New Directions in HIV Prevention

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Director of HIV Prevention
San Francisco Department of Public Health Care Council
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HIV Prevention 2010: from the Plan to Practice

- Our vision is to end new HIV infections in San Francisco
- Our goal is to reduce new HIV infections by 50% by 2015
  - We will focus efforts in populations at the greatest HIV risk: males who have sex with males, injection drug users, and transfemales who have sex with males
  - We will focus efforts in populations with large HIV disparities: African-American males who have sex with males, transfemales who have sex with males
Chronology

2010 HIV Prevention Plan completed
(October 2009)

2010 HIV Prevention Plan released
(February 2009)

HPS New Directions in HIV Prevention presented
(February 2010)

Community/provider feedback on New Directions
(February - April 2010)

HPS response to community/provider feedback on New Directions & continued dialogue
(May 2010)
Q: How does the HPPC ensure that the health department implements the priorities outlined in the HIV Prevention Plan?

A: Through the Letter of Concurrence process, in which the HPPC providers a written response describing whether the health department application does or does not, and to what degree, agree with the priorities in the Plan.
HIV Prevention Section

Core functions

- Partners with 37-member HIV Prevention Planning Council
  - Emphasis on community-based input and feedback to set priorities

- Contracts with CBOs and other agencies to provide prevention programs
  - Allocates funding in accordance with distribution of HIV epidemic
  - Monitors and evaluates who we are reaching with prevention services
  - Runs condom distribution program (1 million/year)

- Supports agencies in delivery of prevention work
  - Oversees testing, counseling, and linkages to care (17,000 HIV tests annually)
  - Assists agencies in delivery of interventions
  - Coordinates and implements health education initiatives

- Conducts prevention research
  - Develops and tests new prevention interventions
  - Performs needs assessments of specific populations
  - Disseminates research findings to prevention providers and community members

- Advocates for improved HIV prevention and treatment policy
  - Involves local, state, national stakeholders
  - Addresses both fiscal and legislative issues
Our endemics

Gay men: **Endemic**

Injection drug users: **Endemic**

Heterosexuals: **Neither epidemic nor endemic**

McFarland, 2009
Relentless inevitability of infection among San Francisco MSM

Age-Specific HIV Prevalence

Blue line = probability of infection for white MSM; red = AA MSM; McFarland 2007
New Directions for HIV Prevention

*HPS will focus on priority areas in plan*

In order to reduce new HIV infections by 50% by 2015, the HIV Prevention Plan prioritizes five areas:

- HIV status awareness
- Prevention with positives (PWP)
- Syringe access
- Drivers of HIV
- Structural change

*Source: HPPC, 2010 San Francisco HIV Prevention Plan*
Resource Allocation by BRP

- Men who have sex with men: 70-79%
- Injection drug users: 15-20% (approx. half for MSM IDU)
- Transfemales who have sex with males: 5-8%
- Females who have sex with males: 1-4%
- Men who have sex with females: <1%

Source: 2010 HIV Prevention Plan, p. 157
Combination prevention remains critical...

*Figure 1: Highly active HIV prevention*

This term was coined by Prof K Holmes, University of Washington School of Medicine, Seattle, WA, USA. STI=sexually transmitted infections.

... and increasing emphasis on testing and treatment *outcomes* is important

<table>
<thead>
<tr>
<th>Infections Averted</th>
<th>Tx&lt;500</th>
<th>Tx All</th>
<th>Test &amp; Tx All</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>1,554</td>
<td>2,169</td>
<td>2,810</td>
</tr>
<tr>
<td>2019</td>
<td>3,102</td>
<td>4,550</td>
<td>6,040</td>
</tr>
<tr>
<td>2029</td>
<td>4,940</td>
<td>8,221</td>
<td>12,189</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Percent Reduction in New Infections</th>
<th>Tx&lt;500</th>
<th>Tx All</th>
<th>Test &amp; Tx All</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>42%</td>
<td>59%</td>
<td>76%</td>
</tr>
<tr>
<td>2019</td>
<td>42%</td>
<td>61%</td>
<td>81%</td>
</tr>
<tr>
<td>2029</td>
<td>33%</td>
<td>55%</td>
<td>81%</td>
</tr>
</tbody>
</table>
Focus Area #1: HIV Status Awareness

• What will be emphasized?
  – New testing models, including those addressing fear, stigma, and other barriers to testing
  – More partner notification by DPH
  – More detection of early infection by using advanced testing technology

• Indicators of success:
  – Positivity rate and number of new positives identified
  – Frequency of testing among high-risk populations
  – Linkage to medical care for HIV-positive individuals
Clinical and Public Health Goals of Diagnosing HIV infection

- Decrease transmission
- Linkage to care
- Partner notification and testing

Percent transmission by awareness of HIV status

Slide from: Susan Philip
Need for Increased Testing

Assumptions:
- Population size estimates from the Plan
- Does not include people who are HIV+
- Assumes 80% are high-risk (assume 20% non-sexually active)
- Goal: All high-risk people test two times a year
## Test volume by site for 2007 and 2008 conventional testing*

<table>
<thead>
<tr>
<th>Site</th>
<th>2007 SFGH Lab</th>
<th>2007 Microbiology Lab</th>
<th>2008 SFGH Lab</th>
<th>2008 Microbiology Lab</th>
<th>Estimate # of active patients</th>
<th>Estimate % of patients tested in 2007</th>
<th>Estimate % of patients tested in 2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Castro-Mission HC</td>
<td>178</td>
<td>231</td>
<td>3,908</td>
<td></td>
<td>4.6%</td>
<td>5.9%</td>
<td></td>
</tr>
<tr>
<td>Maxine Hall HC</td>
<td>209</td>
<td>326</td>
<td>3,717</td>
<td></td>
<td>5.6%</td>
<td>8.8%</td>
<td></td>
</tr>
<tr>
<td>Silver Avenue HC</td>
<td>217</td>
<td>274</td>
<td>3,664</td>
<td></td>
<td>5.9%</td>
<td>7.5%</td>
<td></td>
</tr>
<tr>
<td>Chinatown Public HC</td>
<td>171</td>
<td>151</td>
<td>5,053</td>
<td></td>
<td>3.4%</td>
<td>3.0%</td>
<td></td>
</tr>
<tr>
<td>Ocean Park HC</td>
<td>32</td>
<td>43</td>
<td>2,957</td>
<td></td>
<td>1.1%</td>
<td>1.5%</td>
<td></td>
</tr>
<tr>
<td>Potrero Hill HC</td>
<td>229</td>
<td>334</td>
<td>2,648</td>
<td></td>
<td>8.6%</td>
<td>12.6%</td>
<td></td>
</tr>
<tr>
<td>Southeast HC</td>
<td>430</td>
<td>611</td>
<td>3,572</td>
<td></td>
<td>12.0%</td>
<td>17.1%</td>
<td></td>
</tr>
<tr>
<td>Tom Waddell HC</td>
<td>263</td>
<td>517</td>
<td>518</td>
<td>753</td>
<td>14.4%</td>
<td>23.5%</td>
<td></td>
</tr>
<tr>
<td>Curry Senior Center</td>
<td>43</td>
<td>78</td>
<td>1,396</td>
<td></td>
<td>3.1%</td>
<td>5.6%</td>
<td></td>
</tr>
<tr>
<td>Cole Street Youth</td>
<td>13</td>
<td>32</td>
<td>971</td>
<td></td>
<td>4.6%</td>
<td>2.5%</td>
<td></td>
</tr>
<tr>
<td>Larkin Street Youth</td>
<td>25</td>
<td>17</td>
<td>802</td>
<td></td>
<td>5.2%</td>
<td>7.5%</td>
<td></td>
</tr>
<tr>
<td>Balboa Teen HC</td>
<td>4</td>
<td>3</td>
<td>175</td>
<td></td>
<td>2.3%</td>
<td>1.7%</td>
<td></td>
</tr>
<tr>
<td>Housing/Urban Health</td>
<td>377</td>
<td>397</td>
<td>1,147</td>
<td></td>
<td>32.9%</td>
<td>34.6%</td>
<td></td>
</tr>
<tr>
<td>Children's Health -6M</td>
<td>195</td>
<td>232</td>
<td>8,522</td>
<td></td>
<td>2.3%</td>
<td>2.7%</td>
<td></td>
</tr>
<tr>
<td>Positive Health</td>
<td>248</td>
<td>179</td>
<td>2,378</td>
<td></td>
<td>10.4%</td>
<td>7.5%</td>
<td></td>
</tr>
<tr>
<td>Family Health Center</td>
<td>932</td>
<td>1,280</td>
<td>10,294</td>
<td></td>
<td>9.1%</td>
<td>12.4%</td>
<td></td>
</tr>
<tr>
<td>GMC</td>
<td>538</td>
<td>566</td>
<td>5,417</td>
<td></td>
<td>9.9%</td>
<td>10.4%</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>4,104</strong></td>
<td><strong>603</strong></td>
<td><strong>5,285</strong></td>
<td><strong>811</strong></td>
<td><strong>62,019</strong></td>
<td><strong>7.6%</strong></td>
<td><strong>9.8%</strong></td>
</tr>
</tbody>
</table>

*Figures do not include the 678 point of care tests performed in one clinic in 2008

Source: Janet Myers, et al., 2010
Focus Area #2: Prevention with Positives (PWP)

• What will be emphasized?
  – Results that measure positive health outcomes
  – Increased PWP in HIV medical care settings
  – Focus on persons at high-risk for transmitting HIV
  – Models that address barriers to care, including stigma, fear, discrimination, etc.

• Indicators of success:
  – Engagement and retention in care
  – Treatment adherence
  – Viral load suppression
Viral Load and Risk of Transmission

Quinn, et al., *NEJM*, 2000
ART and HIV-1 transmission

<table>
<thead>
<tr>
<th></th>
<th>Linked HIV-1 infection</th>
<th>Person Years</th>
<th>Rate</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>No ART initiated</td>
<td>102</td>
<td>4558</td>
<td>2.24</td>
<td>(1.84-2.72)</td>
</tr>
<tr>
<td>After ART initiation</td>
<td>1</td>
<td>273</td>
<td>0.37</td>
<td>(0.09-2.04)</td>
</tr>
</tbody>
</table>

Unadjusted Relative Risk = 0.17 (95% CI 0.004, 0.94), p = 0.037

Adjusted* Relative Risk = 0.08 (95% CI 0.002, 0.57), p = 0.004

* For time on study and CD4 count

Case: ART-exposed HIV-1 transmission

Enrollment
CD4: 302
log_{10} VL: 4.7

3mo
CD4: 201
log_{10} VL: 4.7

6mo

9mo
HIV-
ART

12mo
HIV+

637
undet.

Focus Area #3: Syringe Access

• What will be emphasized?
  – Harm reduction
  – Provision of support services with syringe access

• Indicators of success:
  – Number of syringes/sterile equipment distributed
  – Number of contacts made
Focus Area #4: Drivers of HIV

• Plan definition of a driver:
  - Prevalence of 10% or greater in highest-risk populations
  - Independently associated with a minimum 2-fold increase in risk for HIV infection

• What will be emphasized? Drivers in the Plan:
  - Cocaine/crack
  - Methamphetamine
  - Poppers
  - Gonorrhea
  - Heavy alcohol use
  - Multiple partners

• Indicators of success for programs focusing on drivers:
  - Linkage to testing
  - Linkage to care
  - Reduction in drivers

• All HPS-supported programs will focus on one or more drivers
Conceptual Model: Substance Use as a Causal Factor for HIV

- Altered Mental State
- Loss of Muscle Control
- Decreased Experience of Pain
- Enhanced Sexual Function, Desires, or Confidence
- Vasodilation
- Injection Administration

Reduced Condom Use
Increased Unprotected Anal Intercourse

Increased Number of Partners or Duration of Sexual Activity

Increased Tissue Damage or Bleeding
Blood-Blood Contact
Blood-Semen Contact

Needle Sharing

Increased Risk of STI/HIV Acquisition

Drumright, et al., 2006
# Trends in Substance Use, San Francisco

<table>
<thead>
<tr>
<th>Drug</th>
<th>Ever 2004</th>
<th>2004 $\geq$ Weekly</th>
<th>Ever 2008</th>
<th>2008 $\geq$ Weekly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methamphetamine</td>
<td>22%</td>
<td>6%</td>
<td>13%</td>
<td>3%</td>
</tr>
<tr>
<td>Cocaine</td>
<td>17%</td>
<td>2%</td>
<td>24%</td>
<td>2%</td>
</tr>
<tr>
<td>Crack</td>
<td>4%</td>
<td>1%</td>
<td>4%</td>
<td>1%</td>
</tr>
<tr>
<td>Hallucinogens</td>
<td>5%</td>
<td>.06%</td>
<td>9%</td>
<td>0%</td>
</tr>
<tr>
<td>Poppers</td>
<td>20%</td>
<td>5%</td>
<td>19%</td>
<td>4%</td>
</tr>
<tr>
<td>Heroin</td>
<td>.3%</td>
<td>0</td>
<td>.6%</td>
<td>0</td>
</tr>
</tbody>
</table>
Intertwining Epidemics among Urban MSM

(Significant OR estimates, controlling for age, education, race, income, HIV status and sexual risk)

<table>
<thead>
<tr>
<th></th>
<th>Childhood Sex Abuse</th>
<th>Partner Violence</th>
<th>Depression</th>
<th>Substance Abuse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Childhood Sex Abuse</td>
<td>&quot;&quot;</td>
<td>1.9</td>
<td>1.9</td>
<td></td>
</tr>
<tr>
<td>Partner Violence</td>
<td>1.9</td>
<td>&quot;&quot;</td>
<td>1.6</td>
<td>2.2</td>
</tr>
<tr>
<td>Depression</td>
<td>1.9</td>
<td>1.6</td>
<td>&quot;&quot;</td>
<td>1.4</td>
</tr>
<tr>
<td>Substance Abuse</td>
<td>2.2</td>
<td>1.4</td>
<td>&quot;&quot;</td>
<td></td>
</tr>
</tbody>
</table>

From Stall et. al
Focus Area #5: Structural Change

• Plan definition: “New or modified programs, practices, or policies that are logically linkable to HIV transmission and acquisition and that can be sustained over time even when key actors are no longer involved.”

• What will be emphasized?
  – HIV and STI screening and referral as standard of care in medical settings for persons at risk for HIV
  – Universal healthcare coverage for PLWHA
  – Non-harassment policies for drug paraphernalia
  – Client-level linkages to Healthy SF for comprehensive healthcare across all our HIV prevention programs

• Outcome: Structural changes that positively influence one of the other focus areas, or that are associated with declines in HIV incidence
Ensuring coordination and linkages of services

- Moving towards a name-based reporting system
  - Necessary to examine linkage and coordination of services across programs
  - Allows follow-up of clients over time who may access different services at different times
  - Valid concerns re: confidentiality, burden, cost - these will be addressed

- Together we can do this: CTL, HIV Health Services, all DPH clinics, Behavioral Health programs have name-based reporting systems
Provider/Community Input

• 2 public meetings
• 4 provider meetings
• 2 HPPC meetings
• 2 health disparities meetings:
  – African American Action Plan working group
  – Transgender Advisory Group
• Presentations/discussions by request
  – Health Commission, HIV/AIDS Providers Network (HAPN), Latino providers
• One-on-one meetings with Grant and other HPS staff
2005-present

- CTL (25%)
- HERR (40%)
- PWP (25%)
- Syringe Access (10%)

Original New Directions Proposal

- Status Awareness (50%)
- Behavioral Health (15-20%)
- Syringe Access (10-15%)
- PWP (15-20%)

Revised New Directions Proposal

- Will better represent HERR efforts
- Will include new HERR to address gaps
Next steps...

• Ongoing community and provider meetings to discuss and get input on these direction
• Refinement of data systems to collect programmatic outcome data
• RFP release in 2010, new contracts in 2011
Conclusion

• The New Directions represents a structural approach to addressing new HIV infections
• The new directions represents the canvas for 2010 and beyond...We want to paint the picture together