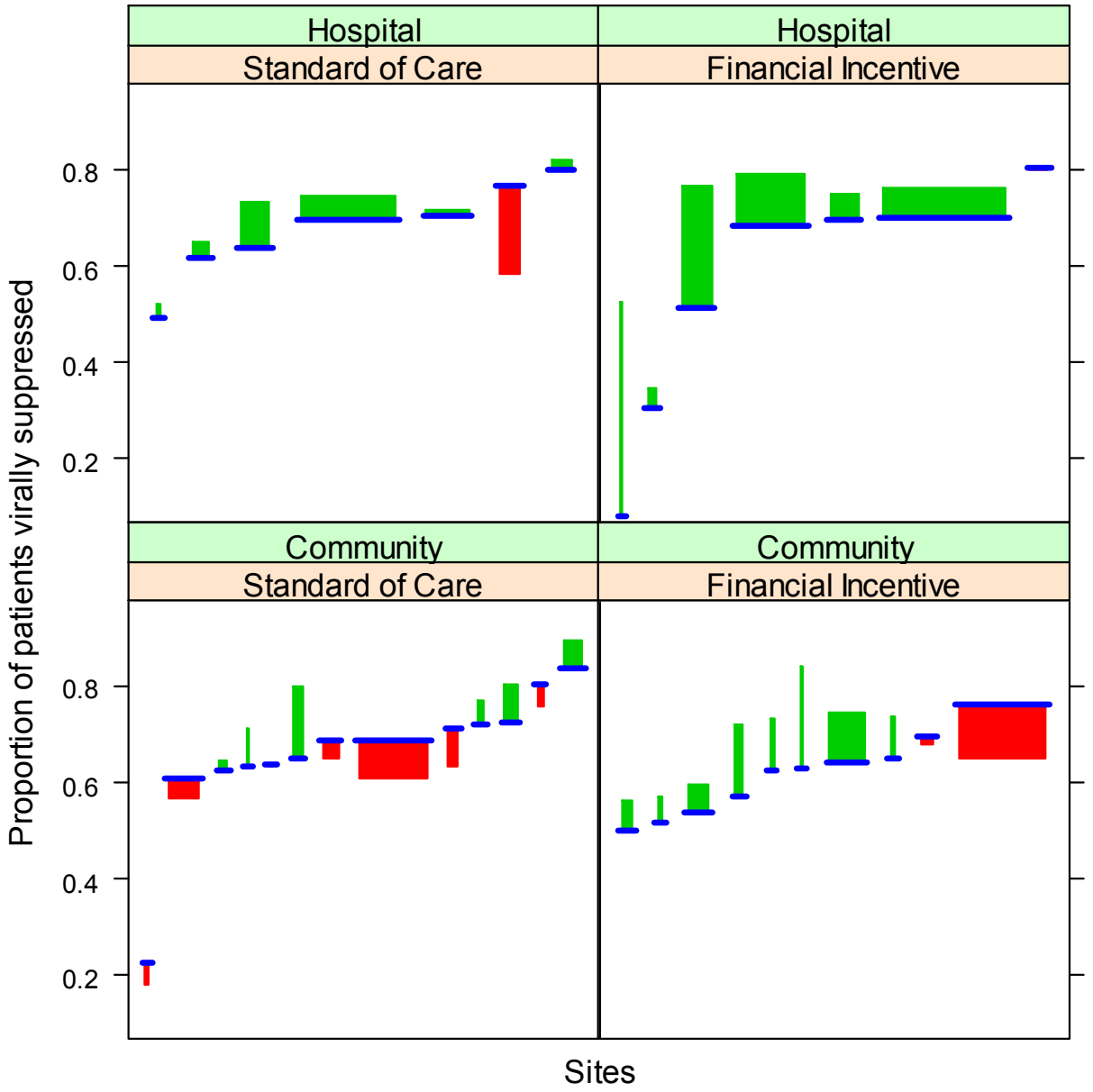
Change in Proportion with VS, by Baseline VS



≥65% with VS at baseline:
Increase in VS
FI vs SOC = 2.4%
95% CI (-5.7%, 10.6%)
P = 0.55

<65% with VS at baseline:
Increase in VS
FI vs SOC = 10.4%
95% CI (2.3%, 18.5%)
P = 0.012

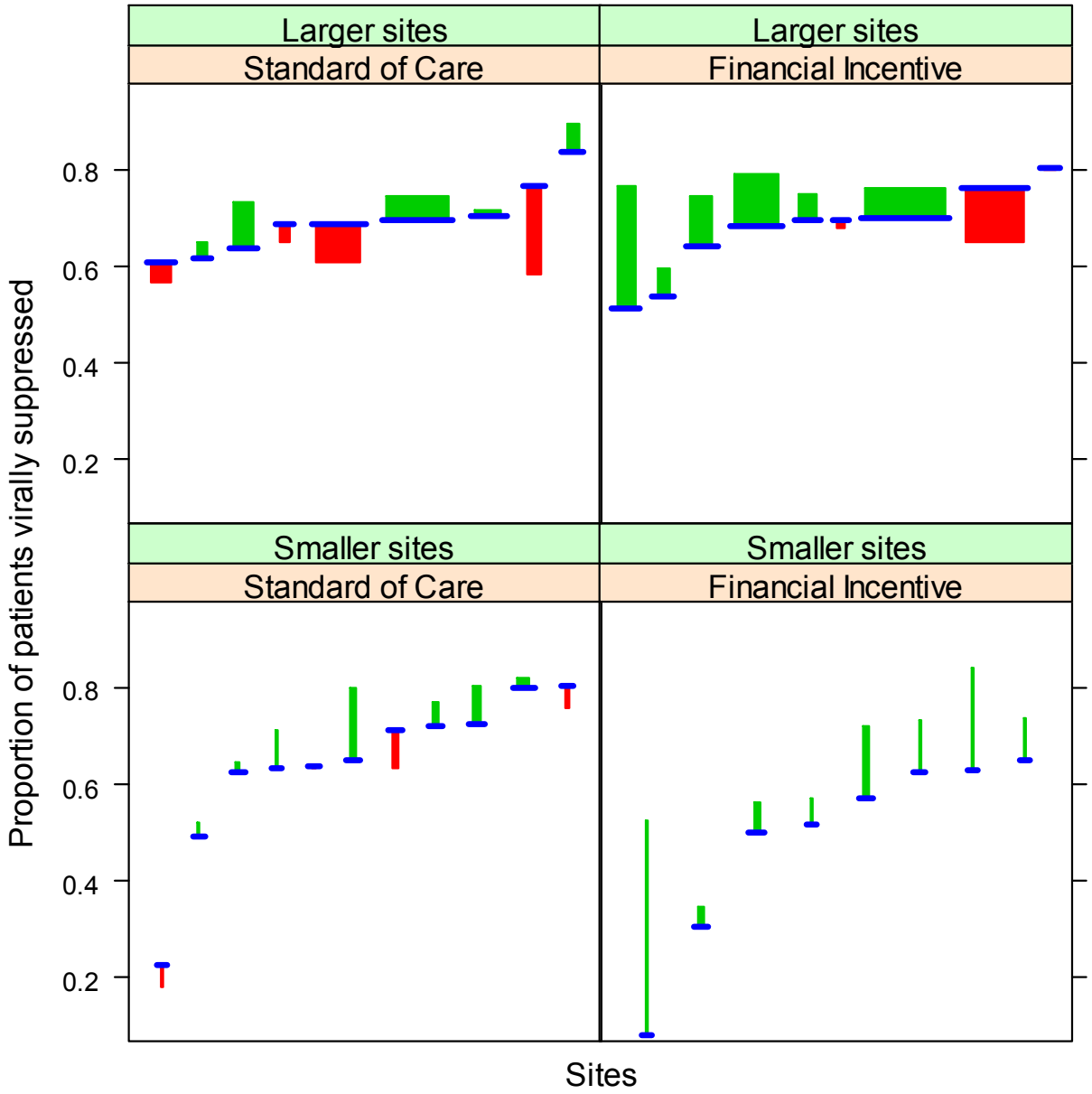
Change in Proportion with VS, by Site Type



Hospital Sites:
Increase in VS
FI vs SOC = 5.2%
95% CI (1.0%, 9.4%)
P = 0.015

Community Sites:
Increase in VS
FI vs SOC = 1.1%
95% CI (-8.3%, 10.4%)
P = 0.82

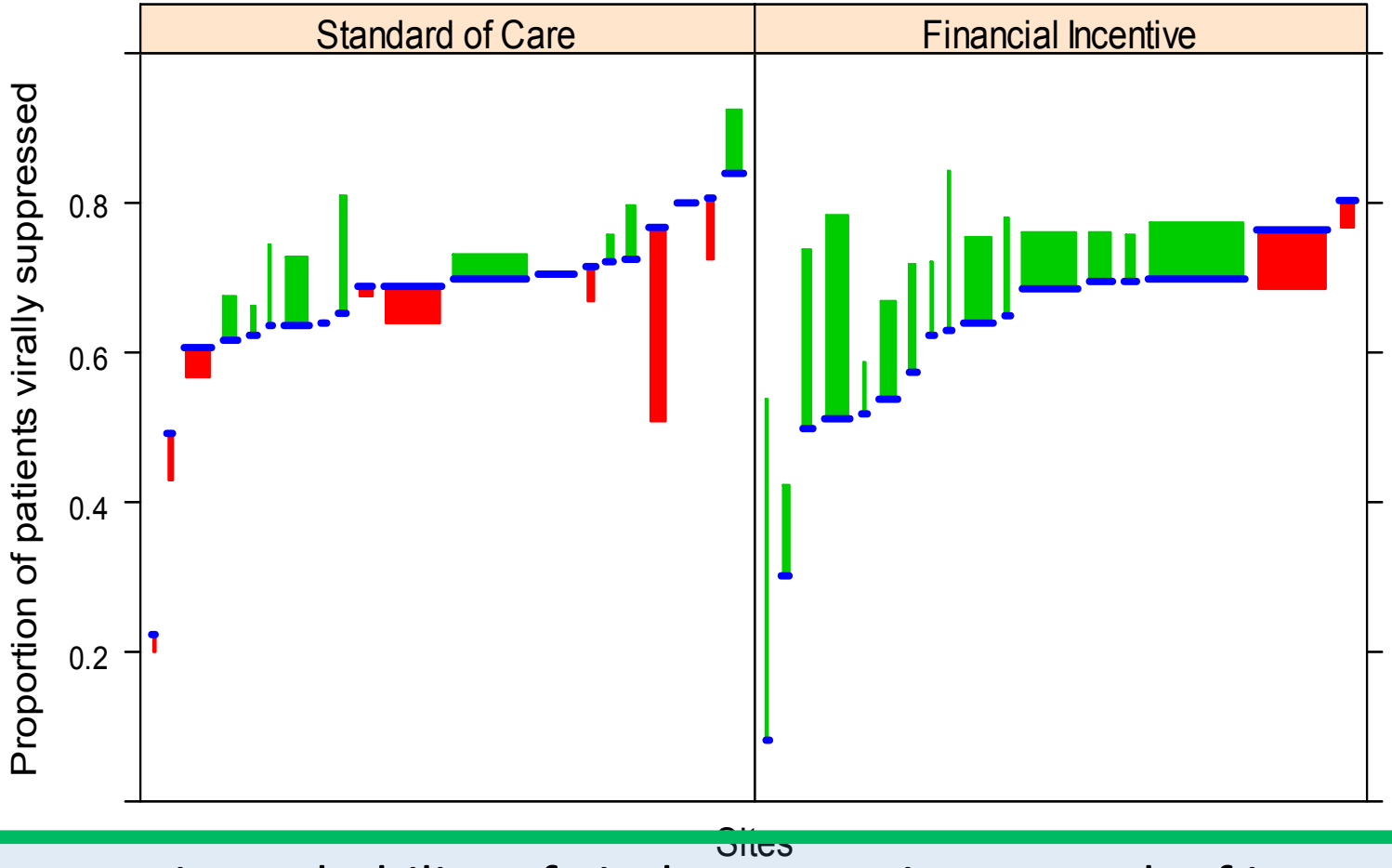
Change in Proportion with VS, by size of Site



≥186 patients in care:
Increase in VS
FI vs SOC = 4.7%
95% CI (-2.7%, 12.2%)
P = 0.21

<186 patients in care:
Increase in VS
FI vs SOC = 6.5%
95% CI (-0.7%, 13.7%)
P = 0.078

Peak of Intervention: Q4 2012
Change in Proportion with VS, by site



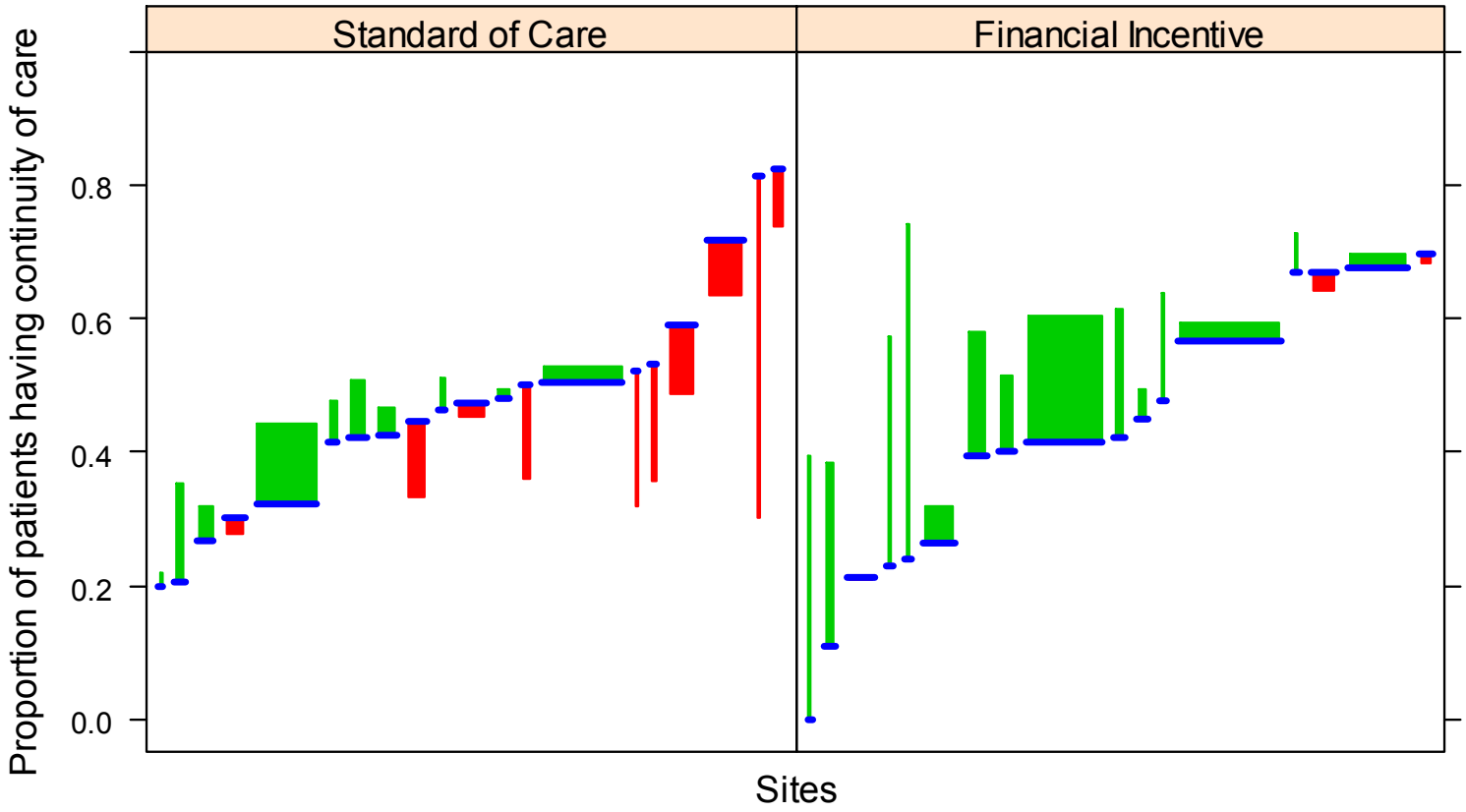
Increase in probability of viral suppression at peak of intervention

FI vs SOC = 5.4% (0.4%, 10.4%) **P = 0.034**

Peak of Intervention (Q4 2012) Change in Proportion with VS FI vs SOC sites

	Increase in VS	95% CI	P value
Overall	**5.4%**	**0.4%, 10.4%**	**P=0.034**
Bronx	5.4%	-5.0%, 15.8%	P=0.28
Washington DC	3.9%	-0.1%, 7.8%	**P=0.054**
Sites higher baseline VS	3.5%	-3.7%, 10%	P=0.31
Sites lower baseline VS	**13.2%**	5.5%, 20.9%	**P=0.002**
Larger sites	6.0%	-1.0%, 13%	P=0.08
Smaller sites	**11.4%**	0.9%, 21.9%	**P=0.035**
Hospital-based sites	6.6%	-1.6%, 14.8%	P=0.10
Community sites	3.2%	-3.9%, 10.3%	P= 0.36

Change in Proportion in Continuity Care, by Site



Increase in proportion of patients with care continuity

FI vs SOC = 8.1% (2.4%, 13.7%) **p = 0.005**

Study Strengths and Limitations

Strengths

- Community-based study with large number of HIV test and care sites (80), included most HIV+ persons in care in the two communities
- Diversity of sites i.e. hospitals/community clinics, private/ public, small/ large sites
- Use of HIV surveillance system to measure study outcomes
- Successful system established for distribution and accounting of FI

Limitations:

- Inability to distinguish patients by ART status in the surveillance system
- Reporting of lab data (CD4/VL) by place of residence rather than site of care (particularly in DC) and incomplete reporting for some sites
- Limited power for linkage to care component
- Change in ARV treatment guidelines during the course of the study

Summary of Findings

- HPTN 065 demonstrated feasibility of use of FI for L2C and VS and for measuring outcomes via HIV surveillance system
- Overall, L2C and VS increased over time in both arms
- Use of FI did not increase L2C, possibly due to limited power to detect an effect
- While FI did not increase VS overall, they significantly increased VS in certain settings i.e. sites with lower baseline VS, sites with fewer patients and hospital-based care sites
- At the peak of the intervention, FI significantly increased VS
- FI significantly increased engagement in care as evidenced by regular clinic attendance

Conclusions

- HPTN 065 demonstrated that financial incentives have a potential role in achieving viral suppression
- Further research is warranted of financial incentives in specific populations and in certain settings
- Studies with sufficient power are needed to assess effectiveness of financial incentives for linkage to care
- Modelling is planned to estimate the impact of financial incentives for viral suppression at a population level based on HPTN 065 findings

Acknowledgements

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