Bridge HIV
Formerly “HIV Research Section”

Protecting and Promoting Health and Equity

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Director, Bridge HIV
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Health Commission Community Meeting
Bridge HIV

• An HIV Prevention Research unit

• Research funded by federal (NIH) and state (UC)
  • Obtained $10 million for renovations to 25 Van Ness
  • Approximately $5 million in grants/year

• Unique global research housed in local health department
  • Evaluating HIV prevention interventions and dissemination
  • Focus on addressing disparities
  • Leadership in Getting to Zero SF
HIV Prevention in Multiple Ways

- Vaccines
- Pre-exposure prophylaxis
- Other prevention modalities

Preventing HIV infections
What is an Antibody?

Antibodies are proteins made by the immune system to help fight infection.

- “Broadly Neutralizing Antibodies” (bnAbs) are rare antibodies that have been effective at stopping a wide range of HIV types from replicating.
- Found in long-term non-progressors, then synthetically manufactured.
AMP: Antibody Mediated Prevention

The AMP Study will test if a special bNAb (VRC01) against HIV will protect people from HIV infection.

Conducted in 14 sites in the US and in Africa (7 countries), South America (2 countries), Europe (1 country)

Gray: gp120
Red: CD4 binding site (CD4bs)
Purple & Green: VRC01 attached to the CD4bs
Many more antibodies in the pipeline

Epitope Specificity: Broadly Neutralizing mAbs in Development

Epitope classes have distinct neutralization profiles.

Image by Stewart-Jones, Doria-Rose, Stuckey
Adapted from Stewart-Jones et al Cell 2016 and Pancera et al Nature 2014
Thanks to VRC
Launching sister vaccine trials in women in Africa and MSM/TG in the Americas, Europe

Mosaic inserts for global coverage (Gag-Pol-Env)

Vectors that elicit optimal immune responses

Trimeric gp140 env proteins for improved humoral immunity

HVTN 705/HPX2008 will be using Clade C gp140
What is Pre-Exposure Prophylaxis (PrEP)?

- With PrEP, an HIV negative person starts anti-HIV medication before exposure to HIV and continues throughout periods of risk.
- The daily pill Truvada (TDF/FTC) was found to be safe and effective in preventing HIV and was approved by the FDA in 2012.
- Studies are now testing new medications and forms of PrEP.
Lack of PrEP persistence accentuates disparities

San Francisco Primary Care Clinics

Scott, CROI 2017, Abstract #24
Top 5 reasons why people stop PrEP

1. Self-perceived low risk

2. Cost or changes in insurance coverage

3. Medication side effects (actual or anticipated)

4. Pill fatigue

5. Difficulty adhering to provider/lab appointments
1. Assisting accurate HIV risk assessment: mysexpro.org

- Interactive, online HIV risk assessment tool for MSM using data from several large cohorts of MSM.

- Calculates HIV personalized risk score (scale 1-20, with positive frame).

- Piloted in 240 MSM in SF, NY, Lima, Rio de Janeiro

- Found to be easy to use and desirable, esp. young MSM
2. Cost and insurance issues

Receiving PrEP navigation services is associated with increased persistence in San Francisco Primary Care Clinics

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Adjusted OR</th>
<th>95% CI</th>
</tr>
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<tbody>
<tr>
<td>Transgender woman</td>
<td>0.54</td>
<td>0.37-0.76</td>
</tr>
<tr>
<td>Illicit substance use</td>
<td>0.66</td>
<td>0.50-0.87</td>
</tr>
<tr>
<td>Patient navigation</td>
<td>1.45</td>
<td>1.10-1.92</td>
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</tbody>
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3. Addressing side effects

- Patterned after the WelTel model of weekly text-message check-ins to support ARV adherence
- Impact primarily through personalized communication between participants and clinic staff

Lester et al, Lancet 2010;76:1838-45
Chiang et al, JMIR mHealth & uHealth 2018;6:e87
4. Coping with pill fatigue
5. Difficulty adhering to appointments

• Proposal: PrEP Digital Diary and Delivery (PrEP-3D)

• Developed app with digital sexual and pill taking diary to guide adherence

• Collaboration with Alto Pharmacy
  – Delivers medications throughout the Bay Area
  – Pharmacist can do prescribing, monitoring all through a practice agreement
Thank you and Questions?