

HIV 2016 **Management**

THE NEW YORK COURSE

***“Ending the Epidemic:
What has to Change”***

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Conflicts of interest: None

HIV: Current State of the ART

Test: Nearly perfect after 3-4 weeks

Treatment: 27 ART agents; Virtually all patients can achieve sustained viral response w/adequate CD4

Guidance: Now clear that all patients should be treated at all CD4 strata everywhere in the world

Prevention: Multiple effective methods; ART w/NDV is (96)-100%; PrEP efficacy 44-75% effective

Longevity: Average is near normal (71-73 years in large cohorts in US and Europe)

BUT - US data

- *About 56,000 new cases/year x 30 years**
- *Average CD4 count at first HIV test is 300-350/mL**
- *About 155,000 (14%) with HIV are unaware of it**
- *PrEP works but greatly underused**
- *Affected community is often poor, disconnected, hard to reach and hard to retain in care**
- *No cure, no vaccine, just lifelong meds**

Lessons from a 20 year experience

Public Health messages - T. Frieden

HIV testing- Who, when & what test

Lessons from the “Gardner cascade”

Retention in care- K. Volpp

PrEP- implementation failure

Expectations from novel, new ART

The funding dilemma

T. Frieden, CDCQ Director

NY Times 12/2/15 pg A15 “AIDS Exceptionalism”

**Conflict between provider mission
(individual health) & public health mission
(public protection from infection)**

**Contact tracing: Model is syphilis, gonorrhea
and TB for rigorous contact tracing and
testing**

**CDC recs: MSM- HIV test q 3 mo. Advocacy
for condoms, clean needles & named HIV
reporting → health dept for contact tracing
(but rarely happens)**

HIV Epidemiology: US 2003-14

(Freiden T R NEJM 2015: 373: 2281)

Age (yrs.)	No. 2014	% change 2003-14
13-24	8,841 (22%)	+43%
25-34	12,63 (32%)	-12%
35-44	8,011 (20%)	-58%
Risk: MSM	26,612 (67%)	+5.4%
IDU	1,424 (4%)	-73%
Female	6,556 (17%)	-40%

COMPOSITE OF HIGHEST
PUBLIC HEALTH TARGET TO
IDENTIFY, TEST AND TREAT

Young – 13-24 years

MSM

Anal sex without condom

HIV Treatment, Suppression and Transmission (Freiden T NEJM 2015;372:2281)

Category	HIV Infect	Transmissions
ART- HIV suppression	30%	3%
ART - HIV not suppressed	6%	3%
ART -HIV not suppressed	3%	2%
HIV dx,not in care	48%	69%
Undiagnosed	13%	23%

What's the message here?

Contemporary Data:

Fastest growing group (10 yr increase of 43%)

Young (age 13-24 yrs) MSM

Major source of new infections (69%)

HIV positive infected & not consistently in care

The message: Priority for funding & research:

Young MSM (test- PrEP or ART);

Known HIV: Adherence & Retention in care

How:

Test- Ab, Ag, RNA; then ART or PrEP

Treatment: Volpp plan New ART

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Dynamics of HIV Viremia

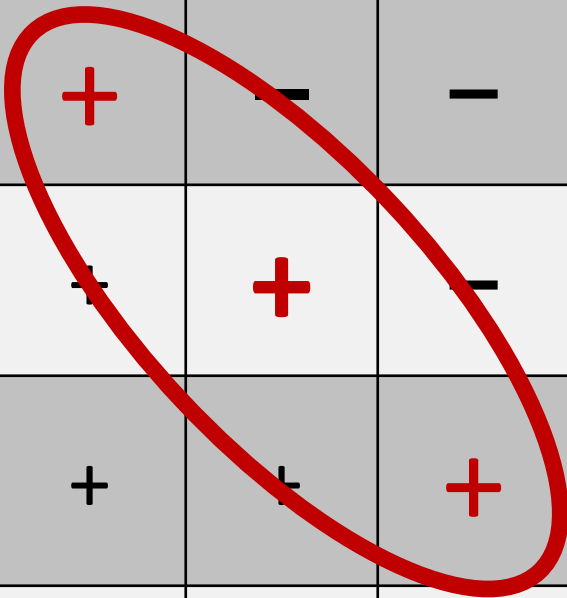
(Fiebig EW. AIDS 2003;17:1871)

Stage	Day	RNA	P24Ag	Ab	WB
I	5	+	-	-	-
II	10	+	+	-	-
III	14	+	+	+	-
IV	19	+	+	+	-
V	88	+	+	+	

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EARLY ART

Prevent transmission including acute HIV when most contagious (30x)

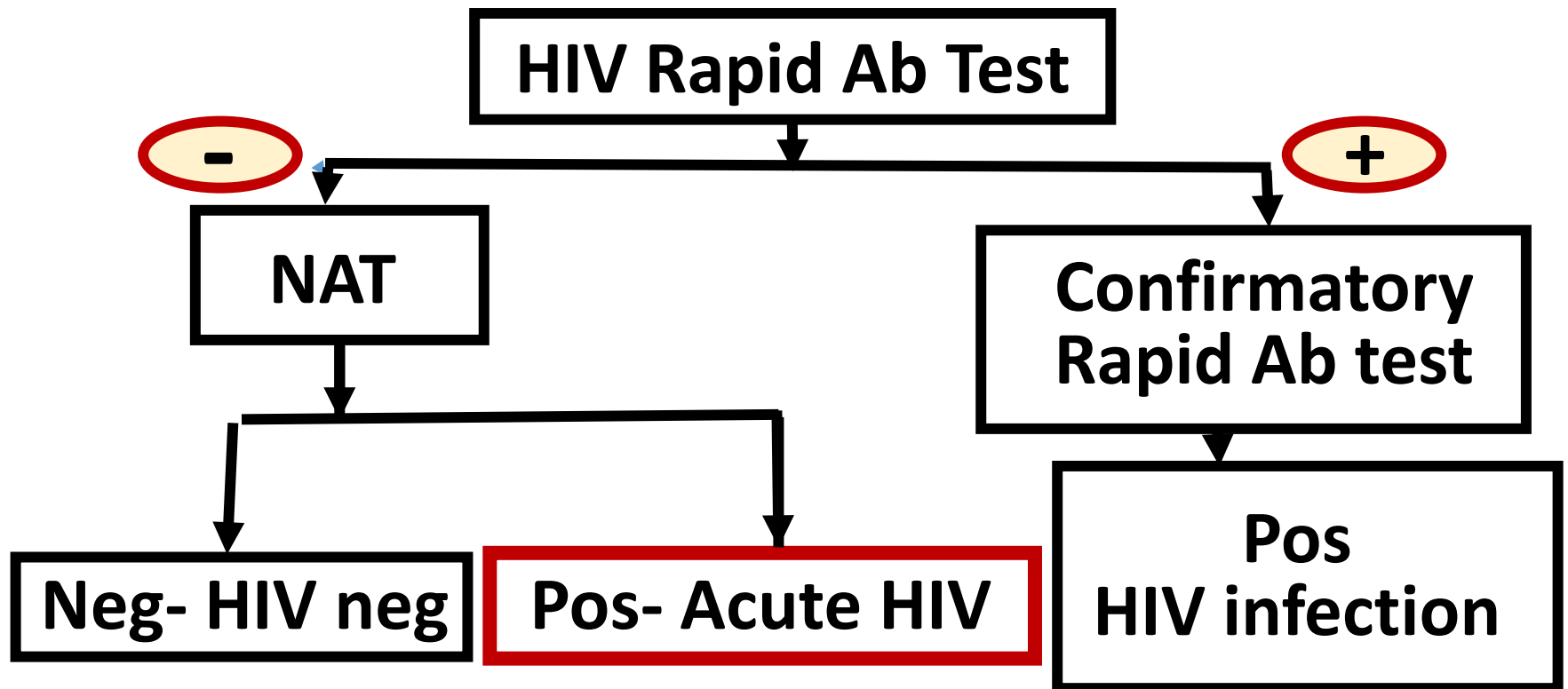
Reduce HIV reservoir (likely)

Current tests:

Never too early, but always too late (for cure)

EarlyTest

Hoeningl M: Cost analysis of Acute HIV detection in community settings (CID 2016; 62:501)



Screening for HIV

(Peters, PJ JAMA 2016;315:682)

- TEST:** 1. Screening test: Rapid HIV Ab test- Positive = positive
2. Negative: 4th generation HIV Ag/Ab OR HIV quantitative assay (+/- pooled samples to reduce cost)

TRIAL: Prospective trial in 7 STD clinics & 4 community clinics

RESULTS: N=86,836, MSM-52%)

Acute HIV: N=134	Sensitivity	Specificity	Cost/test
Architech Ag/Ab	80%	99.9%	\$4.23/test
Pooled HIV RNA	98%	100%	\$160.07/test

CONCLUSION: Screen with Architech in high prevalence sites

HIV Test priorities

Screening test (low risk):

Test: Rapid POC HIV Ab Test

Results in EPR

Expect low yield -only 14% undetected

Screening test (high risk*): Regardless of prior neg test + common sense)

Test: Rapid POC Ab Test: Neg –reflex to NAT or Architech Ag

*Contact tracing, IDU,MSM(esp young MSM)

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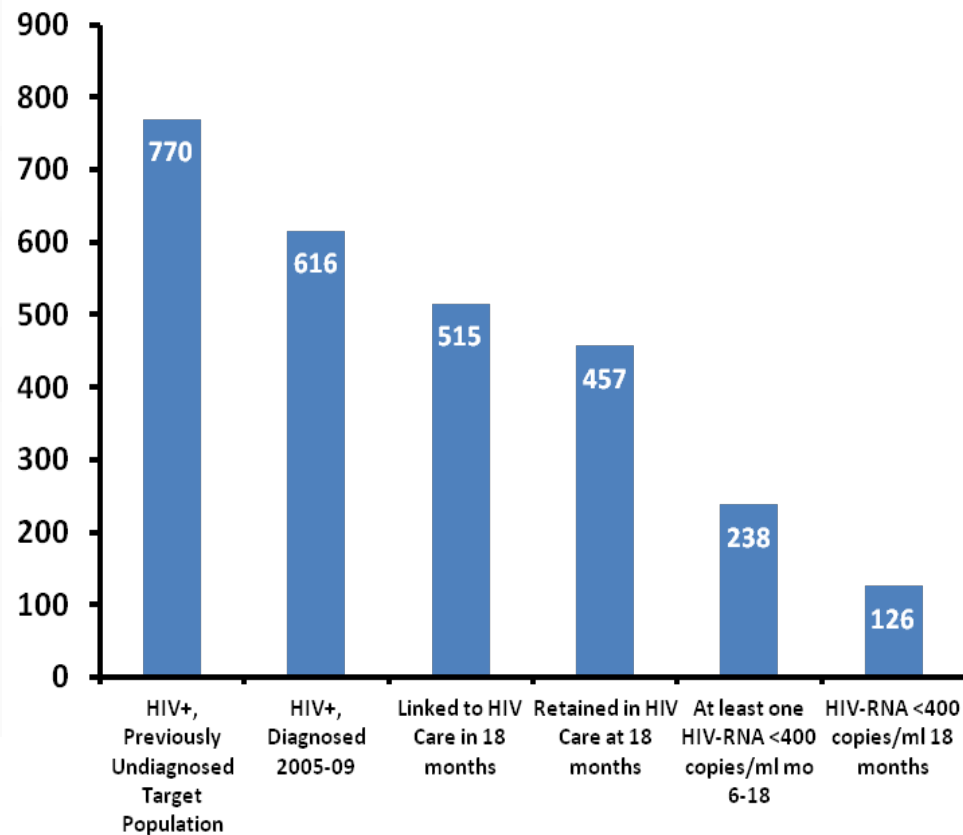
THE CHALLENGE OF HIV CARE

Test → Report for care → Stay in care → ART adherence

HIV: 1.2 million – 328,000 (28%): NDV

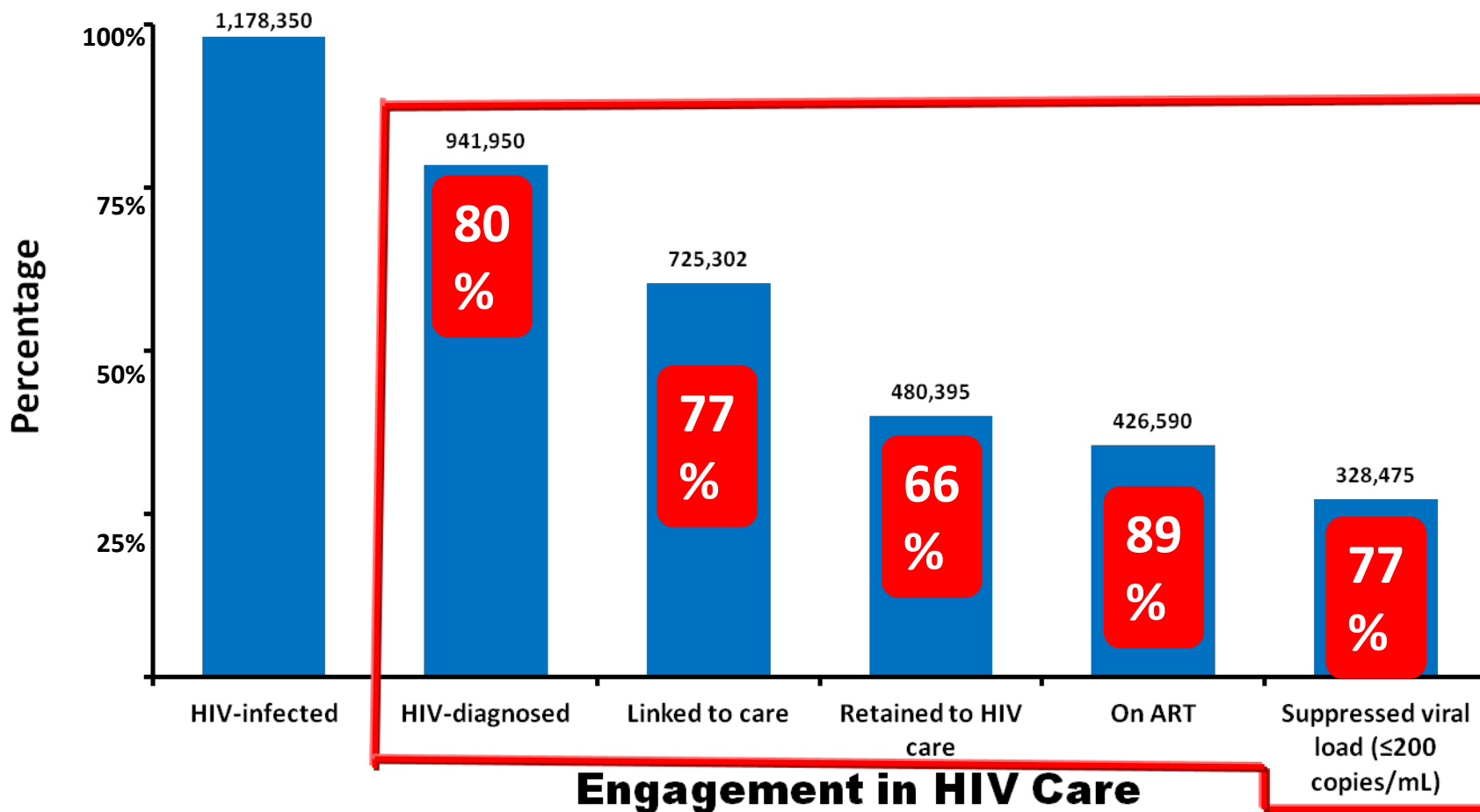


HIV Engagement in Care Cascade Denver, CO
(2005-2009)



The Continuum of HIV Care – US

Gardner EM; CID 2011;52: 793



The elephant is the method of analysis

HOW BAD ARE STEPS 3-5 OF THE
CASCADE?: NA-ACCORD
(Samji H PLoS One 2013;8: e81355)

Cohort: Canada and US, age >20 yrs,
analysis 2000-08; n=22,937; broadly
representative (NA-ACCORD data)

Results: Life expectancy for 20 yo pt-
71.5-73 yrs

Subset MSM: 77 yrs; IDU: 49 yrs Entry
CD4 < 350: 67 yrs

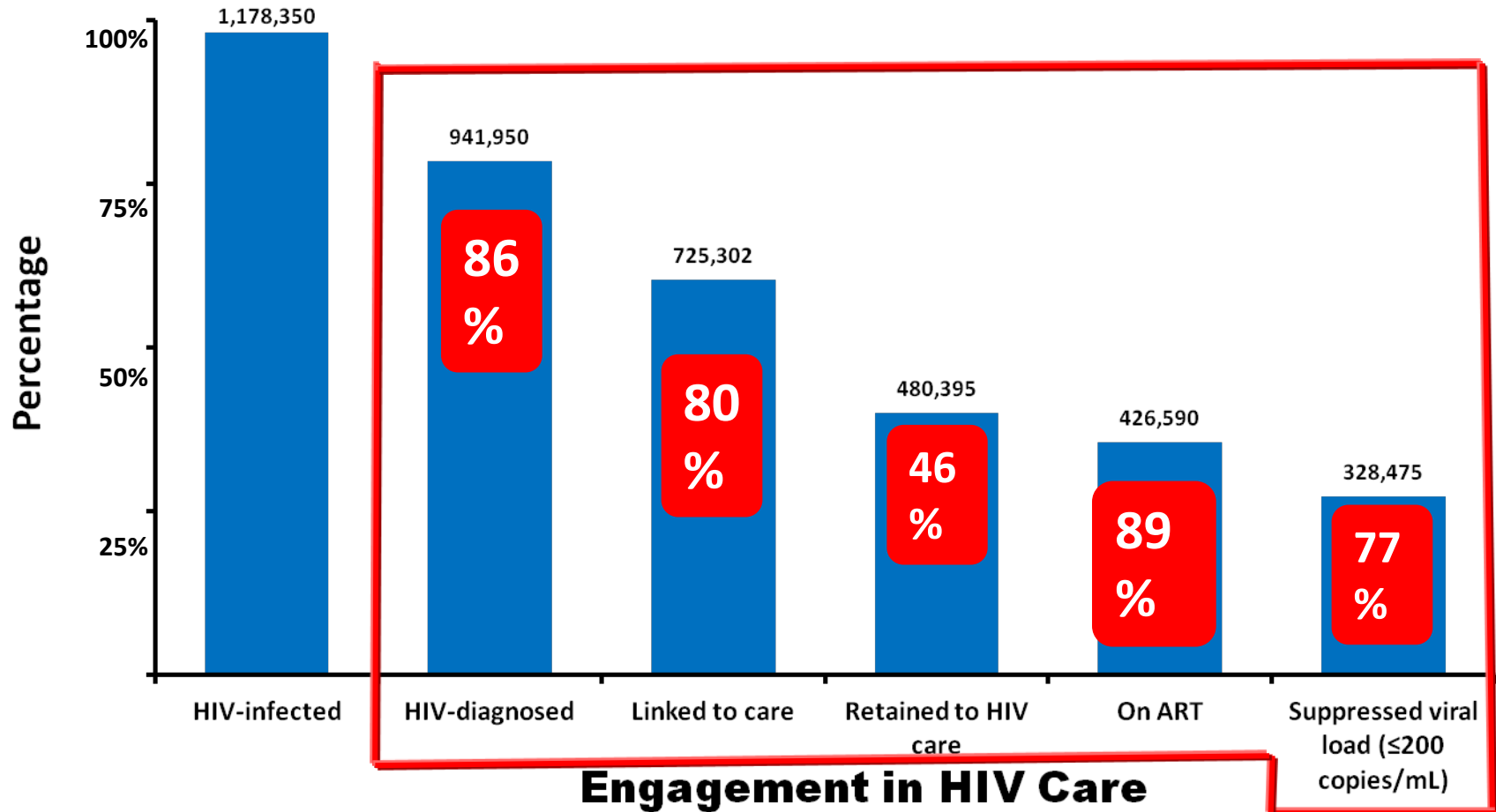
If only 28% of treated patients have viral control and HIV is fatal why is longevity nearly normal (71-72 yrs)?

CDC leader: Problem- changing provider ruled as out of care. Cascade needs to be re-done-2014

Dr. Fauci: Problem is that patients drop out of both care and longevity cohorts so you continually measure those retained in care

Drs. R. Moore & S Gange: Dr. Fauci is partly right, but error is minimized by analytic adjustments

The Continuum of HIV Care - US (Bradley H MMWR 2014;63:1113)



The problem is the method of analysis

IMPACT OF IMPROVING HIV TESTING, LINKAGE & RETENTION IN CARE (Shah M et al CID 2016;62:220)

“Dynamic transmission model” to compare cost and impact of various interventions intended to improve HIV care continuum

Intervention	Deaths/yr	New cases	Cost/QALY
Testing more	20%	16%	\$84K
Link to care (\$500/yr)	25%	21%	\$66K
Retention in care (\$1,000/yr)	45%	36%	\$33K
Comprehensive package	64%	54%	\$45K

CONCLUSION: Best outcome in mortality, prevention and cost-effectiveness is the complete package

Retention in Care: Cost-Effective Strategy to Turn the Tide of HIV in the US (Gardner EM CID 2016;62: 230)

More recent CDC data: 30% have NDV (not 18%)

New data from M. Shah: First to add cost data

Main cost savings: Engagement in care with HIV prevention. Single case saves lifetime cost - \$400K

**Shah data: Most effective strategy: Retention in care
20 year impact of 50% decrease in “lost to follow-up”:
prevent 494,000 new infections & 195,000 deaths at cost of \$33,700/QALY**

Gardner response (2016)

1. I think the actual number with NDV is much higher - ?60%
2. A concern with these analyses is the failure to recognize a 3d category of persons who are in and out of care
3. It should not be a “cascade” (which is rigid). It is “continuum”

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HPTN 065: Test, Link to Care Plus Treat (TLC Plus) (W El-Sadr CROI; 2015)

Trial: 2 Year trial at 39 sites (Bronx and DC sites)

randomized for Financial Incentives (FIs)

FIs (Gift Cards): Test \$25

Return for evaluation \$100

VL < 400 c/ml: \$70 q3 mo

**Results at 2 years: No significant effect
for achieving viral suppression**

WHY DID HPTN 065 FAIL?

Prof Kevin Volpp Univ Penn:

- Failure to “hover”: “Refill, then
5,000 hours of quiet”
- Next generation med incentives:
Wireless devices for adherence
and ongoing feedback/watching

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Preventing HIV transmission

Barriers: Condoms etc

ART with NDV: (96%)-100%

PrEP: Works in trials, but fails in broad implementation

Pre-Exposure Prophylaxis

CDC MMWR 2015;63;1291;

Mayer K Drugs 2015;75:355

CDC estimates of indication/need:

Population	No.	At risk	Efficacy
MSM	492,000	24.7%	92%
IDU	115,000	18.5%	74%
Hetero	624,000	0.4%	90%

Total who Qualify 1.2 million; No. receiving 0.5-30%

CDC Survey 2014-5: 935 HIV providers

PrEP Ever: 25%

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A major challenge is separation of individual health and public health which have different goals, leaders, guidelines, meetings and journals. They are paid from different sources on the basis of differing missions & payers. The need for better integration of communication and resources seems obvious.

Summary-US

1. Test: Need cheap POC NAT test
2. Main source of new HIV in US is young MSM & HIV pts out of care: Test & retain
3. ART compliance: “Hover”+ support
4. “HIV Continuum” needs to be re-thought
5. Priorities: Young MSM & HIV+ not in care: PrEP or ART + retention: Communication, coordination and funding
6. Utopia: Public health and provider collaboration.

Global HIV Issues

Resource-limited countries

Current data for PEPFAR Countries		US
No. living with HIV	36.9 Million	1.2 Million
HIV – Related Deaths	25.3 Million	658,000
HIV Treatment	41%	37%

Unique challenges compared to US:
Stigma, lack of medical infrastructure & experience
with chronic disease

HIV: PEPFAR Data

Challenges: Stigma, limited experience w/health systems & chronic care, but...

Since 2000- 2014-5:

New HIV infections: decreased 35%

New ped infections: decreased 58%

TB/HIV deaths: decreased 32%

Thanks

to:

B. Branson

A. Fauci

S. Gange


E. Gardner

J. Gallant

K. Ghanem

R. Moore

M. Shah



THE END



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