HIV in the US in 2010 and Beyond
--Where We’re Going (I Think…)

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Clinical Lead, HIV/AIDS, Care Management Institute
At the conclusion of this presentation, you should be able to:

- Identify the clinical implications that the key elements of President Obama's HIV/AIDS principles will have on your practice.
- Utilize HIV quality performance measures to assess and identify areas for improvement in the care of individuals with HIV in your practice.

I do not intend to discuss any non-FDA-approved or investigational uses of any products/devices in this presentation.
“When one of our fellow citizens becomes infected with HIV every nine-and-a-half minutes, the epidemic affects all Americans.”

--President Barack Obama
The Continuing HIV/AIDS Epidemic in the US

New Infections, 2006: ~56,000

People Living with HIV/AIDS: ~1,100,000

People with HIV/AIDS Not In Care: ~42-59%

People with HIV Who Don't Know They Are Infected: ~21%

NOTE: Data are estimates.
Some HIV Rates in US Rival Africa

HIV Prevalence in Adults from Selected Countries in Sub-Saharan Africa and Subpopulations in the United States.

Data are from the Centers for Disease Control and Prevention, the District of Columbia Department of Health, the New Jersey Department of Health, the New York City Department of Health and Mental Hygiene, and the Joint United Nations Program on HIV/AIDS (UNAIDS). MSM denotes men who have sex with men.

Numbers of Reported AIDS Cases According to Metropolitan Statistical Area of Residence, Cumulative through 2007

## HIV Demographics

<table>
<thead>
<tr>
<th></th>
<th>United States</th>
<th>VA</th>
<th>KP</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Year</strong></td>
<td>2006</td>
<td>2008</td>
<td>2009</td>
</tr>
<tr>
<td><strong>Number HIV+</strong></td>
<td>1,100,000 (est.)</td>
<td>23,463</td>
<td>19,170</td>
</tr>
<tr>
<td><strong>% Female</strong></td>
<td>25%</td>
<td>3%</td>
<td>*13%</td>
</tr>
<tr>
<td><strong>% Black</strong></td>
<td>50%</td>
<td>50%</td>
<td>*~18%</td>
</tr>
<tr>
<td><strong>% Latino</strong></td>
<td>20%</td>
<td>7%</td>
<td>*15-25%</td>
</tr>
<tr>
<td><strong>% &gt;50 years of age</strong></td>
<td>27%</td>
<td>64%</td>
<td>35%</td>
</tr>
</tbody>
</table>

*--Varies significantly by state

Sources: CDC, KFF, VA, KP
Estimated New HIV Infections in the United States by Select Characteristics, 2006

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Age</th>
<th>Transmission Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>13-29</td>
<td>MSM-IDU 4%</td>
</tr>
<tr>
<td></td>
<td>34%</td>
<td></td>
</tr>
<tr>
<td>Latino</td>
<td>30-39</td>
<td>IDU 12%</td>
</tr>
<tr>
<td></td>
<td>31%</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>40-49</td>
<td>Heterosexual 31%</td>
</tr>
<tr>
<td></td>
<td>25%</td>
<td></td>
</tr>
<tr>
<td>Other 3%</td>
<td>50+</td>
<td>80% of women</td>
</tr>
<tr>
<td></td>
<td>10%</td>
<td></td>
</tr>
</tbody>
</table>

NOTE: MSM=Men who have sex with men (gay and bisexual men); IDU=Injection drug users.
Low Risk but Greater Infection Rates: Heterosexual Black Adults

(Hallfors et al., 2006)
Disparities in HIV Care can be Overcome

Silverberg, et. al., JGIM, 2009;24:1065-72.
Estimated Numbers of Perinatally Acquired AIDS Cases, by Year of Diagnosis, 1985–2007—United States and Dependent Areas

A great success!

Note: Data have been adjusted for reporting delays and missing risk-factor information.
President Obama’s Primary HIV Goals

- Prevent New HIV Infections
- Increase Access to Care and Optimize Health Outcomes
- Reduce HIV-Related Health Disparities

http://www.whitehouse.gov/sites/default/files/microsites/ONAP_rpt.pdf
### The Way There?

**AIDS Community Suggestions**

<table>
<thead>
<tr>
<th>Suggestions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Create a National Campaign to Increase Public Awareness and Prevention of HIV</strong></td>
</tr>
<tr>
<td><strong>Increase Prevention Efforts Among Youth</strong></td>
</tr>
<tr>
<td><strong>Routinize, Increase, and Improve Testing</strong></td>
</tr>
<tr>
<td><strong>Increase Access to Condoms</strong></td>
</tr>
<tr>
<td><strong>Eliminate the Ban on Federal Funding for Syringe Exchange</strong></td>
</tr>
<tr>
<td><strong>Increase Harm Reduction and Treatment Adherence Education</strong></td>
</tr>
<tr>
<td><strong>Improve and Expand Surveillance Data</strong></td>
</tr>
<tr>
<td><strong>Expand Support Services</strong></td>
</tr>
<tr>
<td><strong>Include Chronic Disease Management in Overall Health Care Delivery</strong></td>
</tr>
<tr>
<td><strong>Recognize and Treat Co-occurring Conditions</strong></td>
</tr>
<tr>
<td><strong>Increase the Number of HIV Care Providers and HIV/AIDS Education and Training</strong></td>
</tr>
<tr>
<td><strong>Expand Services to At-Risk Populations</strong></td>
</tr>
<tr>
<td><strong>Provide Culturally and Linguistically Appropriate Services and Interventions</strong></td>
</tr>
<tr>
<td><strong>Improve Availability of HIV-Related Services in Rural Areas and U.S. Territories</strong></td>
</tr>
</tbody>
</table>
Crosscutting Themes and Recommendations

- Evaluation and Program Monitoring
- Coordination Across Agencies, States, Communities, and Providers
- Stigma and Discrimination
- Policy and Research
Step 1: Identifying Undiagnosed and Prevent New Infections

- These two points cannot be separated
- Test patients for HIV
  - Remove testing barriers
  - Routinize testing
- Counsel patients on how to prevent HIV
  - However, not tied to testing anymore
- “Sexual health as a vital sign”?

- Can’t treat HIV if you haven’t diagnosed it
  - Repeat regularly if risk behavior present

CDC, MMWR, September 22, 2006 / 55(RR14):1-17
Community VL predicts HIV incidence

Wood E et al. BMJ. 2009 Apr 30;338:b1649
Prognosis on Treatment

Normal life span ONLY if patient is on effective ART for many years and sustained a normal CD4 count (>500/µL)

<table>
<thead>
<tr>
<th>CD4+ Nadir</th>
<th>Life-expectancy for HIV-infected patients*</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;100</td>
<td>+32 years</td>
</tr>
<tr>
<td>100-200</td>
<td>+42 years</td>
</tr>
<tr>
<td>&gt;200</td>
<td>+50 years</td>
</tr>
</tbody>
</table>

* The number of additional years of life expectancy at age 20

Improving, BUT, at best, this represents barely over 20% of KP population tested ever for HIV.
What should we tell our colleagues?  
i.e. “Training the Trainer”

- 1 in 5 of HIV+ don’t know it, causing most new transmissions  (CDC, 2006)
- 43% newly diagnosed met AIDS criteria, but in the system for some time  (Klein, 2004)
- Prevention of perinatal transmission  (CDC, 2006)
- Improved prognosis  (Hogg, 2008)
- Don’t be afraid to speak to your patients regardless of their (or your) age
- Screen for other STI as appropriate
Barriers to Testing

Guidelines Conflicts

- **CDC Guidelines** (CDC, 2006)
  
  Routine testing of all Americans aged 13-64
  
  However, no consideration of older Americans and risk assessment
  
  Recommend verbal consent

- **USPSTF Guidelines**
  
  No recommendation for routine testing (C Level)
  
  Recommend at-risk testing (A Level)
  
  All pregnant women (A Level)
  
  Evidence-based but too restrictive

- Professional societies are not uniform in opinion
Barriers to Testing (continued)

- Written informed consent considered hardship by providers
  - Time consuming, burdensome
  - Not for other sexually transmitted infections or routine blood tests
  - 40+ states DC, and VA no longer require written consent

- Only California and DC mandate coverage of testing costs

- Medicare now covering *targeted* HIV testing

- Preventive services included in healthcare reform
Potentially, the biggest barrier to testing
Lack of Quality Metrics

- No nationally accepted metric on HIV testing
  - None in HEDIS, AMA PQRI
  - VA and KP measure stage of disease at time of diagnosis
- There are HIV care metrics
- Many have called for HIV testing measurements

Again, you can’t treat if not diagnosed
## Step 2: Linking Patients to Care

### Table: Deaths and Deaths Averted

<table>
<thead>
<tr>
<th>Time Frame</th>
<th>Deaths</th>
<th>Deaths Averted</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>No Strategy</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>269,000</td>
<td>0</td>
</tr>
<tr>
<td>2030</td>
<td>263,000</td>
<td>0</td>
</tr>
<tr>
<td>2008-2050</td>
<td>11,078,000</td>
<td>0</td>
</tr>
</tbody>
</table>

**ART at <350/µL and TLC+**

<table>
<thead>
<tr>
<th>Time Frame</th>
<th>Deaths</th>
<th>Deaths Averted</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>165,000</td>
<td>104,000</td>
</tr>
<tr>
<td>2030</td>
<td>76,000</td>
<td>187,000</td>
</tr>
<tr>
<td>2008-2050</td>
<td>3,879,000</td>
<td>7,199,000</td>
</tr>
</tbody>
</table>

**ART at <350/µL, TLC+, and Preventive Medicine**

<table>
<thead>
<tr>
<th>Time Frame</th>
<th>Deaths</th>
<th>Deaths Averted</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>164,000</td>
<td>105,000</td>
</tr>
<tr>
<td>2030</td>
<td>72,000</td>
<td>191,000</td>
</tr>
<tr>
<td>2008-2050</td>
<td>3.727,000</td>
<td>7,350,000</td>
</tr>
</tbody>
</table>

### San Francisco Data

<table>
<thead>
<tr>
<th>Category</th>
<th>N</th>
<th>Percent</th>
<th>Mean CVL*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total for City</td>
<td>12,512</td>
<td>100</td>
<td>23,348</td>
</tr>
<tr>
<td>African-American</td>
<td>1825</td>
<td>15</td>
<td>26,404</td>
</tr>
<tr>
<td>Women</td>
<td>786</td>
<td>6</td>
<td>27,614</td>
</tr>
<tr>
<td>Transgender</td>
<td>291</td>
<td>2</td>
<td>64,160</td>
</tr>
<tr>
<td>IDU</td>
<td>1011</td>
<td>8</td>
<td>33,245</td>
</tr>
<tr>
<td>MSM-IDU</td>
<td>1791</td>
<td>14</td>
<td>36,261</td>
</tr>
<tr>
<td>Not on treatment</td>
<td>2924</td>
<td>23</td>
<td>40,056</td>
</tr>
<tr>
<td>Not in care</td>
<td>4637</td>
<td>37</td>
<td>36,992</td>
</tr>
</tbody>
</table>

Das, 2010
Accessing Care: “TLC+”

- 42-59% HIV+ in US are not in care
  - Includes undiagnosed and lost to follow-up
  - Greater risk of late entry for older Americans and males

- Testing and then **Link to Care**
  - Every American knows their HIV status
  - Critical step that has many potential and REAL gaps
    - Including those lost from care
  - Care means evaluation for ART and earlier use of ART
  - Increased ART adherence efforts
  - “Prevention for Positives”

- Unlike VA or KP, testing is often uncoupled with care systems

Van Gorder, 2010; Klein, et.al., *JAIDS*, 2003; Althoff, et.al., *CID*, 2010
Step 3: Not *Just* Accessing Care

- Accessing care should mean accessing *high quality HIV care*
  - What does this mean?
  - Who is qualified to deliver such care?
  - How can we assure that quality care is being delivered?

- Again, not all guidelines agree

- Likely key element of implementation of national HIV/AIDS strategy
Step 3: Not *Just* Accessing Care (continued)

- But who decides what is quality care?
  - Professional societies, government?
  - Coalition

- Who is held accountable?
  - And how—monetarily?

- Must have consistency across service systems
  - Public and Private
  - Measures and reporting should be “harmonious”

- Do we have the capacity?
And we can make a difference: But must treat the whole patient

- From the KP/GHC HIV, Depression and SSRI Study:
  (all results compared to non-depressed patients)

- **Adherence**
  - Depression OR achieving ≥90% adherence=0.81 (p=0.03)
  - If >80% adherent to SSRI: OR=1.13 (0.39)

- **HIV RNA <500 copies/mL**
  - Depression OR=0.77 (p=0.02)
  - If >80% adherent to SSRI: OR=0.95 (p=0.76)

- **Change in CD4 T-cell count at 12 months**
  - Depressed patients: -19 cells/µL (p=0.17)
  - If adherent >80% to SSRI: +19 cells/µL (p=0.10)

*All results significant comparing depressed patients to compliant SSRI patients*

Horberg, et. al., *JAIDS*, 2008; 47:384-390
**Managing Co-Morbidities (N=199)**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Manage myself</th>
<th>Refer to Primary Care</th>
<th>Refer to Specialist</th>
<th>Not applicable</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coronary Heart Disease</td>
<td>103</td>
<td>55</td>
<td>100</td>
<td>12</td>
<td>3</td>
</tr>
<tr>
<td>Diabetes</td>
<td>131</td>
<td>64</td>
<td>56</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>Hyperlipidemia</td>
<td>155</td>
<td>52</td>
<td>25</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>Renal Disease</td>
<td>92</td>
<td>32</td>
<td>145</td>
<td>10</td>
<td>2</td>
</tr>
</tbody>
</table>

Office of Public Health, VHA, 2010
Gap in Care Data—Opportunities for Improvement

- **Screening for HIV**
  - HIV testing (<30% in KP; 38-44% ever tested in US)

- **Preventive services**
  - PCP Prophylaxis (<90% in VA or KP)
  - Immunizations (HCSUS—only 34% flu shots)
  - Screening for high risk behavior (evidence suggests lacking compliance with this)

- **Management**
  - CD4+ monitoring (HIVQUAL—only 77% at best)
  - Use of potent anti-retroviral therapy (KP—79%)

- **Intermediate Outcomes**
  - HIV viral load (varying groups report <50% to >80% maximal viral control of patients on ART)

Chou, Korthuis, Huffman, Smits, *Screening for HIV in Adolescents and Adults*, AHRQ USPSTF, July, 2005;
Quality Measure Development

- Categories of Quality Measures
  1. Screening and Diagnosis Measures
     Examples are HIV testing rates, “smoking as a vital sign”
  2. Process (Management) Measures
     Examples are Accessing Care, PCP prophylaxis
  3. Outcome Measures
     Examples are HIV maximally controlled, mortality

- Measures can be for an individual provider or a whole system

Some systems report as an individual provider
No HIV diagnosis or access to care measure

Other Screening Measures
1. TB Screening (Provider level)*
2. STI—gonorrhea/chlamydia (Provider)*
3. STI—syphilis (Provider) (that year)
4. Hepatitis B screening (Provider)*
5. Hepatitis C screening (Provider)*
6. Injection drug use (Provider) (that year)
7. High risk sexual behavior (Provider) (that year)*

---at least once
Process Measures

1. Medical Visit (System and Provider level)
   Measures retention in care

2. CD4 cell count twice yearly (Provider)
3. PCP prophylaxis if CD4<200 (Provider)
4. ART prescription if CD4<350 (Provider)
5. Influenza immunization yearly (Provider)
6. Pneumococcus immunization ever (Provider)
7. Hepatitis B vaccination (Provider and System)
   Provider—once only; System—all three vaccinations
Outcome Measures

1. HIV RNA control for all patients on ART (System)
   To below limits of quantification for lab used

2. HIV RNA control after six months on ART (Provider)
   Accountability measure as needs documentation of plan if patient’s HIV RNA above limit of quantification
Other Potential Measures

1. Number of Persons Tested
   1) All persons?
   2) Those at greatest Risk?
   3) Ever or within a certain time period?

2. Stage of Disease at time of Diagnosis

3. Accessing Care
   1) Within a certain time period?
   2) US or municipality?

4. Mortality—the ultimate outcome measure
KP HIV Care Quality Measures (2007 data)

- **Diagnosing HIV**
  - 55.8% tested for HIV if diagnosed with STI
  - 27.1% new HIV+ met AIDS criteria (CD4< 200/µL)

- **Process Measures**
  - 88.6% newly identified HIV+ in care within 90 days
  - 76.8% seen at least twice annually (retention in care)*
  - 86.3% CD4 test at least every 6 months*
  - 68.0% CD4 <200/µL given PCP prophylaxis*
  - 86.8% appropriately given ART*
  - Median adherence 93.8% HIV+ on ART

- **Outcome Measure**
  - 92.9% HIV+ on ART with maximal viral control*
VA HIV Care Quality Measures (2008 data)

- 79% with VL/CD4 in last 6 months
- 31% met AIDS criteria at entry into registry*
  - 14% met AIDS criteria—all HIV+
- 86% appropriate PCP prophylaxis
- 72% ever pneumococcal vaccination
- 77% Hepatitis B immune or vaccinated
- 96% Hepatitis C screened
- 83% HIV+ on ART with maximal viral control

*--Either newly diagnosed or transferred into VA

Key Elements of Success

- Multidisciplinary care team model
  - HIV specialist (can also serve as primary care)
  - Care manager
  - Clinical pharmacist
  - Designated allied professionals

- Electronic Medical Record
  - Shared information
  - HIV registry for practice management
  - Systematic use of high quality data

- Generating QI programs from recognized gaps
Step 4: Retaining Patients in Care

- Important area of focus
  - Especially as it relates to special populations

- Again, many potential gaps
  - Change or lose insurance
  - Moving
    - Healthcare reform helps here

- Not comfortable with clinician
  - Lack of knowledge
  - Too specialized
  - Stigma (again that word!)

- Lack of access to care in patient’s area
(Re-)New Interest in “Medical Home”

- Emphasis on integrated, multi-disciplinary care
  - HIV Specialist (ID or primary care) as “specialty leader”
  - Case manager and care management
  - Often clinical pharmacist, benefits coordinator, mental health
  - Can be physically in one place or connected by technology

- Has been an element in HIV care
  - Ryan White C clinics, VA, KP

- Not much research
  - Some research but pre-combination ART (Le, 1998, Sherer, 2002)
  - HIV Specialist improved outcomes (Kitahata 2000, Delgado 2003)
  - HIV clinical pharmacist (Horberg 2007)
Even Initial Regimens Have High Costs

Median total costs/year (KP)—1st/2nd regimen: $24,600
3rd or greater regimen: $36,300

Figure 2. Average cost per category--3rd or later ART regimen, 1999-2004

Figure 3. Average cost by category--1st or 2nd ART regimen, 1999-2004

Meenan, et. al., XVII IAC, 2008, Mexico City
Health Care Coverage HIV+--National

This should decrease with HCR

Step 5: Remove Disparities

- Stigma is rampant in HIV
  - Both at testing and at accessing care
- Patients must feel valued, at ease, and have faith in healthcare providers
- Community must support HIV+ patients and those at risk
  - Faith based organizations can assist here
  - Public-private partnerships likely of use
- Standards of care can help if established and enforced
Step 5: Remove Disparities (continued)

- Need to improve outreach to youth and older Americans
  - Consider newer technologies (do you tweet?)
  - Go to where they are; not where you are
- Remove language barriers and health illiteracy
- Consider gender issues
- STOP HOMOPHOBIA AND RACISM!!!
Healthcare Reform and HIV

- It will increase the number of people in care
  - But likely not until 2014
- It removes pre-existing condition clauses
- It promotes community healthcare
- It promotes prevention (USPSTF “A”, “B”)
- It mandates care for many

There are gaps between HCR and HIV needs
National HIV/AIDS Strategy

- First domestic HIV strategic plan
  - Akin to PEPFAR and US Global AIDS Strategy
- It will set goals based on the President’s principles for HIV care in US
- Implementation will be key
  - Coordination of federal agencies (including VA)
  - Coordination of Public and Private
  - PACHA will have role (citizens’ representation)
“Working together, I am confident that we can stop the spread of HIV and ensure that those affected get the care and support they need.”

--President Barack Obama

The great work continues. Thank you.
ARS Question
Special Thanks

Drs. Kathleen Squires and John Brooks
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- Greg Millett

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- Leo Hurley
- Daniel Klein
- Michael Silverberg
- William Towner

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- Dana Van Gorder

Slide 50