

Tri-County CHAIN 2005_2

Trends in HAART & Treatment Adherence

DRAFT

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Health Committee
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C.H.A.I.N. REPORT

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Table 1. Primary Medical Providers, Tri-County CHAIN

| Agency name | Wave 1 (2002) | Percent | Wave 2 (2003) | Percent |
|---|------------------|---------|------------------|---------|
| TOTAL (n) | 398 | | 315 | |
| <i>Westchester Medical Center - HIV/AIDS Clinic</i> | 89 | 23% | 74 | 24% |
| <i>St. John's Riverside (YGH) - HIV/AIDS Clinic</i> | 55 | 14% | 42 | 13% |
| <i>Rockland County DOH - HIV/AIDS Clinic</i> | 52 | 13% | 29 | 9% |
| <i>Mt. Vernon Hospital - HIV/AIDS Clinic</i> | 26 | 7% | 23 | 7% |
| <i>Hudson River Health Care, Inc.</i> | 26 | 7% | 15 | 5% |
| <i>Mt. Vernon Neighborhood Health Center</i> | 24 | 6% | 18 | 6% |
| <i>St. Joseph's Family Health Center</i> | 16 | 4% | 12 | 4% |
| <i>Dr. Thomas Rush</i> | 11 | 3% | 9 | 3% |
| <i>Open Door Family Medical Center</i> | 10 | 3% | 8 | 3% |
| <i>Sound Shore Medical Center of Westchester</i> | 9 | 2% | 8 | 3% |
| <i>Other Tri-County</i> | 60 | 15% | 60 | 19% |
| <i>Other NYC</i> | 17 | 4% | 14 | 4% |

Note: Agencies are enumerated if greater than 7 CHAIN respondents list it as their primary HIV medical provider

Table 2. Outcome variables

| Indicator | Measurement |
|--|---|
| <i>In treatment adherence agency & program</i> | Respondent's primary medical provider was recipient of treatment adherence grant in FY12 - FY13, and client reported receipt of treatment adherence services (someone who helped them or counseled them on taking HIV meds) |
| <i>ARV</i> | On any antiretroviral therapy at time of interview |
| <i>HAART</i> | On highly active ARV as per DHHS guidelines, either as preferred or alternative medication regimen |
| <i>Adherent</i> | Respondent reports taking HIV meds "exactly as prescribed, almost never missing a dose," and has not missed or skipped any pills in past two days |
| <i>Knows t-cell count</i> | Respondent can accurately report either exact t-cell count, or can report t-cell count within a range (e.g., >500, <200 etc) |
| <i>PI-based Regimen</i> | Respondent's medication regimen includes use of a protease inhibitor; compared to NNRTI-based regimen |
| <i>Change in adherence</i> | 0 = not adherent at baseline or follow-up interview 1 = moved from non-adherent to adherent 2 = adherent at both baseline and follow-up |

Table 3. Independent Variables

| Sociodemographic characteristics | |
|---|---|
| <i>Gender</i> | Respondent's self-report of gender |
| <i>Race/Ethnicity</i> | Black, non-Hispanic; White, non-Hispanic; Hispanic |
| <i>Age group</i> | Respondent's age at interview (20-34, 35-49, 50+) |
| <i>Geographical Location</i> | Urban Westchester (south of Rt 287), Suburban West/Putnam, Rockland |
| Economic resources | |
| <i>Education</i> | Less than high school education, high school graduate |
| <i>Employment status</i> | Employed full-time, employed part-time, not employed |
| <i>Annual Household Income</i> | <\$10,000, \$10-24,999, \$25,000+, Refused/Don't know |
| Family & Household characteristics | |
| <i>Current partner relationship</i> | Not in relationship, Co-resident or non-coresident partner |
| <i>Children in household</i> | Number of minor children in household (non, 1-3, 4 or more) |
| <i>Current housing</i> | Predominant living situation over past 6 months |
| <i>Housing stability</i> | Any episode of unstable housing in past 6 months |
| <i>Family members with HIV</i> | Co-resident and non-coresident partner, minor children |
| Health characteristics | |
| <i>T-cell count</i> | Self-reported CD4 count (<200, 201-500, >501) |
| <i>Stage of HIV Infection</i> | Asymptomatic and symptomatic HIV, clinically-diagnosed AIDS |
| <i>Antiretroviral therapy</i> | Self-reported use of HIV medications |
| <i>Treatment regimen</i> | Self-reported HIV med regimen: PI-based, NNRTI-based, NRTI-based |
| Risk | |
| <i>HIV risk behavior</i> | Self reported as MSM; MSM + IDU; IDU; Other |
| <i>Drug Use</i> | Self reported as current user; former user; never used |
| <i>Injection drug use</i> | Any lifetime injection drug use |
| <i>Mental health score</i> | Based on MOS SF-36 mental health component summary score |
| <i>Dually-diagnosed individuals</i> | Low mental health and current drug use |

| Psychological and clinical characteristics | |
|---|--|
| <i>Psychological</i> | Self-efficacy, stigma, AIDS health scale, health locus of control |
| <i>Clinical/medical organization perceptions</i> | Comprehensive primary medical care, appropriate medical care, provider communication and satisfaction |
| <i>Primary care visits</i> | None, 1-3, 4-6, 7+ in the past 6 months |
| <i>Type of primary medical provider</i> | CHC, hospital-based, private MD |
| Other | |
| <i>Reasons for missing medications</i> | Self-reported reasons for missing HIV meds to the extent that it interferes with adherence |
| <i>Number of reasons</i> | None, 1-3, 4+ |
| <i>Trends in reasons</i> | Self-reported positive change (reduction in reasons) or continuously reporting no reasons interfere with adherence vs. negative change (increase in reasons) or same reasons continuously interfere with adherence |
| <i>Side effects</i> | Self-reported side effects experienced in the past 6 months |
| <i>Number of side effects</i> | None, 1-2, 3-5 |
| <i>Trends in side effects</i> | Self-reported positive change (reduction in side effects) or continuously reporting no side effects vs. negative change (increase in side effects) or no change in reported side effects |
| Ancillary services | |
| <i>Housing</i> | Self-reported receipt of housing services |
| <i>Mental health</i> | Self-reported receipt of professional mental health services, supportive mental health services (support group, case manager, clergy) |
| <i>Drug treatment</i> | Self-reported receipt of drug treatment program services, self-help services |
| <i>Case management</i> | Self-reported referral to medical services by CM, CM counseling, CM help with planning |

Table 4. Adherence Rates and Treatment Adherence Programs

| State | n | Adherence rate at one year follow-up |
|---|----------|---|
| Not adherent at baseline | 84 | |
| <i>Not in treatment adherence program</i> | 49 | 51% |
| <i>In treatment adherence program</i> | 35 | 60% |
| Adherent at baseline | 139 | |
| <i>Not in treatment adherence program</i> | 88 | 73% |
| <i>In treatment adherence program</i> | 51 | 76% |

Key Findings

- C Although not statistically significant, respondents in treatment adherence programs are at least as adherent, or slightly more so, than those not in treatment adherence programs

Table 5 Patterns of adherence at baseline and follow-up

| Adherence at Follow-up | Self-reported adherence at Baseline | | |
|-------------------------|-------------------------------------|---------------------|------------|
| | Not completely adherent | Completely adherent | Total |
| Not completely adherent | 38 | 37 | 75 |
| | 17% | 17% | 33% |
| Adherent | 46 | 103 | 149 |
| | 21% | 46% | 67% |
| Total | 84 | 140 | 224 |
| | 38% | 63% | 100% |

Table 6 Patterns of HAART at baseline and follow-up

| HAART at Follow-up | HAART at Baseline | | |
|--------------------|-------------------|------------|------------|
| | Non-HAART | HAART | Total |
| Non-HAART | 45 | 31 | 76 |
| | 14% | 10% | 24% |
| HAART | 37 | 202 | 239 |
| | 12% | 64% | 76% |
| Total | 82 | 233 | 315 |
| | 26% | 74% | 100% |

Key Findings

- C Looking at the "diagonals," approx two-thirds of people remained at same stage of adherence or non-adherence after one year's time, whereas 17% moved to non-adherence and 21% moved to adherence.
- C Nearly three-quarters remained stably on HAART or not on HAART after one year. 13% moved on to HAART, 12% moved off of HAART.
- C Overall adherence rates are approximately two-thirds (63 - 67%); overall HAART rates are 70%

Table 7. Health Outcomes by Sociodemographic Characteristics (odds ratios)

| | Adherent | On HAART | Knows T-Cell Count | In Treatment Adherence Program |
|------------------------------|----------|----------|--------------------|--------------------------------|
| | n | n | n | n |
| Total Sample | 329 | 398 | 398 | 398 |
| Total Observations | 553 | 890 | 712 | 707 |
| Gender | | | | |
| <i>Male</i> | 1.48* | 1.58* | 1.39 | 0.77 |
| <i>Female</i> | 1.00 | 1.00 | 1.00 | 1.00 |
| Race/Ethnicity | | | | |
| <i>White, non-Hispanic</i> | 1.00 | 1.00 | 1.00 | 1.00 |
| <i>Black, non-Hispanic</i> | 0.84 | 0.64 † | 0.35* | 2.21** |
| <i>Hispanic/Latino</i> | 0.72 | 0.40** | 0.64 | 1.66 † |
| Age categories | | | | |
| <i>20-34 years old</i> | 1.00 | 1.00 | 1.00 | 1.00 |
| <i>35-49 years old</i> | 1.14 | 1.44 | 1.13 | 0.90 |
| <i>50+ years old</i> | 1.74 | 1.81 † | 1.26 | 0.72 |
| Geographical Location | | | | |
| <i>Urban Westchester</i> | 1.00 | 1.00 | 1.00 | 1.00 |
| <i>Suburb West/Putnam</i> | 0.89 | 0.87 | 1.94* | 0.50*** |
| <i>Rockland</i> | 0.94 | 1.24 | 0.98 | 0.14*** |

† p<=.10

* p<=.05

** p <=.01

*** p<=.001

Key Findings

- C Women and Latinos slightly more likely to move from non-adherence to adherence
- C Rockland respondents more likely to be on HAART
- C Black respondents least likely to know their t-cell counts
- C As expected, urban Westchester respondents most likely to be in treatment adherence program

Table 8 Health Outcomes by Economic Resources (odds ratios)

| | Adherent | On HAART | Knows T-Cell Count | In Treatment Adherence Program |
|--------------------------------|----------|----------|--------------------|--------------------------------|
| | n | n | n | n |
| Total Sample | 329 | 398 | 398 | 398 |
| Total Observations | 553 | 869 | 712 | 707 |
| Education | | | | |
| <i>Less than high school</i> | 0.92 | 0.70 † | 0.53* | 1.15 |
| <i>High school graduate</i> | 1.00 | 1.00 | 1.00 | 1.00 |
| Employment status | | | | |
| <i>Employed full-time</i> | 1.00 | 1.00 | 1.00 | 1.00 |
| <i>Employed part-time</i> | 1.50 | 0.94 | 1.23 | 1.36 |
| <i>Not employed</i> | 0.97 | 0.82 | 0.74 | 1.55* |
| Annual household income | | | | |
| <i><\$10,000</i> | 0.94 | 0.70 | 0.54 † | 2.29*** |
| <i>\$10,000 - \$24,999</i> | 1.47 | 0.69 | 0.81 | 1.93** |
| <i>\$25,000+</i> | 1.00 | 1.00 | 1.00 | 1.00 |
| <i>Refused/Don't Know</i> | 0.92 | 0.21* | 0.46 | 1.78 |
| Access to car | | | | |
| <i>Has access to car</i> | 0.93 | 1.56* | 1.37 | 0.80 |
| <i>No access to car</i> | 1.00 | 1.00 | 1.00 | 1.00 |
| Medicaid | | | | |
| <i>Covered by Medicaid</i> | 0.94 | 1.36 | 0.86 | 1.73** |
| <i>Not covered by Medicaid</i> | 1.00 | 1.00 | 1.00 | 1.00 |

† p<=.10

* p<=.05

** p <=.01

*** p<=.001

Key Findings

- C More educated, employed, and higher income are all factors associated with knowing t-cell counts
- C Poorer -- respondents below \$10,000 annual household income -- more likely to be in treatment adherence programs, and also less likely to be on HAART

Table 9 Health Outcomes by Family & Household Characteristics (odds ratios)

| | Adherent | On HAART | Knows T-Cell Count | In Treatment Adherence Program |
|--|----------|----------|--------------------|--------------------------------|
| | n | n | n | n |
| Total Sample | 329 | 398 | 398 | 398 |
| Total Observations | 553 | 713 | 712 | 707 |
| Current partner relationship | | | | |
| <i>Not in partner relationship</i> | 1.00 | 1.00 | 1.00 | 1.00 |
| <i>Living with spouse or partner</i> | 1.02 | 1.22 | 0.66 | 0.85 |
| <i>Non-coresident partner relationship</i> | 1.26 | 1.14 | 0.61 † | 0.87 |
| Number of children under 18 in household | | | | |
| <i>None</i> | 1.00 | 1.00 | 1.00 | 1.00 |
| <i>1 - 3</i> | 0.68 † | 0.88 | 0.80 | 1.20 |
| <i>4 or more</i> | 1.39 | 0.46 | 2.41 | 1.71 |
| Current living situation | | | | |
| <i>Own or rent an apartment or house</i> | 1.00 | 1.00 | 1.00 | 1.00 |
| <i>"Doubled up" with friend or relative</i> | 0.52 † | 0.46* | 0.38** | 1.15 |
| <i>Welfare hotel or motel, shelter, street, or other public place</i> | 1.19 | 0.30** | 0.52 | 1.20 |
| <i>Specialized AIDS housing</i> | 1.03 | 1.24 | 2.91 | 2.07* |
| <i>Drug treatment program housing, hospital, nursing home, hospice</i> | 0.85 | 0.76 | 0.96 | 0.12** |
| <i>Other</i> | 4.83 | 0.59 | 0.46 | 0.36 † |
| Stability of housing in past 6 months | | | | |
| <i>Stably housed</i> | 1.00 | 1.00 | 1.00 | 1.00 |
| <i>Unstably housed</i> | 0.62 † | 0.61* | 0.69 | 0.99 |
| Family members with HIV | | | | |
| <i>Live-in spouse/partner</i> | 1.00 | 1.64 | 1.25 | 0.92 |
| <i>Non live-in spouse/partner</i> | 1.32 | 1.40 | 0.92 | 0.82 |
| <i>Children under 18 yo</i> | 4.10 † | 1.83 | 1.39 | 0.89 |

† p<=.10

* p<=.05

** p <=.01

*** p<=.001

Key Findings

- C Respondents in specialized AIDS housing more likely to know their t-cell counts
- C Unstably housed individuals and those not in partnership relationships are more likely to be in treatment adherence programs

Table 10 Health Outcomes by Current Health Status (odds ratios)

| | Adherent | On HAART | Knows T-Cell Count | In Treatment Adherence Program |
|---|---------------|-------------|--------------------|--------------------------------|
| | n | n | n | n |
| Total Sample | 329 | 398 | 398 | 398 |
| Total Observations | 553 | 870 | 712 | 707 |
| Most recent t-cell count | | | | |
| <i>Greater than 500 copies per mm³</i> | 1.00 | 1.00 | | 1.00 |
| <i>201-500 copies per mm³</i> | 0.89 | 1.10 | | 1.39* |
| <i>Less than 200 copies per mm³</i> | 0.65 | 1.55 | | 1.31 |
| <i>Missing/Don't know</i> | 1.25 | 0.90 | | 1.43 † |
| Stage of HIV infection | | | | |
| <i>Asymptomatic HIV</i> | 1.00 | 1.00 | 1.00 | 1.00 |
| <i>Symptomatic HIV</i> | 0.91 | 1.00 | 1.28 | 1.21 |
| <i>Clinically-diagnosed AIDS</i> | 0.82 | 1.44 | 1.65 † | 1.44 |
| Current use of antiretroviral therapy | | | | |
| <i>No HIV therapy</i> | -- | | 0.61 † | 1.22 |
| <i>Guidelines: First Choice</i> | 1.00 | | 1.00 | 1.00 |
| <i>Guidelines: Second Choice</i> | 1.01 | | 0.84 | 0.96 |
| <i>ART (Not HAART)</i> | 0.87 | | 0.92 | 1.31 |
| <i>Not Recommended</i> | 0.39** | | 0.69 | 1.12 |
| Treatment regimen | | | | |
| <i>PI-based</i> | 1.00 | | 1.00 | 1.00 |
| <i>NNRTI-based</i> | 1.14 | | 1.11 | 0.69 † |
| <i>NRTI-based</i> | 1.10 | | 1.30 | 1.05 |

† p<=.10

* p<=.05

** p <=.01

*** p<=.001

Key Findings

- C Respondents on non-HAART HIV medications more likely than those on HAART to be in treatment adherence programs

Table 11 Health Outcomes by Risk Characteristics (odds ratios)

| | Adherent | On HAART | Knows T-Cell Count | In Treatment Adherence Program |
|--|----------------|---------------|--------------------|--------------------------------|
| | n | n | n | n |
| Total Sample | 329 | 398 | 398 | 398 |
| Total Observations | 553 | 870 | 712 | 707 |
| HIV Risk Behavior | | | | |
| <i>MSM</i> | 1.79 † | 1.48 | 4.11** | 0.80 |
| <i>Problem drug use</i> | 0.58** | 1.30 | 1.15 | 0.96 |
| <i>MSM + problem drug use</i> | 0.37* | 1.24 | 2.15 | 0.85 |
| <i>Heterosexual and other</i> | 1.00 | 1.00 | 1.00 | 1.00 |
| Drug use | | | | |
| <i>Never used drugs</i> | 1.00 | 1.00 | 1.00 | 1.00 |
| <i>Former drug use</i> | 0.73 | 0.99 | 0.96 | 1.10 |
| <i>Current drug use</i> | 0.42** | 0.65 † | 0.73 | 1.05 |
| Injection drug use | | | | |
| <i>Never injected drugs</i> | 1.00 | 1.00 | 1.00 | 1.00 |
| <i>Ever injected drugs</i> | 0.59** | 1.00 | 0.94 | 0.90 |
| Mental health component summary score (MCS) | | | | |
| <i><37.0 (very low mental health score)</i> | 0.41*** | 0.73 † | 1.40 | 0.95 |
| <i>37.0 - 42.0 (low mental health score)</i> | 0.83 | 1.00 | 1.54 | 0.91 |
| <i>>42.0 (average mental health score)</i> | 1.00 | 1.00 | 1.00 | 1.00 |
| Dually-diagnosed individuals (Low mental health & drug use) | | | | |
| <i><37.0 (very low mental health score)</i> | 0.32** | 0.49* | 1.69 | 0.79 |

† p<=.10

* p<=.05

** p <=.01

*** p<=.001

Key Findings

- C MSM are more likely to be adherent at both waves, and more likely to know their t-cell counts
- C Current drug users less likely to know their t-cell counts

Table 12 Health Outcomes by Psychological and Clinical Characteristics (odds ratios)

| | Adherent | On HAART | Knows T-Cell Count | In Treatment Adherence Program |
|--|----------|----------|--------------------|--------------------------------|
| | n | n | n | n |
| Total Sample | 329 | 398 | 398 | 398 |
| Total Observations | 553 | 713 | 712 | 707 |
| Psychological | | | | |
| <i>High self-efficacy score</i> | 1.56* | 1.10 | 1.14 | 0.94 |
| <i>High stigma score</i> | 0.80 | 0.56*** | 1.26 | 0.87 |
| <i>High AIDS health scale score</i> | 1.62** | 1.36 † | 0.74 | 0.95 |
| <i>High health locus of control score</i> | 0.93 | 1.22 | 1.77 † | 0.80 |
| Clinical/medical organization perceptions | | | | |
| <i>Comprehensive primary medical care</i> | 1.71** | 1.22 | 1.11 | 1.11 |
| <i>Appropriate medical care</i> | 1.34 † | 1.03 | 0.92 | 1.18 |
| <i>Satisfied with MD</i> | 0.90 | 1.57 | 1.85 | 1.01 |
| <i>Poor patient-MD communication</i> | 0.77 | 0.83 | | 0.92 |
| Primary care visits | | | | |
| <i>No visits</i> | 1.20 | 0.97 | 0.56 | 0.84 |
| <i>1-3 visits</i> | 0.86 | 1.16 | 0.84 | 0.95 |
| <i>4-6 visits</i> | 1.30 | 1.65 † | 0.54 | 1.18 |
| <i>7+ visits</i> | 1.00 | 1.00 | 1.00 | 1.00 |
| Primary care visits controlled for opportunistic infections | | | | |
| <i>No visits</i> | 1.21 | 0.97 | 0.56 | 0.84 |
| <i>1-3 visits</i> | 0.88 | 1.16 | 0.91 | 0.97 |
| <i>4-6 visits</i> | 1.31 | 1.65 † | 0.54 | 1.18 |
| <i>7+ visits</i> | 1.00 | 1.02 | 1.00 | 1.00 |
| Type of primary medical provider | | | | |
| <i>CHC</i> | 1.25 | 1.05 | 1.09 | |
| <i>Hospital-based</i> | 0.84 | 0.68 | 0.72 | |
| <i>Private MD</i> | 1.00 | 1.00 | 1.00 | |
| Barriers | | | | |
| <i>Logistical barriers</i> | 0.70 † | 0.90 | 0.95 | 0.65*** |
| <i>Interpersonal barriers</i> | 0.50*** | 0.84 | 0.65 † | 0.80 |

† p<=.10

* p<=.05

** p <=.01

*** p<=.001

Table 13. Reasons for missing meds by treatment characteristics of non-adherent (odds ratios)

| | Overall | | Adherent | | On HAART | | PI-based Regimen (vs. NNRTI) | | In Treatment Adherence Program | |
|---|------------|-------------|------------|--------|------------|------------|------------------------------|-------|--------------------------------|------------|
| | n | % | n | % | n | % | n | % | n | % |
| Total Sample | 314 | 100% | 314 | | 182 | | 149 | | 181 | |
| Total Observations | 519 | 100% | 511 | | 518 | | 425 | | 517 | |
| Reasons for missing medications occurring "Sometimes" or "Often" | | | | | | | | | | |
| <i>Slept through dose time</i> | 106 | 45% | | | 102 | 47%† | 73 | 50% | 44 | 49% |
| <i>Simply forgot</i> | 110 | 47% | | | 101 | 46% | 70 | 48% | 47 | 52% |
| <i>Felt sick from side effects</i> | 86 | 37% | | | 79 | 36% | 57 | 39% | 28 | 31% |
| <i>Felt depressed/overwhelmed</i> | 88 | 38% | | | 82 | 38% | 58 | 39% | 30 | 34% |
| <i>Busy with other things</i> | 99 | 42% | | | 91 | 42% | 60 | 41% | 41 | 46% |
| <i>Wanted to avoid side effects</i> | 82 | 35% | | | 72 | 33%* | 49 | 33% | 29 | 32% |
| <i>Felt drug was harmful</i> | 65 | 28% | | | 59 | 27% | 36 | 24%† | 22 | 25% |
| <i>Change in daily routine</i> | 72 | 31% | | | 69 | 32% | 47 | 32% | 25 | 28% |
| <i>Away from home</i> | 83 | 35% | | | 76 | 35% | 54 | 37% | 35 | 39% |
| <i>Had too many pills to take</i> | 62 | 26% | | | 55 | 25% | 43 | 29% | 27 | 30% |
| <i>Didn't want others to notice</i> | 41 | 18% | | | 35 | 16%* | 26 | 18% | 18 | 20% |
| Number of reasons for missing medications | | | | | | | | | | |
| <i>None</i> | 597 | 75% | | | 340 | 65%** * | 221 | 63% | 203 | 73% |
| <i>1-3</i> | 83 | 10% | | | 77 | 15% | 52 | 15% | 29 | 10% |
| <i>4+</i> | 116 | 15% | | | 107 | 20% | 75 | 22% | 46 | 17% |
| Side effects | | | | | | | | | | |
| <i>Stomach problems or diarrhea</i> | 234 | 45% | 122 | 37%*** | 216 | 45% | 160 | 50%** | 76 | 37%** |
| <i>Unexplained weight loss/gain</i> | 167 | 32% | 85 | 26%*** | 154 | 32% | 99 | 31% | 67 | 33% |
| <i>Headaches or dizziness</i> | 175 | 34% | 90 | 27%*** | 160 | 33% | 116 | 36% | 51 | 25%** * |
| <i>Other</i> | 102 | 20% | 57 | 17% | 93 | 19% | 55 | 17% | 33 | 16%† |
| <i>Rashes or other skin problems</i> | 102 | 20% | 49 | 15%*** | 90 | 19%* | 67 | 21% | 31 | 15%* |
| Number of side effects | | | | | | | | | | |
| <i>None</i> | 174 | 33% | 135 | 41%*** | 167 | 34%† | 106 | 33% | 79 | 39%* |
| <i>1-2</i> | 211 | 41% | 133 | 40% | 198 | 41% | 130 | 41% | 86 | 42% |
| <i>3-5</i> | 134 | 26% | 62 | 19% | 120 | 25% | 85 | 26% | 39 | 19% |

† p<=.10

* p<=.05

** p<=.01

*** p<=.001

Table 14 Trends in reasons for missing medications by outcome variables in Wave 1
(column percentages)

| | In Treatment Adherence Program W1 | | Not in Treatment Adherence Program W1 | |
|---|-----------------------------------|------------|---------------------------------------|------------|
| | n | % | n | % |
| Total Sample | 149 | 38% | 246 | 62% |
| Slept through dose time | | | | |
| <i>Positive change/cont. not reason</i> | 132 | 89% | 214 | 87% |
| <i>Negative change/cont. reason</i> | 17 | 11% | 32 | 13% |
| Simply forgot | | | | |
| <i>Positive change/cont. not reason</i> | 128 | 86% | 220 | 89% |
| <i>Negative change/cont. reason</i> | 21 | 14% | 26 | 11% |
| Felt sick from side effects | | | | |
| <i>Positive change/cont. not reason</i> | 77 | 52% | 113 | 46% |
| <i>Negative change/cont. reason</i> | 72 | 48% | 133 | 54% |
| Felt depressed/overwhelmed | | | | |
| <i>Positive change/cont. not reason</i> | 78 | 52% | 113 | 46% |
| <i>Negative change/cont. reason</i> | 71 | 48% | 133 | 54% |
| Busy with other things | | | | |
| <i>Positive change/cont. not reason</i> | 135 | 91% | 219 | 89% |
| <i>Negative change/cont. reason</i> | 14 | 9% | 27 | 11% |
| Wanted to avoid side effects | | | | |
| <i>Positive change/cont. not reason</i> | 132 | 89% | 226 | 92% |
| <i>Negative change/cont. reason</i> | 17 | 11% | 20 | 8% |
| Felt drug was harmful | | | | |
| <i>Positive change/cont. not reason</i> | 135 | 91% | 226 | 92% |
| <i>Negative change/cont. reason</i> | 14 | 9% | 20 | 8% |
| Change in daily routine | | | | |
| <i>Positive change/cont. not reason</i> | 138 | 93% | 224 | 91% |
| <i>Negative change/cont. reason</i> | 11 | 7% | 22 | 9% |
| Away from home | | | | |
| <i>Positive change/cont. not reason</i> | 135 | 91% | 227 | 92% |
| <i>Negative change/cont. reason</i> | 14 | 9% | 19 | 8% |

| | In Treatment Adherence Program W1 | | Not in Treatment Adherence Program W1 | |
|--|-----------------------------------|-------------|---------------------------------------|------------|
| | n | % | n | % |
| Total Sample | 149 | 38% | 246 | 62% |
| Had too many pills to take | | | | |
| <i>Positive change/cont. not reason</i> | 136 | 91%† | 235 | 96% |
| <i>Negative change/cont. reason</i> | 13 | 9% | 11 | 4% |
| Didn't want others to notice | | | | |
| <i>Positive change/cont. not reason</i> | 142 | 95% | 239 | 97% |
| <i>Negative change/cont. reason</i> | 7 | 5% | 7 | 3% |
| Total number of reasons (0 vs. 1-3 vs 4+) | | | | |
| <i>Decreased or had no reasons</i> | 117 | 79% | 196 | 80% |
| <i>Did not decrease</i> | 32 | 21% | 50 | 20% |

† p<=.10

* p<=.05

** p <=.01

*** p<=.001

Table 15 Trends in side effects by outcome variables at Wave 1 (column percentages)

| | In Treatment Adherence Program W1 | | Not in Treatment Adherence Program W1 | |
|---|-----------------------------------|-------------|---------------------------------------|------------|
| | n | % | n | % |
| Total Sample | 149 | 38% | 246 | 62% |
| Stomach problems or diarrhea | | | | |
| <i>Positive change/cont. no side effect</i> | 52 | 35%* | 62 | 25% |
| <i>Negative change/cont. side effect</i> | 97 | 65% | 184 | 75% |
| Unexplained weight loss/gain | | | | |
| <i>Positive change/cont. no side effect</i> | 57 | 38% | 78 | 32% |
| <i>Negative change/cont. side effect</i> | 92 | 62% | 168 | 68% |
| Headaches or dizziness | | | | |
| <i>Positive change/cont. no side effect</i> | 61 | 41%* | 76 | 31% |
| <i>Negative change/cont. side effect</i> | 88 | 59% | 170 | 69% |
| Other | | | | |
| <i>Positive change/cont. no side effect</i> | 67 | 45%† | 90 | 37% |
| <i>Negative change/cont. side effect</i> | 82 | 55% | 156 | 63% |
| Rashes or other skin problems | | | | |
| <i>Positive change/cont. no side effect</i> | 73 | 49%* | 93 | 38% |
| <i>Negative change/cont. side effect</i> | 76 | 51% | 153 | 62% |
| Total number of side effects | | | | |
| <i>Decreased or had no reasons</i> | 40 | 27%† | 47 | 19% |
| <i>Did not decrease</i> | 109 | 73% | 199 | 81% |

† p<=.10

* p<=.05

** p <=.01

*** p<=.001

Table 16 Health Outcomes by Ancillary Services Received (odds ratios)

| | Adherent | On HAART | Knows T-Cell Count | In Treatment Adherence Program |
|---|----------|----------|--------------------|--------------------------------|
| | n | n | n | n |
| Total Sample | 339 | 398 | 398 | 398 |
| Total Observations | 687 | 868 | 712 | 707 |
| Housing | | | | |
| <i>Housing service</i> | 0.65 † | 1.17 | 1.01 | 0.97 |
| Mental Health | | | | |
| <i>Professional mental health service</i> | 0.78 | 0.93 | 1.50 | 0.63** |
| <i>Supportive mental health (support groups, case mgrs, clergy)</i> | 0.94 | 1.03 | 1.16 | 0.97 |
| Drug Treatment | | | | |
| <i>Drug treatment program</i> | 0.58* | 0.73 | 1.90 | 0.80 |
| <i>Self-help</i> | 0.82 | 1.17 | 1.79 | 0.83 |
| Case Management | | | | |
| <i>CM referred to medical service</i> | 0.82 | 0.87 | 0.95 | 1.21 |
| <i>CM counseled</i> | 0.71* | 1.08 | 1.45 † | 1.24 † |
| <i>CM helped with planning</i> | 0.84 | 1.00 | 1.32 | 1.34* |

† p<=.10

* p<=.05

** p <=.01

*** p<=.001

Table 17 Advice and assistance by outcome variables (Odds ratios)

| | Adherent | In Treatment Adherence Program | PI-based Regimen (vs. NNRTI) |
|---|----------|--------------------------------|------------------------------|
| | n | n | n |
| Total Sample | 322 | 390 | 281 |
| Total Observations | 538 | 676 | 450 |
| Advice and Information on Combination Therapies | | | |
| <i>Respondent well informed about combination therapy choices</i> | 2.28** | 0.86 | 0.98 |
| <i>Current MD well informed about combination therapy choices</i> | 0.93 | 0.90 | 0.66 |
| <i>Case mgr. well informed about combination therapy choices</i> | 0.88 | 1.03 | 1.45* |
| <i>Needs more information on combination therapies</i> | 0.74 † | 1.08 | 0.96 |
| <i>Current MD could do better job explaining treatment options</i> | 0.63* | 0.87 | 0.94 |
| <i>Consumer material informative and easy to understand</i> | 1.03 | 1.17 | 0.86 |
| <i>Friend/relative with HIV has been good source of information</i> | 0.77 | 1.04 | 0.90 |
| Help received for taking medications | | | |
| <i>Information/advice one-on-one</i> | 1.07 | 1.05 | 1.33 |
| <i>Information/advice group setting</i> | 1.30 | 1.03 | 1.91 |
| <i>Written material</i> | 0.78 | 1.16 | 0.93 |
| <i>Device to keep track of dosages and time, such as beeper</i> | 0.60* | 1.36* | 0.89 |
| <i>Help arranging meals</i> | 1.95 | 0.74 | 0.23 † |
| <i>Help keeping/storing medications</i> | 0.74 | 1.78 | 0.99 |
| <i>Other help</i> | 0.44* | 0.70 † | 1.64 |
| <i>Counseled by case mgr on taking ARV medications</i> | 0.89 | 2.30*** | 0.97 |

† p<=.10

* p<=.05

** p <=.01

*** p<=.001

Table 18 Odds Ratios of Factors Associated with Outcomes - Multivariate

| | Treatment adherence program | On any anti-retroviral meds | On HAART | Adherent | Knows t-cell count |
|---------------------------|-----------------------------|-----------------------------|----------|----------|--------------------|
| n | 377 | 377 | 377 | 312 | 378 |
| Total Observations | 640 | 640 | 640 | 507 | 642 |

| | Treatment adherence program | On any anti-retroviral meds | On HAART | Adherent | Knows t-cell count |
|---|-----------------------------|-----------------------------|-------------|----------|--------------------|
| Sociodemographic Characteristics | | | | | |
| <i>Male</i> | 0.96 | 2.38** | 1.73 | 1.44 | 0.71 |
| <i>White (ref)</i> | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| <i>Black</i> | 1.24 | 0.69 | 0.77 | 0.78 | 0.54 |
| <i>Latino</i> | 1.00 | 0.47 † | 0.50† | 0.96 | 0.92 |
| <i>20-34 years old (ref)</i> | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| <i>35-49 years</i> | 0.92 | 1.53 | 1.39 | 1.63 | 1.52 |
| <i>50+ years</i> | 0.61 | 1.42 | 1.63 | 2.41* | 1.72 |
| <i>Sub West/Putnam</i> | 0.57* | 0.52* | 0.63† | 0.72 | 1.43 |
| <i>Rockland</i> | 0.13*** | 0.85 | 0.80 | 0.81 | 0.57 |
| <i>Westchester (ref)</i> | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| <i>Less than HS education</i> | 0.96 | 0.82 | 0.76 | 1.20 | 0.58† |
| <i>Employed full-time</i> | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| <i>Employed part-time</i> | 1.34 | 0.94 | 1.00 | 1.42 | 0.85 |
| <i>Not employed</i> | 1.18 | 0.45* | 0.56† | 1.01 | 0.51 |
| <i>Less than \$10k annual income</i> | 2.08** | 1.19 | 1.19 | 1.22 | 0.92 |
| <i>\$10k - \$25k income</i> | 2.01** | 1.16 | 1.01 | 1.76† | 0.89 |
| <i>Greater than \$25 (ref)</i> | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| <i>Access to a car</i> | 1.36 | 1.80* | 1.66† | 0.78 | 1.18 |
| <i>On Medicaid</i> | 1.33 | 2.11* | 1.87* | 1.20 | 1.25 |
| Health Characteristics | | | | | |
| Greater than 500 copies per mm ³ | 1.00 | 1.00 | 1.00 | 1.00 | |
| 201-500 copies per mm ³ | 1.56* | 1.28 | 1.18 | 0.89 | |
| Less than 200 copies per mm ³ | 1.56† | 1.98* | 1.67† | 0.76 | |
| Missing/Don't know | 1.60 † | 1.37 | 1.28 | 1.52 | |
| Guidelines: First Choice | | | | 1.00 | |
| Guidelines: Second Choice | | | | 1.10 | |
| ART (Not HAART) | | | | 1.02 | |
| Not Recommended | | | | 0.44† | |
| <i>In treatment adhere agency</i> | | 0.71 | 0.78 | 1.01 | 0.63 |
| <i>Comprehensive primary care</i> | 1.00 | 1.27 | 1.04 | 1.56† | 1.29 |
| <i>Satisfied with MD</i> | 0.76 | 0.85 | 1.23 | 0.39† | |

| | Treatment adherence program | On any anti-retroviral meds | On HAART | Adherent | Knows t-cell count |
|---|-----------------------------|-----------------------------|----------|--------------|--------------------|
| <i>Poor patient-MD communication</i> | 1.01 | 0.88 | 1.03 | 0.76 | |
| Risk Characteristics | | | | | |
| <i>MSM</i> | 1.26 | 0.51 | 0.65 | 1.63 | 3.19† |
| <i>Problem drug use</i> | 0.96 | 0.78 | 0.90 | 0.50* | 1.04 |
| <i>MSM + problem drug use</i> | 0.53 | 0.55 | 0.69 | 0.35† | 1.42 |
| <i>Heterosexual and other</i> | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| <i>Current drug user</i> | 1.02 | 0.69 | 0.63† | 0.63 | 0.78 |
| <i>Unstably housed</i> | 1.06 | 0.79 | 0.78 | 0.62 | 0.64 |
| <i>Very low mental health score</i> | 1.05 | 1.27 | 0.92 | 0.53** | 1.57 |
| Psychological & Clinical Characteristics | | | | | |
| <i>High self-efficacy score</i> | 0.81 | 0.86 | 0.86 | 1.08 | 1.03 |
| <i>High stigma score</i> | 0.79 | 0.69† | 0.68† | 1.02 | 1.07 |
| <i>Logistical barriers</i> | 0.55*** | 1.27 | 1.20 | 1.04 | 1.32 |
| <i>Interpersonal barriers</i> | 0.96 | 0.70 | 0.71 | 0.48** | 0.50* |
| Ancillary Services Received | | | | | |
| <i>Professional mental health service</i> | 0.66* | 0.74 | 0.85 | 1.07 | 1.11 |
| <i>Supportive mental health (support groups, case mgrs, clergy)</i> | 1.07 | 1.00 | 1.10 | 1.05 | 1.09 |
| <i>Drug treatment program</i> | 0.76 | 1.00 | 0.88 | 0.84 | 2.12 |
| <i>Self-help drug treatment</i> | 1.13 | 1.65 | 1.30 | 1.21 | 1.97 |
| <i>CM referred to medical service</i> | 1.20 | 1.03 | 0.82 | 1.28 | 0.57 |
| <i>CM counseled</i> | 0.96 | 1.61 | 1.69 | 0.47* | 1.81 |
| <i>Comprehensive case manager</i> | 1.42 | 1.08 | 0.90 | 1.64 | 1.16 |

† p<=.10

* p<=.05

** p <=.01

*** p<=.001

Table 19 What factors are associated with treatment adherence success?

| | Changed from non-adherent to adherent, compared to respondents who remained non-adherent (among those on HIV meds) |
|---|--|
| n | 138 |
| Sociodemographic Characteristics | |
| <i>Male</i> | 0.8 |
| <i>White (ref)</i> | 1.0 |
| <i>Black</i> | 0.7 |
| <i>Latino</i> | 1.3 |
| <i>20-34 years old (ref)</i> | 1.0 |
| <i>35-49 years</i> | 0.6 |
| <i>50+ years</i> | 0.6 |
| <i>Sub West/Putnam</i> | 0.4 |
| <i>Rockland</i> | 1.5 |
| <i>Westchester (ref)</i> | 1.0 |
| <i>Less than HS education</i> | 2.1 |
| <i>Less than \$10k annual income</i> | 1.0 |
| <i>\$10k - \$25k income</i> | 2.3 |
| <i>Greater than \$25 (ref)</i> | 1.0 |
| <i>Access to a car</i> | 0.9 |
| <i>On Medicaid</i> | 2.5 |
| Health Characteristics | |
| <i>In treatment adhere agency</i> | 1.1 |
| <i>Poor patient-MD communictn</i> | 0.8 |
| Risk Characteristics | |
| <i>Current drug user</i> | 0.2* |
| <i>Unstably housed</i> | 0.2† |
| <i>Very low mental health score</i> | 0.5 |
| System Characteristics | |
| <i>Logistical barriers</i> | 0.8 |
| <i>Interpersonal barriers</i> | 0.8 |
| <i>Comprehensive case manager</i> | 1.1 |

† p<=.10

* p<=.05

** p <=.01

*** p<=.001

Regression Key Findings

- C Comprehensive case management is significantly associated with being on HIV medications, being in a treatment adherent program, and knowing one's t-cell count

- C Non-adherence is most significantly associated with current drug use and unstable housing, the two factors also most significantly associated with failure to move from non-adherence to adherence

- C Men are more likely to be on HIV medications and HAART.