

**HIV Care Quality and Clinical Outcomes
in Boston EMA Sites Providing Primary Medical Care
2000**

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1. INTRODUCTION

1.1 Background

Advances in HIV treatment over recent years have resulted in prolonged length and quality of life for persons living with HIV (PLWH) while reducing the number and frequency of opportunistic infections and cancers. However, achievement of clinical stabilization for patients with HIV disease requires strict adherence to combination antiretroviral therapy regimens and participation in a series of preventive care practices. Access to and utilization of quality and appropriate care are critical to ensuring that all PLWH benefit from the progress in care and prevention. However, studies have shown that many populations --- including minorities, substance users and women --- have decreased access to and utilization of important aspects of HIV-related care[1, 2].

The optimal management of HIV patients has become a complex clinical specialty in which standards of care and therapeutic approaches are evolving very rapidly. Recognizing the complex challenges facing HIV care providers and PLWH, the public funding agencies have begun to create evaluation requirements for their grantees and contracted programs that focus on outcomes of care. One pilot/demonstration project of the New York State AIDS Institute (known as HIVQUAL) has developed a protocol and software for use by Title III-funded clinics nationwide that tracks clinical measures (CD4 count and viral load), antiretroviral therapy, prophylaxis for PCP and MAI, tuberculosis screening and routine gynecological screening. Through another HRSA-funded program, the Institute for Healthcare Improvement (IHI) has developed a collaborative series to assist enrolled Ryan White Title III programs in implementing quality improvement initiatives. The IHI initiative is currently under evaluation through the Evaluation of Quality Improvement in HIV Care (EQHIV) project. The goal of programs such as HIVQUAL and EQHIV is to establish the level of performance within these clinical sites in a random subset of patients so that operational processes can be improved where indicated and outcomes (both short and long term) can be re-evaluated and hopefully improved.

In 2000, the HIV/AIDS Bureau of the Massachusetts Department of Public Health (MDPH) contracted with JSI Research and Training Institute, Inc. to create a flexible and comprehensive quality assurance/continuous quality improvement plan (including protocol, instruments and electronic data-sharing capacity) for use in their publicly funded clinical sites. The JSI protocol was designed in light of the resource limitations of public clinics, the competing expectations of

multiple funding sources, the current priorities of funders and the clinical program leadership, and other logistical concerns and information needs communicated by the participating sites.

In 2002, the Boston Public Health Commission contracted with JSI to conduct chart reviews in four Title 1 funded programs providing primary medical care. Because the data were abstracted and analyzed using the same protocol, findings could be compared between BPHC clinics and the statewide ACTNow sample for the year 2000. This report provides an overview of the findings.

1.2 Protocol

Chart abstraction was conducted by research nurses and clinical research assistants from JSI who have had detailed training in the project and are familiar with standards and processes of HIV outpatient care. The JSI staff sign confidentiality agreements assuring their adherence to complete patient privacy protection. Nurses use clinic records including progress notes, flow sheets, laboratory reports and other documentation contained within the record to complete the data collection instrument. Other sources of supporting secondary data (i.e. from information system database or billing information) are sometimes used to fill in gaps or corroborate chart information if appropriate.

Client level data collected includes demographics, clinical events (hospitalizations, pregnancies, comorbidities, incident STD's and OI's), laboratory measures, prevention education and counseling, screening, immunizations, prophylaxis, medications (for HIV and mental health problems) and adherence. Background information at the clinic level is also obtained including overall caseload, mortality experience, protocols and practice guidelines, and model of care.

1.3 Benchmarks for Quality HIV Care

Guidelines and recommendations from a number of established and nationally recognized sources (based on data from clinical studies or expert opinion) were used to establish benchmarks for standards of care. The United States Public Health Service (USPHS) and the Infectious Diseases Society of America (IDSA) have collaborated for many years on guidelines for the prevention of opportunistic infections (OI's) among PLWH. These include recommendations for prevention of *Pneumocystis carinii* pneumonia (PCP), mycobacterial infections, and potentially vaccine-preventable diseases such as invasive pneumococcal diseases and viral hepatitis (types A and B)[3-5]. The guidelines define populations at risk based on CD4 cell count and exposure risk and provide recommendations for initiation (and discontinuation) of preventive measures. Routine clinical interventions include universal administration of vaccine for hepatitis B virus,

pneumococcus and influenza, Pap smears for cervical cancer screening at least annually for HIV-positive women, and prophylaxis for PCP and MAI for individuals at risk (based on low CD4 counts). The version of the guidelines that was current during the review period (2000) was utilized and supplemented by other nationally recognized sources for primary care HIV management[6-8].

Recommendations for screening and vaccination for hepatitis C virus (HCV) coinfecting individuals were based on the CDC recommendations [3, 7]. Standards for initiation of antiretroviral therapy, monitoring of viral loads, CD4 cell count and adherence were derived from the national guidelines current in 2000. These recommended initiation of highly active antiretroviral therapy (HAART) for individuals with CD4 cell counts <500/mm³ or plasma viral loads >5-10,000 copies/ml[9, 10]. Recommendations for risk reduction counseling and management of mental illness and substance abuse were based on formal recommendations [10,11] and current standards of general clinical practice.

2. POPULATION

2.1 Participating Sites

Record abstraction for HIV care information in 2000 was carried out in four clinical programs funded by the Boston Public Health Commission to provide Primary Medical Care:

- East Boston Health Center
- Great Brook Valley Health Center
- Martha Eliot Health Center
- Whittier Street Health Center

Patients were included in the full review if they received at least two medical visits for primary HIV care during the year 2000. A medical visit was defined as a visit with a physician, physician's assistant, or nurse practitioner; a visit with only nursing input (i.e., RN or LPN) did not qualify as a medical visit for the purposes of this review. Individuals who died during the year were excluded from the primary analysis because ascertainment of death information varied substantially between sites, which would be likely to bias the results. After exclusion of patients who died, 146 individual's charts were included in the final sample for 2000.

3. DEMOGRAPHICS

The sample of HIV/AIDS patients whose charts were reviewed is very diverse with respect to gender, race/ethnicity and risk behavior history (see Table 1). One of four were born outside the US or Puerto Rico and nearly 2/3 are racial/ethnic minorities. The group is evenly split between those with AIDS diagnoses and HIV-positive non-AIDS patients. Substance abuse problems and mental health diagnoses are common. Among the four individual clinical sites, there is considerable variability in demographics (See Appendix A for site data summaries).

Table 1. Demographics of BPHC sites vs. ACTNow sites (2000 review population).

	BPHC CLINICS		ACTNOW CLINICS	
	Total (N=146)		Total (N=998)	
	No.	%	No.	%
<u>Gender:</u>				
Male	83	56.8%	630	63.1%
Female	62	42.5%	366	36.7%
Transgender	1	0.7%	2	0.2%
<u>Race/Ethnicity:</u>				
Hispanic	74	50.7%	288	28.9%
White non-Hispanic	40	27.4%	434	43.5%
Black non-Hispanic	30	20.5%	252	25.3%
Asian/PI non-Hispanic	1	0.7%	17	1.7%
Other non-Hispanic	1	0.7%	7	0.7%
Missing	0	0.0%	0	0.0%
<u>Minority</u>	106	72.6%	564	56.5%
<u>Born outside US</u>	38	26.0%	206	20.6%
<u>HIV Risk Behavior*:</u>				
MSM	25	17.1%	230	23.0%
Heterosexual	100	68.5%	504	50.5%
IDU	58	39.7%	413	41.4%
Blood product	9	6.2%	21	2.1%
Occupational	1	0.7%	5	0.5%
Other	1	0.7%	5	0.5%
Unknown/not documented	0	0.0%	23	2.3%

Table 1 (continued). Demographics of BPHC sites vs. ACTNOW sites (2000 review population).

	BPHC CLINICS		ACTNOW CLINICS	
	Total (N=146)		Total (N=998)	
	No.	%	No.	%
<u>Initial CD4 count @ site:</u>				
≤50	10	6.8%	95	9.5%
51-200	31	21.2%	188	18.8%
201-500	63	43.2%	403	40.4%
>500	39	26.7%	295	29.6%
Not available	3	2.1%	17	1.7%
<u>HIV Stage:</u>				
AIDS	72	49.3%	526	52.7%
HIV	74	50.7%	472	47.3%
<u>Substance Abuse</u>				
Active	40	27.4%	230	23.0%
Inactive (hx only)	47	32.2%	331	33.2%
No history	59	40.4%	415	41.6%
No documentation	0	0.0%	22	2.2%
<u>Mental Illness</u>				
Active	68	46.6%	425	42.6%
Inactive (hx only)	14	9.6%	105	10.5%
No history	64	43.8%	446	44.7%
No documentation	0	0.0%	22	2.2%
<u>Incarcerated in Review Period</u>	12	8.2%	50	5.0%
<u>Hospitalized in Review Period</u>	27	18.5%	164	16.4%

4. CLINICAL VISITS AND ENTRY TO CARE

4.1 Visits to Clinical Site

For efficiency of chart abstractions, we opted not to record the exact number of clinical visits per review year. Rather, we assumed that reasonable continuity of care can be achieved if patients are seen at least every 4 months, and recorded whether visits had occurred in each of these 3 time intervals: January – April, May – August, September – December. Overall in 2000, 57% of patients were seen at least once during each four-month period, with 31% seen only in two periods, and 12% seen only in one period. The frequency of visits for the 4 BPHC sites was nearly identical to the ACTNow group.

4.2 Entry to Care

The population of patients reviewed had been in care for a median of 3 years (mean 3.3, range <1-10 years). Patients with more than 5 years since establishing care made up 22% of the 2000 sample. The length of HIV care relationship at the site for the total sample of surviving patients studied is shown in Table 2.

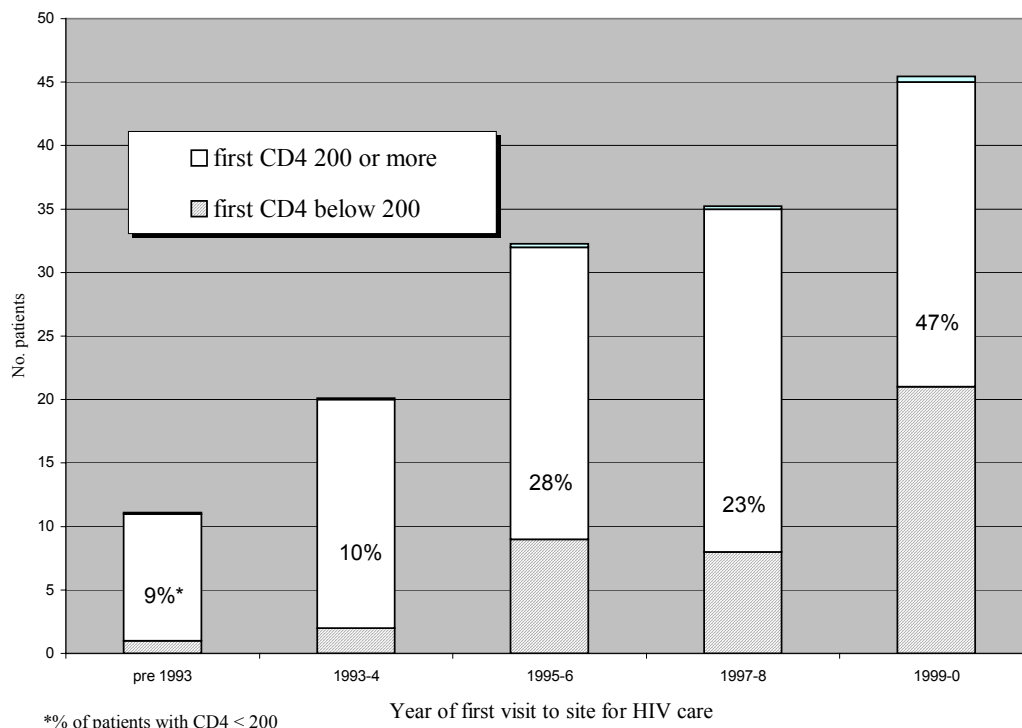
Table 2. Timeframe of entry into HIV/AIDS care at the clinical site (N=143)

Entry Year	N	Percent
Pre 1993	11	8
1993-4	20	14
1995-6	32	22
1997-8	35	24
1999-00	45	32

The percent of individuals who entered care at the review sites with CD4 counts less than 200 ranged from 9% for those with longstanding care relationships to 47% for the most recent time period (see Figure 2). It should be noted that the first CD4 count done at the site does not necessarily represent the immune status at first-ever HIV clinical evaluation, because some patients may have been transferring care or moving into the area after being treated elsewhere. However,

neither the extent of care relocation nor the original date of HIV/AIDS diagnosis was specifically tracked by our data collection and was not routinely available from the medical record.

Figure 2. Entry CD4 count by year of first HIV/AIDS visit



5. SCREENING AND PROPHYLAXIS

5.1 Tuberculosis (TB) Skin Tests (PPD)

Among individuals eligible in 2000 who had no history of TB or a previously positive PPD, 52% (range 40-62%) were screened, and an additional 5% (range 0-7%) had skin tests planted but did not return for reading. Two newly PPD-positive patients were identified, and both were referred to or received preventive treatment. The newly PPD-positive patients were from two different clinics, but were both Puerto Rican-born and had AIDS diagnoses. TB screening performance overall in the BPHC sites was significantly higher than among the ACTNow sites in 2000 (p=0.01).

Conclusion: Suboptimal rates of PPD screening were seen overall, largely due to failure to screen rather than problems reading the results. However, the BPHC sites were able to achieve

higher rates of screening than the ACTNow group. Rates of referral for preventive therapy were good. For clinics with limited resources for PPD screening, initial quality improvement efforts could be targeted towards populations with higher rates of PPD positivity, including those born outside the continental US.

5.2 Vaccines

5.2.1 Pneumovax (any previous history of receipt)

Because invasive pneumococcal disease causes significant morbidity and mortality in PLWH, pneumococcal vaccine (pneumovax) is routinely recommended for preventive care of the HIV-positive patient and should be given soon after diagnosis[4]. General adult immunization guidelines also call for one re-immunization after 5-6 years for some older adults and groups of immunocompromised patients, so this approach has been supported in HIV-specific guidelines as well, although some controversy exists.

Pneumovax administration was determined by chart review. Immunization given at any time was considered coverage regardless of the amount of time since administration. In 2000, 89% had documentation of receiving pneumovax in the chart (range 67-94% in 2000). The BPHC pneumococcal immunization rate was significantly higher than the ACTNow group (81%, $p=0.009$).

5.2.2 Influenza (per year)

Annual influenza immunization (given in Fall before flu season) is generally recommended for PLWH[6]. However, use of flu vaccine in patients with low CD4 counts has been controversial and individual clinics or providers have sometimes withheld vaccine from seriously immunocompromised patients.

Influenza vaccine administration was determined from the chart review, and documentation of doses given at any time during the review period (a calendar year) was considered coverage, although this represents vaccination at end of one season or beginning of following season. Overall rates of influenza vaccine were 53% for BPHC compared to 47% for ACTNow in 2000 ($p=0.26$), with site specific rates ranging from 39-63%. It should be noted that delays in vaccine manufacturing and distribution occurred in 2000, which may have postponed immunization of some patients into early 2001; since the chart reviews recorded only the vaccines given in 2000, the rates for this year should be considered minimum estimates.

Conclusion: Extremely high rates of coverage with pneumovax were seen, with greater inter-site variation in range of coverage for annual influenza vaccine. Immunization rates for BPHC sites were comparable to the ACTNow sample for flu vaccine but significantly higher for pneumovax.

5.3 Viral Hepatitis Testing and Immunization

5.3.1 Hepatitis B (HBV)

Because immunization of susceptible HIV patients against HBV is recommended[6], documentation of HBV serologic screening and immunization was tracked. Because of charting issues, receipt of even one dose of vaccine was counted as having been vaccinated. Like the ACTNow group, nearly all BPHC patients (97%) were screened for HBV or had serologic evidence of infection in the chart; inter-site performance ranged from 94-100%. High rates of HBV seropositivity were seen overall, with 56% (range 32-82%) showing evidence of one or more HBV serologic marker. Of individuals who were HBV negative or unscreened, 68% received at least one dose of hepatitis B vaccine, a significantly higher rate than the ACTNow sites (53%, $p < 0.05$).

5.3.2 Hepatitis C (HCV)

USPHS/IDSA Guidelines recommend that all HIV infected persons should be tested for HCV infection[4]. Screening for evidence of HCV occurred in 97% of patients (range 95-100%), and 42% of those tested were seropositive (range 26-58%). These results are similar to the ACTNow sites.

5.3.3 Hepatitis A (HAV)

According to national guidelines, HIV-HCV coinfecting patients who are susceptible to hepatitis A should be vaccinated[4]. Rates of HAV screening among HCV-positive patients were reasonably high and did not change between years. Among HCV-positive patients in 2000, 38% were screened for HAV, with 28% testing HAV-positive or receiving at least one dose of hepatitis A vaccine. Both hepatitis A screening and immunization rates were significantly lower than in ACTNow sites ($p < 0.0001$).

Because fecal-oral contact can transmit hepatitis A, gay or bisexual men are at high risk and should be targeted for immunization. Among 25 patients with MSM as their risk, only 12

(48%) were screened for HAV. Seventeen MSM's were HAV-negative or unscreened, and 2 of these (12%) received hepatitis A vaccine.

Conclusion: Extremely high rates of screening for HBV and HCV were seen in most sites, with more variability in HAV screening (intra-site range 5-67%). However, rates of HBV and HAV vaccination for eligible individuals were low, particularly considering our relaxed evaluation criteria (receipt of even one in the series of vaccine doses). However, these data are consistent with a recent report on practices from a wide range of sites surveyed by the CDC as part of the Adult Spectrum of Disease Project[11].

5.4 Cervical Cancer Screening

To screen for cervical cancer, women who are HIV-positive should have Pap smears at least annually by current guidelines. Pap smears were considered done if they were documented in the chart and/or if the results were found. Women who only had a colposcopy during the review period were considered to have received screening. In 2000, 70% (range 50-85%) of women received a Pap smear or colposcopy compared to 61% of the ACTNow female patients (p=0.2). For BPHC sites, 23% of Pap smear results were abnormal. Among the 10 women with an abnormal Pap smear, 90% were referred for further evaluation and 70% completed the referrals.

Conclusion: Site-specific Pap smear and colposcopy screening rates ranged from good (85%) to poor (50%) with a significant number of abnormal Pap smears requiring follow-up care. Due to the relatively small sample of 62 women, BPHC cervical cancer screening rate was not significantly different from the ACTNow sites.

5.5 Prophylaxis Against *Pneumocystis carinii* Pneumonia (PCP) and *Mycobacterium avium intracellulare* (MAI)

Antimicrobials are used to prevent PCP and MAI in HIV patients with low CD4 counts, per established guidelines[4]. High rates of compliance with the prophylaxis recommendations were observed through the chart reviews. Of eligible patients, only 3% (5 individuals) were not on PCP prophylaxis. For MAI, 3% (4 individuals) of patients eligible were not taking the medicines. Patient refusal or non-adherence was the primary obstacle to prophylaxis.

Conclusion: Overall, rates of appropriate PCP and MAI prophylaxis were extremely high.

5.6 Risk Reduction Counseling

In 2000, 66% (range 53-77%) had counseling about safer sex or needle use documented, either on care entry or in the review period, comparable to the ACTNow sample's experience. However, the timing of the occurrence of counseling differed significantly. Rates for counseling on entry to care were higher in BPHC (61% vs. 52%, $p=0.04$) and rates for counseling in 2000 were lower (33% vs. 45%, $p=0.006$) than ACTNow.

Counseling rates differed by HIV risk and gender and age (comparing older than 50 vs. younger than 50). Women (42% vs. 25%), MSM's (92% vs. 62%) and patients under age 50 (69% vs. 40%) were more likely to receive risk reduction counseling on entry to care or during the year. The one patient who had a new STD diagnosed in 2000 received risk reduction counseling.

Conclusion: Given data on ongoing transmission and risk behaviors, documented risk reduction counseling was incomplete, particularly for older individuals and heterosexual men. Charting practices may differ among sites and lead to underestimating of the actual counseling performance.

6. BEHAVIORAL HEALTH

6.1 Substance Abuse

Twenty-seven percent of patients surveyed had active substance abuse (including alcohol and/or recreational drugs) during 2000, with an additional 32% having a history of substance abuse but no record of active substance abuse during the year. One in five were active substance abusers who had injection drug use as their risk behavior. Among 40 individuals with active substance abuse, all but one (98%) received treatment referrals or counseling on site.

Conclusion: High rates of referral and counseling for active substance abuse were documented.

6.2 Mental Health Diagnoses

In 2000, 47% of patients in care had active mental illness and an additional 10% had a history of mental illness but not active mental illness during the year. Among 68 individuals with active mental illness, 96% received referral, counseling by provider or other mental health treatment. There were no differences based on HIV risk or gender in offering or receiving treatment for mental illness.

Conclusion: High rates of action for active mental illness were documented.

7. ANTIRETROVIRAL TREATMENT (ART)

7.1 Utilization of ART

Because of medication documentation and time constraints, only the last ART regimen in the review period was examined in detail. Information on the duration of this regimen or on prior ART use was not collected. In 2000, 82% (range 74-86%) of patients were on ART at some point, with 24% having therapy interrupted at least once. Overall, 96% of patients who met Public Health Service (PHS) guidelines for treatment received ART during 2000. Of the 21 individuals who were not on ART but who were eligible, 29% refused, 38% had discussed ART with their provider, 14% did not have documentation of any discussion about ART in the chart, and 18% had other reasons why ART was not started. These other reasons included active substance abuse and poor adherence. One third of patients (22/33) whose last CD4 count was less than 200 were not on ART at their last visit in 2000.

In order to control for whether ART was indicated according to the guidelines in effect, we assumed that all patients on ART met the CD4 and viral load criteria and categorized patients who were not on ART as “indicated” or “not indicated” based on the CD4 count and viral load during the review year. Using these assumptions, overall compliance with ART guidelines was 85%, compared to 90% in the ACTNow sites. The BPHC inter-site variation was minimal (83-88%) compared to ACTNow sites (73-98%).

7.2 On ART at Last Visit

To evaluate the clinical efficacy of ART, patients who were on ART at sometime during 2000 were examined separately; this subgroup represents 73% of all patients. We used all available viral load results found in the record during the review period. Table 4 shows selected virologic outcomes of these patients. Since the level of sensitivity varied for viral load tests done by different sites during 2000, in this report “undetectable” is defined as <400 RNA copies/ml.

Table 4. Selected virologic outcomes during the review periods in patients who were on ART at their last visit

	BPHC (n=107)	ACTNow (n=737)
Last viral load during year undetectable	55% (range 40-60%)	64%
All viral loads during year undetectable	37% (range 33-53%)	43%
No undetectable viral loads during year	34% (range 13-53%)	25%

The patient characteristics significantly associated with being on ART at the last visit included lack of active substance abuse problems (82% vs. 53%, $p < 0.001$), and absence of adherence problems (99% vs. 76%, $p < 0.001$).

7.3 Adherence and Resistance Testing

To achieve good virologic response to ART, patients must closely follow medication dose schedules and other requirements of the drug therapies. Numerous studies have illustrated that high levels of medication adherence are needed, but these challenges can be daunting for many patients. During clinical care, providers are encouraged to regularly assess patient adherence and provide support for medication-taking using a variety of strategies tailored to individual needs. Resistance testing is becoming more widely utilized to guide the selection of an appropriate drug regimen in patients who have been treated with various drug combinations over time.

Medication adherence was considered addressed if any mention of the provider assessing it was found in the chart. Similarly, problems and interventions were also noted if documented in the chart. Adherence was addressed in 100% of patients on ART, with 39% having a problem identified. Twenty percent (range 9-39%) of patients had a resistance test performed.

7.4 Treatment Regimens

On average, patients were taking a three-medication regimen. One patient was on monotherapy and refused to change despite provider encouragement. This patient had high CD4 counts and viral load less than 400 during the period. Only 9% were on two drug regimens (range 7-10%) and 13% were on four or more medications at the end of the year. There were no significant differences by gender, risk or race in the use of 2 vs. 3-4 drug regimens.

Over half (55%) were on a PI-containing regimen, 42% were on an NNRTI/nRTI regimen, and 13% were on an nRTI-only regimen. No significant differences by demographics or risk were seen in the use of ART drug classes.

8. PREGNANCY

In 2000, 3 women (5%) became pregnant, and 2/3 were on ART during the pregnancy. The pregnant woman who was not on ART met PHS criteria for treatment but had a history of nonadherence to previous regimens.

Conclusion: Low rates of pregnancy were seen with 100% of women receiving or being considered for ART, but previous treatment nonadherence delayed use of ART in one pregnancy. Perinatal transmission rates could not be determined by this review.

9.0 SITE-SPECIFIC COMMENTS AND COMPARISON TO OTHER HIV QUALITY MANAGEMENT PROGRAMS

The following section provides summary information for the four clinics included in this project. The findings of each site's chart review were discussed at a face-to-face meeting with each clinic's clinical and administrative staff. Additional site-specific information collected during interviews with key program staff is provided in Appendix B.

9.1 East Boston Health Center

The JSI reviewers received 71 charts of active HIV/AIDS patients, of which 66 (93%) had 2 or more medical visits in 2000 and received a full performance review. The patient demographics revealed diversity in gender, race and ethnicity that was similar to the ACTNow survey. Heterosexual transmission was somewhat more common (77%) and injection drug use somewhat lower (30%) than the statewide sample. Like the ACTNow group, patients had complex needs since nearly half of your patients had an AIDS diagnosis (48%), and rates of active substance abuse (26%) and mental health diagnoses (51%) were high.

Notable clinical outcomes were a lower than expected hospitalization rate (6% vs. 16% statewide), high levels of tuberculosis skin testing, pneumococcal vaccine, Pap smears for cervical cancer screening, hepatitis B virus screening and immunization, and HIV resistance testing. However, hepatitis A virus screening was somewhat low (51%) as was the use of hepatitis A vaccine. Virologic and immunologic outcomes were comparable to the statewide sample.

The following table illustrates the performance of the clinic compared to the overall ACTNow results and the national goals suggested by the Institute for Healthcare Improvement (IHI), contractors for HRSA in quality management projects.

Comparison of Boston Public Health Commission Clinics to National Goals (Proposed by IHI) and State Average Performance (MA ACTNow sites): East Boston Health Center

Core Measures for the IHI Standards of Care				
<i>Category</i>	<i>Measure</i>	<i>IHI Goal</i>	<i>ACTNow sites 2000 (n=998)</i>	<i>East Boston HC 2000 (n=66)</i>
Access & Retention	Percent of patients with visit(s) in last 3 months	85%	85% (in last 4 months)	79% (in last 4 months)
Viral Load	Percent of patients with undetectable viral load	60%	All pts: 51% at last visit; 60% sometime ART pts: 59% at last visit; 70% sometime	All pts: 47% at last visit; 54% sometime ART pts: 54% at last visit; 63% sometime
Clinical Care	Percent of patients on HAART	75%	Of ART-“indicated” by guidelines: 89% ever, 80% at last visit	Of ART-“indicated” by guidelines: 88% ever (57/65) 85% at last visit (55/65)
Self-Management & Adherence Support	Percent of HAART patients with adherence counseling/intervention at their last visit	75%	98% during the year had adherence addressed	100% during the year had adherence addressed
Additional Quality of Care Measures				
Viral Load	Percent of patients with VL tests in the past 3 months	100%	72% (in last 4 months)	50% (in last 4 months)
Clinical Care	Percent with hospitalizations	<10%	16% in year with psych & substance abuse	6% in year with psych & substance abuse
	Percent of patients with hepatitis B & C screening	90%	HBV 96% HCV 92%	HBV 98% HCV 97%
Prevention	Percent of patients with PPD	95%	41% PPD placed (36% had it read)	55% PPD placed 48% read
	Percent of patients with Pap smear in past 6 months	95%	60% had Pap or colpo during year	77% had Pap or colpo during year
	Percent of (eligible) patients with PCP prophylaxis	95%	96%	97% (28/29)
	Percent of patients with pneumovax	95%	81%	94%

9.2 Great Brook Valley Health Center

The JSI reviewers received 54 charts of active HIV/AIDS patients, of which 43 (80%) had 2 or more medical visits in 2000 and received a full performance review. The patient demographics revealed a different case mix in race and ethnicity than the ACTNow survey sample, with 86% Latinos and no Black non-Hispanic patients. Injection drug use risk behavior and incarceration during 2000 were somewhat more common than in the statewide sample. Like the ACTNow group, patients had complex needs since nearly half of your patients had an AIDS diagnosis (46%), and active substance abuse problems (28%) and mental health diagnoses (44%) were frequent.

Notable clinical outcomes seen in your patients were high rates of tuberculosis skin testing (PPD), pneumococcal vaccine and flu immunization. However, risk reduction counseling, cervical cancer screening (Pap smears), hepatitis A virus screening and immunization were low, and rates of hospitalization were higher than the statewide average (28% vs. 16%). Virologic and immunologic outcomes were comparable to the statewide sample.

Comparison of Boston Public Health Commission Clinics to National Goals (Proposed by IHI) and State Average Performance (MA ACTNow sites): Great Brook Valley Health Center

Core Measures for the IHI Standards of Care				
<i>Category</i>	<i>Measure</i>	<i>IHI Goal</i>	<i>ACTNow sites 2000 (n=998)</i>	<i>Great Brook Valley HC 2000 (n=43)</i>
Access & Retention	Percent of patients with visit(s) in last 3 months	85%	85% (in last 4 months)	81% (in last 4 months)
Viral Load	Percent of patients with undetectable viral load	60%	All pts: 51% at last visit; 60% sometime ART pts: 59% at last visit; 70% sometime	All pts: 51% at last visit; 76% sometime ART pts: 59% at last visit; 66% sometime
Clinical Care	Percent of patients on HAART	75%	Of ART-“indicated” by guidelines: 89% ever, 80% at last visit	Of ART-“indicated” by guidelines: 82% ever (32/39) 72% at last visit (28/39)
Self-Management & Adherence Support	Percent of HAART patients with adherence counseling/intervention at their last visit	75%	98% during the year had adherence addressed	100% during the year had adherence addressed
Additional Quality of Care Measures				
Viral Load	Percent of patients with VL tests in the past 3 months	100%	72% (in last 4 months)	58% (in last 4 months)
Clinical Care	Percent with hospitalizations	<10%	16% in year with psych & substance abuse	28% in year with psych & substance abuse
	Percent of patients with hepatitis B & C screening	90%	HBV 96% HCV 92%	HBV 95% HCV 95%
Prevention	Percent of patients with PPD	95%	41% PPD placed (36% had it read)	62% PPD placed 56% read
	Percent of patients with Pap smear in past 6 months	95%	60% had Pap or colpo during year	50% had Pap or colpo during year (7/14)
	Percent of (eligible) patients with PCP prophylaxis	95%	96%	88% (15/17)
	Percent of patients with pneumovax	95%	81%	93%

9.3 Martha Elliot Health Center

The JSI reviewers received 23 charts of active HIV/AIDS patients, of which 19 (83%) had 2 or more medical visits in 2000 and received a full performance review. The patient demographics revealed a different case mix in gender, race and ethnicity than the ACTNow survey sample, with 68% women and 58% Latinos. Heterosexual transmission was more common (89%) and injection drug use somewhat lower (10%) than the statewide sample. Like the ACTNow group, patients had complex needs since over half of your patients had an AIDS diagnosis (58%), and active substance abuse problems (21%) and mental health diagnoses (32%) were frequent.

Notable clinical outcomes were high rates of Pap smears for cervical cancer screening, hepatitis B immunization, and flu vaccine. However, hepatitis A virus screening and immunization was low, and rates of hospitalization and interruptions of antiretroviral therapy were higher than the statewide average. Considering the small sample size, virologic and immunologic outcomes were comparable to the statewide sample.

**Comparison of Boston Public Health Commission Clinics to National Goals (Proposed by IHI)
and State Average Performance (MA ACTNow sites): Martha Elliot Health Center**

Core Measures for the IHI Standards of Care				
<i>Category</i>	<i>Measure</i>	<i>IHI Goal</i>	<i>ACTNow sites 2000 (n=998)</i>	<i>Martha Elliot HC 2000 (n=19)</i>
Access & Retention	Percent of patients with visit(s) in last 3 months	85%	85% (in last 4 months)	95% (in last 4 months)
Viral Load	Percent of patients with undetectable viral load	60%	All pts: 51% at last visit; 60% sometime ART pts: 59% at last visit; 70% sometime	All pts: 37% at last visit; 42% sometime ART pts: 40% at last visit; 47% sometime
Clinical Care	Percent of patients on HAART	75%	Of ART-“indicated” by guidelines: 89% ever, 80% at last visit	Of ART-“indicated” by guidelines: 83% ever (15/18) 61% at last visit (11/18)
Self-Management & Adherence Support	Percent of HAART patients with adherence counseling/intervention at their last visit	75%	98% during the year had adherence addressed	100% during the year had adherence addressed
Additional Quality of Care Measures				
Viral Load	Percent of patients with VL tests in the past 3 months	100%	72% (in last 4 months)	68% (in last 4 months)
Clinical Care	Percent with hospitalizations	<10%	16% in year with psych & substance abuse	26% (5/19) in year with psych & substance abuse
	Percent of patients with hepatitis B & C screening	90%	HBV 96% HCV 92%	HBV 100% HCV 100%
Prevention	Percent of patients with PPD	95%	41% PPD placed (36% had it read)	53% PPD placed & read
	Percent of patients with Pap smear in past 6 months	95%	60% had Pap or colpo during year	85% had Pap or colpo during year
	Percent of (eligible) patients with PCP prophylaxis	95%	96%	78%
	Percent of patients with pneumovax	95%	81%	84%

9.4 Whittier Street Health Center

The JSI reviewers received 19 charts of active HIV/AIDS patients, of which 18 (95%) had 2 or more medical visits in 2000 and received a full performance review. The patient demographics revealed greater diversity at your site in gender, race and ethnicity than found in the overall ACTNow survey, with heterosexual transmission and injection drug use somewhat more common. Like the ACTNow group, patients had complex needs since half of your patients had an AIDS diagnosis, and rates of active substance abuse (39%) and mental health diagnoses (50%) were high.

Notable clinical outcomes were high rates of risk reduction counseling and hepatitis A vaccine. However, there was a higher than expected hospitalization rate (33% vs. 16% statewide) and low levels of pneumococcal vaccine and flu vaccine. Virologic and immunologic outcomes were comparable to the statewide sample.

Comparison of Boston Public Health Commission Clinics to National Goals (Proposed by IHI)
and State Average Performance (MA ACTNow sites): Whittier Street Health Center

Core Measures for the IHI Standards of Care				
<i>Category</i>	<i>Measure</i>	<i>IHI Goal</i>	<i>ACTNow sites 2000 (n=998)</i>	<i>Whittier Street HC 2000 (n=18)</i>
Access & Retention	Percent of patients with visit(s) in last 3 months	85%	85% (in last 4 months)	78% (in last 4 months)
Viral Load	Percent of patients with undetectable viral load	60%	All pts: 51% at last visit; 60% sometime ART pts: 59% at last visit; 70% sometime	All pts: 50% at last visit; 71% sometime ART pts: 60% at last visit; 87% sometime
Clinical Care	Percent of patients on HAART	75%	Of ART-“indicated” by guidelines: 89% ever, 80% at last visit	Of ART-“indicated” by guidelines: 83% ever (15/18) 72% at last visit (13/18)
Self-Management & Adherence Support	Percent of HAART patients with adherence counseling/intervention at their last visit	75%	98% during the year had adherence addressed	100% during the year had adherence addressed
Additional Quality of Care Measures				
Viral Load	Percent of patients with VL tests in the past 3 months	100%	72% (in last 4 months)	56% (in last 4 months)
Clinical Care	Percent with hospitalizations	<10%	16% in year with psych & substance abuse	33% (6/18) in year with psych & substance abuse
	Percent of patients with hepatitis B & C screening	90%	HBV 96% HCV 92%	HBV 94% HCV 100%
Prevention	Percent of patients with PPD	95%	41% PPD placed (36% had it read)	40% PPD placed & read
	Percent of patients with Pap smear in past 6 months	95%	60% had Pap or colpo during year	56% had Pap or colpo during year
	Percent of (eligible) patients with PCP prophylaxis	95%	96%	100% (6/6)
	Percent of patients with pneumovax	95%	81%	67%

10. SUMMARY

This report represents a “baseline” (or pre-intervention) performance assessment for many of the sites, upon which quality management activities will be planned and undertaken. The findings described here are based on data collected by chart reviews from a range of clinical sites, and so are limited by variations in documentation, chart organization and extractor interpretation. Therefore, any variability cannot be attributed with certainty to actual variations in care without considering the impact of differential charting practices.

In this context and despite these limitations, overall care patterns demonstrated high levels of quality, particularly considering the complexity of needs in the population, but considerable variability was seen between sites and areas for improvement were noted at all sites. ART use was extremely high and consistent attention was paid to treatment adherence. Viral suppression rates observed were similar to the published literature. However, prevention practices were less consistent. Areas for potential improvement include risk reduction counseling, hepatitis vaccinations, and tuberculin skin testing.

As a group, the four BPHC clinics were found to significantly exceed performance of the statewide ACTNow sample in tuberculin skin testing with PPD’s, pneumococcal immunization, and risk reduction counseling at entry to care. However, their performance of risk reduction counseling during the year 2000 and hepatitis A screening and immunization was lower as a group than rates found in the statewide sample during this same timeframe. Other quality care parameters were comparable across the two clinical samples.

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**BPHC CLINICAL CQI CHART REVIEW DATA
EXCLUDING DEATHS**

3/7/2003

Calendar Year 2000

	Boston Public Health Commission Clinics								ACTNOW CLINICS			
	Clinic T (N=19)		Clinic U (N=18)		Clinic V (N=43)		Clinic W (N=66)		Total (N=146)		Total (N=998)	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
<u>BASELINE DATA</u>												
<u>Gender:</u>												
Male	6	31.6%	9	50.0%	29	67.4%	39	59.1%	83	56.8%	630	63.1%
Female	13	68.4%	9	50.0%	14	32.6%	26	39.4%	62	42.5%	366	36.7%
Transgender	0	0.0%	0	0.0%	0	0.0%	1	1.5%	1	0.7%	2	0.2%
<u>Race/Ethnicity:</u>												
Hispanic	11	57.9%	8	44.4%	37	86.0%	18	27.3%	74	50.7%	288	28.9%
White non-Hispanic	0	0.0%	1	5.6%	6	14.0%	33	50.0%	40	27.4%	434	43.5%
Black non-Hispanic	8	42.1%	9	50.0%	0	0.0%	13	19.7%	30	20.5%	252	25.3%
Asian/PI non-Hispanic	0	0.0%	0	0.0%	0	0.0%	1	1.5%	1	0.7%	17	1.7%
Other non-Hispanic	0	0.0%	0	0.0%	0	0.0%	1	1.5%	1	0.7%	7	0.7%
Missing	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
<u>Minority</u>	19	100.0%	17	94.4%	37	86.0%	33	50.0%	106	72.6%	564	56.5%
<u>Born outside US</u>	4	21.1%	4	22.2%	8	18.6%	22	33.3%	38	26.0%	206	20.6%
<u>HIV Risk Behavior*:</u>												
MSM	1	5.3%	2	11.1%	4	9.3%	18	27.3%	25	17.1%	230	23.0%
Heterosexual	17	89.5%	10	55.6%	22	51.2%	51	77.3%	100	68.5%	504	50.5%
IDU	2	10.5%	10	55.6%	26	60.5%	20	30.3%	58	39.7%	413	41.4%
Blood product	1	5.3%	0	0.0%	2	4.7%	6	9.1%	9	6.2%	21	2.1%
Occupational	0	0.0%	1	5.6%	0	0.0%	0	0.0%	1	0.7%	5	0.5%
Other	0	0.0%	0	0.0%	0	0.0%	1	1.5%	1	0.7%	5	0.5%
Unknown/not documented	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	23	2.3%
<u>Number Of HIV Risk Behaviors:</u>												
Unknown/not documented	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	23	2.3%
1	17	89.5%	13	72.2%	32	74.4%	42	63.6%	104	71.2%	788	79.0%
2	2	10.5%	5	27.8%	11	25.6%	20	30.3%	38	26.0%	171	17.1%
3 or more	0	0.0%	0	0.0%	0	0.0%	4	6.1%	4	2.7%	16	1.6%
<u>Initial CD4 count @ site:</u>												
<= 50	2	10.5%	1	5.6%	1	2.3%	6	9.1%	10	6.8%	95	9.5%
51-200	3	15.8%	4	22.2%	10	23.3%	14	21.2%	31	21.2%	188	18.8%
201-500	6	31.6%	9	50.0%	18	41.9%	30	45.5%	63	43.2%	403	40.4%
>500	5	26.3%	4	22.2%	14	32.6%	16	24.2%	39	26.7%	295	29.6%
Not available	3	15.8%	0	0.0%	0	0.0%	0	0.0%	3	2.1%	17	1.7%

**BPHC CLINICAL CQI CHART REVIEW DATA
EXCLUDING DEATHS**

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Calendar Year 2000

	Boston Public Health Commission Clinics								ACTNOW CLINICS			
	Clinic T (N=19)		Clinic U (N=18)		Clinic V (N=43)		Clinic W (N=66)		Total (N=146)		Total (N=998)	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
<u>REVIEW PERIOD DATA:</u>												
<u>HIV Stage:</u>												
AIDS	11	57.9%	9	50.0%	20	46.5%	32	48.5%	72	49.3%	526	52.7%
HIV	8	42.1%	9	50.0%	23	53.5%	34	51.5%	74	50.7%	472	47.3%
<u>Substance Abuse</u>												
Active	4	21.1%	7	38.9%	12	27.9%	17	25.8%	40	27.4%	230	23.0%
Inactive (hx only)	4	21.1%	6	33.3%	15	34.9%	22	33.3%	47	32.2%	331	33.2%
No history	11	57.9%	5	27.8%	16	37.2%	27	40.9%	59	40.4%	415	41.6%
No documentation	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	22	2.2%
<u>Mental Illness</u>												
Active	6	31.6%	9	50.0%	19	44.2%	34	51.5%	68	46.6%	425	42.6%
Inactive (hx only)	3	15.8%	2	11.1%	2	4.7%	7	10.6%	14	9.6%	105	10.5%
No history	10	52.6%	7	38.9%	22	51.2%	25	37.9%	64	43.8%	446	44.7%
No documentation	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	22	2.2%
<u>IDU Risk/Active Substance Abuse</u>												
IDU risk with active substance abuse	1	5.3%	5	27.8%	12	27.9%	12	18.2%	30	20.5%	163	16.3%
IDU risk with no active substance abuse	1	5.3%	5	27.8%	14	32.6%	8	12.1%	28	19.2%	250	25.1%
Active substance abuse with no IDU risk	3	15.8%	2	11.1%	0	0.0%	5	7.6%	10	6.8%	67	6.7%
No active substance abuse with no IDU risk	14	73.7%	6	33.3%	17	39.5%	41	62.1%	78	53.4%	518	51.9%
<u>Incarcerated in Review Period</u>												
	1	5.3%	1	5.6%	7	16.3%	3	4.5%	12	8.2%	50	5.0%
<u>Hospitalized in Review Period</u>												
	5	26.3%	6	33.3%	12	27.9%	4	6.1%	27	18.5%	164	16.4%

* HIV Risk Behaviors are not mutually exclusive categories.

**BPHC CLINICAL CQI CHART REVIEW DATA
EXCLUDING DEATHS**

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Calendar Year 2000

	Boston Public Health Commission Clinics								ACTNOW CLINICS			
	Clinic T (N=19)		Clinic U (N=18)		Clinic V (N=43)		Clinic W (N=66)		Total (N=146)		Total (N=998)	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
<u>H/O TB or positive PPD</u>	2	10.5%	3	16.7%	6	14.0%	12	18.2%	23	15.8%	114	11.4%
Screened in review period	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	8	7.0%
<u>No H/O TB or positive PPD</u>	17	89.5%	15	83.3%	37	86.0%	54	81.8%	123	84.2%	884	88.6%
PPD completed in review period	9	52.9%	6	40.0%	23	62.2%	26	48.1%	64	52.0%	318	36.0%
PPD placed but not read	0	0.0%	0	0.0%	2	5.4%	4	7.4%	6	4.9%	42	4.8%
Missed PPD screening	8	47.1%	9	60.0%	12	32.4%	24	44.4%	53	43.1%	524	59.3%
Received pneumovax at anytime	16	84.2%	12	66.7%	40	93.0%	62	93.9%	130	89.0%	804	80.6%
Received flu vaccine in review period	12	63.2%	7	38.9%	27	62.8%	31	47.0%	77	52.7%	474	47.5%
<u>ART Indicated In Review Period</u>												
ART indicated (on ART or meeting PHS guidelines)	18	94.7%	18	100.0%	39	90.7%	65	98.5%	140	95.9%	933	93.5%
ART not indicated	1	5.3%	0	0.0%	4	9.3%	1	1.5%	6	4.1%	65	6.5%
On ART during review period	15	78.9%	15	83.3%	32	74.4%	57	86.4%	119	81.5%	816	81.8%
<u>Not on ART but meets PHS guidelines (Review Year)</u>	3	15.8%	3	16.7%	7	16.3%	8	12.1%	21	14.4%	117	11.7%
Discussed/no action documented	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	5	4.3%
Patient refused	0	0.0%	1	33.3%	1	14.3%	3	37.5%	5	23.8%	50	42.7%
Not discussed or not offered	0	0.0%	0	0.0%	4	57.1%	0	0.0%	4	19.0%	8	6.8%
Other/Unknown	3	100.0%	2	66.7%	2	28.6%	5	62.5%	12	57.1%	54	46.2%
ART interrupted during review pd	7	46.7%	3	20.0%	7	21.9%	12	21.1%	29	24.4%	218	26.7%
<u>Adherence addressed</u>	15	100.0%	15	100.0%	32	100.0%	57	100.0%	119	100.0%	803	98.4%
Problem identified	9	60.0%	2	13.3%	13	40.6%	22	38.6%	46	38.7%	284	35.4%
On ART at last visit in review period	11	57.9%	13	72.2%	28	65.1%	55	83.3%	107	73.3%	737	73.8%
Had resistance testing	5	26.3%	7	38.9%	4	9.3%	14	21.2%	30	20.5%	131	13.1%
On PCP Prophylaxis	7	36.8%	6	33.3%	15	34.9%	28	42.4%	56	38.4%	371	37.2%
Not eligible by Guidelines	10	52.6%	12	66.7%	26	60.5%	37	56.1%	85	58.2%	612	61.3%
Eligible, but not taking	2	10.5%	0	0.0%	2	4.7%	1	1.5%	5	3.4%	14	1.4%
Missing	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.1%
On MAI Prophylaxis	1	5.3%	1	5.6%	2	4.7%	9	13.6%	13	8.9%	120	12.0%
Not eligible by Guidelines	18	94.7%	16	88.9%	39	90.7%	56	84.8%	129	88.4%	873	87.5%
Eligible, but not taking	0	0.0%	1	5.6%	2	4.7%	1	1.5%	4	2.7%	3	0.3%
Missing	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	0.2%

**BPHC CLINICAL CQI CHART REVIEW DATA
EXCLUDING DEATHS**

3/7/2003

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	Boston Public Health Commission Clinics								ACTNOW CLINICS			
	Clinic T (N=19)		Clinic U (N=18)		Clinic V (N=43)		Clinic W (N=66)		Total (N=146)		Total (N=998)	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
<u>Last Trimester (4-Months)</u>												
Seen By Medical Provider In Sep-Dec	18	94.7%	14	77.8%	35	81.4%	52	78.8%	119	81.5%	827	82.9%
Had a CD4 test	10	52.6%	11	61.1%	23	53.5%	31	47.0%	75	51.4%	704	70.5%
Had a viral load measured	13	68.4%	10	55.6%	25	58.1%	33	50.0%	81	55.5%	690	69.1%
<u>Female Patients</u>	13	68.4%	9	50.0%	14	32.6%	26	39.4%	62	42.5%	366	36.7%
<i>Pregnant in review period</i>	2	15.4%	0	0.0%	0	0.0%	1	3.8%	3	4.8%	12	3.3%
Pregnant & on ART	1	50.0%	0		0		1	100.0%	2	66.7%	8	66.7%
Pap smear in review period *	11	84.6%	5	55.6%	7	50.0%	20	76.9%	43	69.4%	217	59.3%
Colposcopy in review period *	2	15.4%	0	0.0%	0	0.0%	5	19.2%	7	11.3%	33	9.0%
No Pap or Colpo in review period	2	15.4%	4	44.4%	7	50.0%	6	23.1%	19	30.6%	143	39.1%
<u>Abnormal Pap (if done)</u>	3	27.3%	0	0.0%	1	14.3%	6	30.0%	10	23.3%	61	28.1%
<i>completed referral</i>	2	66.7%	0		0	0.0%	5	83.3%	7	70.0%	32	52.5%
<i>referral not completed</i>	1	33.3%	0		0	0.0%	1	16.7%	2	20.0%	16	26.2%
<i>no referral</i>	0	0.0%	0		1	100.0%	0	0.0%	1	10.0%	13	21.3%
<i>missing</i>	0	0.0%	0		0	0.0%	0	0.0%	0	0.0%	0	0.0%

* Women may have both a Pap smear and colposcopy during the review period.

**BPHC CLINICAL CQI CHART REVIEW DATA
EXCLUDING DEATHS**

3/7/2003

Calendar Year 2000

Drugs in Last ART Regimen in Review Period
(N=# on ART)

Drugs:

	Boston Public Health Commission Clinics								ACTNOW CLINICS			
	Clinic T (N=15)		Clinic U (N=15)		Clinic V (N=32)		Clinic W (N=57)		Total (N=119)		Total (N=816)	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Combivir	3	20.0%	4	26.7%	10	31.3%	24	42.1%	41	34.5%	310	38.0%
3TC	2	13.3%	9	60.0%	3	9.4%	12	21.1%	26	21.8%	316	38.7%
ddC	0	0.0%	0	0.0%	0	0.0%	1	1.8%	1	0.8%	7	0.9%
ZDV	1	6.7%	1	6.7%	2	6.3%	0	0.0%	4	3.4%	43	5.3%
ddI	5	33.3%	3	20.0%	8	25.0%	11	19.3%	27	22.7%	109	13.4%
d4T	10	66.7%	7	46.7%	16	50.0%	24	42.1%	57	47.9%	363	44.5%
Abacavir	5	33.3%	0	0.0%	14	43.8%	15	26.3%	34	28.6%	132	16.2%
Delavirdine	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	0.2%
Efavirenz	3	20.0%	1	6.7%	13	40.6%	14	24.6%	31	26.1%	207	25.4%
Nevirapine	4	26.7%	6	40.0%	3	9.4%	6	10.5%	19	16.0%	156	19.1%
Amprenavir	1	6.7%	0	0.0%	0	0.0%	3	5.3%	4	3.4%	37	4.5%
Saquinavir	1	6.7%	1	6.7%	2	6.3%	4	7.0%	8	6.7%	54	6.6%
Indinavir	1	6.7%	3	20.0%	0	0.0%	6	10.5%	10	8.4%	120	14.7%
Ritonavir	2	13.3%	2	13.3%	3	9.4%	2	3.5%	9	7.6%	96	11.8%
Nelfinavir	5	33.3%	4	26.7%	8	25.0%	25	43.9%	42	35.3%	228	27.9%
Tenofovir	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3	0.4%
Lopinavir/Riton	0	0.0%	0	0.0%	1	3.1%	2	3.5%	3	2.5%	25	3.1%
Preveon	0	0.0%	0	0.0%	1	3.1%	0	0.0%	1	0.8%	0	0.0%
Trizivir	0	0.0%	0	0.0%	1	3.1%	0	0.0%	1	0.8%	9	1.1%
<u>Number of Meds:</u>												
One drug	0	0.0%	0	0.0%	0	0.0%	1	1.8%	1	0.8%	0	0.0%
Two drugs	1	6.7%	1	6.7%	3	9.4%	6	10.5%	11	9.2%	67	8.2%
Three drugs	12	80.0%	13	86.7%	25	78.1%	42	73.7%	92	77.3%	602	73.8%
Four or more drugs	2	13.3%	1	6.7%	4	12.5%	8	14.0%	15	12.6%	146	17.9%
Drug information not available	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.1%
<u>Average Number of Meds:</u>												
Mean	3.067		3.000		3.031		3.035		3.034		3.119	
Median	3		3		3		3		3		3	
<u>Frequency Of Viral Load < 400 - On ART Only</u>												
Always < 400	5	33.3%	8	53.3%	11	34.4%	20	35.1%	44	37.0%	322	39.5%
Sometimes < 400	2	13.3%	5	33.3%	10	31.3%	16	28.1%	33	27.7%	250	30.6%
Never < 400	8	53.3%	2	13.3%	10	31.3%	20	35.1%	40	33.6%	232	28.4%
No viral loads measured	0	0.0%	0	0.0%	1	3.1%	1	1.8%	2	1.7%	12	1.5%
<u>Last Viral Load < 400 - On ART Only</u>												
< 400	6	40.0%	9	60.0%	19	59.4%	31	54.4%	65	54.6%	481	58.9%
>= 400	9	60.0%	6	40.0%	12	37.5%	25	43.9%	52	43.7%	323	39.6%
Missing	0	0.0%	0	0.0%	1	3.1%	1	1.8%	2	1.7%	12	1.5%

**BPHC CLINICAL CQI CHART REVIEW DATA
EXCLUDING DEATHS
Calendar Year 2000**

3/7/2003

	Boston Public Health Commission Clinics										ACTNOW CLINICS	
	Clinic T (N=19)		Clinic U (N=18)		Clinic V (N=43)		Clinic W (N=66)		Total (N=146)		Total (N=998)	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
New STD's	0	0.0%	1	5.6%	0	0.0%	0	0.0%	1	0.7%	3	0.3%
New TB	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3	0.3%
New Acute HAV	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.1%
New IDU-related endocarditis	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
New OI's	0	0.0%	1	5.6%	2	4.7%	2	3.0%	5	3.4%	44	4.4%
HBV Screening	19	100.0%	17	94.4%	41	95.3%	65	98.5%	142	97.3%	959	96.1%
<i>HBV positive (any marker)</i>	6	31.6%	14	82.4%	29	70.7%	31	47.7%	80	56.3%	549	57.2%
<i>HBV negative</i>	13	68.4%	3	17.6%	12	29.3%	34	52.3%	62	43.7%	410	42.8%
No HBV screen	0	0.0%	1	5.6%	2	4.7%	1	1.5%	4	2.7%	39	3.9%
<i>Total w/ HBV vaccine (of HBV negative or not screened)</i>	9	69.2%	2	50.0%	7	50.0%	27	77.1%	45	68.2%	240	53.5%
HBV Negative	13	68.4%	3	16.7%	12	27.9%	34	51.5%	62	42.5%	410	41.1%
<i>HBV vaccine</i>	9	69.2%	2	66.7%	7	58.3%	27	79.4%	45	72.6%	239	58.3%
HCV Screening	19	100.0%	18	100.0%	41	95.3%	64	97.0%	142	97.3%	915	91.7%
<i>HCV positive</i>	5	26.3%	10	55.6%	24	58.5%	21	32.8%	60	42.3%	460	50.3%
HCV Positive	5	26.3%	10	55.6%	24	55.8%	21	31.8%	60	41.1%	460	46.1%
<i>Screened for HAV</i>	0	0.0%	8	80.0%	4	16.7%	11	52.4%	23	38.3%	353	76.7%
<i>HAV+ or vaccinated</i>	0	0.0%	6	60.0%	5	20.8%	6	28.6%	17	28.3%	292	63.5%
HAV Screening	1	5.3%	12	66.7%	10	23.3%	34	51.5%	57	39.0%	706	70.7%
<i>HAV positive</i>	0	0.0%	7	58.3%	3	30.0%	20	58.8%	30	52.6%	358	50.7%
<i>HAV negative</i>	1	100.0%	5	41.7%	7	70.0%	14	41.2%	27	47.4%	348	49.3%
Of HAV neg, vaccine	0	0.0%	3	60.0%	1	14.3%	4	28.6%	8	29.6%	167	48.0%
No screen, vaccine given	1	5.3%	0	0.0%	4	9.3%	0	0.0%	5	3.4%	36	3.6%
Risk Reduction Discussion:												
On Entry Or In Last Year	11	57.9%	12	66.7%	23	53.5%	51	77.3%	97	66.4%	627	62.8%
On Entry To Care	11	57.9%	10	55.6%	20	46.5%	48	72.7%	89	61.0%	512	51.3%
In Last Year	7	36.8%	8	44.4%	9	20.9%	23	34.8%	47	32.2%	441	44.2%
None Documented	8	42.1%	6	33.3%	20	46.5%	15	22.7%	49	33.6%	371	37.2%
Number Of 4-Month Periods Seen By HIV Provider												
One	3	15.8%	0	0.0%	8	18.6%	6	9.1%	17	11.6%	112	11.2%
Two	5	26.3%	8	44.4%	14	32.6%	18	27.3%	45	30.8%	281	28.2%
Three	11	57.9%	10	55.6%	21	48.8%	42	63.6%	84	57.5%	605	60.6%
None	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
First CD4 Count												
CD4 <= 200	6	31.6%	4	22.2%	10	23.3%	15	22.7%	35	24.0%	216	21.6%
CD4 > 200	13	68.4%	14	77.8%	32	74.4%	51	77.3%	110	75.3%	767	76.9%
Missing	0	0.0%	0	0.0%	1	2.3%	0	0.0%	1	0.7%	15	1.5%

**BPHC CLINICAL CQI CHART REVIEW DATA
EXCLUDING DEATHS**

3/7/2003

Calendar Year 2000

	Boston Public Health Commission Clinics								ACTNOW CLINICS			
	Clinic T (N=19)		Clinic U (N=18)		Clinic V (N=43)		Clinic W (N=66)		Total (N=146)		Total (N=998)	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
<u>Last CD4 Count</u>												
CD4 <= 200	7	36.8%	5	27.8%	8	18.6%	13	19.7%	33	22.6%	200	20.0%
CD4 > 200	12	63.2%	13	72.2%	34	79.1%	53	80.3%	112	76.7%	783	78.5%
Missing	0	0.0%	0	0.0%	1	2.3%	0	0.0%	1	0.7%	15	1.5%
<u>Drop In CD4 Count From First To Last</u>												
CD4 drop > 50 (1st CD4 <= 500)	2	10.5%	1	5.6%	3	7.0%	8	12.1%	14	9.6%	83	8.3%
CD4 drop <= 50 (1st CD4 <= 500)	9	47.4%	10	55.6%	17	39.5%	27	40.9%	63	43.2%	440	44.1%
Fewer than 2 CD4 counts	6	31.6%	1	5.6%	14	32.6%	11	16.7%	32	21.9%	179	17.9%
Two or more CD4 w/1st > 500	2	10.5%	6	33.3%	9	20.9%	20	30.3%	37	25.3%	296	29.7%
<u>Frequency Of Viral Load < 400 - All Cases</u>												
Always < 400	6	31.6%	8	44.4%	14	32.6%	20	30.3%	48	32.9%	344	34.5%
Sometimes < 400	2	10.5%	5	27.8%	12	27.9%	16	24.2%	35	24.0%	257	25.8%
Never < 400	11	57.9%	5	27.8%	16	37.2%	29	43.9%	61	41.8%	377	37.8%
No viral loads measured	0	0.0%	0	0.0%	1	2.3%	1	1.5%	2	1.4%	20	2.0%
<u>Last Viral Load < 400 - All Cases</u>												
< 400	7	36.8%	9	50.0%	22	51.2%	31	47.0%	69	47.3%	506	50.7%
>= 400	12	63.2%	9	50.0%	20	46.5%	34	51.5%	75	51.4%	472	47.3%
Missing	0	0.0%	0	0.0%	1	2.3%	1	1.5%	2	1.4%	20	2.0%
<u>TOTAL CASES REVIEWED INCL DEATHS</u>	23	82.6%	19	94.7%	54	79.6%	71	93.0%	167	87.4%	1196	83.4%

Appendix B. The Clinic Background Survey Form

Clinical Site: East Boston Neighborhood Health Center

Date of Interview: 11/04/2002

Site Contact: Susana Medeiros

In order to provide context for the patient chart abstraction data, key informants will be interviewed at each site to obtain the following Clinic level data:

1. Case load: 105 (36% Women)

➤ What is the current census of active patients receiving their primary HIV care here?

During CY **2000?** **105**

Explain any major differences or trends: **Now seeing an increase in Latinos 44% in 2002**

2. Mortality experience:

➤ How many patients are known to have expired in **2000?** **2**

Comment on any issues with access to these records: **Unable to locate 1 of the charts in off site storage.**

3. Model of care: **multidisciplinary teams**

➤ Describe the model used to provide HIV primary care:

(i.e., specialists vs. internists/primary care practitioners vs. multidisciplinary teams, etc.)

Multidisciplinary team

Describe the personnel involved in HIV care at the clinic? Numbers, types, roles, etc.

Infectious Disease Doctors : 2

Primary Care Providers : 19

Nurse Case Manager: 1

Congrete Services Case Manager: 1

Social Workers: 2

Psychiatrist

Pastoral Psychologist

Where are patients hospitalized? For Medical admissions? **BMC or MGH**

For Psychiatric admissions? **Varies done via ER Referral**

For Drug detox? **Wherever beds are available; Suffolk**

Mental Health, Baycove

For Alcohol detox? **Same as Above**

Does the clinic provider manage the patient during the hospitalization? **No, but communication is established with admitting provider.**

How do HIV patients access Gyn services (i.e., on-site vs. referral)? **On Site**

What are the most common Gyn referral sites? **BMC & MGH**

What is the typical colposcopy site? **On site** Scheduling delays? **No**

Are there issues in availability of Gyn care for uninsured or publicly funded patients? **No.**

Who provides obstetrical care for women with HIV? Comment on issues: **BMC & MGH for consultant care but most of F/U is done on site.**

How are patients with HCV coinfection managed (i.e., on-site specialty care vs. referral)? **In 2000 on site**

If HCV patients are referred, describe the arrangement and comment on any difficulties:

None

What type of mental health services are provided on site? By whom? How often?

1 Psychiatrist 4 X week

2 Social Workers combined = 3 days fulltime

What difficulties have been encountered in delivering mental health services?

Spanish: there are no Bilingual Mental Health Providers

What type of substance abuse treatment is available on site? **None**

What difficulties have been encountered in delivering substance abuse services?

Sometimes there may be a 1 day delay for detox but usually not a problem, but patients may need to go as far as Worcester

Describe adherence support programs offered? (content, length, provider, target group, experiences)

Individualized adherence care plan provided by Nurse and Case Manager
Statscripts pharmacy provides pre-fills for patients

➤ What QA/CQI activities have been undertaken? Comment on results or issues:

2000 HIV QUAL Title 3
Pap Smear QA Project chart Review in 2000
Data collected for PCP & MAC Prophylaxis not analyzed
Quarterly Health Maintenance Chart Reviews performed

4. Protocols and Practice Guidelines

<i>TYPE</i>
HIV Sexual and Drug Risk Assessment NO
STD Screening, Treatment and Referral CDC Guidelines Followed
HIV Counseling and Testing for Clinicians CDC adapted to their program
PEP: Occupational and Non-occupational EBNHC Protocol
Perinatal HIV Prevention US Public Health Service Guidelines
ARS Diagnosis and Treatment US Public Health Service Guidelines
Behavior Risk Reduction Counseling/Referral DPH Guidelines
Partner Counseling, Referral and Support CDC Guidelines
Treatment Adherence Support EBNHC
HIV Quality of Care Review Title 3 EBNHC

Appendix B. The Clinic Background Survey Form

Clinical Site: Great Brook Valley Health Center

Date of Interview: 11/19/2002

Site Contact: John Hess

In order to provide context for the patient chart abstraction data, key informants will be interviewed at each site to obtain the following Clinic level data:

5. Case load: **80** (? **20% Women**)

➤ What is the current census of active patients receiving their primary HIV care here? **80-90**

During CY **2000?** **Less in 2000 ~ 70**

Explain any major differences or trends: **In flux of Brazilians in 2000, now seeing an increase in Africans**

6. Mortality experience:

➤ How many patients are known to have expired in **2000?** **3**

Comment on any issues with access to these records: **2 reviewed, unable to locate 1 of the charts in off site storage.**

7. Model of care: **multidisciplinary teams**

➤ Describe the model used to provide HIV primary care:

(i.e., specialists vs. internists/primary care practitioners vs. multidisciplinary teams, etc.)

Multidisciplinary team: primary care providers mostly family practice physicians with ID consult, RN/case manager, LPN/adherence counselor, & case manager/outreach worker.

➤ Describe the personnel involved in HIV care at the clinic? Numbers, types, roles, etc.

MD's 15 on site HIV Care Provided by primarily 3 Providers.

Infectious Disease Doctor from UMass every other week: 1

Nurse Practitioners/PA's: 5

RN/Case manager: 1 full time

LPN/Adherence counselor: 1 Part time

Case Manager: 1

Where are patients hospitalized?

For Medical admissions? **Worcester Memorial or UMMHC University**

For Psychiatric admissions? **UMMHC University**

For Drug detox? **Spectrum, Family Community Health , Framingham Detox ,
Adcare**

For Alcohol detox? **Same as Above**

Does the clinic provider manage the patient during the hospitalization? **Yes**

How do HIV patients access Gyn services (i.e., on-site vs. referral)? **On Site**

What are the most common Gyn referral sites? **Worcester Memorial**

What is the typical colposcopy site? **On site** Scheduling delays? **No**

Are there issues in availability of Gyn care for uninsured or publicly funded patients? **No.**

Who provides obstetrical care for women with HIV? **Worcester Memorial**

Comment on issues:

How are patients with HCV coinfection managed (i.e., on-site specialty care vs. referral)?

Some were seen on site and some were referred out

If HCV patients are referred, describe the arrangement and comment on any difficulties:

No problems

What types of mental health services are provided on site? By whom? How often?

**1:1 counseling provided by Psychiatrist, Psychiatric Nurse Specialist, MSW, and
psychologist**

What difficulties have been encountered in delivering mental health services?

Multilingual client population, lack of a Portuguese speaking counselor

What type of substance abuse treatment is available on site? **None**

What difficulties have been encountered in delivering substance abuse services?

Language barrier, mother's with children who won't go into programs because

they would have to leave their children.

Describe adherence support programs offered? (content, length, provider, target group, experiences)

Individualized adherence care plan provided by Nurse Adherence specialist, case manager, pharmacy on site. Pill boxes reminder alarms etc used.

➤ What QA/CQI activities have been undertaken? Comment on results or issues:

2 X a year charts reviewed for updates, demographics, PPD's, Viral load, CD4, HAART

8. Protocols and Practice Guidelines

<i>TYPE</i>
HIV Sexual and Drug Risk Assessment On initial assessment form
STD Screening, Treatment and Referral On initial assessment form
HIV Counseling and Testing for Clinicians ON Site counseling & Testing
PEP: Occupational and Non-occupational Yes
Perinatal HIV Prevention All pregnant women receive C& T
ARS Diagnosis and Treatment Working on a protocol
Behavior Risk Reduction Counseling/Referral Yes
Partner Counseling, Referral and Support Yes
Treatment Adherence Support Yes
HIV Quality of Care Review Yes

Appendix B. The Clinic Background Survey Form

Clinical Site: Martha Elliot Health Center

Date of Interview: 12/9/2002

Site Contact: Adolfo Valadez, MD

In order to provide context for the patient chart abstraction data, key informants will be interviewed at each site to obtain the following Clinic level data:

9. Case load: **25** (additional 12 children are followed at Children's Hospital)

? % Women (review =23 patients 57% women)

➤ What is the current census of active patients receiving their primary HIV care here?

During CY **2000?** ~25

Explain any major differences or trends:

10. Mortality experience:

➤ How many patients are known to have expired in **2000?** **1**

Comment on any issues with access to these records:

11. Model of care: **multidisciplinary teams**

➤ Describe the model used to provide HIV primary care:

(i.e., specialists vs. internists/primary care practitioners vs. multidisciplinary teams, etc.)

Multidisciplinary team: Primary care provider with RN and Case manager

➤ Describe the personnel involved in HIV care at the clinic? Numbers, types, roles, etc.

MD's 4: John Jewett, MD

RN 1: Peggy Wilson was FT

Marsha Katz, MD,

changed to Linda Miller, NP = PT

Ronald White, MD

Adolfo Valadez, MD

Case manager 1: full time Ana Lamarche also performs C&T

Where are patients hospitalized?

For Medical admissions? **B&W ,BMC**

For Psychiatric admissions? **ER to B&W or BMC Best Team**

For Drug detox? **Dimock Inpatient Detox, OPD on site, or Casa Esperanza**

For Alcohol detox? **Same as Above**

Does the clinic provider manage the patient during the hospitalization? **No, admitted to teaching hospitals but communication with admitting team.**

How do HIV patients access Gyn services (i.e., on-site vs. referral)? **On Site**

What are the most common Gyn referral sites? **B&W or sometimes BMC**

What is the typical colposcopy site? **B&W**

Scheduling delays? **No**

Are there issues in availability of Gyn care for uninsured or publicly funded patients? **No.**

Who provides obstetrical **care for women with HIV? B&W**

Comment on issues: **None**

How are patients with HCV coinfection managed (i.e., on-site specialty care vs. referral)?

Referred out to Shattuck or B&W Hepatitis Clinics

If HCV patients are referred, describe the arrangement and comment on any difficulties:

No problems

What types of mental health services are provided on site? By whom? How often?

On site Team Approach: Psychiatrist, Bilingual MSW, and Psychologist

SA counselor, Domestic Violence counselor and housing advocate on site.

What difficulties have been encountered in delivering mental health services?

None

What type of substance abuse treatment is available on site? **Detox, day RX & groups on site**

What difficulties have been encountered in delivering substance abuse services?

Lack of Detox beds particularly for Spanish speakers

Describe adherence support programs offered? (content, length, provider, target group, experiences)

Individualized adherence care plan provided by Nurse with utilization of VNA and outreach as needed

➤ What QA/CQI activities have been undertaken? Comment on results or issues:

Dr Valadez not in charge of program at the time is not aware of any activities

12. Protocols and Practice Guidelines

<i>TYPE</i>
HIV Sexual and Drug Risk Assessment DPH C&T form
STD Screening, Treatment and Referral Follow CDC guidelines
HIV Counseling and Testing for Clinicians DPH
PEP: Occupational and Non-occupational Occupational
Perinatal HIV Prevention All pregnant women receive C& T
ARS Diagnosis and Treatment No
Behavior Risk Reduction Counseling/Referral On Site harm reduction counseling
Partner Counseling, Referral and Support DPH
Treatment Adherence Support Yes, Informal individualized
HIV Quality of Care Review ?

Appendix B. The Clinic Background Survey Form

Clinical Site: Whittier Street Neighborhood Health Center

Date of Interview: 12/03/2002

**Site Contact: Robin Sherman, NP (New)
Mark Drews, MD**

In order to provide context for the patient chart abstraction data, key informants will be interviewed at each site to obtain the following Clinic level data:

13. Case load:

- What is the current census of active patients receiving their primary HIV care here?

During CY 2000? **20-25**

Explain any major differences or trends: **None**

14. Mortality experience:

- How many patients are known to have expired in 2000? **None**

15. Comment on any issues with access to these records: Model of care: **multidisciplinary teams**

- Describe the model used to provide HIV primary care:

(i.e., specialists vs. internists/primary care practitioners vs. multidisciplinary teams, etc.)

Multidisciplinary team

Describe the personnel involved in HIV care at the clinic? Numbers, types, roles, etc.

Infectious Disease Doctors : 1 (Catherine Flemming)

Primary Care Providers : 1 (Mark Drews)

RN / Nurse Practitioner: 1

Case Manager: 1

Where are patients hospitalized? For Medical admissions? **BMC or B&W**

For Psychiatric admissions? **Wherever a bed is available**

? Bournemouth

For Drug detox? **Dimock, Bournemouth, Arbor**

For Alcohol detox? **Same as Above**

Does the clinic provider manage the patient during the hospitalization? **No, but notified of admissions and communication is established with admitting provider.**

How do HIV patients access Gyn services (i.e., on-site vs. referral)? **On Site**

What are the most common Gyn referral sites? **B&W**

What is the typical colposcopy site? **On site**

Scheduling delays? **No**

Are there issues in availability of Gyn care for uninsured or publicly funded patients? **No.**

Who provides obstetrical care for women with HIV? **Does not recall any pregnancies**

Comment on issues:

How are patients with HCV coinfection managed (i.e., on-site specialty care vs. referral)?

Referral to BMC HIV/GI Clinic

If HCV patients are referred, describe the arrangement and comment on any difficulties:

None

What type of mental health services are provided on site? By whom? How often?

Psychiatrist, MSW, Psychologist available

What difficulties have been encountered in delivering mental health services?

What type of substance abuse treatment is available on site? **Counseling**

What difficulties have been encountered in delivering substance abuse services?

Describe adherence support programs offered? (content, length, provider, target group, experiences)

**Individualized adherence care plan provided by Nurse
With pharmacy support and home visits if needed.**

➤ What QA/CQI activities have been undertaken? Comment on results or issues:

Periodic reviews of flow sheet for health maintenance updates

Protocols and Practice Guidelines

<i>TYPE</i>
HIV Sexual and Drug Risk Assessment Yes
STD Screening, Treatment and Referral Yes
HIV Counseling and Testing for Clinicians Yes
PEP: Occupational and Non-occupational Occupational
Perinatal HIV Prevention Risk / C&T
ARS Diagnosis and Treatment
Behavior Risk Reduction Counseling/Referral
Partner Counseling, Referral and Support
Treatment Adherence Support
HIV Quality of Care Review

Addendum to BPHC Clinical Quality Management Report

The primary focus of this report was on the findings for the four clinical sites that were funded by BPHC under Title I but not also part of the Massachusetts Department of Public Health's ACTNow Clinical Quality Management Project. However, the JSI team was granted permission (from the MDPH HIV/AIDS Bureau) to merge data from the other six ACTNow clinics that were also Title I funding recipients, in order to present the overall clinical performance data for Title I–funded sites in CY 2000. Using the closest measured parameter, the combined Boston EMA Title I group (N=524) met or exceeded the goals proposed by HRSA/IHI on all 4 of the core measures (Access and Retention, Viral Load, Clinical Care, Self-management/adherence support) (Table 1). The Boston EMA sites also exceeded the target levels for hepatitis screening and PCP prophylaxis.

Table 1. Comparison of Boston EMA Title I Clinical Sites to National Performance Goals

Core Measures for the IHI Standards of Care			
<i>Category</i>	<i>Measure</i>	<i>Goal</i>	<i>Title I sites 2000 (N=524)</i>
Access & Retention	Percent of patients with visit(s) in last 3 months	85%	86% (in last 4 months)
Viral Load	Percent of patients with undetectable viral load	60%	All pts: 50% at last visit; 60% sometime ART pts: 57% at last visit; 68% sometime (using <400 copies/ml criteria)
Clinical Care	Percent of patients on HAART	75%	Of ART-“indicated” by guidelines: 89% ever, 80% at last visit
Self-Management & Adherence Support	Percent of HAART patients with adherence counseling/intervention at their last visit	75%	100% during the year had adherence addressed
Additional Quality of Care Measures			
Viral Load	Percent of patients with VL tests in the past 3 months	100%	66% (in last 4 months)
Clinical Care	Percent with hospitalizations	<10%	17% during year including psych and detox admissions
	Percent of patients with hepatitis B & C screening	90%	HBV 96% HCV 94%
Prevention	Percent of patients with PPD	95%	41% PPD placed (36% had it read) during the year
	Percent of female patients with cervical Pap smear in past 6 months	95%	64% had Pap or colpo during year
	Percent of (eligible) patients with PCP prophylaxis	95%	95%
	Percent of patients with pneumovax	95%	83%

Of note was the increased rate of hospitalizations compared with the 10% annual target proposed by HRSA/IHI. A focused analysis of this finding was requested by the Boston EMA Planning Council when the data were presented to them in March 2003. The following discussion responds to their request:

Hospitalizations in Title I-funded clinical sites 2000

To investigate the elevated rate of hospitalization found in the 2000 chart reviews, we focused on the type of hospitalization because our comprehensive approach tracked both medical and psychiatric/substance abuse treatment admissions in our cohort. Multiple admissions were tracked for all patients, with medical admissions receiving hierarchical priority. Separating the medical admissions from the others illustrated that nearly 4% of the hospitalized patients had only in-patient psychiatric or substance abuse treatment in 2000.

<u>Type of Hospitalization</u>	<u>No. (%)</u>
Medical admissions	72 (13.7%)
Psych or detox/substance abuse treatment	19 (3.6%)
No admissions	433 (82.6%)

The reasons for admission were determined for the 13.7% of patients with any medical admission. The primary diagnosis for the admission was categorized, with results summarized below:

Hospitalizations in 2000 for 524 patients in Title I-funded clinics

<u>Primary Diagnosis</u>	<u>No.</u>	<u>% of all pts</u>	<u>% of hospitalized pts</u>
Infections (non-AIDS)	21	4.0	23.0
Respiratory	16	3.0	17.6
AIDS-defining OI	15*	2.9	16.5
GI	13	2.5	14.3
Liver disease	6	1.1	6.6
Cardiovascular	6	1.1	6.6
Musculoskeletal	5	1.0	5.5
Obstetric	4	0.8	4.4

**OI's include PCP (8), CMV (3), Herpes zoster (2), lymphoma (1), and cryptococcal meningitis (1)*

Only 2.9% of patients were admitted for AIDS-defining opportunistic infections or cancers, and more than half of these admissions were for PCP. In 5/8 PCP cases, patients were new to care and had extremely low CD4 cell counts. The remainder (3/8) were receiving PCP prophylaxis. Other infections (non-AIDS defining) and respiratory problems were the leading reasons for medical hospitalizations. There

were 7 other causes with 1-3 patients each, including cancer (non-AIDS), drug reactions, gynecological problems, hematology, neurology, renal and trauma.

Finally, the full complement of descriptive data analysis and clinical performance findings were prepared using the total Boston EMA Title I clinical site group, comprising 10 clinics and 524 patients receiving active care in 2000. As with the earlier tables in Appendix A, patients who died in 2000 are excluded. These detailed summary tables follow.

TITLE I CLINICAL CQI CHART REVIEW DATA



ALL TITLE I SITES		Calendar Year 2000				
		All Sites (N=524)				
		No.	%	Mean	Min	Max
<u>BASELINE DATA</u>						
<u>Gender:</u>						
Male		319	60.9%	58.5%	31.6%	87.7%
Female		204	38.9%	41.4%	12.3%	68.4%
Transgender		1	0.2%	0.2%	0.0%	1.5%
<u>Race/Ethnicity:</u>						
Hispanic		194	37.0%	39.3%	4.8%	86.0%
White non-Hispanic		186	35.5%	30.5%	0.0%	78.9%
Black non-Hispanic		132	25.2%	28.1%	0.0%	70.6%
Asian/PI non-Hispanic		11	2.1%	1.9%	0.0%	7.5%
Other non-Hispanic		1	0.2%	0.2%	0.0%	1.5%
Missing		0	0.0%	0.0%	0.0%	0.0%
<u>Minority</u>		338	64.5%	69.5%	21.1%	100.0%
<u>Born outside US</u>		135	25.8%	24.6%	15.8%	39.8%
<u>HIV Risk Behavior*:</u>						
MSM		111	21.2%	19.4%	5.3%	70.2%
Heterosexual		313	59.7%	61.0%	12.3%	89.5%
IDU		194	37.0%	36.6%	8.8%	61.8%
Blood product		14	2.7%	2.7%	0.0%	9.1%
Occupational		2	0.4%	0.7%	0.0%	5.6%
Other		3	0.6%	0.4%	0.0%	1.5%
Unknown/not documented		13	2.5%	2.3%	0.0%	14.0%
<u>Number Of HIV Risk Behaviors:</u>						
Unknown/not documented		13	2.5%	2.3%	0.0%	14.0%
1		395	75.4%	76.3%	48.5%	92.5%
2		108	20.6%	20.1%	5.3%	48.5%
3 or more		8	1.5%	1.3%	0.0%	6.1%
<u>Initial CD4 count @ site:</u>						
<= 50		45	8.6%	8.4%	2.3%	11.8%
51-200		114	21.8%	21.7%	15.8%	31.4%
201-500		206	39.3%	39.6%	31.6%	50.0%
>500		146	27.9%	27.5%	19.6%	35.3%
Not available		13	2.5%	2.8%	0.0%	15.8%

* HIV Risk Behaviors are not mutually exclusive categories.

TITLE I CLINICAL CQI CHART REVIEW DATA



ALL TITLE I SITES	Calendar Year 2000				
	All Sites (N=524)				
	No.	%	Mean	Min	Max
<u>REVIEW PERIOD DATA:</u>					
<u>HIV Stage:</u>					
AIDS	286	54.6%	53.8%	43.9%	66.7%
HIV	238	45.4%	46.2%	33.3%	56.1%
<u>Substance Abuse</u>					
Active	120	22.9%	23.7%	12.5%	38.9%
Inactive (hx only)	174	33.2%	32.6%	15.8%	42.5%
No history	227	43.3%	43.3%	27.8%	68.4%
No documentation	3	0.6%	0.4%	0.0%	2.4%
<u>Mental Illness</u>					
Active	240	45.8%	45.2%	31.6%	54.2%
Inactive (hx only)	58	11.1%	10.9%	4.7%	16.9%
No history	219	41.8%	42.7%	28.9%	57.4%
No documentation	7	1.3%	1.2%	0.0%	5.0%
<u>IDU Risk/Active Substance Abuse</u>					
IDU risk with active substance abuse	84	16.0%	16.1%	3.5%	27.9%
IDU risk with no active substance abuse	110	21.0%	20.5%	5.3%	35.3%
Active substance abuse with no IDU risk	36	6.9%	7.6%	0.0%	15.8%
No active substance abuse with no IDU risk	294	56.1%	55.8%	33.3%	78.9%
<u>Incarcerated in Review Period</u>	27	5.2%	5.7%	1.3%	16.3%
<u>Hospitalized in Review Period</u>	91	17.4%	19.0%	6.1%	33.3%
<u>H/O TB or positive PPD</u>	69	13.2%	13.3%	3.5%	21.6%
<i>Screened in review period</i>	5	7.2%	7.5%	0.0%	50.0%
<u>No H/O TB or positive PPD</u>	455	86.8%	86.7%	78.4%	96.5%
<i>PPD completed in review period</i>	163	35.8%	36.9%	11.4%	62.2%
<i>PPD placed but not read</i>	24	5.3%	4.2%	0.0%	17.9%
<i>Missed PPD screening</i>	268	58.9%	59.0%	32.4%	85.7%
Received pneumovax at anytime	437	83.4%	81.9%	66.7%	93.9%
Received flu vaccine * in review period	265	50.6%	49.7%	30.0%	70.6%

* Minimum estimates due to vaccine distribution delay in 2000

TITLE I CLINICAL CQI CHART REVIEW DATA



ALL TITLE I SITES	Calendar Year 2000				
	All Sites (N=524)				
	No.	%	Mean	Min	Max
<u>ART Indicated In Review Period</u>					
ART indicated (on ART or meeting PHS guidelines)	500	95.4%	95.7%	90.7%	100.0%
ART not indicated	24	4.6%	4.3%	0.0%	9.3%
On ART during review period (of ART indicated)	444	88.8%	88.0%	81.9%	97.1%
<u>Not on ART but meets</u>	56	10.7%	11.4%	2.9%	16.7%
<u>PHS guidelines (Review Year)</u>					
<i>Discussed/no action documented</i>	2	3.6%	3.3%	0.0%	33.3%
<i>Patient refused</i>	21	37.5%	34.9%	0.0%	75.0%
<i>Not discussed or not offered</i>	5	8.9%	8.2%	0.0%	57.1%
<i>Other/Unknown</i>	28	50.0%	53.5%	0.0%	100.0%
ART interrupted during review pd	120	27.0%	27.5%	18.9%	46.7%
Adherence addressed	444	100.0%	100.0%	100.0%	100.0%
<i>Problem identified</i>	162	36.5%	36.7%	13.3%	60.0%
On ART at last visit	401	90.3%	88.4%	73.3%	96.5%
in review period (of On ART during review pd)					
Had resistance testing	94	17.9%	20.9%	8.4%	38.9%
On PCP Prophylaxis	204	38.9%	38.2%	26.3%	54.4%
Not eligible by Guidelines	309	59.0%	59.1%	44.3%	72.1%
Eligible, but not taking	10	1.9%	2.5%	0.0%	10.5%
Missing	1	0.2%	0.2%	0.0%	2.0%
On MAI Prophylaxis	66	12.6%	11.2%	4.7%	27.8%
Not eligible by Guidelines	451	86.1%	87.0%	72.2%	94.7%
Eligible, but not taking	6	1.1%	1.6%	0.0%	5.6%
Missing	1	0.2%	0.2%	0.0%	2.0%
<u>Last Trimester (4-Months)</u>					
Seen By Medical Provider In Sep-Dec	449	85.7%	85.1%	77.8%	94.7%
Had a CD4 test	350	66.8%	63.7%	47.0%	84.3%
Had a viral load measured	348	66.4%	64.2%	47.5%	85.3%

TITLE I CLINICAL CQI CHART REVIEW DATA



ALL TITLE I SITES	Calendar Year 2000				
	All Sites (N=524)				
	No.	%	Mean	Min	Max
<u>Female Patients</u>	204	38.9%	41.4%	12.3%	68.4%
<i>Pregnant in review period</i>	9	4.4%	3.7%	0.0%	15.4%
Pregnant & on ART	6	66.7%	80.0%	50.0%	100.0%
Pap smear in review period *	128	62.7%	58.6%	28.6%	84.6%
Colposcopy in review period *	24	11.8%	9.5%	0.0%	19.2%
No Pap or Colpo in review period	73	35.8%	40.1%	15.4%	71.4%
<u>Abnormal Pap (if done)</u>	36	28.1%	23.7%	0.0%	50.0%
<i>completed referral</i>	23	63.9%	61.3%	0.0%	100.0%
<i>referral not completed</i>	8	22.2%	17.7%	0.0%	33.3%
<i>no referral</i>	5	13.9%	21.0%	0.0%	100.0%
<i>missing</i>	0	0.0%	0.0%	0.0%	0.0%

* Women may have both a Pap smear and colposcopy during the review period.

TITLE I CLINICAL CQI CHART REVIEW DATA



ALL TITLE I SITES	Calendar Year 2000
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Drugs in Last ART Regimen in Review Period

Drugs:	All Sites (N=444)				
	No.	%	Mean	Min	Max
Combivir	177	39.9%	38.1%	20.0%	62.2%
3TC	144	32.4%	31.4%	9.4%	60.0%
ddC	3	0.7%	0.5%	0.0%	2.8%
ZDV	18	4.1%	4.7%	0.0%	8.1%
ddl	73	16.4%	18.2%	10.2%	33.3%
d4T	194	43.7%	44.9%	21.6%	66.7%
Abacavir	81	18.2%	19.5%	0.0%	43.8%
Delavirdine	0	0.0%	0.0%	0.0%	0.0%
Efavirenz	92	20.7%	20.4%	6.7%	40.6%
Nevirapine	86	19.4%	20.5%	9.3%	40.0%
Amprenavir	19	4.3%	3.7%	0.0%	6.8%
Saquinavir	26	5.9%	5.9%	0.0%	11.3%
Indinavir	67	15.1%	15.0%	0.0%	32.6%
Ritonavir	52	11.7%	12.2%	3.5%	26.5%
Nelfinavir	139	31.3%	29.8%	14.3%	43.9%
Tenofovir	1	0.2%	0.1%	0.0%	1.4%
Lopinavir/Riton	10	2.3%	2.0%	0.0%	8.2%
Preveon	1	0.2%	0.3%	0.0%	3.1%
Trizivir	5	1.1%	1.1%	0.0%	3.1%

TITLE I CLINICAL CQI CHART REVIEW DATA



ALL TITLE I SITES	Calendar Year 2000
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N=# On ART

	All Sites (N=444)		Mean	Min	Max
	No.	%			
<u>Number of Meds:</u>					
One drug	1	0.2%	0.2%	0.0%	1.8%
Two drugs	36	8.1%	7.8%	3.4%	11.3%
Three drugs	336	75.7%	76.9%	59.2%	86.7%
Four or more drugs	71	16.0%	15.2%	6.7%	32.7%
Drug information not available	0	0.0%	0.0%	0.0%	0.0%
<u>Average Number of Meds:</u>					
Mean	3.097			3.000	3.265
Median	3				
<u>Frequency Of Viral Load < 400 - On ART Only</u>					
Always < 400	166	37.4%	38.7%	20.3%	53.3%
Sometimes < 400	134	30.2%	28.0%	13.3%	40.7%
Never < 400	138	31.1%	31.9%	13.3%	53.3%
No viral loads measured	6	1.4%	1.3%	0.0%	7.0%
<u>Last Viral Load < 400 - On ART Only</u>					
< 400	253	57.0%	56.0%	40.0%	67.3%
>= 400	185	41.7%	42.7%	32.7%	60.0%
Missing	6	1.4%	1.3%	0.0%	7.0%

TITLE I CLINICAL CQI CHART REVIEW DATA



ALL TITLE I SITES	Calendar Year 2000				
	All Sites (N=524)				
	No.	%	Mean	Min	Max
New STD's	3	0.6%	0.9%	0.0%	5.6%
New TB	1	0.2%	0.2%	0.0%	2.0%
New Acute HAV	1	0.2%	0.1%	0.0%	1.3%
New IDU-related endocarditis	0	0.0%	0.0%	0.0%	0.0%
New OI's	21	4.0%	3.7%	0.0%	8.9%
<u>HBV Screening</u>	504	96.2%	96.0%	87.7%	100.0%
<i>HBV positive (any marker)</i>	276	54.8%	55.8%	28.2%	82.4%
<i>HBV negative</i>	228	45.2%	44.2%	17.6%	71.8%
No HBV screen	20	3.8%	4.0%	0.0%	12.3%
<i>Total w/ HBV vaccine (of HBV negative or not screened)</i>	146	58.9%	57.6%	50.0%	77.1%
<u>HBV Negative</u>	228	43.5%	42.6%	16.7%	70.9%
<i>HBV vaccine</i>	146	64.0%	64.1%	55.0%	79.4%
<u>HCV Screening</u>	492	93.9%	94.7%	86.0%	100.0%
<i>HCV positive</i>	218	44.3%	43.6%	24.5%	64.7%
<u>HCV Positive</u>	218	41.6%	41.5%	21.1%	64.7%
<i>Screened for HAV</i>	154	70.6%	63.5%	0.0%	97.0%
<i>HAV+ or vaccinated</i>	121	55.5%	51.4%	0.0%	76.9%
<u>HAV Screening</u>	347	66.2%	60.8%	5.3%	94.1%
<i>HAV positive</i>	166	47.8%	44.4%	0.0%	73.4%
<i>HAV negative</i>	181	52.2%	55.6%	26.6%	100.0%
Of HAV neg, vaccine	82	45.3%	39.8%	0.0%	66.7%
No screen, vaccine given	15	2.9%	3.0%	0.0%	9.3%
<u>Risk Reduction Discussion:</u>					
<i>On Entry Or In Last Year</i>	352	67.2%	65.7%	45.8%	87.3%
<i>On Entry To Care</i>	295	56.3%	55.9%	30.1%	82.3%
<i>In Last Year</i>	242	46.2%	44.0%	20.9%	70.9%
<i>None Documented</i>	172	32.8%	34.3%	12.7%	54.2%

TITLE I CLINICAL CQI CHART REVIEW DATA



ALL TITLE I SITES	Calendar Year 2000				
	All Sites (N=524)				
	No.	%	Mean	Min	Max
<u>Number Of 4-Month Periods Seen By HIV Provider</u>					
One	54	10.3%	10.4%	0.0%	18.6%
Two	147	28.1%	30.1%	19.6%	47.5%
Three	323	61.6%	59.6%	40.0%	74.7%
None	0	0.0%	0.0%	0.0%	0.0%
<u>First CD4 Count</u>					
CD4 <= 200	134	25.6%	25.7%	21.1%	31.6%
CD4 > 200	384	73.3%	73.3%	66.7%	78.9%
Missing	6	1.1%	1.0%	0.0%	3.9%
<u>Last CD4 Count</u>					
CD4 <= 200	125	23.9%	24.8%	14.7%	36.8%
CD4 > 200	393	75.0%	74.2%	63.2%	84.2%
Missing	6	1.1%	1.0%	0.0%	3.9%
<u>Drop In CD4 Count From First To Last</u>					
CD4 drop > 50 (1st CD4 <= 500)	44	8.4%	8.0%	2.9%	13.9%
CD4 drop <= 50 (1st CD4 <= 500)	231	44.1%	44.3%	37.3%	55.6%
Fewer than 2 CD4 counts	91	17.4%	18.7%	5.6%	32.6%
Two or more CD4 w/1st > 500	158	30.2%	29.0%	10.5%	42.1%
<u>Frequency Of Viral Load < 400 - All Cases</u>					
Always < 400	175	33.4%	34.7%	17.7%	44.4%
Sometimes < 400	138	26.3%	24.4%	10.5%	36.8%
Never < 400	202	38.5%	39.2%	27.8%	57.9%
No viral loads measured	9	1.7%	1.7%	0.0%	11.8%
<u>Last Viral Load < 400 - All Cases</u>					
< 400	263	50.2%	49.4%	36.8%	59.6%
>= 400	252	48.1%	48.9%	40.4%	63.2%
Missing	9	1.7%	1.7%	0.0%	11.8%