Overview

• Disparities in AIDS health services

• Factors explaining disparities in services

• Health consequences of disparities and barriers
## U.S. AIDS Death Rates by race
(per 100,000 Population)

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>4</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Black</td>
<td>27</td>
<td>42</td>
<td>14</td>
</tr>
<tr>
<td>Hispanic</td>
<td>9</td>
<td>14</td>
<td>4</td>
</tr>
<tr>
<td>American Indian / Alaska Native</td>
<td>3</td>
<td>4</td>
<td>Unknown</td>
</tr>
<tr>
<td>Asian Pacific Islander</td>
<td>1</td>
<td>2</td>
<td>Unknown</td>
</tr>
</tbody>
</table>

*NCHS 1999*
HCSUS Was the Only Nationally Representative Study of People in care for HIV/AIDS (1996-99)

Stage 1: Random areas

Stage 2: Random providers

Stage 3: Random patients
Disparities in AIDS
Health Services

- Insurance coverage
- Outpatient
- Emergency Room
- Hospital Care
- Medications
Insurance Profile of Adults Living with HIV in Care by Race/Ethnicity

Insurance Profile of Adults Living with HIV in Care by Race/Ethnicity

- **Other Latino**: 15%
- **African American**: 20%
- **White non-Hispanic**: 49%
- **Private Medicare Uninsured**: 32%
- **Medicaid (with or without other insurance)**: 29%
- **Medicare**: 19%
- **Uninsured**: 20%

Bozzette, *NEJM* 1998
Disparities in Outpatient Visits and Protease Inhibitor Use

Shapiro et al., *JAMA* 1998  all P<.01
Proportion Using Emergency Room without Associated Hospitalization

- Whites: 18%
- Blacks: 30%
- Hispanics: 26%
- Men: 21%
- Women: 32%
- MSM: 19%
- IDU: 30%
- Heterosexual: 27%

Shapiro, et al. JAMA 1999 all p<0.05
Expenditures for Medications vs. Hospital Care by Race

Bozzette, et al.  *NEJM* 2001 All  p<.01
Percent Ever Using HAART by Vulnerable Characteristics

- Whites: 78%
- Blacks: 59%
- Men: 74%
- Women: 61%
- MSM: 78%
- IDU: 78%
- High Income: 79%
- Low Income: 65%

Cunningham, et al., JAIDS 2000, all p<0.01
Percent of Blacks and Whites Who Ever Received HAART

Cunningham, et al., JAIDS 2000  Both  p <.001
Percent Adhering “all of the time” to Antiretroviral Medications

Wenger, et al., SGIM 2000 abstract;  p<.001
Multivariate Association of Race with Adherence

All P<.01

Wenger, et al., In Progress Adherence paper 121801
Percentage With Access to Important Preventive Medications

Among those meeting criteria. Asch et al. JAIDS 2001; Both p < .001
Factors That Help Explain Disparities in Care

- Setting of care
- Access to clinical trials
- Patient attitudes
- System and provider factors
- Competing subsistence needs
- Lack of supportive services / case-management
Greater than 3 months’ delay from HIV diagnosis to first HIV medical care by race, exposure (%)

- White: 26%
- Black: 31%
- Hispanic: 34%
- Heterosexual: 27%
- IDU: 36%
- MSM: 24%

Percent

Turner, Cunningham et al. *Archives* 2000   all p<0.05

I:\docs\bcunnham\grand rounds\REM HIV Disparities\REM HIV Disparities NashvilleNov2004  FINAL
Adjusted Odds of Access to an HIV Clinical Trial by Patient Characteristics

- White: 1.0
- Black: 0.5
- Hispanic: 0.6
- College Graduate: 1.0
- Some College: 0.7
- High School Graduate: 0.5
- <High School Education: 0.6

Gifford, Cunningham et al. NEJM 2002, all p<.01
Participation in a HIV Clinical Trial by Level of Trust in Providers and Distance from Center of Excellence

Gifford, Cunningham, et al. NEJM 2002  P-value <.05
System and Provider Factors Help Explain Disparities in HAART Use (%)

- Private Insurance: 63%
- Medicaid: 47%
- Uninsured: 50%
- Provider Experienced: 54%
- Not Experienced: 44%

Cunningham, et al., AHSR 1999 all p<0.05
Percent of Women Who Received Needed Pap Smear or Colposcopy by Patient and System Characteristics

Stein, et al., JAIDS 2000   all  p<0.05
## Days Until First Protease Inhibitor Use by Patient-Provider Race Groups

<table>
<thead>
<tr>
<th></th>
<th>White Providers</th>
<th>Black Providers</th>
<th>White Providers</th>
<th>Black Providers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>White Patients</td>
<td>Black Patients</td>
<td>White Patients</td>
<td>Black Patients</td>
</tr>
<tr>
<td>Unadjusted</td>
<td>278</td>
<td>443***</td>
<td>206</td>
<td>419**</td>
</tr>
<tr>
<td>Adjusted for patient characteristics</td>
<td>353</td>
<td>461**</td>
<td>251</td>
<td>342</td>
</tr>
<tr>
<td>Adjusted for patient and provider characteristics</td>
<td>377</td>
<td>460*</td>
<td>227</td>
<td>285*</td>
</tr>
<tr>
<td>Adjusted for patient, provider, and attitude characteristics</td>
<td>383</td>
<td>467*</td>
<td>223*</td>
<td>288*</td>
</tr>
</tbody>
</table>

Source: JGIM 2004; 19:1146-1153. King et al. Racial Concordance and Receipt to Protease Inhibitors

P value: * < .05  
** < .01  
*** < .001
### Days Until First Protease Inhibitor Use Among Selective Providers

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Predicted Median Days to First PI Use (95% CI)</th>
<th>Difference in Days to First PI Use Compared to Reference (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whites</td>
<td>311 (284 to 333)</td>
<td>reference</td>
</tr>
<tr>
<td>African Americans</td>
<td>409 (368 to 445)</td>
<td>98 (51 to 148)***</td>
</tr>
<tr>
<td>Latinos</td>
<td>360 (316 to 404)</td>
<td>50 (1 to 98)*</td>
</tr>
<tr>
<td>Other Race Ethnicity</td>
<td>300 (228 to 379)</td>
<td>-10 (-80 to 71)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gender</th>
<th>Predicted Median Days to First PI Use (95% CI)</th>
<th>Difference in Days to First PI Use Compared to Reference (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>329 (305 to 350)</td>
<td>reference</td>
</tr>
<tr>
<td>Women</td>
<td>400 (356 to 443)</td>
<td>71 (16 to 125)**</td>
</tr>
</tbody>
</table>

### Days Until First Protease Inhibitor Use Among Selective Providers (Continued)

<table>
<thead>
<tr>
<th></th>
<th>Predicted Median Days to First PI Use (95% CI)</th>
<th>Difference in Days to First PI Use Compared to Reference (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Annual Family Income</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; $25,000</td>
<td>306 (267 to 337)</td>
<td>reference</td>
</tr>
<tr>
<td>≤ $25,000</td>
<td>366 (339 to 388)</td>
<td>60 (17 to 102)**</td>
</tr>
<tr>
<td><strong>Drug / Heavy Alcohol Use</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonuser</td>
<td>342 (319 to 361)</td>
<td>reference</td>
</tr>
<tr>
<td>User</td>
<td>394 (336 to 447)</td>
<td>51 (-1 to 117)</td>
</tr>
</tbody>
</table>


P value: * < .05
** < .01
*** < .001
## Access to Infectious Disease Specialist by Race

<table>
<thead>
<tr>
<th>Race</th>
<th>RR</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>0.67</td>
<td>(0.57, 0.80)</td>
</tr>
<tr>
<td>Latino</td>
<td>1.09</td>
<td>(0.87, 1.35)</td>
</tr>
<tr>
<td>Other</td>
<td>0.64</td>
<td>(0.40, 1.04)</td>
</tr>
</tbody>
</table>

Heslin et al. *AHSR* 2003  
*p<0.01*
## Access to High Volume HIV Provider by Race

| Race   | PM  | 95% CI       
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>-48</td>
<td>(-86, -5) *</td>
</tr>
<tr>
<td>Latino</td>
<td>36</td>
<td>(-7, 95)</td>
</tr>
<tr>
<td>Other</td>
<td>-58</td>
<td>(-136, 13)</td>
</tr>
</tbody>
</table>

*Heslin et al. AHSR 2002  *p*<0.01
Percent Delays in Care Due to Competing Subsistence Needs by Vulnerable Group

- Men: 33%
- Women: 45%
- Whites: 32%
- Blacks: 40%
- Hispanics: 41%
- MSM: 31%
- IDU: 45%
- College Grad: 28%
- HS Grad: 37%
- < High School: 42%
- Income >25K: 26%
- Income <25K: 45%

Cunningham, et al. Med Care, 1999 all p<0.05
Effect of Competing Needs on Access to Care

- ER Visit without HOSP: 1.6
- No Anti-retroviral Therapy: 1.5
- Low Overall Access to Care: 2.9

Cunningham, et al. Medical Care 1999  All  P<.01
Adjusted Odds of Unmet Need for Supportive Services, Non-Whites Compared with Whites

Katz, Cunningham, et al. Med Care 2000 p<0.05
Effect of Drug Use and Mental Health Treatment on Use of HAART

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Adjusted Odds Ratio</th>
<th>CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drug Dependence</td>
<td>0.58</td>
<td>0.34 to 0.97</td>
</tr>
<tr>
<td>Severe Drug Abuse</td>
<td>0.52</td>
<td>0.32 to 0.87</td>
</tr>
<tr>
<td>IDU HIV Exposure</td>
<td>0.55</td>
<td>0.39 to 0.79</td>
</tr>
<tr>
<td>Mental Health Treatment</td>
<td>1.57</td>
<td>1.11 to 2.08</td>
</tr>
</tbody>
</table>

Turner BJ, et al. JGIM 2001  All P<.01
### Adjusted Odds of Receiving Antiretrovirals for Those on Case-Management (OR)

<table>
<thead>
<tr>
<th>Antiretroviral Regimen</th>
<th>CM at Baseline</th>
<th>CM at Baseline and Follow Up</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 ARV</td>
<td>1.2</td>
<td>1.6 **</td>
</tr>
<tr>
<td>2 ARV</td>
<td>1.6 **</td>
<td>1.7 **</td>
</tr>
<tr>
<td>3 ARV</td>
<td>1.3 *</td>
<td>1.6 ***</td>
</tr>
<tr>
<td>PI/NNRTI</td>
<td>1.3</td>
<td>1.5 **</td>
</tr>
</tbody>
</table>

*p<0.05; **p<0.01; ***p<0.001*
Factors That Help Explain Disparities in Treatment and Outcomes

- Provider/system factors
  - financing
  - experience/specialization
  - service organization, coordination, proximity
- Provider/patient factors
  - communication/language
  - racial/gender concordance
  - trust
  - case management
- Barriers - financial and non-financial
- Patient attitudes, beliefs, behaviors
Overview of Health Outcomes from Disparities in Care and Access Barriers

- Post-hospital risk of death for Hispanics 2X that of whites in Los Angeles (Cunningham et al. 2000)

- Risk of death elevated 60% for low SES persons, among those in care nationally (Cunningham et al. submitted)

- QOL outcomes better with access to clinical trials, overall access to care (Cunningham et al. 1995& 1998)

- Number of hospitalizations lower, testing and counseling higher with community-based access to care (Cunningham et al. 1996; Mosen at al. 2000)
Summary and Recommendations

• Vulnerable groups are increasingly HIV Infected

• Vulnerable groups get fewer medications for HIV, report more barriers to care, have worse health outcomes

• Need to develop and test interventions to overcome barriers, to reduce disparities, and improve outcomes