

# Bridge HIV

## Formerly “HIV Research Section”



**POPULATION HEALTH DIVISION**  
SAN FRANCISCO DEPARTMENT OF PUBLIC HEALTH

*Protecting and Promoting Health and Equity*

Susan Buchbinder, MD  
Director, Bridge HIV  
December 20, 2016  
Health Commission



**STRATEGIC DIRECTION 1. SUPERB KNOWLEDGE MANAGEMENT AND**

**STRATEGIC DIRECTION 2. ASSESSMENT AND RESEARCH ALIGNED WITH OUR  
VISION AND PRIORITIES**

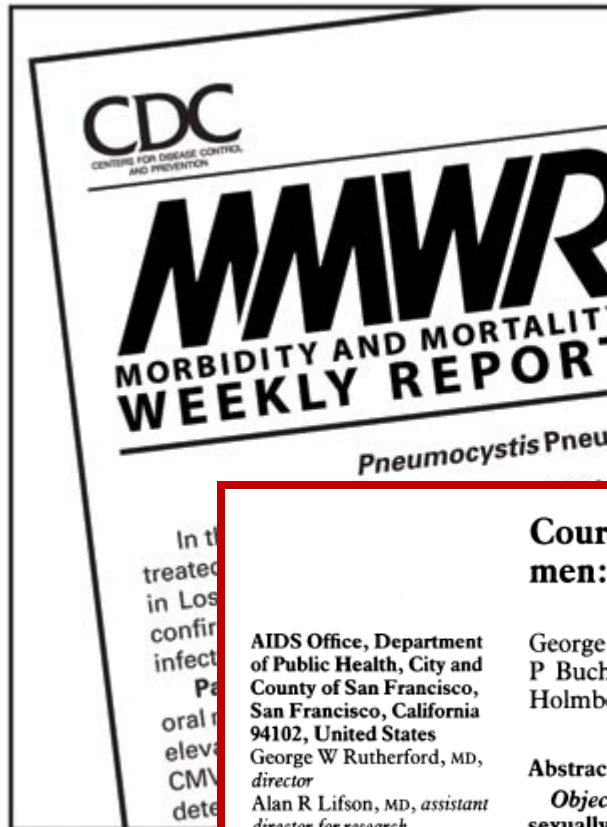
**STRATEGIC DIRECTION 3. POLICY DEVELOPMENT WITH COLLECTIVE IMPACT**

**STRATEGIC DIRECTION 4. ASSURANCE OF HEALTHY PEOPLE AND HEALTHY  
PLACES**

**STRATEGIC DIRECTION 5. SUSTAINABLE FUNDING AND MAXIMIZE  
COLLECTIVE RESOURCES**

**STRATEGIC DIRECTION 6. LEARNING ORGANIZATION WITH A CULTURE OF  
TRUST AND INNOVATION**

# A Brief History....



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## PREVALENCE, INCIDENCE, AND PROGRESSION OF HUMAN IMMUNODEFICIENCY VIRUS INFECTION IN HOMOSEXUAL AND BISEXUAL MEN IN HEPATITIS B VACCINE TRIALS, 1978-1988

NANCY A. HESSOL,<sup>1</sup> ALAN R. LIFSON,<sup>1</sup> PAUL M. O'MALLEY,<sup>1</sup>  
LYNDA S. DOLL,<sup>2</sup> HAROLD W. JAFFE,<sup>2</sup> AND GEORGE W. RUTHERFORD<sup>1</sup>

Hessol, N. A. (AIDS Office, Dept. of Public Health, San Francisco, CA 94102),  
Lifson, A. R., O'Malley, P. M., Doll, L. S., Jaffe, H. W., and Rutherford, G. W.

### Course of HIV-I infection in a cohort of homosexual and bisexual men: an 11 year follow up study

AIDS Office, Department of Public Health, City and County of San Francisco, San Francisco, California 94102, United States  
George W Rutherford, MD, director  
Alan R Lifson, MD, assistant director for research  
Nancy A Hessol, MSPH, assistant chief, research branch  
Paul M O'Malley, project manager, research branch  
Susan P Buchbinder, MD, chief, clinical studies section, research branch  
J Lowell Barnhart, chief, data management section, research branch  
Torsten W Bodecker, research associate, field studies section, research branch  
Lyn Cannon, project

George W Rutherford, Alan R Lifson, Nancy A Hessol, William W Darrow, Paul M O'Malley, Susan P Buchbinder, J Lowell Barnhart, Torsten W Bodecker, Lyn Cannon, Lynda S Doll, Scott D Holmberg, Janet S Harrison, Martha F Rogers, David Werdegar, Harold W Jaffe

#### Abstract

**Objective**—To characterise the natural history of sexually transmitted HIV-I infection in homosexual and bisexual men.

**Design**—Cohort study.

**Setting**—San Francisco municipal sexually transmitted disease clinic.

**Patients**—Cohort included 6705 homosexual and bisexual men originally recruited from 1978 to 1980 for studies of sexually transmitted hepatitis B. This analysis is of 489 cohort members who were either HIV-I seropositive on entry into the cohort (n=312) or seroconverted during the study period and had ≤24 months between the dates of their last seronegative and first seropositive specimens (n=177). A

have been able to determine the approximate dates of HIV-I seroconversion and therefore the duration of HIV-I infection, studies of sexually transmitted HIV-I infection in homosexual and bisexual men have generally been conducted in men who were already infected with HIV-I at the time of their recruitment. Thus most of these studies have been unable to examine the long term risk of progression from infection to AIDS as a function of duration of HIV-I infection.

To understand better the relation between duration of HIV-I infection and the risk of progressing to AIDS we have expanded our longitudinal cohort study of homosexual and bisexual men.<sup>17-21</sup> We now report the risk of AIDS in men who have been infected for up to 12 years.

# Highlights of Previous Work

- **Natural history of HIV infection**
  - Risk factors for infection (individual- and population-level)
  - Factors associated with disease progression
  - “Non-progressors”
- **Prevention studies**
  - HIV vaccines (safety, immune response, efficacy)
  - Pre-exposure prophylaxis (PrEP)
    - Safety, efficacy, effectiveness in STD clinics
  - Disparities
    - Race/ethnicity, transgender women

# Current Grant-Funded Research

A Sample

- **Global Networks:**
  - HIV Vaccine Trials Network (HVTN)
  - HIV Prevention Trials Network (HPTN)
  - Microbicide Trials Network (MTN)
- **Investigator-initiated Research**
  - Home HIV/STI testing
  - Improving PrEP uptake, adherence, retention
  - Addressing disparities

# The Impact of Vaccines in the United States

DISEASE	BASELINE 20 <sup>TH</sup> CENTURY PRE-VACCINE ANNUAL CASES	2008 CASES*	PERCENT DECREASE
Measles	503,282	140	99.9%
Diphtheria	175,885	0	100.0%
Mumps	152,209	454	99.7%
Pertussis	147,271	10,735	92.7%
Smallpox	48,164	0	100.0%
Rubella	47,745	16	99.9%
<i>Haemophilus influenzae</i> type b, invasive <5 yrs.)	20,000	30	99.9%
Polio, paralytic	16,316	0	100%
Tetanus	1,314	19	98.6%

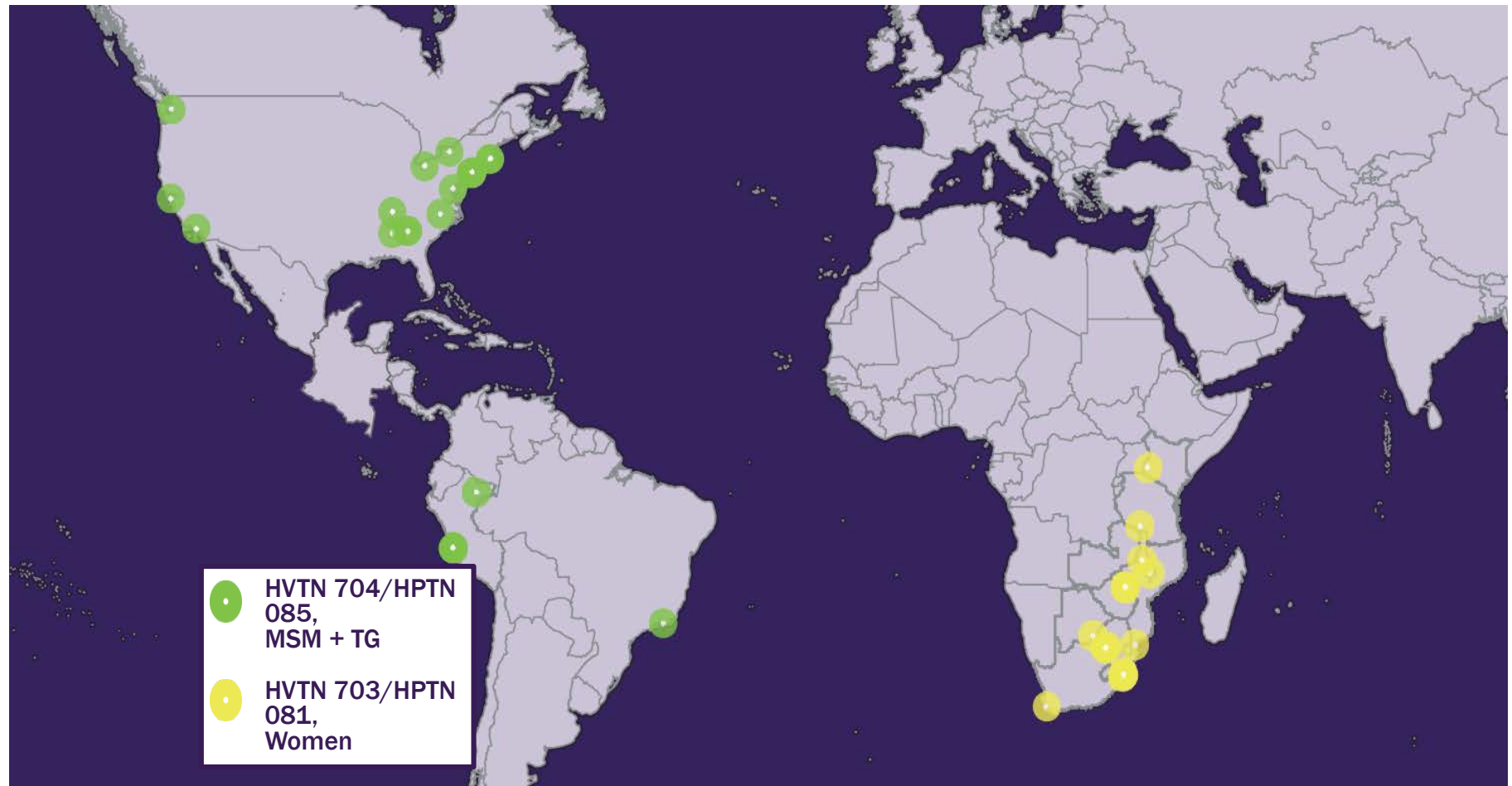
\*Provisional

Source: *MMWR* 4/2/99, 12/25/09, 3/12/2010



# AMP Studies:

## 40 Research Sites in 10 countries





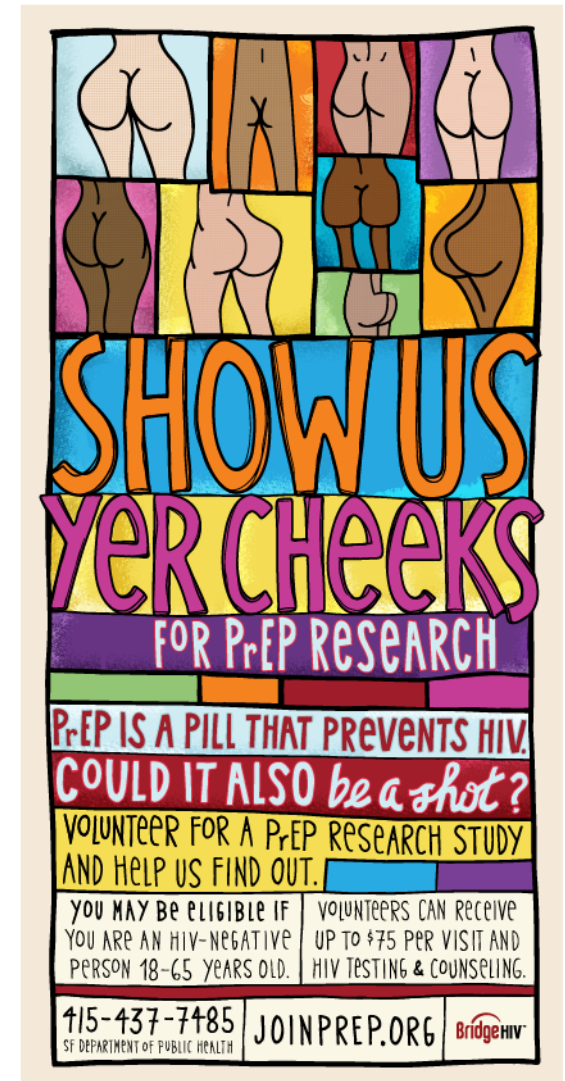
# Injectable PrEP – Advantages and Caveats

## Advantages

- Injection can be given every 2 months (rather than taking a daily pill)
- Cabotegravir (injectable PrEP) -> less concern for HIV resistance

## Caveats

- Drug levels decrease slowly over time – gone by 1 year in most, but low levels may stay in body for another 6 mo
- Cannot be removed once given → important to try oral medication before starting injections





# 4500 participants will be enrolled across 42 Study sites, 7 countries



# Microbicides

Microbicides are topical formulations (gel, lube, films, rings) to deliver PrEP

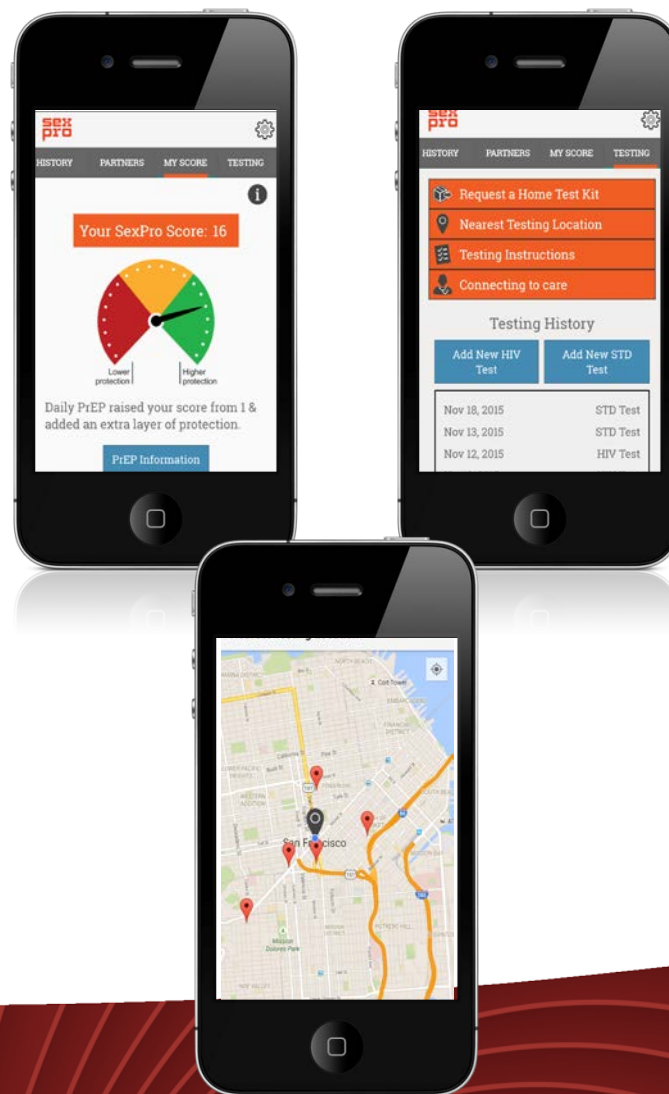
Bridge HIV has participated in microbicide studies using vaginal rings and rectal gels.

In 2016, data were released that proved that vaginal rings were effective in preventing new HIV infections.



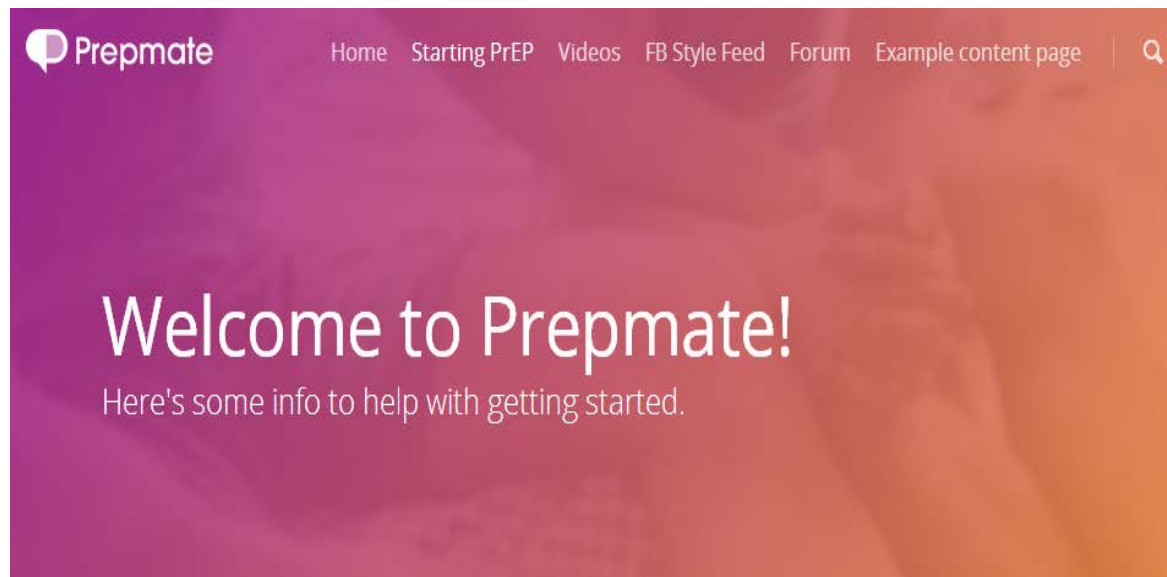
# HOME and Sex Pro: An HIV and STI testing mobile app for young Black MSM

- Objective: Increase HIV and STI screening frequency among young Black MSM in San Francisco and Oakland.
- Integration of Sex Pro, daily sex diary, home HIV testing, and home STI self-collection.



## EPIC: Enhancing PrEP In Community

- Need low-cost, scalable methods for increasing PrEP pill-taking
  - Pilot studies: MSM < 30 years and men of color **7x more likely** than older, white men to find this intervention useful for them
- Early results show those who got the intervention were **significantly more likely to take PrEP at protective levels over time**

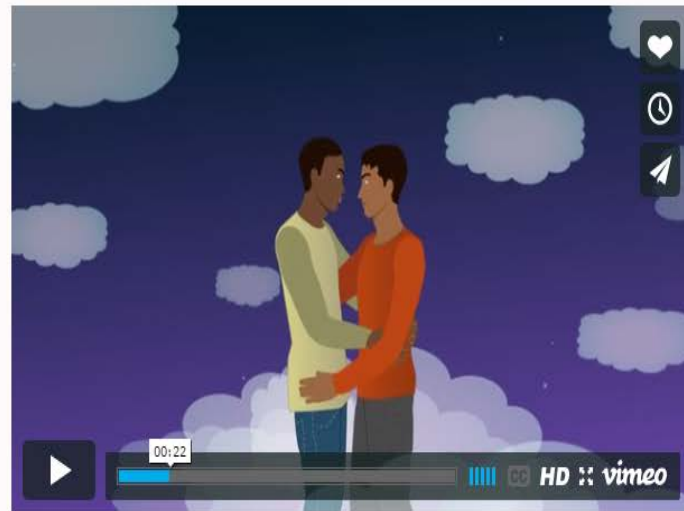


How is PrEP going?

Ok

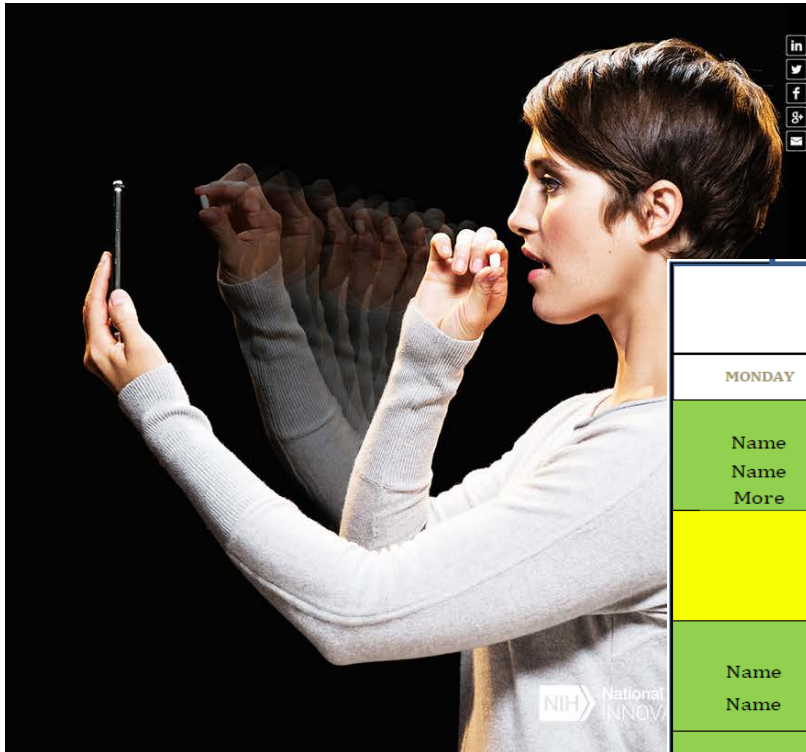
Not great.

Here are some stories from people who have taken PrEP. It's great to hear about some of the experiences other's have had. Maybe you can relate! Check 'em out! Come back to see new videos every few weeks!





# DOT Diary – Technology to Improve PrEP Pill-Taking



- Directly Observed Therapy (DOT) by phone
- Link with sexual diary
- Help determine when “protected” by PrEP

September 2016						
MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
Name Name More						
		Name				
Name Name	Name		Name		Name	
			Name	Name	Name Name More	Name Name More
		<b>Activity Summary:</b> * Number of Sex Encounters Protected by PrEP: <b>16</b> * Number of Sexual Encounters Partially-Protected by PrEP: <b>0</b> * Number of Sexual Encounters NOT protected by PrEP: <b>1</b>				



# Stay You Demonstration Project

PrEP Demonstration project for transgender people living in the Bay Area

Collaborating Sites at 4 clinics

Castro Mission (SF)

Tom Waddell Clinic (SF)

A & PI Wellness Center (SF)

Tri- City Health Center (Fremont)



Will launch a website with digital stories about PrEP and its impact on the lives of transgender people living in the San Francisco Bay Area

Study led by Bridge HIV (Al Liu) and Center for Public Health Research (Erin Wilson) at SFPDHP



# PrEP Persistence, SFDPH clinics

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- **Chart review, lab and pharmacy databases**
- **Overall persistence 67% in past year**
  - No difference by gender or age
  - By clinic, ranges 30%-100%
    - Differences in appointments, adherence to protocol, panel management
  - By race:

Race/Ethnicity	% of patients	Persistence	Median duration
Asian/Pacific Islander	8%	75%	9 months
African American	9%	50%	4 months
Latino	18%	57%	6 months
White	43%	68%	12 months
Other	19%	69%	7 months

# Thank you and Questions?

