

# **HIV/AIDS CLINICAL CARE QUALITY ASSURANCE PROJECT**

## **HRSA/HAB, in+care and Other Non-HAB Performance Measurement Results In Massachusetts Clinics, 2010 to 2011**



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## BACKGROUND

Since 2000, John Snow Incorporated (JSI) has conducted medical record reviews on a sample of HIV/AIDS patients engaged in medical care in Massachusetts to measure performance across a range of clinical care and treatment areas. Sites participating in these chart reviews receive funding from the Boston Public Health Commission (BPHC) HIV/AIDS Services Division and Massachusetts Department of Public Health (MDPH) Office of HIV/AIDS (OHA). Biannual chart reviews have occurred since 2000 (covering patients receiving care in 1999) with the exception of 2009.<sup>1</sup> A total of 22 sites participated in the 2010/2011 chart review cycle. Data collection for the 2010/2011 chart review view cycle also focused on collecting data specific to the three groups of the Health Resources and Service Administration (HRSA) HAB core clinical performance measures and the four in+care campaign measures. In addition, several other screening indicators (i.e. mammograms, urinalysis, glucose screenings) and some HIV specific performance measures (i.e. all viral loads in a review year less than 200 copies/ml and last CD4 cell count < 200 cells/mm) that are not included in the HAB performance measures were also examined. This report describes the clinic/site level and statewide results for all of these performance measures.

## PERFORMANCE MEASUREMENT AND ANALYSIS METHODOLOGY

### Population Reviewed

There was a change in the population of focus for the 2010-2011 review period, with OHA and BPHC prioritizing patients actively in care who were also receiving medical case management at each of the 22 participating sites. Clinics were asked to provide a coded list of patients who were actively in care and who also receiving medical case management. Clinics also provided the patient's date of entry to care and were asked to determine if the patient was newly diagnosed. From this list, JSI selected charts for review based on the priorities listed below.

### Sample Selection

A sample size of 50 charts per site was chosen, with priority given to patients who were recently diagnosed and new to care. The sample selection for each site was based on the following priorities:

- New to care patients are newly diagnosed patients who entered care at a site after 12/31/2009 up to a maximum of **25** patients;
- Continuing care patients included patient charts sampled from the following categories:
  1. "Re-review": patients whose chart had been reviewed in previous review cycles, HIV diagnosed after 1/1/2003;
  2. "Re-review": patients whose chart had been reviewed in previous review cycles, HIV diagnosed before 1/1/2003;
  3. "New review, continuing: for the new sites and for those sites in which the first three criteria did not total 50 patients, patients who entered care at a site before 12/31/2009 and their charts had not been previously reviewed by JSI.

Table 1 provides the total number of charts reviewed by site and patient care status for both review years.

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<sup>1</sup> Chart reviews were not performed that year due to funding constraints  
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## PERFORMANCE MEASURES AND CHART EXTRACTION

Data collection tools and methods used in this project were adapted from a data collection strategy initially developed by JSI in collaboration with MDPH and clinics receiving Ryan White Part B funding (program formerly known as “ACT Now”). For each chart review cycle, JSI nurses and trained research assistants conducted detailed medical chart reviews on the selected sample of patients at each site. Electronic medical records (EMRs) are used for clinics that had have fully converted to EMRs. For several sites that had recently converted to an EMR, both paper and electronic sources were reviewed to ensure the fullest data capture.

The HRSA/HAB recommended performance measures were used for this report as well as the four measures from the in+care campaign. Several HAB measures were modified due to data collection constraints and these measures are described in the appropriate report section. For each of the measures described, data are shown overall, at the site level and by patient care status (new to care or continuing care). Figures depicting the median and the interquartile ranges for all clinical sites and the number of patient visits necessary to be eligible for the measure are also presented for each measure. Chi-square analyses were used to test for statistical significance between the patient care status (new to care vs. continuing in care). The Fisher’s exact test was used to test for statistical significance when cell sizes were small (< 5 observations/cell). Differences were considered significant at the  $p < .05$  level.

## DEFINITION OF TERMS

The following terminology and definitions used in this report:

- “Racial/ethnic minority”: Patients identified as part of any racial/ethnic group *other than* White, non-Hispanic.
- New to Care Patients: Patients who were newly diagnosed and entered care for the first time ever during the review year. For both review years, a few patients were diagnosed several months prior to the start of the review year but entered care for the first time in the review year (i.e. patient was diagnosed with HIV in December 2009 and entered care in January 2010).
- Continuing in Care: Patients who entered care before 2009.
- HIV viral suppression and “undetectable” viral load: A cut-off of less than 200 copies/ml is used based on the revised USPHS guidelines for viral load threshold.
- IQR: Interquartile range describes the value above 25% of the clinics performed (top 25%) and the value below 25% of the clinics performed (bottom 25%).

## POTENTIAL LIMITATIONS

The following limitations should be considered when interpreting the results presented in this report:

Documentation: As with any medical chart review project, the validity of findings depends on the accuracy and completeness of data maintained in patient records. Differences in documentation procedures across clinics and among providers may affect results. Referrals to other providers or care received elsewhere may not be systematically documented in patient medical records and may lead to an underestimate of services provided. Finally for a site that has recently converted to an EMR, performance may be underestimated if there was incomplete documentation or incomplete data transfers during the conversion period to electronic medical records.

Population Reviewed: Some limitations are related to the sampling methods and it is important to note that patient’s medical records were not randomly selected for 2010/2011 chart reviews. Therefore, the results may not reflect the overall care across all patients at a site and the overall average scores may not reflect the average

quality delivered across the clinics. Retention in care cannot be measured as sites were asked to submit lists of active patients, and patients lost prior to 2010 were not included.

For some of the measures, the number of eligible patients was small, so differences between sites should be interpreted with caution.

**TABLE 1: NUMBER OF CHART REVIEWS BY SITE AND PATIENT CARE STATUS, 2010 & 2011**

Site	2010			2011		
	New to Care	Continuing in Care	All Clients	New to Care	Continuing in Care	All Clients
Clinic A	12	25	37	15	37	52
Clinic B	10	38	48	3	45	48
Clinic C	2	48	50	1	50	51
Clinic D	12	37	49	1	47	48
Clinic E	13	36	49	2	47	49
Clinic F	8	40	48	1	48	49
Clinic G	4	44	48	2	46	48
Clinic H	22	28	50	1	49	50
Clinic I	6	40	46	4	46	50
Clinic J	8	39	47	3	49	52
Clinic K	8	41	49	2	49	51
Clinic L	9	37	46	4	46	50
Clinic M	2	43	45	5	45	50
Clinic N	7	40	47	2	48	50
Clinic O	4	44	48	2	48	50
Clinic P	6	43	49	1	48	49
Clinic Q	3	44	47	2	48	50
Clinic R	3	43	46	4	46	50
Clinic S	7	41	48	4	47	51
Clinic T	2	47	49	1	50	51
Clinic U	13	37	50	0	50	50
Clinic V	7	42	49	4	48	52
<b>Total</b>	<b>168</b>	<b>877</b>	<b>1045</b>	<b>64</b>	<b>1037</b>	<b>1101</b>

## PATIENT CHARACTERISTICS

During the 2010-2011 chart review cycle, a total of 22 clinical sites were visited and 1101 patient medical records were reviewed. Of the 1101 patients, 232 (21%) were patients who had entered care for the first time in either 2010 (n=168) or 2011 (n=64). Of the 1101 patients, 62% were male, 64% were minorities and 36% were born outside of the United States. Sixty-one percent were less than 50 years old and 29% were between the ages of 50-59 years old. Thirty percent of patients reported any men who sex with men risk, 62% reported any heterosexual risk and 20% reported any intravenous drug use (IDU) risk (Table 2a). In the 2010 review year, 95% of the patients had  $\geq 2$  visits and 96% of patients had  $\geq 2$  visits in the 2011 review year. Only six patients in each review year did not have a visit with a provider (Table 2b).

**TABLE 2A): DEMOGRAPHICS BY PATIENT CARE STATUS, NEW TO CARE OR CONTINUING IN CARE PATIENTS, 2010 & 2011**

		2010 Data						2011 Data					
		New to Care Patients N=168		Continuing in Care Patients N=877		All Patients N=1045		New to Care Patients N=64		Continuing in Care Patients N=1037		All Patients N=1101	
		No.	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%
<b>Gender</b>	<b>Male</b>	118	70%	522	60%	640	61%	46	72%	635	61%	681	62%
	<b>Female</b>	49	29%	350	40%	399	38%	17	27%	396	38%	413	38%
	<b>Transgender</b>	1	1%	5	1%	6	1%	1	2%	6	1%	7	1%
<b>Age</b>	<b>&lt; 19</b>	2	1%	0	0%	2	0%	1	2%	2	0%	3	0%
	<b>20-29</b>	51	30%	47	5%	98	9%	19	30%	81	8%	100	9%
	<b>30-39</b>	41	24%	160	18%	201	19%	16	25%	189	18%	205	19%
	<b>40-49</b>	40	24%	317	36%	357	34%	19	30%	345	33%	364	33%
	<b>50-59</b>	21	13%	267	30%	288	28%	6	9%	311	30%	317	29%
	<b>60-69</b>	10	6%	80	9%	90	9%	2	3%	98	10%	100	9%
	<b>70+</b>	3	2%	6	1%	9	1%	1	2%	11	1%	12	1%
<b>Race/ Ethnicity</b>	<b>Hispanic</b>	55	33%	271	31%	326	31%	20	31%	325	31%	345	31%
	<b>White</b>	56	33%	337	38%	393	38%	15	23%	389	38%	404	37%
	<b>Black</b>	50	30%	247	28%	297	28%	25	39%	295	28%	320	29%
	<b>Asian/PI</b>	3	2%	14	2%	17	2%	1	2%	17	2%	18	2%
	<b>Other</b>	4	2%	8	1%	12	1%	3	5%	11	1%	14	1%
<b>Minority</b>	<b>Minority</b>	112	67%	540	62%	652	62%	49	77%	648	63%	697	63%
<b>Foreign Born</b>	<b>Born Outside US</b>	71	42%	308	35%	379	36%	23	37%	373	36%	396	36%
<b>HIV Risk Behavior (can be multiple)</b>	<b>MSM</b>	67	40%	240	27%	307	29%	25	39%	303	29%	328	30%
	<b>Heterosexual</b>	109	65%	536	61%	645	62%	42	66%	642	62%	684	62%
	<b>IDU</b>	22	13%	190	22%	212	20%	7	11%	212	20%	219	20%
	<b>Blood Product</b>	4	2%	21	2%	25	2%	0	0%	25	2%	25	2%
	<b>Occupational</b>	1	1%	2	0%	3	0%	0	0%	3	0%	3	0%
	<b>Other/Unknown</b>	2	1%	20	2%	22	2%	1	2%	21	2%	22	2%

**TABLE 2B): NUMBER OF PROVIDER VISITS AND NUMBER OF PATIENTS NO LONGER RECEIVING CARE AT SITE BY REVIEW YEAR, 2010 & 2011**

		2010 N=1045		2011 N=1101	
		No.	%	No.	%
<b>Visits With Provider During Review Year</b>	<b>&gt;= 2 visits in review period</b>	992	95%	1057	96%
	<b>1 visit in review period</b>	47	5%	38	4%
	<b>0 visits in review period</b>	6	1%	6	1%
<b>No Longer Receiving Care At Site</b>	<b>No Longer Receiving Care At Site By End Of Review Period</b>	10	1.0%	21	2%
	<b>Reason                      Lost</b>	1	10%	1	5%
	<b>                                 Transferred care</b>	2	20%	7	33%
	<b>                                 Moved</b>	6	60%	7	33%
	<b>                                 Incarcerated</b>	0	0%	5	24%
	<b>                                 Other</b>	1	10%	1	5%



## **RESULTS**

### **2010-2011 Performance Measures HAB/HRSA, in+care and Other Non-HAB Performance Measures**

#### **PART I: MEDICAL VISIT PERFORMANCE MEASURES**

## MEDICAL VISITS (HAB MEASURE GROUP 1)

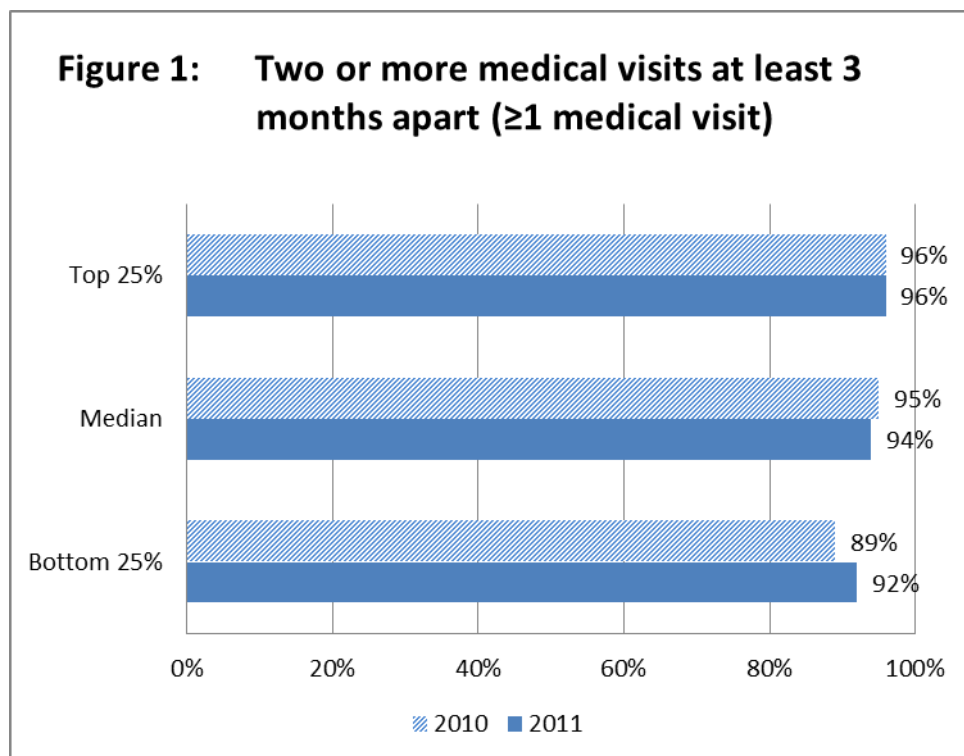
**Performance Measure:** Percentage of clients with HIV infection who had two or more medical visits in an HIV care setting in the measurement year.

**Numerator:** Two or more medical visits at least 3 months apart

**Denominator:** One or more visits with a provider, in care at least 6 months before 7/1 of review year

### **Findings:**

For both the 2010 and 2011 measurement years, the mean clinic rate for the 22 sites was 93% (median=95% and 94% respectively). The lowest clinic score was 83% in 2010 and 80% in 2011 (lowest quartile 89%) and the highest clinic score was 98% in 2010 and 100% in 2011 (highest quartile 96% for both review years (Table 3a). Patients who were new to care were more likely to have regular visits, although this only reached statistical significance ( $p<.04$ ) in 2010 (Table 3b).



**Table 3a: Percentage of clients with HIV infection who had two or more medical visits in an HIV care setting in the measurement year, Aggregate & Site-Specific (≥1 medical visit)**

	2010	2011
<b>Eligible Patients</b>	n=938	n=1088
<b>Number of Sites</b>	22	22
<b>Aggregate All Sites</b>		
Mean	93%	93%
Median	95%	94%
Min-Max	(83-98%)	(80-100%)
IQR	89%-96%	92%-96%
<b>By Site</b>		
Clinic A	97%	100%
Clinic B	98%	90%
Clinic C	94%	92%
Clinic D	93%	96%
Clinic E	85%	94%
Clinic F	89%	94%
Clinic G	93%	88%
Clinic H	95%	96%
Clinic I	98%	94%
Clinic J	83%	92%
Clinic K	98%	94%
Clinic L	95%	86%
Clinic M	89%	94%
Clinic N	83%	88%
Clinic O	96%	96%
Clinic P	83%	80%
Clinic Q	94%	96%
Clinic R	95%	96%
Clinic S	96%	96%
Clinic T	96%	100%
Clinic U	98%	92%
Clinic V	96%	94%

**Table 3b: Percentage of clients with HIV infection who had two or more medical visits in an HIV care setting in the measurement year, New to Care & Continuing Care Patients (≥1 medical visit)**

2010 Data						2011 Data					
New to Care Patients*		Continuing in Care Patients		All Patients		New to Care Patients		Continuing in Care Patients		All Patients	
Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%
72/73	99%	797/865	92%	869/938	93%	56/57	98%	956/1031	93%	1012/1088	93%

\* P=.04 (FISHER'S EXACT TEST)

## VISIT GAP MEASURE (in+care MEASURE)

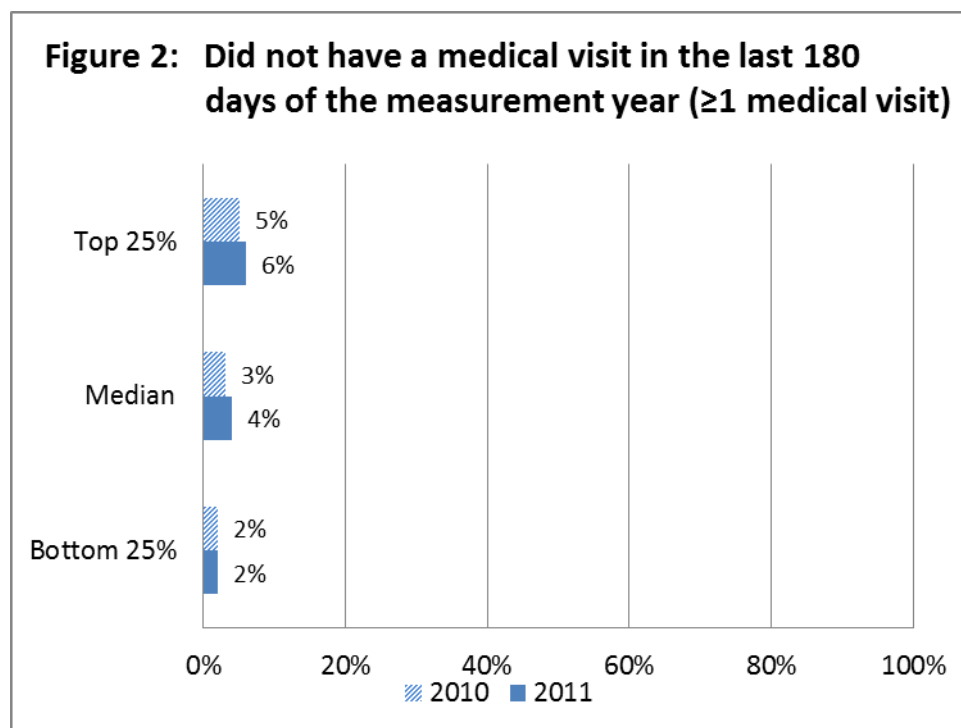
**Performance Measure:** Percentage of patients with a diagnosis of HIV/AIDS who did not have a medical visit with a provider with prescribing privileges in the last 180 days of the measurement year.

**Numerator:** Number in denominator who did not have a provider visit in last 6 months of review year

**Denominator:** One or more medical visits in first 6 months, not deceased by the end of the year, incarcerated > 90 days during the year or lost to follow-up (LTFU)

### **Findings:**

On average, 4% in 2010 and 5% of patients in 2011 who were seen during the first half of the review year did not have a medical visit during the second half (clinic median 3% and 4% respectively) (Table 4a ). The lowest performing sites had rates of 16% and 14% in 2010 and 2011 (lowest performing quartiles 5% and 6% respectively), and sites in the highest performing quartile having 2% or fewer patients with no medical visit in the last 180 days. There was no difference in rates of no visit in the last 180 days between patients new to care and those continuing care at the site. (Table 4b)



**Table 4a: Percentage of patients with a diagnosis of HIV/AIDS who did not have a medical visit with a provider with prescribing privileges in the last 180 days of the measurement year, Aggregate & Site-Specific ( $\geq 1$  medical visit)**

	2010	2011
<b>Number of Eligible Patients</b>	n=879	n=1018
<b>Number of Sites</b>	22	22
<b>Aggregate All Sites</b>		
Mean	4%	5%
(Min-Max)	(0-16%)	(0-14%)
Median	3%	4%
IQR	2%-5%	2%-6%
<b>By Site</b>		
Clinic A	0%	0%
Clinic B	3%	5%
Clinic C	4%	4%
Clinic D	5%	4%
Clinic E	3%	0%
Clinic F	3%	7%
Clinic G	2%	13%
Clinic H	3%	2%
Clinic I	2%	4%
Clinic J	11%	4%
Clinic K	2%	2%
Clinic L	3%	2%
Clinic M	5%	6%
Clinic N	7%	7%
Clinic O	2%	4%
Clinic P	16%	14%
Clinic Q	2%	0%
Clinic R	2%	4%
Clinic S	2%	6%
Clinic T	4%	2%
Clinic U	8%	2%
Clinic V	2%	4%

**Table 4b: Percentage of patients with a diagnosis of HIV/AIDS who did not have a medical visit with a provider with prescribing privileges in the last 180 days of the measurement year, New to Care & Continuing Care Patients ( $\geq 1$  medical visit)**

2010 Data						2011 Data					
New to Care Patients		Continuing in Care Patients		All Patients		New to Care Patients		Continuing in Care Patients		All Patients	
Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%
2/72	3%	35/807	4%	37/879	4%	2/51	4%	43/967	4%	45/1018	4%

## MEDICAL VISIT FREQUENCY (in+care MEASURE)

**Performance Measure:** Percentage of patients with a diagnosis of HIV/AIDS who had at least one medical visit with a provider with prescribing privileges in each 6-month period of the 24-month measurement period with a minimum of 60 days between medical visits.

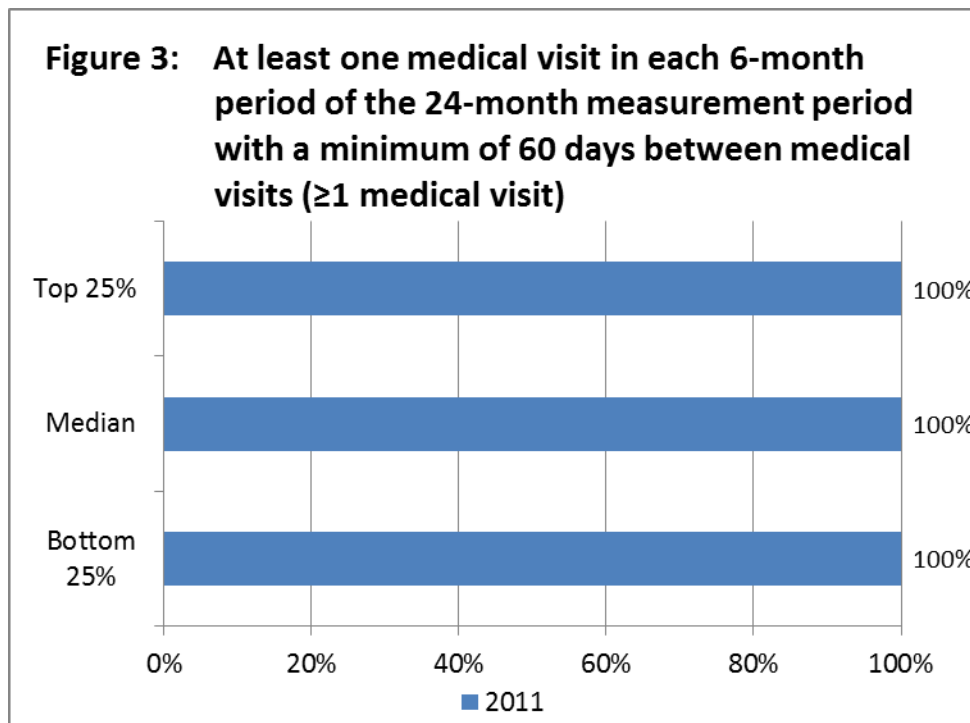
Note: Because data were required for 24 months, this indicator could only be measured in 2011.

**Numerator:** Visit In Each 6-Month Period from 1/1/2010 through 12/31/2011 with  $\geq 60$  days between visits 2010-2011

**Denominator:** One or more medical visits in first 6 months of 2010

### **Findings:**

Most of the eligible patients (clinic mean and median of 87%) met this measure, with clinic performance ranging from a low of 67% (lowest quartile 85%) to a high of 100% (highest quartile 91% or higher). (Table 5a)



**Table 5a: Percentage of patients with a diagnosis of HIV/AIDS who had at least one medical visit with a provider with prescribing privileges in each 6-month period of the 24-month measurement period with a minimum of 60 days between medical visits, Aggregate & Site-Specific (≥1 medical visit)**

	2010	2011
<b>Number of Eligible Patients</b>	Not Applicable	n=872
<b>Number of Sites</b>		22
<b>Aggregate All Sites</b>		
Mean		87%
Min-Max		(67-100%)
Median		87%
IQR		85%-91%
<b>By Site</b>		
Clinic A		100%
Clinic B		90%
Clinic C		87%
Clinic D		90%
Clinic E		85%
Clinic F		91%
Clinic G		80%
Clinic H		86%
Clinic I		88%
Clinic J		81%
Clinic K		90%
Clinic L		85%
Clinic M		86%
Clinic N		77%
Clinic O		96%
Clinic P		67%
Clinic Q		95%
Clinic R		95%
Clinic S		86%
Clinic T		94%
Clinic U		85%
Clinic V		84%

## VISITS FOR PATIENTS NEWLY ENROLLED IN MEDICAL CARE (in+care MEASURE)

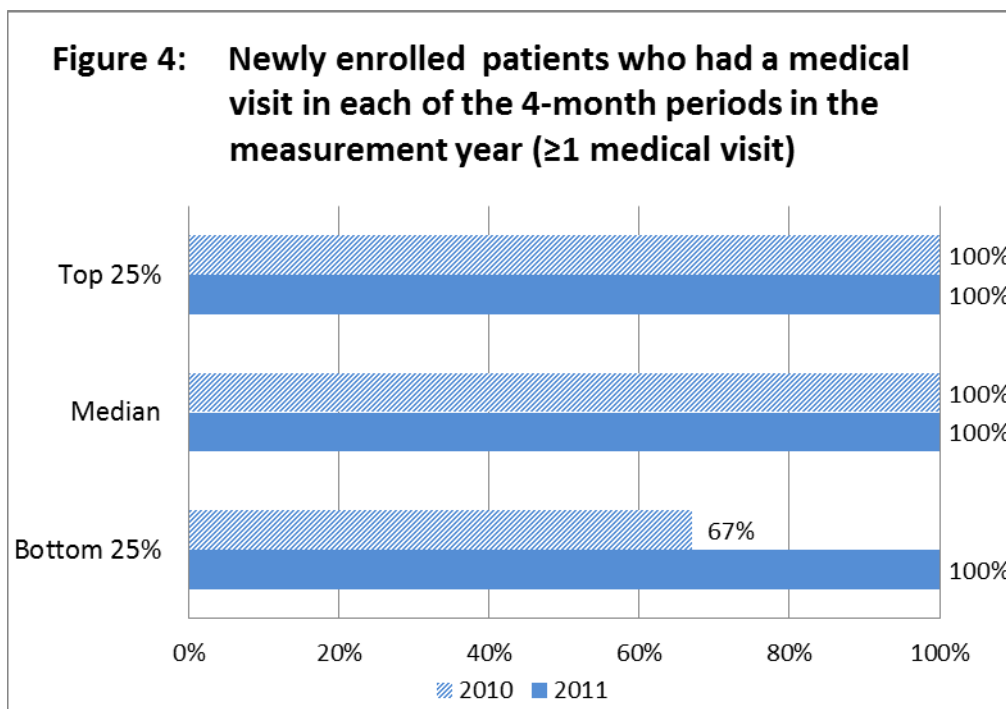
**Performance Measure:** Percentage of patients with a diagnosis of HIV/AIDS who were newly enrolled with a medical provider with prescribing privileges who had a medical visit in each of the 4 month periods in the measurement year.

**Numerator:** One or more medical visits in each 4-Month period in review year

**Denominator:** One or more medical visits in first 4 months of the year, enrolled in review year, not LTFU, dead or incarcerated  $\geq 90$  days by the end of the review year

### **Findings:**

Most of the eligible patients had the visits as defined by the measure in 2011 (average clinic rate of 92%, median of 100%), and similar results in 2010 (average clinic rate of 92%, median 100%, highest quartile 100%). Some outliers were seen with lowest rates of 0% and 50% in 2010 and 2011 respectively, but very small numbers of per site patients make these results difficult to interpret (Table 6a).





**Table 6a: Percentage of patients with a diagnosis of HIV/AIDS who were newly enrolled with a medical provider with prescribing privileges who had a medical visit in each of the 4 month periods in the measurement year, Aggregate & Site-Specific (≥1 medical visit)**

	2010	2011
<b>Number of Eligible Patients</b>	n=53	n=31
<b>Number of Sites</b>	21	19
<b>Aggregate All Sites</b>		
Mean	79%	92%
Min-Max	(0-100%)	(0-100)
Median	100%	100%
IQR	67%-100%	100%-100%
<b>By Site</b>		
Clinic A	100%	100%
Clinic B	50%	100%
Clinic C	100%	100%
Clinic D	88%	100%
Clinic E	75%	---
Clinic F	100%	---
Clinic G	0%	0%
Clinic H	75%	100%
Clinic I	100%	100%
Clinic J	100%	100%
Clinic K	100%	100%
Clinic L	50%	100%
Clinic M	0%	50%
Clinic N	100%	100%
Clinic O	50%	100%
Clinic P	67%	100%
Clinic Q	100%	100%
Clinic R	---	100%
Clinic S	100%	100%
Clinic T	100%	100%
Clinic U	100%	---
Clinic V	100%	100%

## PART II: HIV SPECIFIC INDICATORS

### CD4 COUNTS (HAB MEASURE GROUP 1)

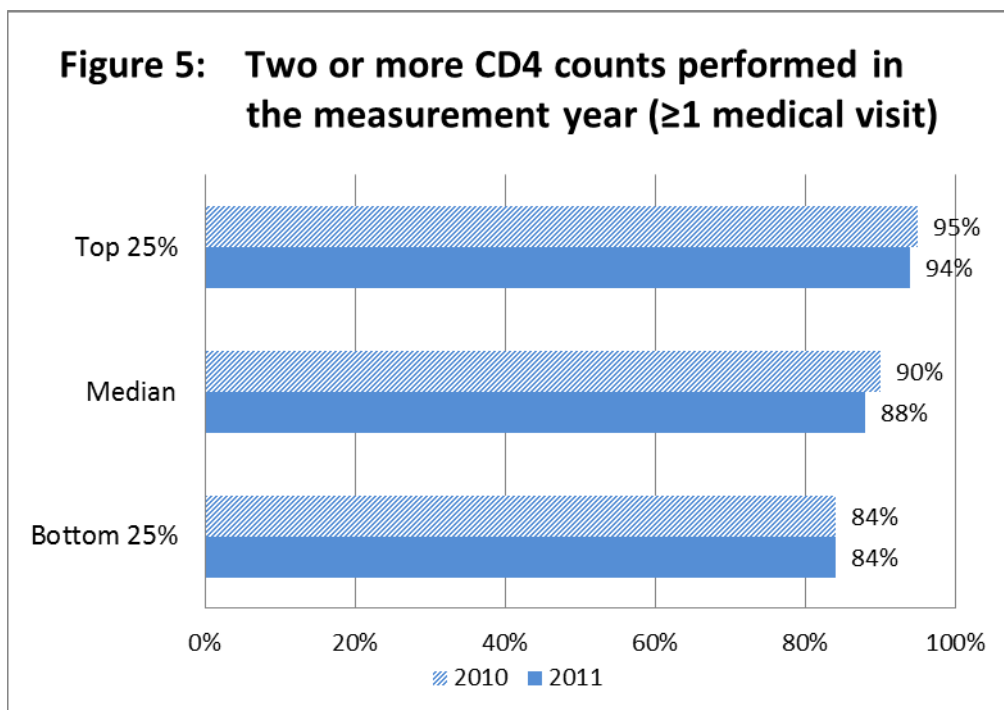
**Performance Measure:** Percentage of clients with HIV infection who had 2 or more CD4 T-cell counts performed in the measurement year.

**Numerator:** Two or more CD4 cell counts at least 3 months apart

**Denominator:** One or more visits with a provider, in care 6 or more months before 7/1 of review year

#### **Findings:**

High rates of patients meeting the CD4 count monitoring measure were seen in 2010 (mean 89%, median 90%) and 2011 (mean 87%, median 88%) (Table 7a). The lowest performing clinics had rates of 64% and 59% (lowest quartile 84%) in 2010 and 2011 respectively while the highest performing clinics had 100% of patients meeting the measure (highest quartile 95% and 94% in 2010 and 2011 respectively). There was no statistically significant difference in CD4 count monitoring rates by patient care status, (new to care versus continuing care). (Table 7b).



**Table 7a: Percentage of clients with HIV infection who had 2 or more CD4 T-cell counts performed in the measurement year, Aggregate & Site-Specific (≥1 medical visit)**

	2010	2011
<b>Number of Eligible Patients</b>	n=938	n=1088
<b>Number of Sites</b>	22	22
<b>Aggregate All Sites</b>		
Mean	89%	87%
Min-Max	(64-100%)	(59-100%)
Median	90%	88%
IQR	84%-95%	84%-94%
<b>By Site</b>		
Clinic A	97%	100%
Clinic B	90%	85%
Clinic C	92%	86%
Clinic D	95%	92%
Clinic E	83%	88%
Clinic F	100%	94%
Clinic G	84%	71%
Clinic H	90%	88%
Clinic I	95%	94%
Clinic J	80%	86%
Clinic K	91%	94%
Clinic L	88%	82%
Clinic M	75%	84%
Clinic N	90%	90%
Clinic O	87%	88%
Clinic P	64%	59%
Clinic Q	87%	94%
Clinic R	84%	82%
Clinic S	93%	90%
Clinic T	98%	96%
Clinic U	95%	94%
Clinic V	96%	83%

**Table 7b: Percentage of clients with HIV infection who had 2 or more CD4 T-cell counts performed in the measurement year, New to Care & Continuing Care Patients (≥1 medical visit)**

2010 Data						2011 Data					
New to Care Patients		Continuing in Care Patients		All Patients		New to Care Patients		Continuing in Care Patients		All Patients	
Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%
69/73	95%	762/865	88%	831/938	89%	50/57	88%	899/1031	87%	949/1088	87%

## LAST CD4 CELL COUNT <200 DURING THE REVIEW YEAR (NON-HAB MEASURE)

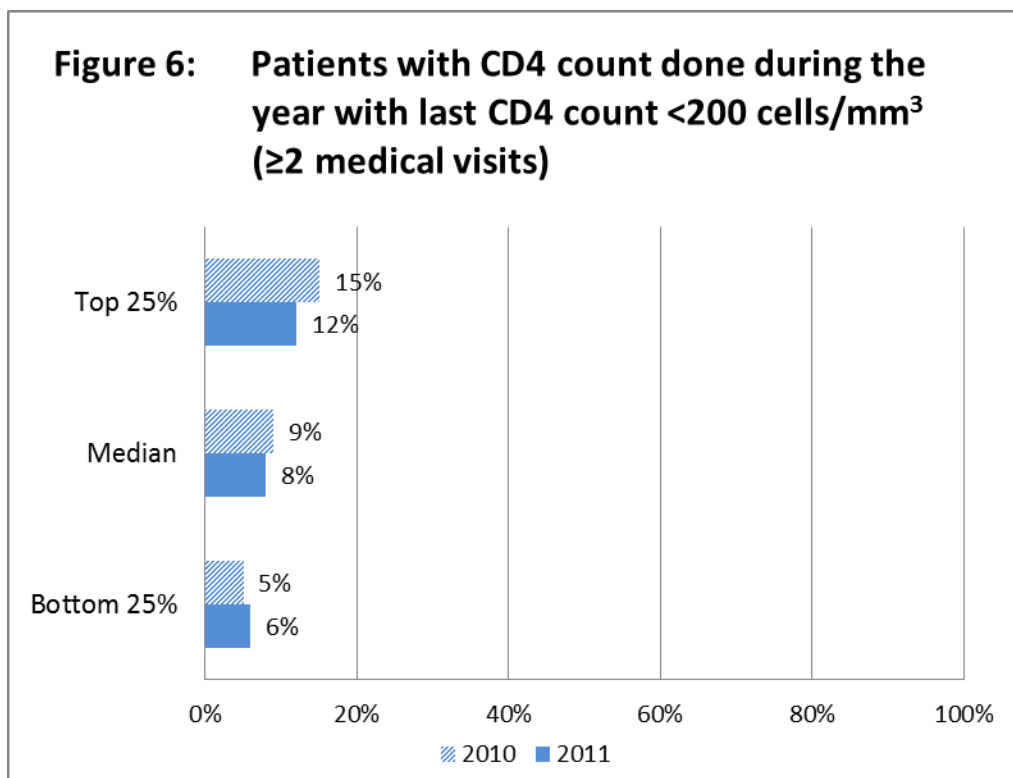
**Performance Measure:** Percent of all patients with CD4 count done during the year with last CD4 count <200 cells/mm<sup>3</sup>

**Numerator:** Last CD4 Count in the review year < 200 cells/mm

**Denominator:** Two or more medical visits and on ART at last visit

### **Findings:**

An important outcome in increasing CD4 counts is to decrease the risk of HIV-related complications and death. On average, 10% and 8% of patients ended the review year in 2010 and 2011 with a CD4 count <200 cells/mm<sup>3</sup>. The range was from 2-21% in 2010 (IQR 5-15%) and 0-17% in 2011 (IQR 6-12%) (Table 8a). Not surprisingly, more patients who were newly diagnosed and just entering care still had a CD4 count <200 by the end of the review year compared to continuing care patients (18% versus 8% in 2010, p=.0002) (Table 8b).



**Table 8a: Percent of all patients with CD4 count done during the year with last CD4 count <200 cells/mm<sup>3</sup>, Aggregate & Site-Specific (≥2 medical visits)**

	2010	2011
<b>Eligible Patients</b>	992	1057
<b>Number of Sites</b>	22	22
<b>Aggregate All Sites</b>		
Mean	10%	8%
Min-Max	(2-21%)	(0-17%)
Median	9%	8%
IQR	5%-15%	6%-12%
<b>By Site</b>		
Clinic A	14%	12%
Clinic B	15%	17%
Clinic C	8%	8%
Clinic D	15%	9%
Clinic E	16%	9%
Clinic F	11%	13%
Clinic G	9%	9%
Clinic H	2%	0%
Clinic I	13%	8%
Clinic J	5%	10%
Clinic K	4%	6%
Clinic L	9%	0%
Clinic M	5%	6%
Clinic N	21%	13%
Clinic O	8%	6%
Clinic P	7%	0%
Clinic Q	16%	12%
Clinic R	2%	2%
Clinic S	4%	8%
Clinic T	4%	6%
Clinic U	17%	15%
Clinic V	8%	8%

**Table 8b: Percentage of all patients with a CD4 count done during the year with last CD4 count <200 cells/mm<sup>3</sup> New to Care & Continuing in Care (≥2 medical visits)**

2010 Data						2011 Data					
New to Care Patients*		Continuing in Care Patients		All Patients		New to Care Patients		Continuing in Care Patients		All Patients	
Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%
28/157	18%	68/835	8%	96/992	10%	8/63	13%	77/994	8%	85/1057	8%

\*P=.0002

## ON HAART (HAB MEASURE GROUP 1)

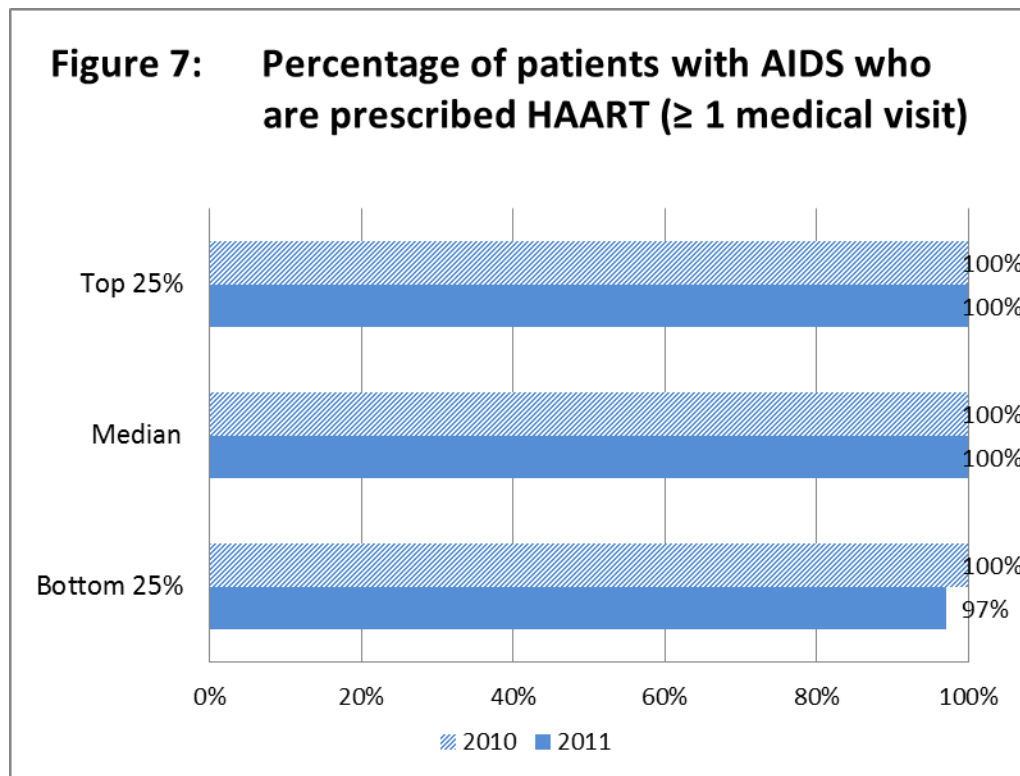
**Performance Measure:** Percentage of patients with AIDS who are prescribed HAART.

**Numerator:** On HAART during review period

**Denominator:** AIDS and one or more visits with provider, in care three or more months before 10/1 of the review year

### **Findings:**

As has been seen in prior review years, HAART coverage was very high, with virtually all patients on HAART during both review years (99% average clinic rate and 100% median for both years). Even the lowest performing clinics had high rates (lowest quartile 97% and 94% in 2010 and 2011 respectively). (Table 9a). Regardless of care status (new or continuing), high rates of HAART for patients with AIDS were seen, including 98% and 96% of newly diagnosed patients on treatment by the end of the year they entered care. (Table 9b)



**Table 9a: Percentage of patients with AIDS who are prescribed HAART, Aggregate & Site-Specific ( $\geq 1$  medical visit)**

	2010	2011
<b>Number of Eligible Patients</b>	n=546	n=594
<b>Number of Sites</b>	22	22
<b>Aggregate All Sites</b>		
Mean	99%	99%
Min-Max	(88-100%)	(94-100%)
Median	100%	100%
IQR	97%-100%	97%-100%
<b>By Site</b>		
Clinic A	100%	100%
Clinic B	100%	96%
Clinic C	96%	96%
Clinic D	100%	100%
Clinic E	100%	100%
Clinic F	100%	97%
Clinic G	100%	100%
Clinic H	100%	100%
Clinic I	88%	100%
Clinic J	100%	95%
Clinic K	100%	100%
Clinic L	100%	100%
Clinic M	96%	94%
Clinic N	100%	100%
Clinic O	100%	100%
Clinic P	97%	97%
Clinic Q	100%	100%
Clinic R	96%	96%
Clinic S	100%	100%
Clinic T	97%	97%
Clinic U	100%	100%
Clinic V	100%	100%

**Table 9b: Percentage of patients with AIDS who are prescribed HAART, New to Care & Continuing Care Patients ( $\geq 1$  medical visit)**

2010 Data						2011 Data					
New to Care Patients		Continuing in Care Patients		All Patients		New to Care Patients		Continuing in Care Patients		All Patients	
Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%
40/41	98%	498/505	99%	538/546	99%	25/26	96%	560/568	99%	585/594	99%

## PREGNANT WOMEN ON ART

## (HAB MEASURE GROUP 1)

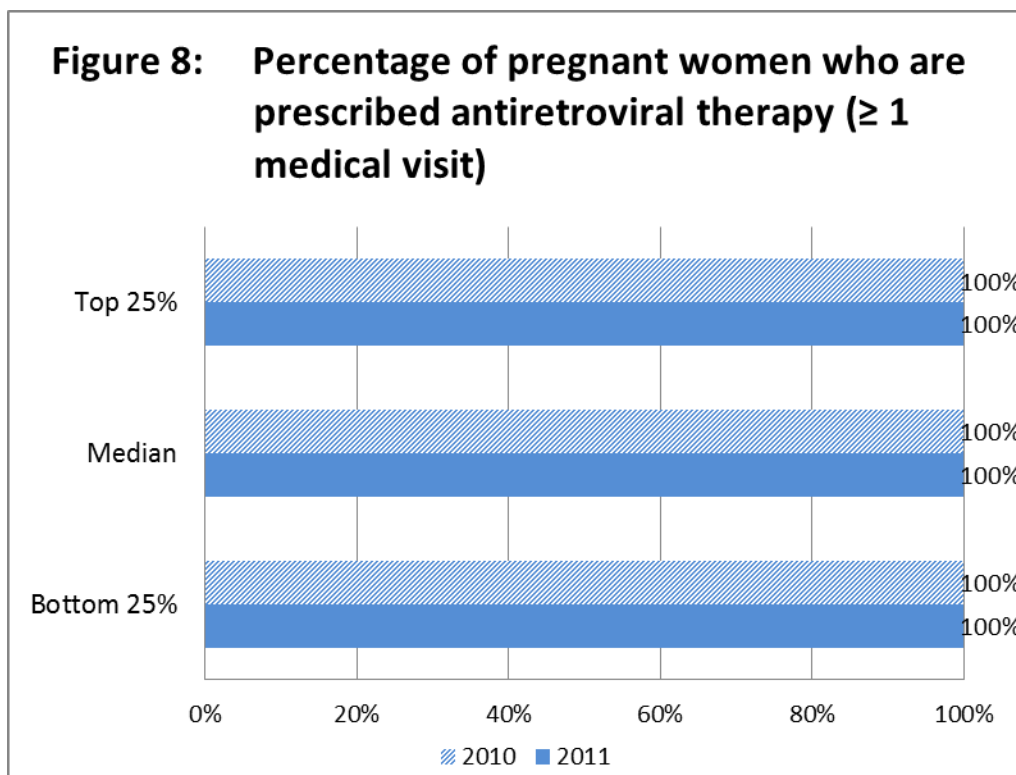
**Performance Measure:** Percentage of pregnant women with HIV infection who are prescribed antiretroviral therapy.

**Numerator:** Pregnant in review year, prescribed Antiretrovirals (ARVs)

**Denominator:** One or more medical visits, pregnant in review year, pregnancy not terminated

### **Findings:**

All women who were pregnant during the review year and did not have their pregnancy terminated were on ARVs.





**Table 10a: Percentage of pregnant women with HIV infection who are prescribed antiretroviral therapy, Aggregate & Site-Specific ( $\geq 1$  medical visit)**

	2010	2011
<b>Number of Eligible Patients</b>	16	17
<b>Number of Sites</b>	9	10
<b>Aggregate All Sites</b>		
Mean	100%	100%
Median	100%	100%
Min-Max	100%-100%	100%-100%
<b>By Site</b>		
Clinic A	-----	-----
Clinic B	-----	-----
Clinic C	100%	-----
Clinic D	100%	
Clinic E	-----	100%
Clinic F	100%	-----
Clinic G	-----	-----
Clinic H	-----	-----
Clinic I	-----	-----
Clinic J	100%	100%
Clinic K	100%	100%
Clinic L	100%	100%
Clinic M	-----	-----
Clinic N	100%	100%
Clinic O	-----	-----
Clinic P	-----	100%
Clinic Q	-----	100%
Clinic R	-----	-----
Clinic S	-----	100%
Clinic T	-----	-----
Clinic U	100%	100%
Clinic V	100%	100%

## ON ART IF ELIGIBLE (HAB MEASURE GROUP 1-ADAPTED)

**Performance Measure:** Percentage of patients eligible for ART per USPHS guidelines who are prescribed HAART.

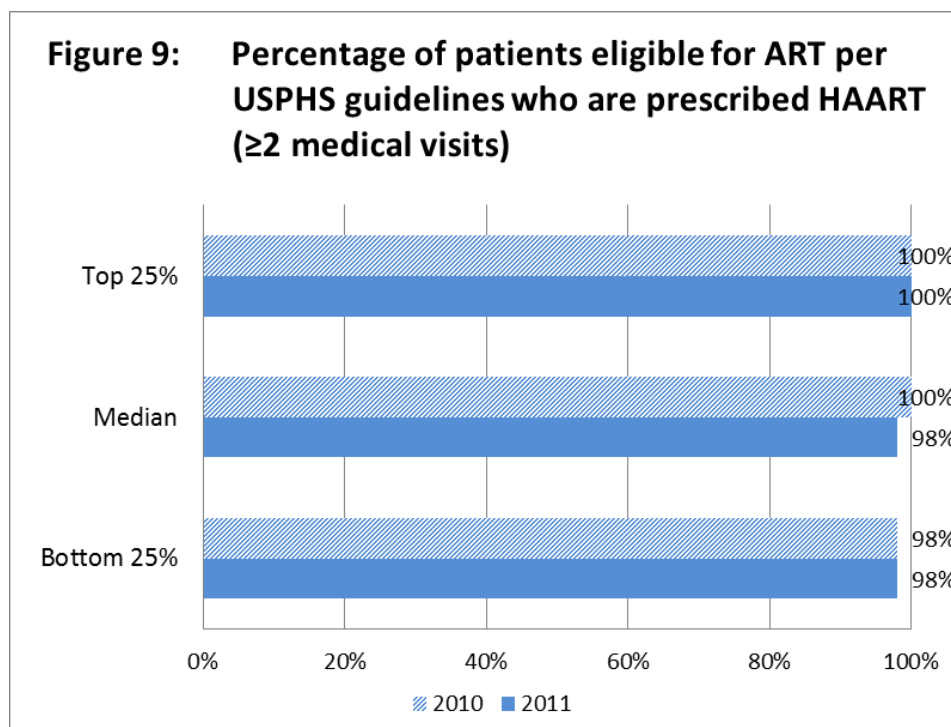
**Numerator:** Ever on HAART during review period

**Denominator:** On HAART or meeting USPHS eligibility criteria during review year (CD4 count, clinical stage or viral load) two or more visits with provider

Note: If the patient was on ART, an assumption was made that the patient was eligible in the past

### **Findings:**

Rates for all patients eligible for HAART remained high with an average 98% of eligible patients in a clinic on treatment for both review years (median 100% on 2010 and 93% in 2011). Even the lowest performing clinics had almost all patients on treatment (90% in 2010 and 98% in 2011) (Table 11a). While in 2010, new to care patients were slightly less likely to be on HAART if eligible by the end of the review year 95% vs. 99%, (p=.003), however this difference was no longer seen in 2011 (Table 11b).



**Table 11a: Percentage of patients eligible for ART per USPHS guidelines who are prescribed HAART, Aggregate & Site-Specific (≥2 medical visits)**

	2010	2011
<b>Number of Eligible Patients</b>	990	993
<b>Number of Sites</b>	22	22
<b>Aggregate All Sites</b>		
Mean	98%	98%
Min-Max	(90-100%)	(93-100%)
Median	100%	98%
IQR	98%-100%	98%-100%
<b>By Site</b>		
Clinic A	100%	98%
Clinic B	98%	93%
Clinic C	97%	97%
Clinic D	100%	100%
Clinic E	100%	98%
Clinic F	91%	98%
Clinic G	100%	98%
Clinic H	97%	100%
Clinic I	90%	98%
Clinic J	100%	96%
Clinic K	100%	100%
Clinic L	100%	98%
Clinic M	100%	93%
Clinic N	97%	98%
Clinic O	100%	100%
Clinic P	100%	100%
Clinic Q	100%	100%
Clinic R	98%	98%
Clinic S	98%	100%
Clinic T	98%	98%
Clinic U	100%	100%
Clinic V	98%	100%

**Table 11b: Percentage of patients eligible for ART per USPHS guidelines who are prescribed HAART, New to Care & Continuing Care Patients (≥2 medical visits)**

2010 Data						2011 Data					
New to Care Patients		Continuing in Care Patients*		All Patients		New to Care Patients		Continuing in Care Patients		All Patients	
Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%
111/117	95%	773/783	99%	884/900	98%	46/48	96%	929/945	98%	975/993	98%

\* P=.003

## VIRAL LOAD MONITORING (HAB MEASURE GROUP 1)

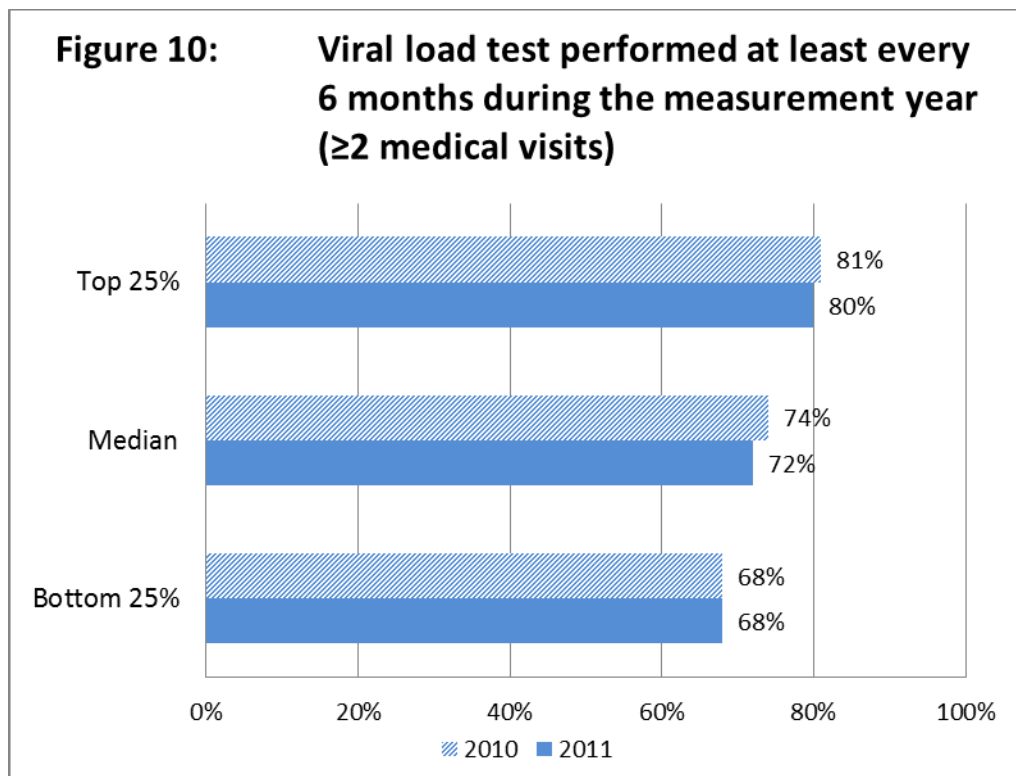
**Performance Measure:** Percentage of patients, regardless of age, with a diagnosis of HIV/AIDS with a viral load test performed at least every 6 months during the measurement year

**Numerator:** Viral load done at least every 6 months

**Denominator:** Two or more medical visits more than 60 days apart and in care at the site for 6 or more months before 7/1 of the review year

### **Findings:**

About three-quarters of patients received viral load monitoring at least every 6 months (clinic averages: 74% (median 74%) and 72% (median 72%) for 2010 and 2011 respectively). (Table 12a) Clinic rates ranged from a low of 48-51% (lowest quartile 68%) to a maximum of 92% and 94 % (highest quartile 81% and 80%) % in 2010 and 2011 respectively. There were no significant differences in viral load monitoring rates based on patient care status (new to care versus continuing care) in either year. (Table 12b)



**Table 12a: Percentage of patients, regardless of age, with a diagnosis of HIV/AIDS with a viral load test performed at least every 6 months during the measurement year, Aggregate & Site-Specific ( $\geq 2$  medical visits)**

	2010	2011
<b>Number of Eligible Patients</b>	n=883	n=1027
<b>Number of Sites</b>	22	22
<b>Aggregate All Sites</b>		
Mean	74%	72%
Min-Max	(48-92%)	(51-94%)
Median	74%	72%
IQR	68%-81%	67%-80%
<b>By Site</b>		
Clinic A	89%	94%
Clinic B	68%	82%
Clinic C	92%	69%
Clinic D	78%	75%
Clinic E	68%	76%
Clinic F	90%	80%
Clinic G	74%	51%
Clinic H	65%	67%
Clinic I	83%	87%
Clinic J	67%	66%
Clinic K	85%	73%
Clinic L	74%	52%
Clinic M	48%	62%
Clinic N	76%	71%
Clinic O	71%	71%
Clinic P	57%	67%
Clinic Q	61%	83%
Clinic R	73%	51%
Clinic S	72%	69%
Clinic T	81%	73%
Clinic U	77%	83%
Clinic V	80%	80%

**Table 12b: Percentage of patients with a viral load done at least every 6 months during the review year, New to Care & Continuing Care Patients ( $\geq 2$  medical visits)**

2010 Data						2011 Data					
New to Care Patients		Continuing in Care Patients		All Patients		New to Care Patients		Continuing in Care Patients		All Patients	
Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%
54/72	75%	599/811	74%	653/883	74%	36/56	64%	704/971	73%	740/1027	72%

## VIRAL LOAD SUPPRESSION (HAB MEASURE GROUP 1 - MODIFIED)

**Performance Measure:** Percentage of patients, regardless of age, with a diagnosis of HIV/AIDS, on ART during the review year, whose last viral load in the review year was below detectable limits of quantification (<200 copies/ml).

**Numerator:** Last viral load in review year was below detectable limits

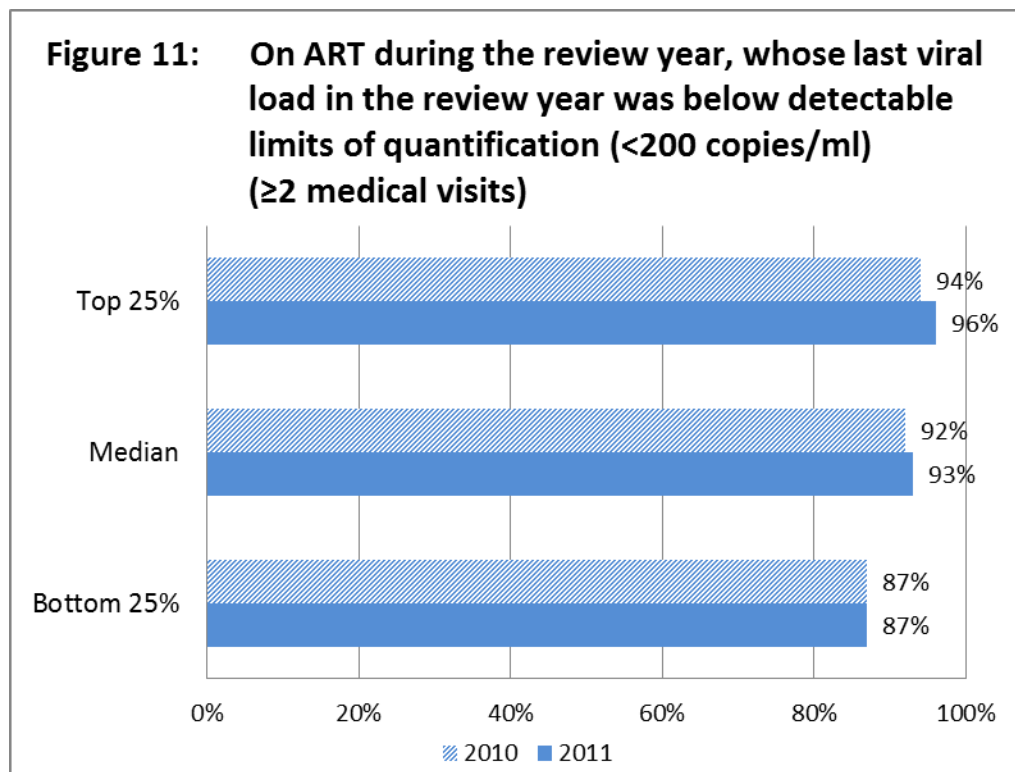
**Denominator:** Two + medical visits more than 60 days apart, in care 6 or more months, on ART during the review year, date 1<sup>st</sup> prescribed for new ARV patients is before 7/1 of the review year, viral load in review year.

Note: The denominator for the HAB measure states "Two or more medical visits during the year at least 60 days apart and prescribed ARVs for  $\geq 6$  months and had VL during the measurement year" Chart review data did not collect the length of time a patient was on ARVs. Instead patients were eligible for this measure if 1) a patient was a continuing in care and on ART during the review year and 2) the date prescribed for patients newly starting ARVs for the first time was before 7/1 of the review year.

*Data tables for this measure for patients with only one medical visit can be found on page 87 in Appendix I*

### **Findings:**

Rates of viral suppression for patients were very high (clinic mean of 89% (median 99%) in 2010 and 91% clinic mean (median 99%) in 2011 (Table 13a). The lowest performing sites had rates of 63% in 2010 and 81% in 2011 with three quarters of sites having rates of 97% or higher in both years. The mean clinic rate of achieving viral suppression by the end of the review year did not differ by patient care status (new to care versus continuing care) in either review year. (Table 13b)



**Table 13a: Percentage of patients, regardless of age, with a diagnosis of HIV/AIDS, on ART during the review year, whose last viral load in the review year was below detectable limits of quantification(<200 copies/ml), Aggregate & Site-Specific (≥2 medical visits)**

	2010	2011
<b>Number of Eligible Patients</b>	n=774	n=929
<b>Number of Sites</b>	22	22
<b>Aggregate All Sites</b>		
Mean	89%	91%
(Min-Max)	(63-100%)	(81-100%)
Median	92%	93%
IQR	87%-94%	87%-96%
<b>By Site</b>		
Clinic A	100%	100%
Clinic B	75%	82%
Clinic C	82%	84%
Clinic D	92%	91%
Clinic E	97%	93%
Clinic F	94%	93%
Clinic G	90%	95%
Clinic H	93%	98%
Clinic I	79%	85%
Clinic J	87%	88%
Clinic K	95%	96%
Clinic L	91%	97%
Clinic M	91%	90%
Clinic N	86%	95%
Clinic O	93%	87%
Clinic P	88%	82%
Clinic Q	63%	81%
Clinic R	97%	96%
Clinic S	92%	91%
Clinic T	93%	98%
Clinic U	95%	98%
Clinic V	92%	93%

**Table 13b: Percentage of patients, regardless of age, with a diagnosis of HIV/AIDS, on ART during the review year, whose last viral load in the review year was below detectable limits of quantification(<200 copies/ml), New to Care & Continuing Care Patients (≥2 medical visits)**

2010 Data						2011 Data					
New to Care Patients		Continuing in Care Patients		All Patients		New to Care Patients		Continuing in Care Patients		All Patients	
Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%
33/38	87%	657/736	89%	690/774	89%	29/33	88%	821/896	92%	850/929	92%

## VIRAL LOAD SUPPRESSION

(in+care MEASURE)

**Performance Measure:** Percentage of patients with a diagnosis of HIV/AIDS with a viral load less than 200 copies/mL at last viral load test during the review year.

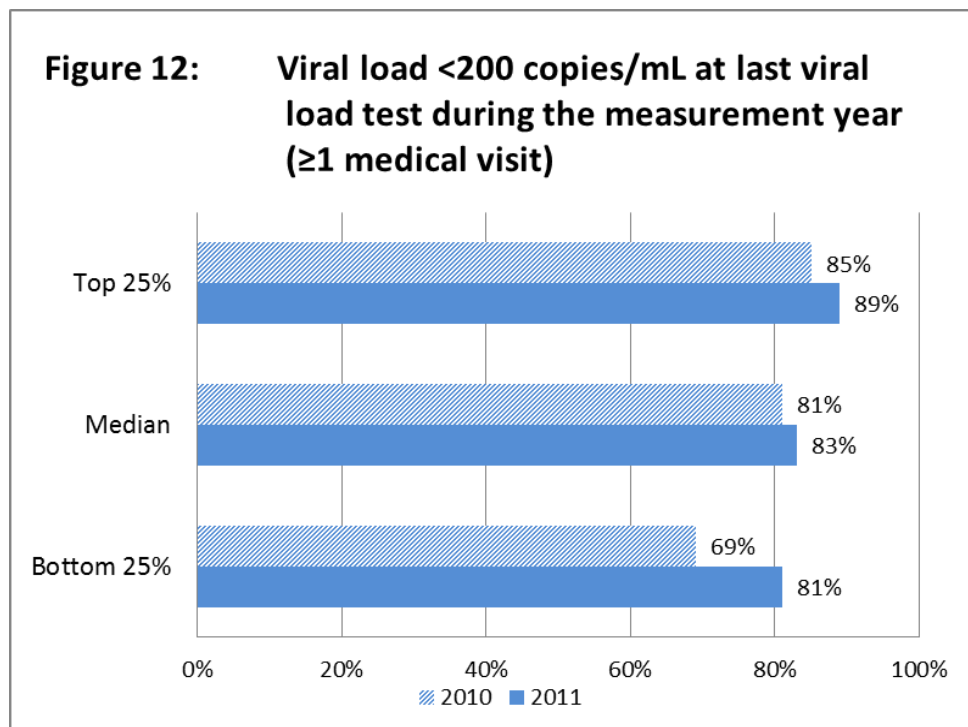
**Numerator:** Last viral load in review year below 200 (or otherwise suppressed)

**Denominator:** One or more medical visits, and not deceased, incarcerated > 90 days or LTFU during review year.

### Findings:

Mean clinic rate of viral suppression among all patients reviewed (regardless of ART status) was 77% in 2010 (median 81%) and 84% (median 83%) in 2011 (Table 14a). The lowest clinic rates were 57% and 69% in 2010 and 2011 respectively (lowest quartile 69% and 81% in 2010 and 2011 respectively) with the highest quartile rates at 85% and 89% in the two years. For comparison, rates of this measure across Part C programs submitting data to the in+care campaign in December 2011 were 71.2%. In both years, patients who were newly diagnosed and newly entering care were less likely to achieve viral suppression with their last viral load than patients who were continuing care (53% vs. 82%,  $p < .0001$  in 2010 and 61% versus 86%,  $p < .001$  in 2011). This is different from the measure which only included patients on HAART as well as rates of HAART use if eligible, suggesting that differences were related to differences in rates of HAART eligibility. (Table 14b)

*Data tables for this measure for patients with only one medical visit only and for patients with two or more visits can be found on pages 89 and 91 in Appendix I.*





**Table 14a: Percentage of patients with a diagnosis of HIV/AIDS with a viral load less than 200 copies/mL at last viral load test during the review year, Aggregate & Site-Specific ( $\geq 1$  medical visit)**

	2010	2011
<b>Number of Eligible Patients</b>	n=1022	n=1068
<b>Number of Sites</b>	22	22
<b>Aggregate All Sites</b>		
Mean	77%	84%
(Min-Max)	(57-92%)	(69-98%)
Median	81%	83%
IQR	69%-85%	81%-89%
<b>By Site</b>		
Clinic A	78%	82%
Clinic B	69%	69%
Clinic C	66%	69%
Clinic D	81%	92%
Clinic E	82%	83%
Clinic F	87%	89%
Clinic G	81%	92%
Clinic H	69%	89%
Clinic I	61%	79%
Clinic J	70%	82%
Clinic K	85%	88%
Clinic L	82%	89%
Clinic M	73%	72%
Clinic N	63%	81%
Clinic O	90%	82%
Clinic P	82%	81%
Clinic Q	57%	81%
Clinic R	89%	88%
Clinic S	83%	82%
Clinic T	88%	98%
Clinic U	92%	98%
Clinic V	76%	86%

**Table 14b: Percentage of patients with a diagnosis of HIV/AIDS with a viral load less than 200 copies/mL at last viral load test during the review year, New to Care & Continuing Care Patients ( $\geq 1$  medical visit)**

2010 Data						2011 Data					
New to Care Patients		Continuing in Care Patients*		All Patients		New to Care Patients		Continuing in Care Patients**		All Patients	
Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%
86/161	53%	706/861	82%	792/1022	78%	36/59	61%	863/1009	86%	899/1068	84%

\*p < .0001

\*\* p < .0001

## VIRAL LOAD SUPPRESSION (NON-HAB MEASURE)

**Performance Measure:** All viral loads in the review year  $\leq 200$  copies/ml among continuing in care patients on ART with two or more visits

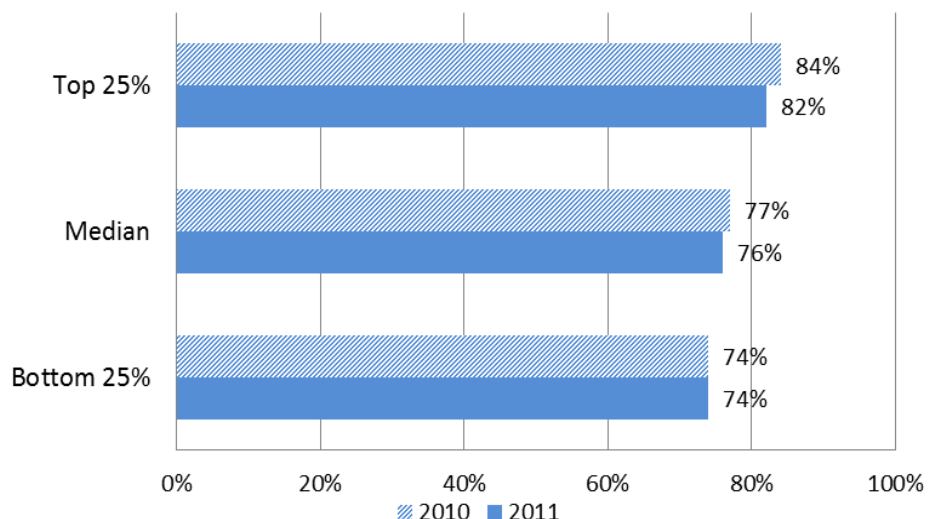
**Numerator:** All viral loads in the review year  $\leq 200$  copies/ml

**Denominator:** Continuing in care patients only with two or more medical visits and on ART

### **Findings:**

On average, clinics had over three-quarters (mean 76% in 2010, mean 77% in 2011) of continuing care patients on ART had a viral load  $\leq 200$  copies/ml or were otherwise virally suppressed on every measurement. Clinic rates range from 50% to 90% in 2010 and from 57% to 93% in 2011.

**Figure 13: On ART during the review year all viral loads  $< 200$  copies/ml during the measurement year ( $\geq 2$  medical visits)**



**Table 15a: All viral loads in review year  $\leq 200$  copies/ml or suppressed among patients with two or more visits on ART, continuing in care patients only, Aggregate & Site-Specific ( $\geq 2$  medical visits)**

	2010	2011
<b>Number of Eligible Patients</b>	773	929
<b>Number of Sites</b>	22	22
<b>Aggregate All Sites</b>		
Mean	76%	77%
Min-Max	(50-90%)	(57-93%)
Median	77%	76%
IQR	74%-84%	74%-82%
<b>By Site</b>		
Clinic A	76%	74%
Clinic B	64%	71%
Clinic C	82%	75%
Clinic D	74%	74%
Clinic E	90%	81%
Clinic F	88%	81%
Clinic G	78%	80%
Clinic H	76%	76%
Clinic I	50%	63%
Clinic J	75%	77%
Clinic K	87%	84%
Clinic L	74%	85%
Clinic M	78%	82%
Clinic N	68%	68%
Clinic O	67%	75%
Clinic P	84%	74%
Clinic Q	54%	57%
Clinic R	90%	93%
Clinic S	83%	81%
Clinic T	84%	88%
Clinic U	83%	85%
Clinic V	77%	71%

## PNEUMOCYSTIS (CARINII) JIROVECI PNEUMONIA (PCP) PROPHYLAXIS (HAB MEASURE GROUP 1)

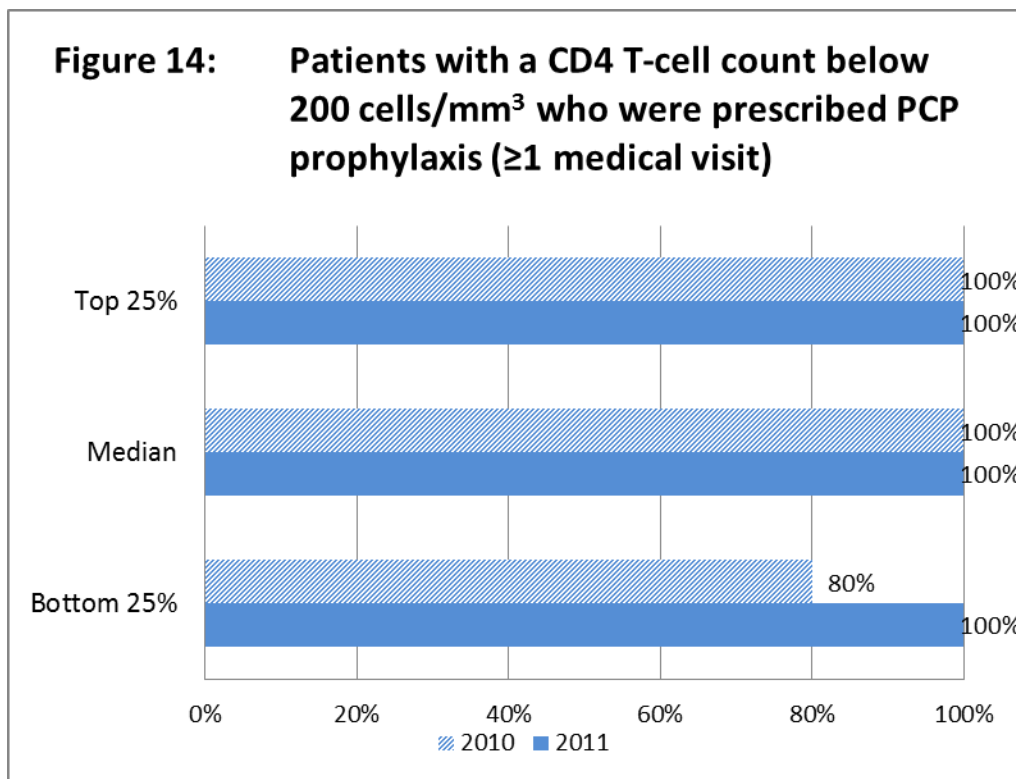
**Performance Measure:** Percentage of clients with HIV infection and a CD4 T-cell count below 200 cells/mm<sup>3</sup> who were prescribed PCP prophylaxis

**Numerator:** Prescribed PCP Prophylaxis

**Denominator:** One or more medical visits, in care 3 or more months before 10/1 of review year, with CD4 < 200 remaining < 200

### **Findings:**

Rates of PCP prophylaxis was high with a clinic average of 91% in 2010 (median 100%) and 97% in 2011 (median 100%). The total number of eligible patients per clinic was low, so comparison of site rates should be done with caution. There was no difference in PCP prophylaxis rates based on patient care status (newly diagnosed and new to care versus continuing care) in either year. (Table 16b)



**Table 16a: Percentage of clients with HIV infection and a CD4 T-cell count below 200 cells/mm<sup>3</sup> who were prescribed PCP prophylaxis, Aggregate & Site-Specific (≥1 medical visit)**

	2010	2011
<b>Number of Eligible Patients</b>	n=115	n=129
<b>Number of Sites</b>	22	22
<b>Aggregate All Sites</b>		
Mean	91%	97%
Median	100%	100%
Min-Max	(60-100%)	(75-100%)
IQR	80%-100%	100%-100%
<b>By Site</b>		
Clinic A	67%	90%
Clinic B	100%	91%
Clinic C	60%	75%
Clinic D	90%	100%
Clinic E	100%	100%
Clinic F	86%	86%
Clinic G	100%	100%
Clinic H	100%	100%
Clinic I	100%	100%
Clinic J	100%	100%
Clinic K	100%	100%
Clinic L	80%	100%
Clinic M	75%	100%
Clinic N	100%	100%
Clinic O	86%	100%
Clinic P	80%	100%
Clinic Q	100%	100%
Clinic R	100%	100%
Clinic S	100%	100%
Clinic T	100%	100%
Clinic U	71%	88%
Clinic V	100%	100%

**Table 16b: Percentage of clients with HIV infection and a CD4 T-cell count below 200 cells/mm<sup>3</sup> who were prescribed PCP prophylaxis, New to Care & Continuing Care Patients (≥1 medical visit)**

2010 Data						2011 Data					
New to Care Patients		Continuing in Care Patients		All Patients		New to Care Patients		Continuing in Care Patients		All Patients	
Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%
28/31	90%	76/84	91%	104/115	90%	21/21	100%	103/108	95%	124/129	96%

## MYCOBACTERIUM AVIUM COMPLEX (MAC) PROPHYLAXIS (HAB MEASURE GROUP 3)

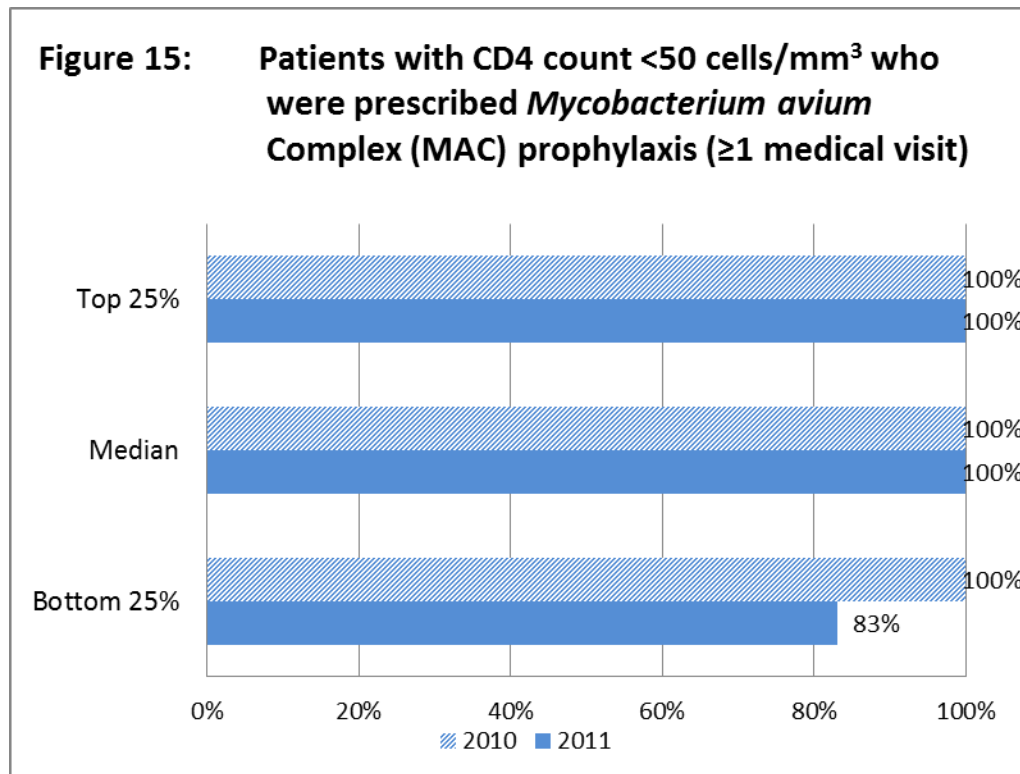
**Performance Measure:** Percentage of clients with HIV infection with CD4 count  $<50$  cells/mm<sup>3</sup> who were prescribed Mycobacterium avium Complex (MAC) prophylaxis within the measurement year.

**Numerator:** Prescribed MAC prophylaxis during review year

**Denominator:** One + medical visits, at least one CD4 $<50$

### **Findings:**

Mean clinic rates were 93% in 2010 (median 100%), with an average rate of 85% in 2011 (median 100%). While the range went from 50-100% in 2010 and 0-100% in 2011, numbers are very small so clinic level rates should be carefully interpreted (Table 17a). No difference in MAC prophylaxis rates were seen based on patient care status (newly diagnosed and new to care versus continuing care). (Table 17b)



**Table 17a: Percentage of clients with HIV infection with CD4 count <50 cells/mm<sup>3</sup> who were prescribed Mycobacterium avium Complex (MAC) prophylaxis within the measurement year, Aggregate & Site-Specific (≥1 medical visit)**

	2010	2011
<b>Number of Eligible Patients</b>	n=28	n=25
<b>Number of Sites</b>	18	16
<b>Aggregate All Sites</b>		
Mean	93%	85%
Min-Max	(50-100%)	(0-100%)
Median	100%	100%
IQR	100%-100%	83%-100%
<b>By Site</b>		
Clinic A	100%	100%
Clinic B	67%	100%
Clinic C	100%	50%
Clinic D	-----	-----
Clinic E	100%	100%
Clinic F	50%	50%
Clinic G	100%	100%
Clinic H	100%	0%
Clinic I	100%	100%
Clinic J	100%	67%
Clinic K	100%	100%
Clinic L	100%	100%
Clinic M	-----	-----
Clinic N	100%	100%
Clinic O	-----	-----
Clinic P	100%	-----
Clinic Q	100%	100%
Clinic R	100%	100%
Clinic S	100%	100%
Clinic T	-----	-----
Clinic U	100%	-----
Clinic V	50%	100%

**Table 17b: Percentage of clients with HIV infection with CD4 count <50 cells/mm<sup>3</sup> who were prescribed Mycobacterium avium Complex (MAC) prophylaxis within the measurement year, New to Care & Continuing Care Patients (≥1 medical visit)**

2010 Data						2011 Data					
New to Care Patients		Continuing in Care Patients		All Patients		New to Care Patients		Continuing in Care Patients		All Patients	
Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%
11/13	85%	14/15	93%	25/28	89%	5/5	100%	16/20	80%	21/25	84%

### PART III: VIRAL HEPATITIS PREVENTION, SCREENING & TREATMENT

#### HEPATITIS B VACCINATION (HAB MEASURE GROUP 2)

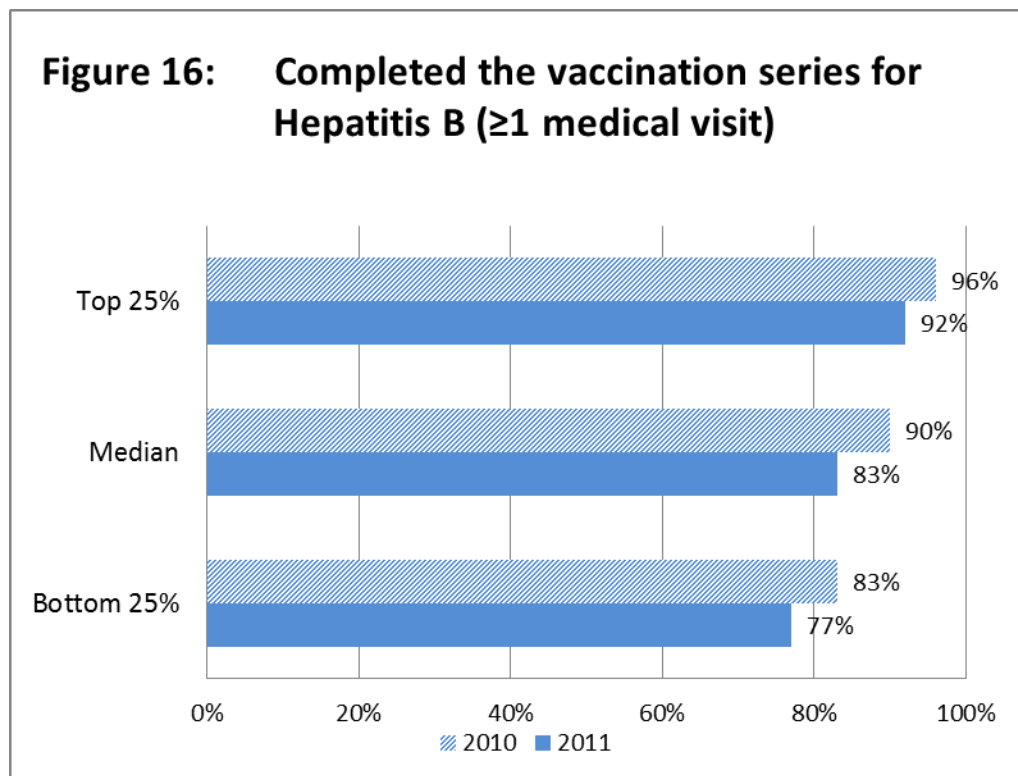
**Performance Measure:** Percentage of clients with HIV infection who completed the vaccination series for Hepatitis B

**Numerator:** Completed HBV vaccination series ever

**Denominator:** One or more visits with provider, not newly enrolled in care in review year, not HBV(+)

#### Findings:

On average, clinics completed vaccinations series in 87% of eligible patients in 2010 and 83% in 2011 (median of 90% and 83% respectively) (Table 18a). Lowest performing clinics fully vaccinated one-half of patients in both years (lowest performing quartile at 83% in 2010 and 77% in 2011), with three-quarters of clinics managing to complete the vaccination series for over 75% of eligible patients in both years.





**Table 18a: Percentage of clients with HIV infection who completed the vaccination series for Hepatitis B, Aggregate & Site-Specific (≥1 medical visit)**

	2010	2011
<b>Number of Eligible Patients</b>	n=465	n=551
<b>Number of Sites</b>	22	22
<b>Aggregate All Sites</b>		
Mean	87%	83%
Min-Max	(50-100%)	(52-100%)
Median	90%	83%
IQR	83% -96%	77% -92%
<b>By Site</b>		
Clinic A	86%	77%
Clinic B	89%	78%
Clinic C	93%	89%
Clinic D	73%	72%
Clinic E	91%	90%
Clinic F	65%	65%
Clinic G	91%	80%
Clinic H	92%	82%
Clinic I	83%	81%
Clinic J	83%	83%
Clinic K	100%	100%
Clinic L	100%	96%
Clinic M	92%	92%
Clinic N	50%	52%
Clinic O	96%	89%
Clinic P	100%	94%
Clinic Q	83%	80%
Clinic R	74%	76%
Clinic S	100%	96%
Clinic T	89%	89%
Clinic U	87%	77%
Clinic V	96%	92%

## HEPATITIS B SCREENING (HAB MEASURE GROUP 2)

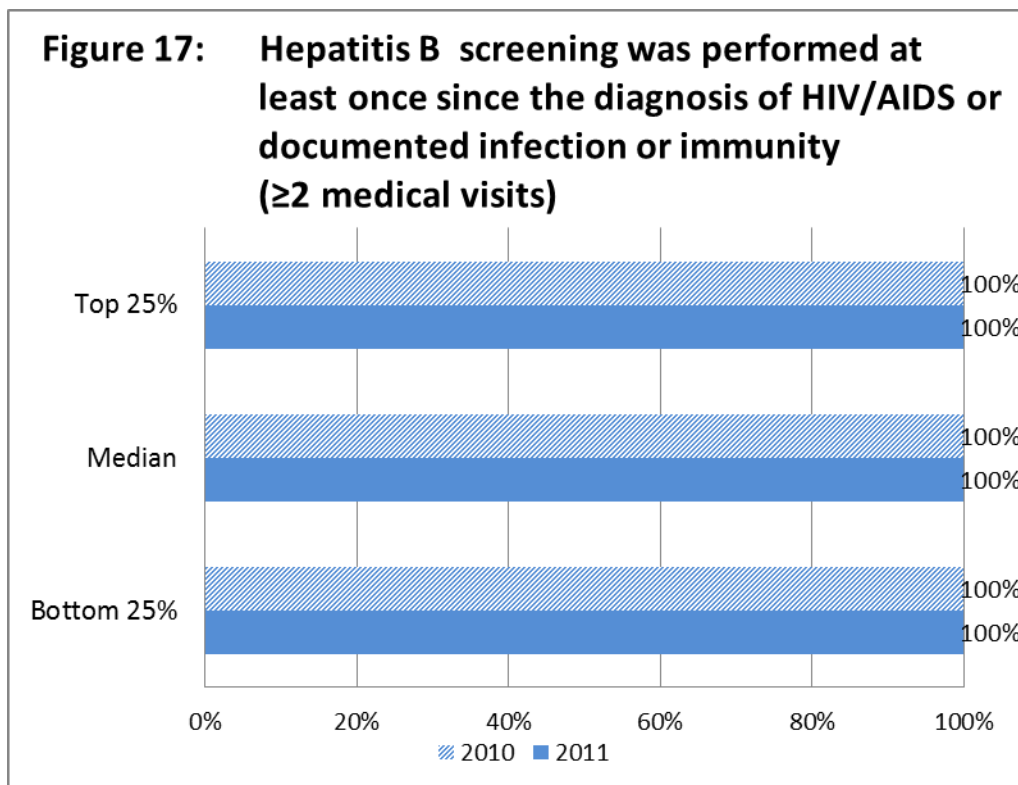
**Performance Measure:** Percentage of patients, regardless of age, for whom Hepatitis B screening was performed at least once since the diagnosis of HIV/AIDS or for whom there is documented infection or immunity.

**Numerator:** Screening and/or documented immunity of HBV Infection

**Denominator:** Two or more visits with provider more than 60 days apart, not HBV(+)

### **Findings:**

Virtually all patients (clinic means of 99% and median of 100% both years) had their Hepatitis B virus serostatus documented. (Table 19a) There was no meaningful difference in rates between newly diagnosed and new to care versus continuing care (98% versus 99% in 2010, 97% versus 100% in 2011 respectively) although this small difference did reach statistical significance in 2010. (Table 19b)



**Table 19a: Percentage of patients, regardless of age, for whom Hepatitis B screening was performed at least once since the diagnosis of HIV/AIDS or for whom there is documented infection or immunity, Aggregate & Site-Specific ( $\geq 2$  medical visits)**

	2010	2011
<b>Number of Eligible Patients</b>	n=934	n=1031
<b>Number of Sites</b>	22	22
<b>Aggregate All Sites</b>		
Mean	99%	99%
Min-Max	(93-100%)	(93-100%)
Median	100%	100%
IQR	100%-100%	100%-100%
<b>By Site</b>		
Clinic A	100%	100%
Clinic B	98%	98%
Clinic C	100%	100%
Clinic D	100%	100%
Clinic E	100%	100%
Clinic F	98%	98%
Clinic G	93%	93%
Clinic H	100%	98%
Clinic I	100%	100%
Clinic J	100%	100%
Clinic K	100%	100%
Clinic L	100%	100%
Clinic M	100%	100%
Clinic N	100%	100%
Clinic O	100%	100%
Clinic P	100%	100%
Clinic Q	100%	100%
Clinic R	98%	98%
Clinic S	100%	100%
Clinic T	100%	100%
Clinic U	100%	100%
Clinic V	100%	100%

**Table 19b: Percentage of patients, regardless of age, for whom Hepatitis B screening was performed at least once since the diagnosis of HIV/AIDS or for whom there is documented infection or immunity, New to Care & Continuing Care Patients ( $\geq 2$  medical visits)**

2010 Data						2011 Data					
New to Care Patients		Continuing in Care Patients*		All Patients		New to Care Patients		Continuing in Care Patients		All Patients	
Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%
118/121	98%	810/813	100%	928/934	99%	58/60	97%	966/971	100%	1024/1031	99%

\*P=.03 (FISHER'S EXACT TEST)

## HEPATITIS C SCREENING (HAB MEASURE GROUP 2)

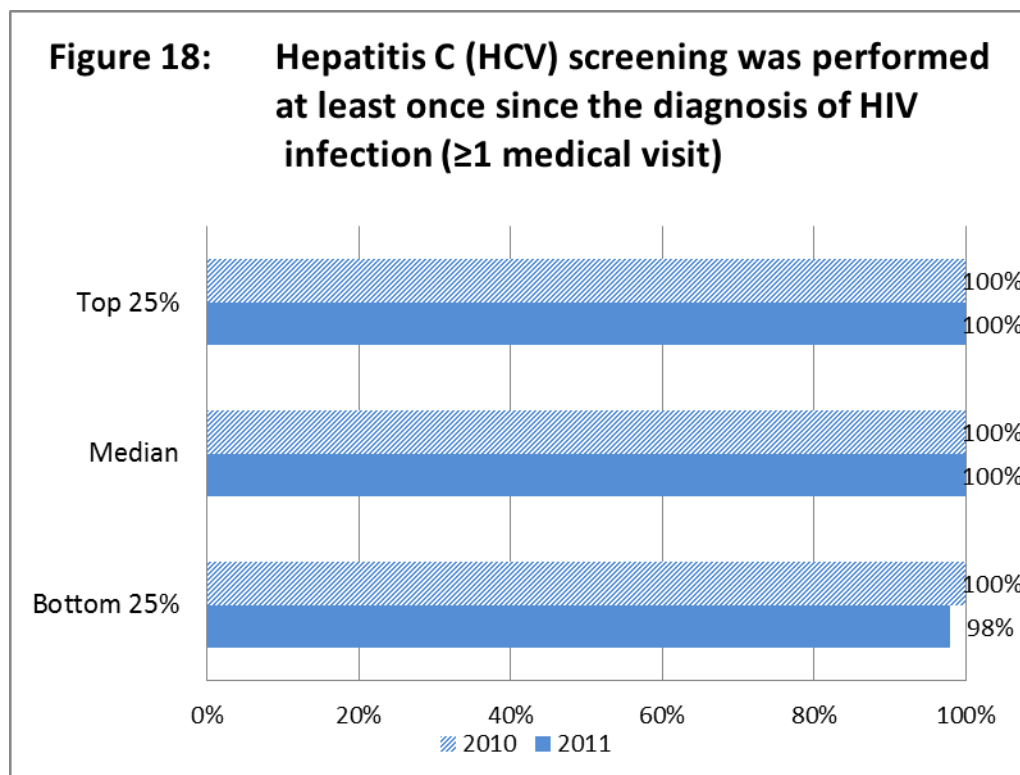
**Performance Measure:** Percentage of clients for whom Hepatitis C (HCV) screening was performed at least once since the diagnosis of HIV infection

**Numerator:** Patients with documented screening and/or HCV serostatus

**Denominator:** Patients with one or more medical visits with provider in the review year

### **Findings:**

Virtually all patients (clinic means of 99% and median of 100% for both years) had their Hepatitis C virus serostatus documented (Table 20a). Similar to Hepatitis B screening, only small differences (only in 2011) were seen based on patient care status (newly entering care versus continuing care) which did reach statistical significance (95% versus 99%,  $p=.03$ , Table 20b). Among patients with two or more visits who were both HCV antibody positive and HCV viral load (+), on average, 28% had been undergoing treatment at the end of 2011.



**Table 20a: Percentage of clients for whom Hepatitis C (HCV) screening was performed at least once since the diagnosis of HIV infection, Aggregate & Site-Specific (≥1 medical visit)**

	2010	2011
<b>Number of Eligible Patients</b>	n=1039	n=1095
<b>Number of Sites</b>	22	22
<b>Aggregate All Sites</b>		
Mean	99%	99%
Min-Max	(94-100%)	(94-100%)
Median	100%	100%
IQR	100%-100%	100%-100%
<b>By Site</b>		
Clinic A	100%	100%
Clinic B	100%	98%
Clinic C	100%	100%
Clinic D	94%	94%
Clinic E	100%	100%
Clinic F	98%	98%
Clinic G	94%	92%
Clinic H	98%	96%
Clinic I	100%	100%
Clinic J	100%	100%
Clinic K	100%	100%
Clinic L	100%	100%
Clinic M	100%	100%
Clinic N	100%	100%
Clinic O	100%	100%
Clinic P	100%	100%
Clinic Q	100%	100%
Clinic R	100%	100%
Clinic S	100%	100%
Clinic T	100%	100%
Clinic U	98%	98%
Clinic V	100%	100%

**Table 20b: Percentage of clients for whom Hepatitis C (HCV) screening was performed at least once since the diagnosis of HIV infection, New to Care & Continuing Care Patients (≥1 medical visit)**

2010 Data						2011 Data					
New to Care Patients		Continuing in Care Patients		All Patients		New to Care Patients		Continuing in Care Patients*		All Patients	
Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%
165/167	99%	865/872	99%	1030/1039	99%	61/64	95%	1022/1031	99%	1083/1095	100%

\* p=.03 (FISHER'S EXACT TEST)

## PART IV: STD SCREENING

### SYPHILIS SCREENING (HAB MEASURE GROUP 1)

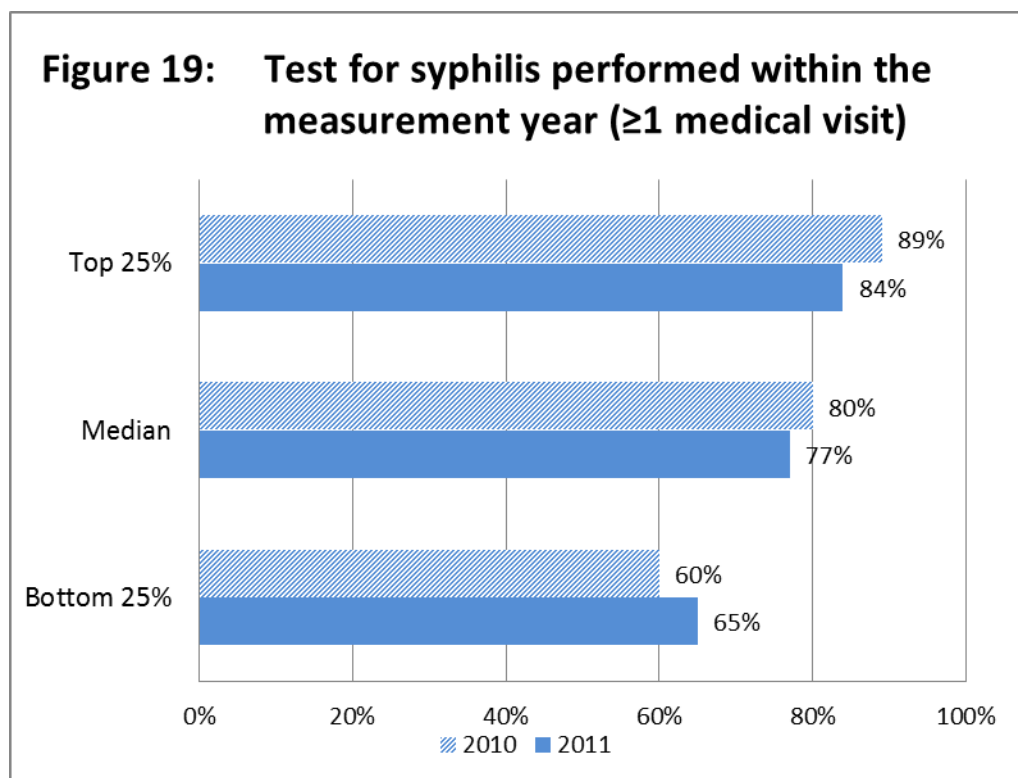
**Performance Measure:** Percentage of adult clients with HIV infection who had a test for syphilis performed within the measurement year.

**Numerator:** Serologic syphilis test during review year

**Denominator:** One + Visits, 18+ Years Old or < 18 and sexually active

#### **Findings:**

For both the 2010 and 2011 measurement years, mean clinic rate for the 22 sites was 74% (median 80% in 2010 and 74% in 2011). The lowest clinic score was 39% in 2010 (lowest quartile 60%) and 48% (lowest quartile 65%) in 2011 and the highest clinic score was 92% for both review years (Table 21a). For each review year, patients who were new to care (92% in 2010 and 94% in 2011) had statistically significant higher rates of having a syphilis test performed compared to continuing care patients (71% in 2010 and 74% in 2011) (Table 21b).



**Table 21a: Percentage of adult clients with HIV infection who had a test for syphilis performed within the measurement year, Aggregate and Site-Specific (≥1 medical visit)**

	2010	2011
<b>Eligible Patients</b>	n=1039	n=1095
<b>Number of Sites</b>	22	22
<b>Aggregate All Sites</b>		
Mean	74%	74%
Min-Max	(39-92%)	(48-92%)
Median	80%	77%
IQR	60%-89%	65%-84%
<b>By Site</b>		
Clinic A	39%	52%
Clinic B	58%	65%
Clinic C	90%	92%
Clinic D	57%	54%
Clinic E	84%	78%
Clinic F	92%	81%
Clinic G	42%	48%
Clinic H	90%	84%
Clinic I	87%	92%
Clinic J	67%	84%
Clinic K	90%	71%
Clinic L	76%	48%
Clinic M	73%	72%
Clinic N	85%	85%
Clinic O	85%	82%
Clinic P	76%	71%
Clinic Q	60%	76%
Clinic R	89%	92%
Clinic S	90%	92%
Clinic T	69%	65%
Clinic U	84%	82%
Clinic V	53%	56%

**Table 21b: Percentage of adult patients with HIV infection who had a test for syphilis performed in the measurement year, New to Care Patients and Continuing Care Patients(≥1 medical visit)**

2010 Data						2011 Data					
New to Care Patients*		Continuing in Care Patients		All Patients		New to Care Patients**		Continuing in Care Patients		All Patients	
Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%
154/167	92%	622/872	71%	776/1039	75%	60/64	94%	747/1031	73%	807/1095	74%

\*p < .0001

\*\*p < .00005 (Fisher's Exact Test)

## CHLAMYDIA SCREENING (HAB MEASURE GROUP 3)

**Performance Measure:** Percentage of clients with HIV infection at risk for sexually transmitted infections (STI) who had a test for chlamydia within the measurement year.

**Numerator:** Tested for Chlamydia

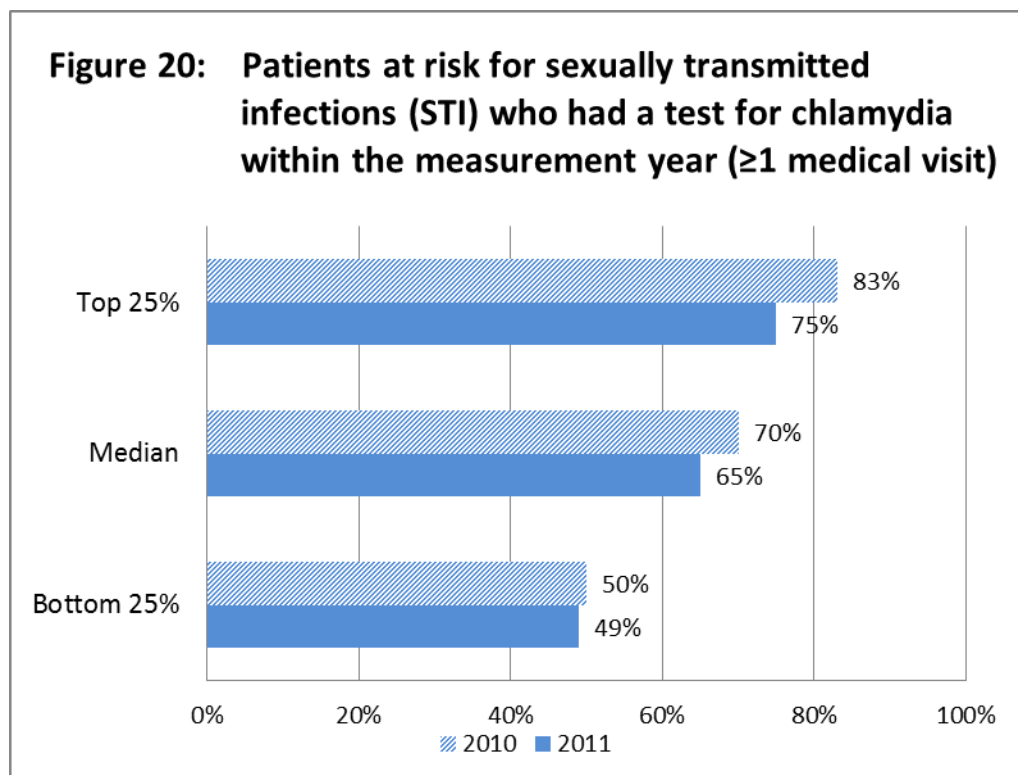
**Denominator:** One + Visits, either newly enrolled in care or STI Diagnosis in Review Year\* or sexually active, or <18 and sexually active

\*Note: Newly enrolled patient in care patients are patients whose first visit for care was during the review year and assessment of an STI diagnosis was assessed for the particular review year.

### **Findings:**

Across all sites, the mean of patients meeting this measure was 62% in 2010 (median 70%) and 61% (median 65%) in 2011. For both review years, six sites had less than 50% of their eligible patients screened for Chlamydia, the lowest clinic rate was between 8% -10% and the highest clinic rate was 92% (highest quartile 83% and 75% in 2010 and 2011 respectively) (Table 22a).

For each review year, patients who were new to care (77% in 2010 and 75% in 2011) had statistically significant higher rates of having a Chlamydia test performed compared to continuing care patients (60% in 2010 and 62% in 2011) (Table 22b).





**Table 22a: Percentage of patients with HIV infection at risk for HIV infection at risk for sexually transmitted infections (STI) who had a test for Chlamydia within the measurement year, Aggregate & Site-Specific (≥1 medical visit)**

	2010	2011
<b>Eligible Patients</b>	n=912	n=959
<b>Number of Sites</b>	22	22
<b>Aggregate All Sites</b>		
Mean	62%	61%
Min-Max	(8-92%)	(10-92%)
Median	70%	65%
IQR	50%-83%	49%-75%
<b>By Site</b>		
Clinic A	56%	59%
Clinic B	29%	35%
Clinic C	57%	69%
Clinic D	71%	61%
Clinic E	87%	72%
Clinic F	34%	43%
Clinic G	15%	14%
Clinic H	50%	40%
Clinic I	85%	89%
Clinic J	70%	83%
Clinic K	85%	80%
Clinic L	86%	61%
Clinic M	72%	75%
Clinic N	92%	83%
Clinic O	82%	73%
Clinic P	69%	66%
Clinic Q	40%	65%
Clinic R	8%	10%
Clinic S	70%	92%
Clinic T	75%	63%
Clinic U	83%	72%
Clinic V	58%	49%

**Table 22b: Percentage of patients with HIV infection at risk for HIV infection at risk for sexually transmitted infections (STI) who had a test for Chlamydia within the measurement year, New to Care & Continuing Care Patients (≥1 medical visit)**

2010 Data						2011 Data					
New to Care Patients*		Continuing in Care Patients		All Patients		New to Care Patients**		Continuing in Care Patients		All Patients	
Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%
128/167	77%	447/745	60%	575/912	63%	48/64	75%	552/895	62%	600/959	63%

\*p < .0001

\*\*p = .03

## GONORRHEA SCREENING (HAB Measure Group 3)

**Performance Measure:** Percentage of clients with HIV infection at risk for sexually transmitted infections (STI) who had a test for gonorrhea within the measurement year.

**Numerator:** Tested for Gonorrhea

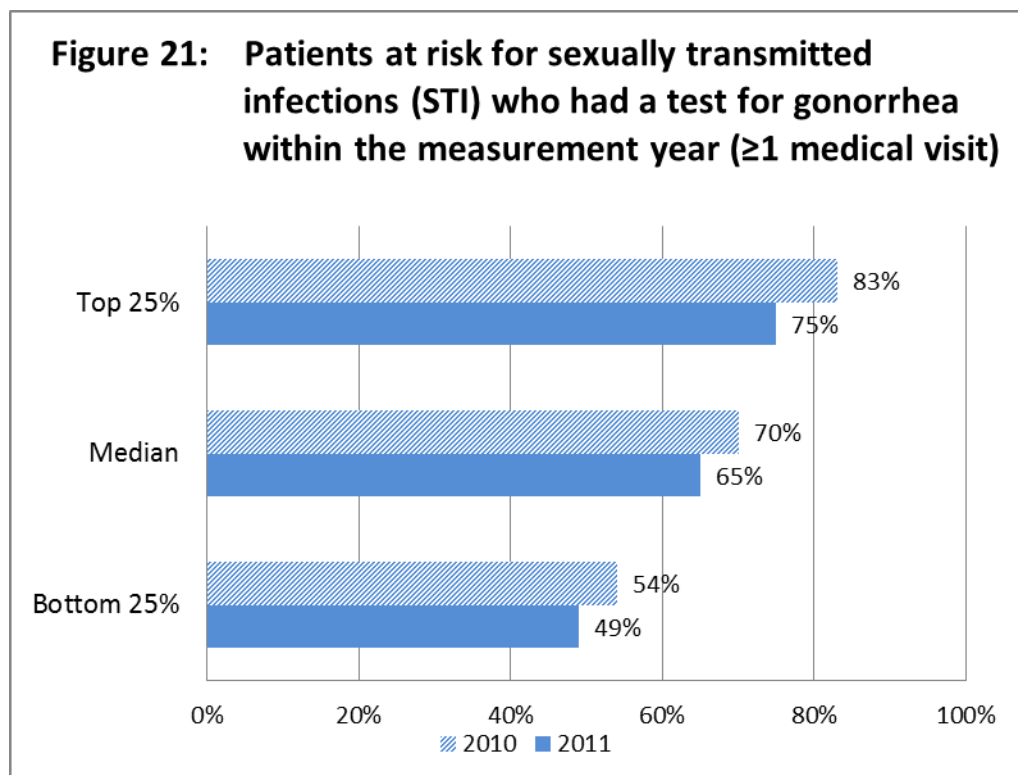
**Denominator:** One + Visits, either newly enrolled in care or STI Diagnosis in Review Year\* or sexually active, or <18 and sexually active

\*Note: Newly enrolled patient in care patients are patients whose first visit for care was during the review year and assessment of an STI diagnosis was assessed for the particular review year.

### **Findings:**

Across all sites, the median rate of patients meeting this measure was 70% in 2010 (median 70%) and 65% (median 65%) in 2011. For both review years, six sites had less than 54% of their eligible patients screened for Gonorrhea, the lowest clinic rate was between 10% -11% and the highest clinic rate was 92% (Table 23a).

As was previously seen with other STD screening tests, for each year, patients who were new to care (78% in 2010 and 75% in 2011) had statistically significant higher rates of having a Gonorrhea test performed compared to continuing care patients (64% in 2010 and 62% in 2011) (Table 23b).



**Table 23a: Percentage of patients with HIV infection at risk for HIV infection at risk for sexually transmitted infections (STI) who had a test for gonorrhea within the measurement year, Aggregate & Site-Specific (≥1 medical visit)**

	2010	2011
<b>Eligible Patients</b>	n=913	n=956
<b>Number of Sites</b>	22	22
<b>Aggregate All Sites</b>		
Mean	63%	61%
Min-Max	(11-92%)	(10-92%)
Median	70%	65%
IQR	54%-83%	49%-75%
<b>By Site</b>		
Clinic A	56%	59%
Clinic B	29%	35%
Clinic C	57%	69%
Clinic D	73%	61%
Clinic E	88%	67%
Clinic F	34%	44%
Clinic G	15%	14%
Clinic H	54%	40%
Clinic I	85%	89%
Clinic J	70%	83%
Clinic K	85%	80%
Clinic L	86%	61%
Clinic M	72%	75%
Clinic N	92%	83%
Clinic O	82%	75%
Clinic P	69%	66%
Clinic Q	40%	65%
Clinic R	11%	10%
Clinic S	70%	92%
Clinic T	75%	63%
Clinic U	83%	72%
Clinic V	61%	49%

**Table 23b: Percentage of patients with HIV infection at risk for HIV infection at risk for sexually transmitted infections (STI) who had a test for gonorrhea within the measurement year, New to Care & Continuing Patients (≥1 medical visit)**

2010 Data						2011 Data					
New to Care Patients*		Continuing in Care Patients		All Patients		New to Care Patients**		Continuing in Care Patients		All Patients	
Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%
130/167	78%	451/746	61%	581/913	64%	48/64	75%	549/892	62%	597/956	62%

\*P < .0001

\*\*P = .03

## PART V: OTHER SCREENING INDICATORS:

### PAP SMEARS AND/OR COLPOSCOPY PERFORMED (HAB MEASURE GROUP 2-MODIFIED)

**Performance Measure:** Percentage of women with HIV infection who have a Pap or Colposcopy screening in the measurement year.

**Numerator:** Pap/Colposcopy Screening Results Documented

**Denominator:** One+ visits, Female,  $\geq 18$  years old, cervical cancer screening appropriate

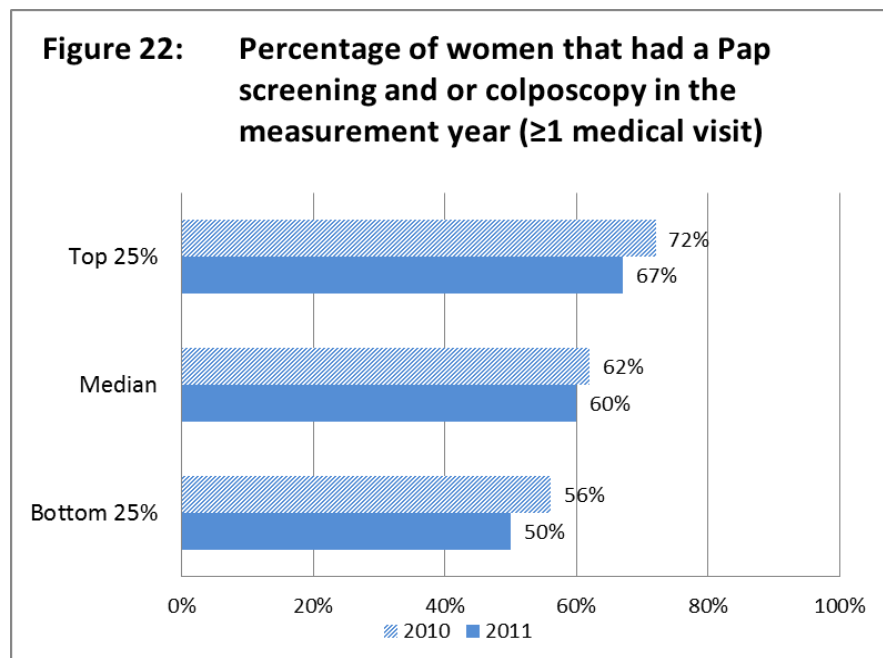
Note: Patients who had a hysterectomy for non-dysplasia/non-malignant indications and patients  $\leq 18$  years old and denied history of sexual activity were excluded. This measure was modified to include results of colposcopy procedures which allowed for 6 women in 2010 and 2 women in 2011 to be included in the numerator. Women were not reviewed at Fenway Community Health Center.

#### Findings:

Across all sites, the mean rate of patients meeting this measure was 63% in 2010 (median 62%) and 58% (median 60%) in 2011. In the 2011 review year, six sites had less than 50% of their eligible patients had a Pap smear or Colposcopy done. Across both years, the lowest clinic rate was 26% in 2010 and 37% in 2011. The highest clinic rate observed in one site was 92%.

In the 2010 measurement year, a statistically significant difference was seen by patient status with new to care patients (81%) more likely to have had a Pap smear or Colposcopy procedure when compared to continuing in care patients (63%,  $p=.01$ ). No significant differences between the patient care status groups were observed in the 2011 measurement year.

For those women who had an abnormal PAP result, 99% of women in 2010 and 100% of women received a referral for a colposcopy or anoscopy and/or another consultation.



**Table 24a: Percentage of women with HIV infection who have a Pap or Colposcopy screening in the measurement year, Aggregate & Site-Specific ( $\geq 1$  medical visit)**

	2010	2011
<b>Eligible Patients</b>	383	397
<b>Total Number of Sites</b>	21	21
<b>Aggregate All Sites</b>		
Mean	63%	58%
Min-Max	(26%-90%)	(37%-81%)
Median	62%	60%
IQR	56-72%	50-67%
<b>By Site</b>		
Clinic A	67%	55%
Clinic B	56%	38%
Clinic C	77%	58%
Clinic D	71%	60%
Clinic E	75%	81%
Clinic F	90%	67%
Clinic G	50%	42%
Clinic H	Not applicable	Not applicable
Clinic I	79%	72%
Clinic J	53%	65%
Clinic K	60%	40%
Clinic L	64%	64%
Clinic M	61%	60%
Clinic N	68%	79%
Clinic O	64%	60%
Clinic P	26%	37%
Clinic Q	62%	50%
Clinic R	29%	43%
Clinic S	46%	67%
Clinic T	52%	57%
Clinic U	50%	56%
Clinic V	78%	63%

**Table 24b: Percentage of women with HIV infection who have a Pap or Colposcopy screening in the measurement year, New to Care Patients & Continuing Care Patients ( $\geq 1$  medical visit)**

2010 Data						2011 Data					
New to Care Patients*		Continuing in Care Patients		All Patients		New to Care Patients		Continuing in Care Patients		All Patients	
Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%
38/47	81%	210/336	63%	248/383	65%	13/17	77%	222/380	58%	235/397	59%

\*p=.01

## MAMMOGRAM PROCEDURE PERFORMED (NON-HAB MEASURE)

**Performance Measure:** Percentage of women with HIV infection who have a mammogram procedure documented in the measurement year.

**Numerator:** Mammogram Results Documented

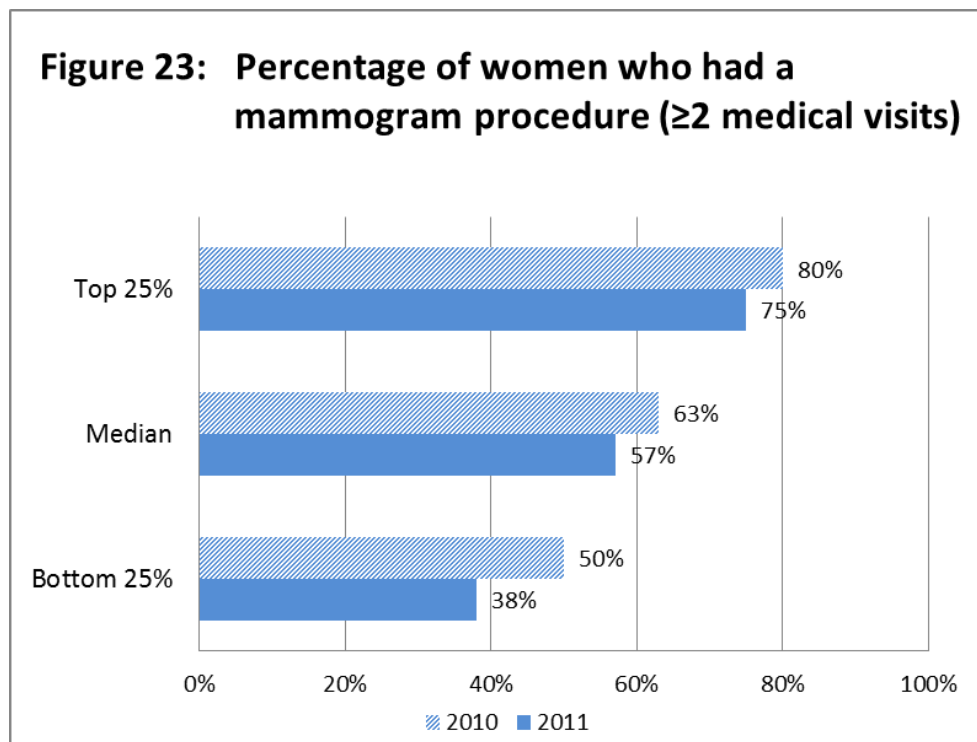
**Denominator:** Two + visits, Female, > 50 years old

No women were reviewed at Fenway Community Health Center.

### **Findings:**

Across all sites, the mean rate of patients meeting this measure was 58% in 2010 (median 63%) and 54% in 2011 (median 57%). In the 2010 review year, six sites had less than 50% of their eligible patients having a mammogram procedure done. The lowest clinic rate was 0% seen in 1 clinic in each review year.

No statistically significant differences between the patient care status groups (new to care and continuing in care) were observed.



**Table 25a: Percentage of women with HIV infection who had a mammogram procedure in the measurement year, Aggregate and Site Specific ( $\geq 2$  medical visits)**

	2010	2011
<b>Eligible Patients</b>	126	139
<b>Number of Sites</b>	21	21
<b>Aggregate All Sites</b>		
Mean	58%	54%
Min-Max	(0-100%)	(0-90%)
Median	63%	57%
IQR	50%-80%	38%-75%
<b>By Site</b>		
Clinic A	75%	14%
Clinic B	88%	38%
Clinic C	67%	57%
Clinic D	86%	86%
Clinic E	80%	50%
Clinic F	67%	0%
Clinic G	57%	67%
Clinic H	----	-----
Clinic I	63%	67%
Clinic J	60%	60%
Clinic K	0%	25%
Clinic L	100%	75%
Clinic M	0%	25%
Clinic N	80%	40%
Clinic O	67%	83%
Clinic P	50%	17%
Clinic Q	14%	56%
Clinic R	50%	75%
Clinic S	40%	80%
Clinic T	44%	55%
Clinic U	50%	75%
Clinic V	82%	90%

**Table 25b: Percentage of women with HIV infection who had a mammogram procedure in the measurement year, New to Care & Continuing Care Patients ( $\geq 2$  medical visits)**

2010 Data						2011 Data					
New to Care Patients		Continuing in Care Patients		All Patients		New to Care Patients		Continuing in Care Patients		All Patients	
Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%
12/16	75%	66/110	60%	78/126	62%	0/3	0%	80/136	59%	80/139	58%

## ANAL PAP (NON-HAB Measure)

**Performance Measure:** Percentage of men with MSM risk and HIV infection who have had an anal PAP documented in the measurement year.

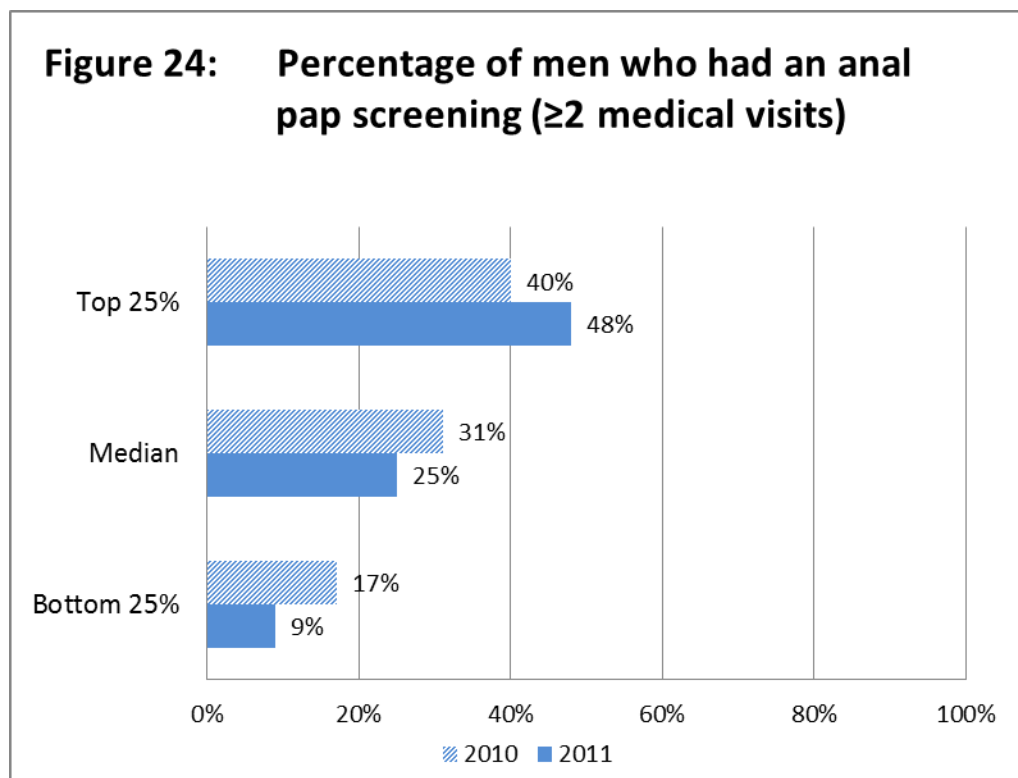
**Numerator:** Anal PAP Results Documented

**Denominator:** Two + visits, MSM

### **Findings:**

Across all sites, the mean rate of patients meeting this measure was 33% in 2010 (median 25%) and 29% in 2011 (median 31%). In the 2010 review year, six sites had less than 17% of their eligible patients having an anal pap procedure done. The lowest clinic rate of 0% was seen in several clinics in both review years.

No statistically significant differences between the patient care status groups (new to care and continuing in care) were observed.





**Table 26a: Percentage of men with MSM risk and HIV infection who have had an anal PAP documented in the measurement year, Aggregate and Site Specific (≥2 medical visits)**

	2010	2011
<b>Eligible Patients</b>	n=291	n=317
<b>Number of Sites</b>	22	22
<b>Aggregate All Sites</b>		
Mean	33%	29%
Min-Max	(0-100%)	(9-48%)
Median	31%	25%
IQR	17%-40%	9%-48%
<b>By Site</b>		
Clinic A	0%	9%
Clinic B	33%	17%
Clinic C	0%	0%
Clinic D	33%	25%
Clinic E	33%	43%
Clinic F	0%	25%
Clinic G	0%	0%
Clinic H	40%	33%
Clinic I	25%	0%
Clinic J	55%	62%
Clinic K	27%	48%
Clinic L	17%	17%
Clinic M	100%	50%
Clinic N	0%	0%
Clinic O	29%	17%
Clinic P	29%	22%
Clinic Q	80%	9%
Clinic R	24%	43%
Clinic S	48%	48%
Clinic T	80%	67%
Clinic U	36%	52%
Clinic V	33%	57%

**Table 26b: Percentage of men with MSM risk and HIV infection who have had an anal PAP documented in the measurement year, New to Care & Continuing Care Patients (≥2 medical visits)**

2010 Data						2011 Data					
New to Care Patients		Continuing in Care Patients		All Patients		New to Care Patients		Continuing in Care Patients		All Patients	
Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%
22/64	34%	75/227	33%	97/291	33%	10/24	42%	103/293	35%	113/317	42%

## LIPID SCREENING – FULL PANEL (HAB MEASURE GROUP 2)

**Performance Measure:** Percentage of clients with HIV infection on HAART who had a full lipid panel during the measurement year

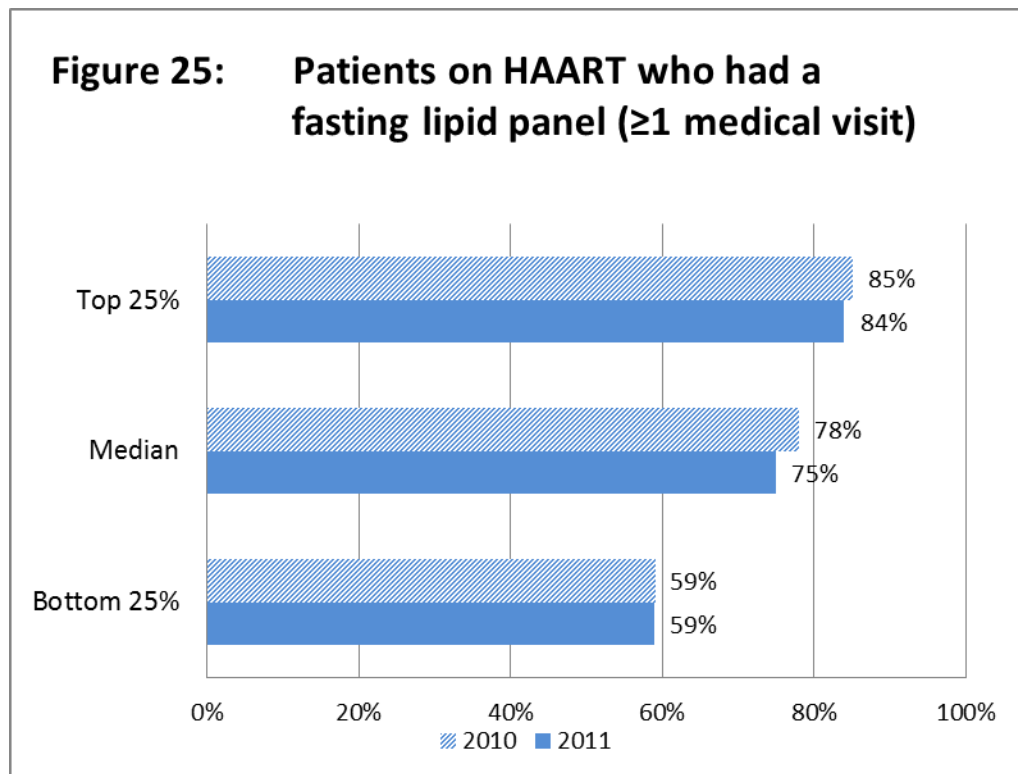
**Numerator:** Full lipid panel during review period

**Denominator:** One+ medical visits with provider, on ART during review period

### **Findings:**

The mean rate of patients meeting this measure was 73% in 2010 (median 78%) and 72% (median 75%) in 2011. For both review years, six sites had less than 59% of their eligible patients having a full lipid screening panel done. The lowest clinic rate was between 27 % in 2010 and 17% in 2011. The highest clinic rate observed in one site was 98%.

Significant differences were observed by patient care status with a higher rate of continuing care patients (74%) having a full lipid panel performed in 2010 when compared to new to care patients (59%) in the 2010 review year. In 2011, the difference was also significant however by a different patient care status group with a higher percentage of new to care patients (91%) having a full lipid panel compared to 71% of continuing care patients.



**Table 27a: Percentage of clients with HIV infection on HAART who had a full lipid panel during the measurement year, Aggregate & Site-Specific ( $\geq 1$  medical visit)**

	2010	2011
<b>Eligible Patients</b>	n=920	n=1005
<b>Number of Sites</b>	22	22
<b>Aggregate All Sites</b>		
Mean	73%	72%
Min-Max	(27-98%)	(17-97%)
Median	78%	75%
IQR	59%-85%	59%-84%
<b>By Site</b>		
Clinic A	91%	82%
Clinic B	52%	51%
Clinic C	92%	97%
Clinic D	59%	56%
Clinic E	91%	81%
Clinic F	85%	84%
Clinic G	66%	76%
Clinic H	74%	74%
Clinic I	67%	61%
Clinic J	45%	52%
Clinic K	84%	90%
Clinic L	93%	80%
Clinic M	58%	81%
Clinic N	83%	95%
Clinic O	78%	58%
Clinic P	27%	17%
Clinic Q	78%	60%
Clinic R	81%	91%
Clinic S	81%	89%
Clinic T	67%	74%
Clinic U	57%	59%
Clinic V	98%	72%

**Table 27b: Percentage of clients with HIV infection on HAART who had a full lipid panel during the measurement year, New to Care & Continuing Care Patients ( $\geq 1$  medical visit)**

2010 Data						2011 Data					
New to Care Patients		Continuing in Care Patients *		All Patients		New to Care Patients**		Continuing in Care Patients		All Patients	
Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%
67/114	59%	599/806	74%	666/920	72%	42/46	91%	676/959	71%	718/1005	71%

\*P=.0005

\*\*P=.0001 (FISHER'S EXACT TEST)

**LIPID –ANY TEST  
(HAB MEASURE GROUP 2 MODIFIED)**

**Performance Measure:** Percentage of clients with HIV infection on HAART who had any one of the lipid screening tests (Cholesterol, HDL, LDL, or triglycerides) during the measurement year.

**Numerator:** Any lipid screening during review period

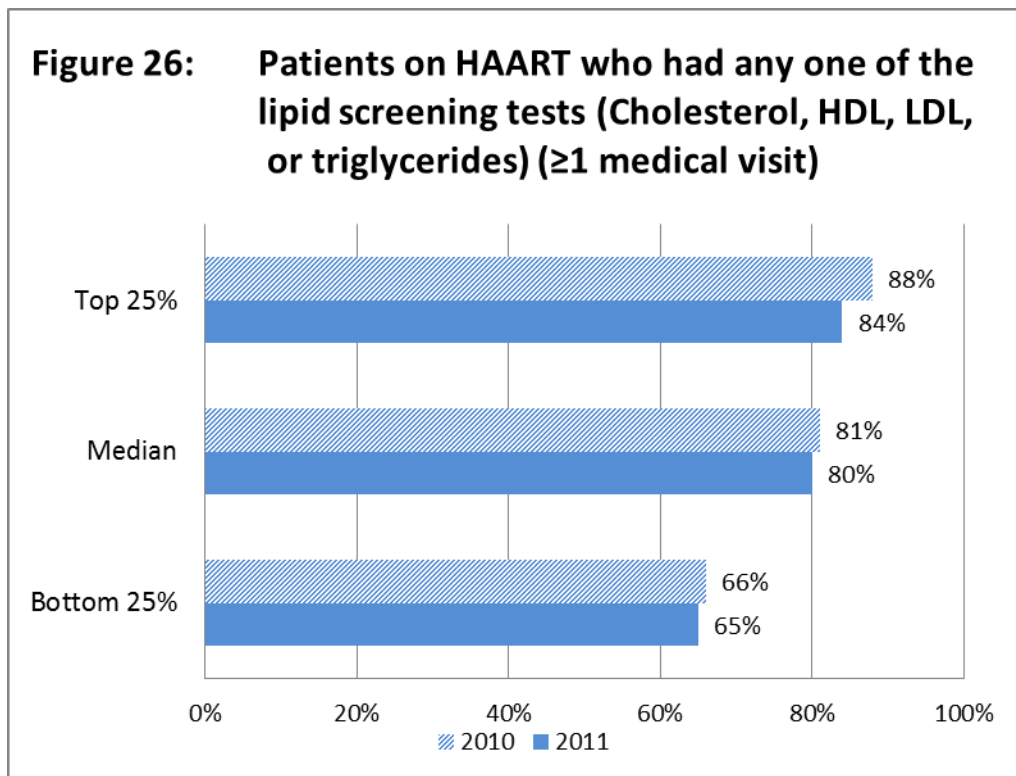
**Denominator:** One+ medical visits with provider, on ART during review period

Note: This measure was modified to include patients that had any lipid test done including cholesterol, HDL, LDL or triglyceride test.

**Findings:**

The mean rate of patients meeting this measure was 75% in 2010 and 74% in 2011. In the 2011 review year, six sites had less than 59% their eligible patients met this measure. The lowest clinic rate was 27 % in 2010 and 17% in 2011. The highest clinic rate observed in one site was 98%.

As with the full panel lipid testing measure, significant differences were observed by patient status with a higher rate of continuing care patients (74%) having a full lipid panel performed in 2010 when compared to new to care patients (61%) in the 2010 review year. In 2011, the difference was also significant however by different patient status group with a higher percentage of new to care patients (91%) having a full lipid panel compared to 74% of continuing care patients.



**Table 28a: Percentage of clients with HIV infection on HAART who had any one of the lipid screening tests (cholesterol, HDL, LDL, or triglycerides) during the measurement year, Aggregate & Site-Specific (≥1 medical visit)**

	2010	2011
<b>Eligible Patients</b>	n=920	n=1005
<b>Number of Sites</b>	22	22
<b>Aggregate All Sites</b>		
Mean	75%	74%
Min-Max	(27-98%)	(17-97%)
Median	81%	80%
IQR	(66%-88%)	(65%-84%)
<b>By Site</b>		
Clinic A	91%	82%
Clinic B	52%	54%
Clinic C	92%	97%
Clinic D	74%	79%
Clinic E	91%	83%
Clinic F	85%	84%
Clinic G	66%	76%
Clinic H	74%	78%
Clinic I	67%	66%
Clinic J	45%	52%
Clinic K	84%	90%
Clinic L	93%	80%
Clinic M	58%	81%
Clinic N	83%	95%
Clinic O	80%	65%
Clinic P	27%	17%
Clinic Q	78%	60%
Clinic R	81%	91%
Clinic S	88%	92%
Clinic T	83%	82%
Clinic U	57%	59%
Clinic V	98%	72%

**Table 28b: Percentage of clients with HIV infection on HAART who had any one of the lipid screening tests (Cholesterol, HDL, LDL, or triglycerides) during the measurement year, New to Care and Continuing in Care Patients (≥1 medical visit)**

2010 Data						2011 Data					
New to Care Patients		Continuing in Care Patients*		All Patients		New to Care Patients **		Continuing in Care Patients		All Patients	
Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%
70/114	61%	614/806	76%	684/920	74%	42/46	91%	701/959	73%	743/1005	74%

\*P=.0007

\*\*P=.005 (FISHER'S EXACT TEST)

## GLUCOSE SCREENING (NON-HAB MEASURE)

**Performance Measure:** Percentage of clients with HIV infection who had a glucose screening during the measurement year

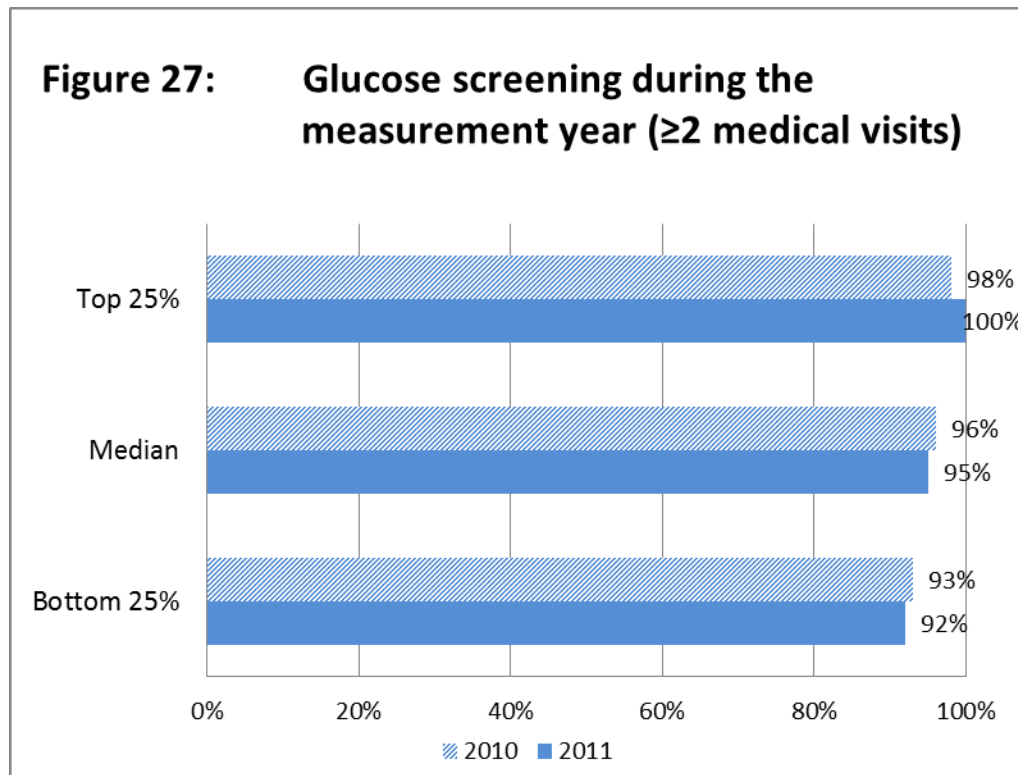
**Numerator:** Glucose screening during review period

**Denominator:** Two + medical visits with provider

### **Findings:**

The mean rate of patients meeting this measure was high with 95% of patients in 2010 (median 96%) and 94% (median 95%) in 2011. The lowest clinic rate was between 84 % in 2010 (lowest quartile 93%) and 80% in 2011 (lowest quartile 92%).

In the 2011 review year, significant differences were observed by patient care status with a higher rate of new to care patients (100%) having a glucose screen performed in 2011 compared to continuing care patients (94%). No significant differences were observed between patient care groups in 2010.



**Table 29a: Percentage of clients with HIV infection who had a glucose screening during the measurement year, Aggregate & Site-Specific ( $\geq 2$  medical visits)**

	2010	2011
<b>Eligible Patients</b>	992	1057
<b>Number of Sites</b>	22	22
<b>Aggregate All Sites</b>		
Mean	95%	94%
Min-Max	(84-100%)	(80-100%)
Median	96%	95%
IQR	93%-98%	92%-100%
<b>By Site</b>		
Clinic A	97%	92%
Clinic B	100%	98%
Clinic C	100%	100%
Clinic D	94%	100%
Clinic E	96%	96%
Clinic F	93%	80%
Clinic G	94%	93%
Clinic H	86%	92%
Clinic I	87%	88%
Clinic J	93%	100%
Clinic K	96%	100%
Clinic L	100%	100%
Clinic M	84%	92%
Clinic N	93%	96%
Clinic O	96%	86%
Clinic P	96%	95%
Clinic Q	100%	100%
Clinic R	100%	100%
Clinic S	96%	94%
Clinic T	94%	94%
Clinic U	89%	94%
Clinic V	98%	85%

**Table 29b: Percentage of clients with HIV infection who had a glucose screening during the measurement year, New to Care & Continuing in Care Patients ( $\geq 2$  medical visits)**

2010 Data						2011 Data					
New to Care Patients		Continuing in Care Patients		All Patients		New to Care Patients*		Continuing in Care Patients		All Patients	
Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%
149/157	95%	788/835	94%	937/992	95%	63/63	100%	933/934	94%	996/1057	94%

\*p=.05 (Fisher's Exact Test)

## URINALYSIS SCREENING (NON-HAB MEASURE)

**Performance Measure:** Percentage of clients with HIV infection who had a urinalysis screening during the measurement year

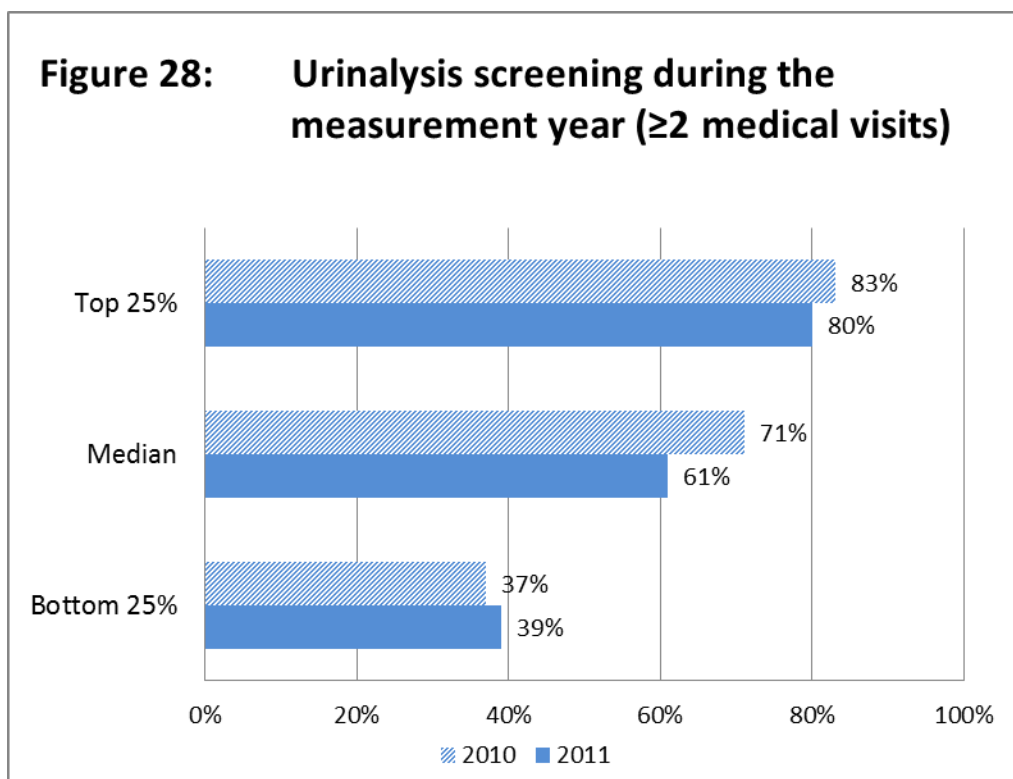
**Numerator:** Urinalysis during review period

**Denominator:** Two + medical visits with provider

### **Findings:**

The mean rate of patients meeting this measure was high with 60% of patients in 2010 (median 71%) and 57% in 2011 (median 61%). The lowest clinic rate was 13 % in 2010 (lowest quartile 37%) and 3% in 2011 (lowest quartile 39%).

No significant differences were observed between patient care groups for both review years.





**Table 30a: Percentage of clients with HIV infection who had a urinalysis screening during the measurement year, Aggregate & Site-Specific (≥2 medical visits)**

	2010	2011
<b>Eligible Patients</b>	992	1057
<b>Number of Sites</b>	22	22
<b>Aggregate All Sites</b>		
Mean	60%	57%
Min-Max	(13-91%)	(3-89%)
Median	71%	61%
IQR	37%-83%	39%-80%
<b>By Site</b>		
Clinic A	91%	80%
Clinic B	75%	72%
Clinic C	29%	27%
Clinic D	72%	64%
Clinic E	30%	32%
Clinic F	73%	59%
Clinic G	33%	21%
Clinic H	37%	44%
Clinic I	70%	67%
Clinic J	83%	86%
Clinic K	64%	74%
Clinic L	84%	70%
Clinic M	40%	53%
Clinic N	83%	89%
Clinic O	79%	57%
Clinic P	18%	3%
Clinic Q	76%	82%
Clinic R	13%	10%
Clinic S	46%	56%
Clinic T	85%	80%
Clinic U	85%	85%
Clinic V	46%	39%

**Table 30b: Percentage of clients with HIV infection who had a urinalysis screening during the measurement year, New to Care & Continuing in Care Patients (≥2 medical visits)**

2010 Data						2011 Data					
New to Care Patients		Continuing in Care Patients		All Patients		New to Care Patients		Continuing in Care Patients		All Patients	
Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%
91/157	58%	495/835	59%	586/992	59%	42/63	67%	562/991	57%	604/1054	57%

## TB SCREENING (HAB MEASURE GROUP 2)

**Performance Measure:** Percentage of clients with HIV infection who received testing with results documented for latent tuberculosis infection (LTBI) since HIV diagnosis.

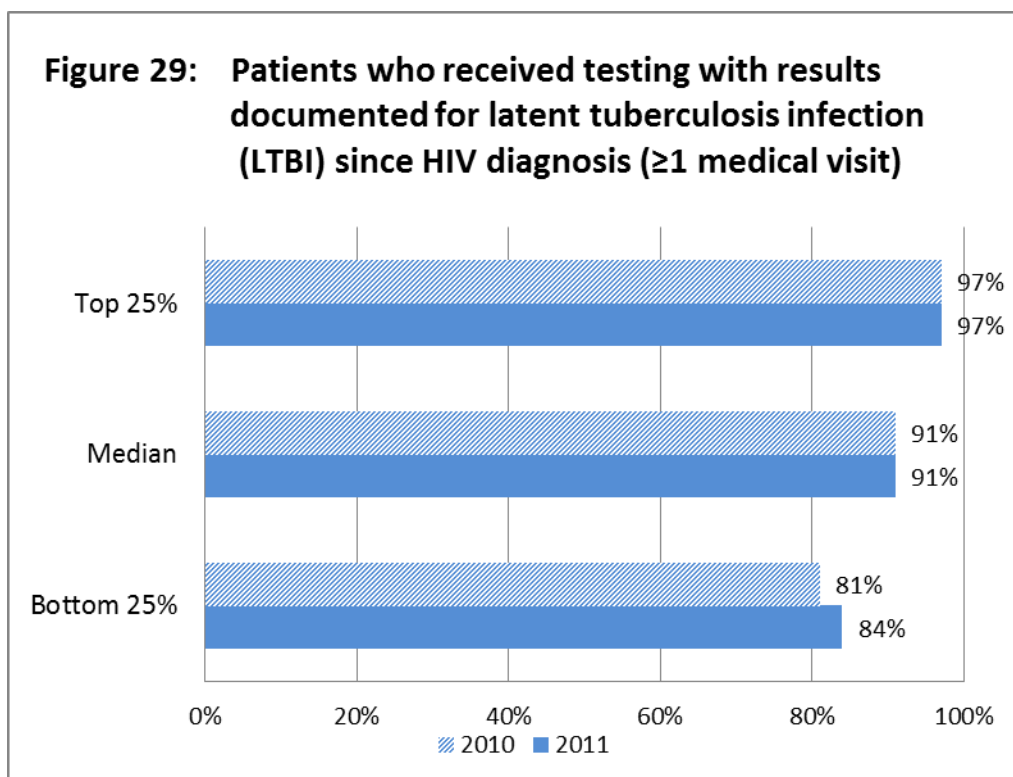
**Numerator:** Screened by TST or IGRA since HIV diagnosis

**Denominator:** One + medical visits, no prior history of TB or positive test

### **Findings:**

The overall mean clinic rate was high with 89% (median 91%) of eligible patients receiving TB screening in both the 2010 and 2011 measurement years. The lowest clinic score was 74% in 2010 (lowest quartile 81%) and 59% in 2011 (lowest quartile 84%) and the highest clinic score was 100% for both review years.

For both review years, significant differences were observed with continuing care patients (92 % in 2010 and 91% in 2011) having a higher rate of receiving TB testing with results documented when compared to new to care patients (74% in 2010 and 57% in 2011).



**Table 31a: Percentage of clients with HIV infection who received testing with results documented for latent tuberculosis infection (LTBI) since HIV diagnosis, Aggregate and Site-Specific (≥1 medical visit)**

	2010	2011
<b>Eligible Patients</b>	n=865	n=913
<b>Number of Sites</b>	22	22
<b>Aggregate All Sites</b>		
Mean	89%	89%
Min-Max	(74-100%)	(59-100%)
Median	91%	91%
IQR	81%-97%	84%-97%
<b>By Site</b>		
Clinic A	81%	59%
Clinic B	79%	76%
Clinic C	100%	100%
Clinic D	80%	80%
Clinic E	100%	100%
Clinic F	97%	100%
Clinic G	77%	77%
Clinic H	78%	80%
Clinic I	96%	96%
Clinic J	85%	92%
Clinic K	88%	84%
Clinic L	97%	92%
Clinic M	100%	97%
Clinic N	95%	98%
Clinic O	93%	89%
Clinic P	90%	97%
Clinic Q	88%	89%
Clinic R	86%	85%
Clinic S	97%	97%
Clinic T	74%	84%
Clinic U	94%	94%
Clinic V	93%	90%

**Table 31b: Percentage of clients with HIV infection who received testing with results documented for latent tuberculosis infection (LTBI) since HIV diagnosis, New to Care & Continuing in Care Patients (≥1 medical visit)**

2010 Data						2011 Data					
New to Care Patients		Continuing in Care Patients*		All Patients		New to Care Patients		Continuing in Care Patients**		All Patients	
Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%
107/144	74%	664	92%	771/865	89%	31/54	57%	779/859	91%	810/913	89%

\*p < .0001

\*\*p < .0001

## MENTAL HEALTH SCREENING (HAB MEASURE GROUP 3- MODIFIED)

**Performance Measure:** Percentage of clients with HIV infection who have had a mental health screening.

**Numerator:** Received Mental Health Screening During Review Year

**Denominator:** One + medical visits during review year

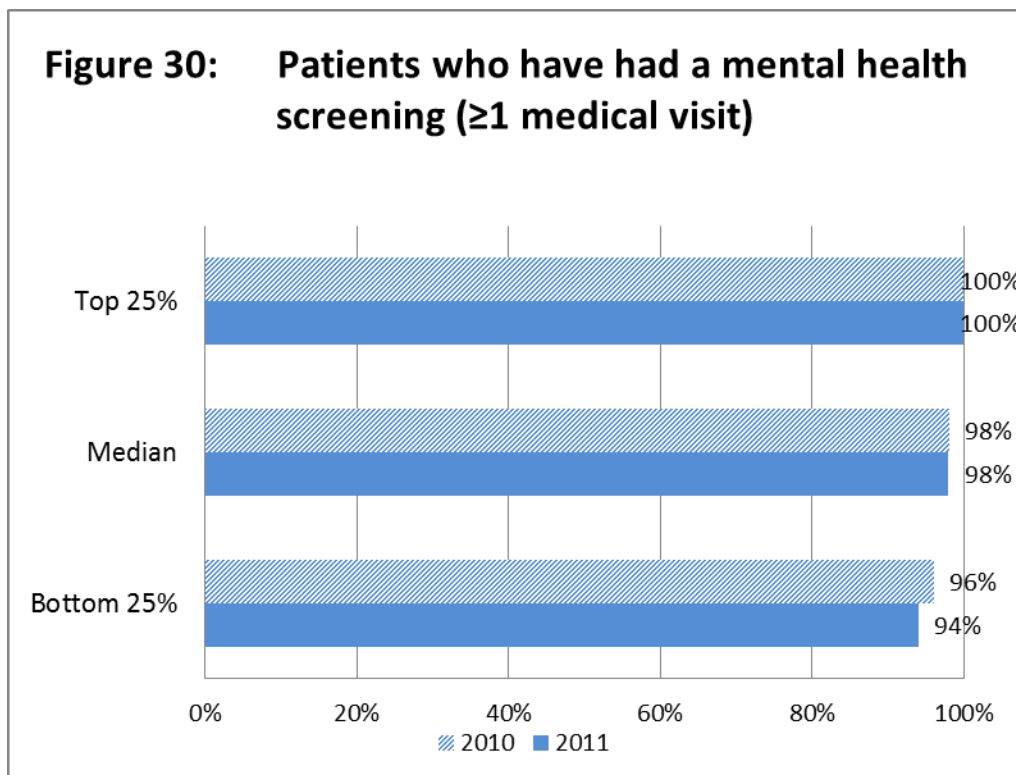
Note: This measure was modified to include all clients.

### **Findings:**

For both review years, across all sites, the mean rate of patients meeting this measure was high with an average of 96% (median 98%) of eligible patients having a mental health screening. The lowest clinic rate was 79% in 2010 and 84% in 2011. The majority of clinics in both review years had rates greater than 95% (Table 32a).

This measure was also looked at for new to care patients only. High rates of patients meeting this measure was also observed with an average of 98% meeting the measure in 2010 and 100% of eligible patients has a mental health screening in 2011.

No statistically significant differences were observed by whether or not the patient was new to care or continuing in care (Table 32b).



**Table 32a: Percentage of clients with HIV infection who have had a mental health screening (all patients), Aggregate & Site Specific (≥1 medical visit)**

	2010	2011
<b>Eligible Patients</b>	n=1039	n=1095
<b>Number of Sites</b>	22	22
<b>Aggregate All Sites</b>		
Mean	96%	96%
Min-Max	(79-100%)	(84-100%)
Median	98%	98%
IQR	96%-100%	94%-100%
<b>By Site</b>		
Clinic A	100%	100%
Clinic B	98%	94%
Clinic C	88%	84%
Clinic D	90%	90%
Clinic E	96%	96%
Clinic F	100%	100%
Clinic G	79%	90%
Clinic H	98%	100%
Clinic I	98%	98%
Clinic J	100%	96%
Clinic K	100%	100%
Clinic L	98%	98%
Clinic M	98%	98%
Clinic N	96%	94%
Clinic O	96%	98%
Clinic P	100%	100%
Clinic Q	83%	86%
Clinic R	100%	100%
Clinic S	98%	100%
Clinic T	100%	98%
Clinic U	100%	100%
Clinic V	96%	98%

**Table 32b: Percentage of clients with HIV infection who have had a mental health screening, New to Care & Continuing in Care Patients (≥1 medical visit)**

2010 Data						2011 Data					
New to Care Patients		Continuing in Care Patients		All Patients		New to Care Patients		Continuing in Care Patients		All Patients	
Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%
164/167	98%	832/872	95%	996/1039	96%	64/64	100%	990/1031	96%	1054/1095	96%

## SUBSTANCE ABUSE SCREENING (HAB MEASURE GROUP 3 – MODIFIED)

**Performance Measure:** Percentage of clients with HIV infection who have been screened for substance use (alcohol & drugs) in the review year.

**Numerator:** Received Substance Abuse Screening During Review Year

**Denominator:** One + medical visits during review year

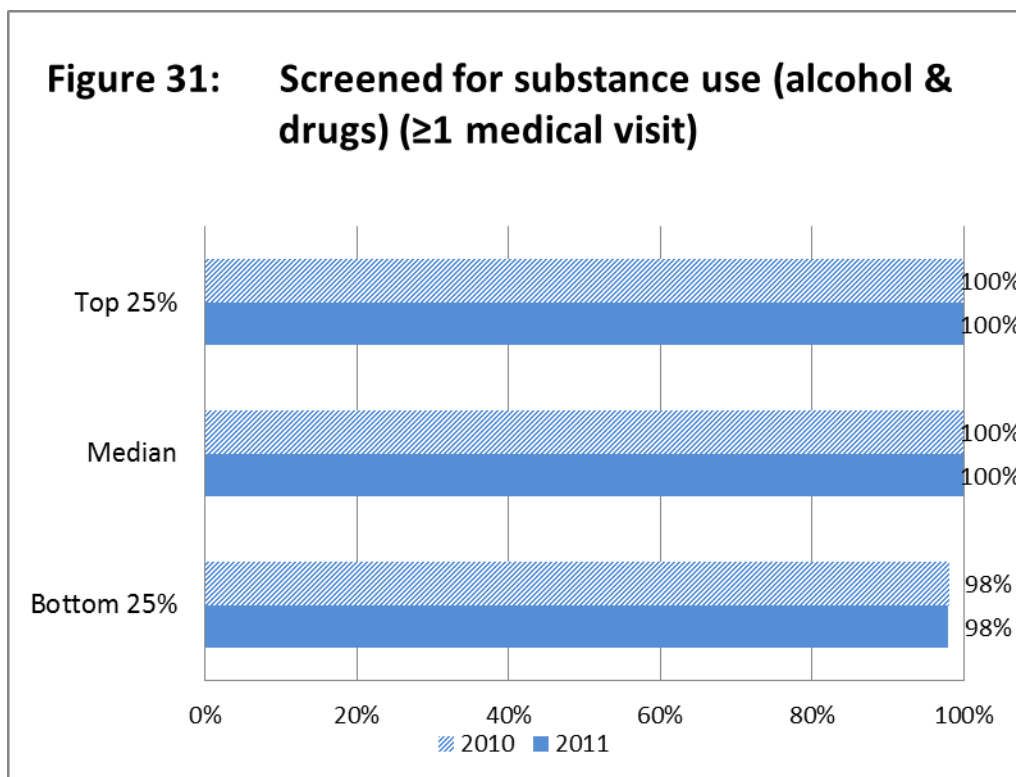
Note: This measure was modified to include all clients.

### **Findings:**

As was observed in the mental health screening measure, for both review years, the mean rate of patients meeting this measure was high with 96% (median 100%) of eligible patients being screened for substance use including alcohol and drugs. The lowest clinic rate was between 56% in 2010 and 69% in 2011. The majority of clinics in both review years had rates of patients meeting this measure greater than 95% (Table 33a).

This measure was also looked at for new to care patients only. High rates of patients meeting this measure was also observed with 99% meeting the measure in 2010 and 100% of eligible patients had a substance abuse screening in 2011.

For the review year 2010, a statistical difference was observed with new to care patients having a higher rate of patients screened (99%) when compared to continuing in care patients (95%) (Table 33b).



**Table 33a: Percentage of clients with HIV infection who have been screened for substance use (alcohol & drugs) in the review year, Aggregate & Site-Specific (≥1 medical visit)**

	2010	2011
<b>Eligible Patients</b>	n=1039	n=1095
<b>Number of Sites</b>	22	22
<b>Aggregate All Sites</b>		
Mean	96%	96%
Min-Max	(56-100%)	(69-100%)
Median	100%	100%
IQR	98%-100%	98%-100%
<b>By Site</b>		
Clinic A	100%	100%
Clinic B	96%	98%
Clinic C	98%	100%
Clinic D	98%	100%
Clinic E	100%	100%
Clinic F	100%	100%
Clinic G	56%	69%
Clinic H	98%	100%
Clinic I	100%	100%
Clinic J	93%	94%
Clinic K	100%	100%
Clinic L	100%	100%
Clinic M	98%	98%
Clinic N	92%	92%
Clinic O	100%	100%
Clinic P	100%	100%
Clinic Q	75%	76%
Clinic R	100%	98%
Clinic S	100%	98%
Clinic T	100%	98%
Clinic U	100%	100%
Clinic V	98%	100%

**Table 33b: Percentage of clients with HIV infection who have been screened for substance use (alcohol & drugs) in the review year, New to Care Patients and Continuing in Care Patients (≥1 medical visit)**

2010 Data						2011 Data					
New to Care Patients*		Continuing in Care Patients		All Patients		New to Care Patients		Continuing in Care Patients		All Patients	
Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%
165/167	99%	827/872	95%	992/1039	96%	64/64	100%	992/1031	96%	1056/1095	96%

\*p=.02

## PART IV: GENERAL MEDICAL CARE INDICATORS

### ORAL SCREENING (HAB MEASURE GROUP 2)

**Performance Measure:** Percentage of clients who received an oral exam by a dentist at least once during the measurement year.

**Numerator:** Oral exam from dentist based on self-report or documentation

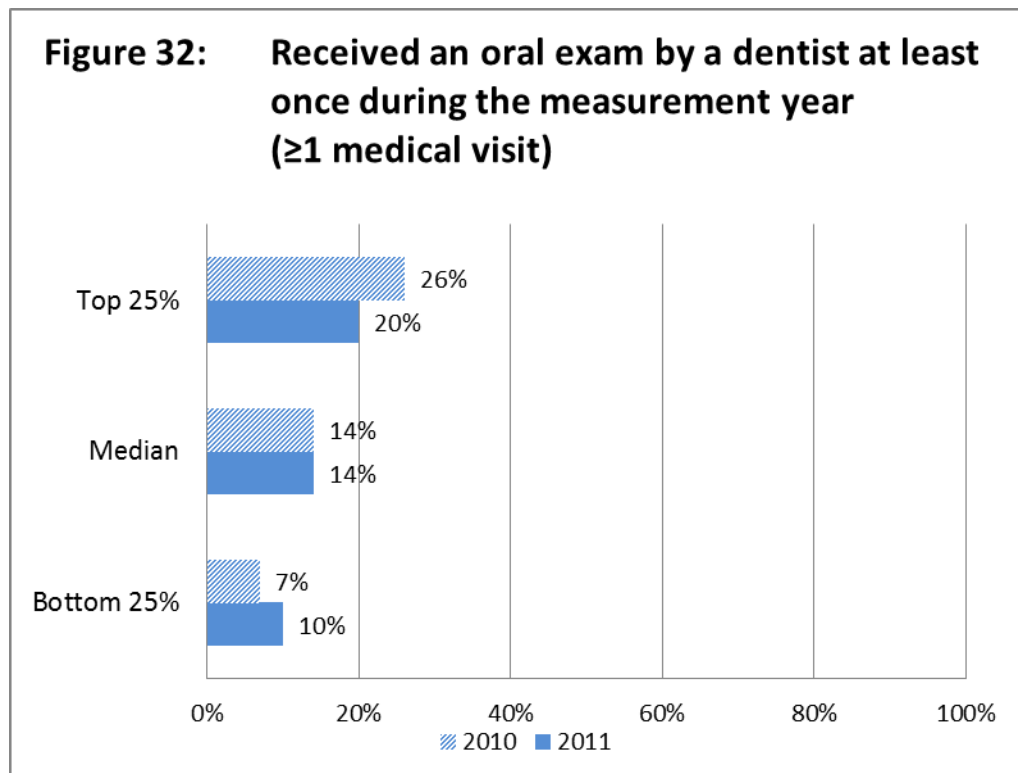
**Denominator:** One+ medical visits with provider

#### **Findings:**

For both review years, the mean rate of patients meeting this measure was low with only 15-16% (median 14%) of patients having an oral screening. The lowest clinic rate was 2% in 2010 (lowest quartile 7%) and 0% (lowest quartile 10% in 2011. The highest clinic rates were 47% in 2010 and 36% in 2011 (Table 34a).

For both review years, no statistically significant differences were observed by patient care status (new to care or continuing in care) (Table 34b).

Caution must be exercised when considering these rates as documentation of an oral exam by a dentist was not usually found in the patient's medical record.





**Table 34a: Percentage of clients who received an oral exam by a dentist at least once during the measurement year, Aggregate & Site-Specific (≥1 medical visit)**

	2010	2011
<b>Eligible Patients</b>	n=1039	n=1095
<b>Number of Sites</b>	22	22
<b>Aggregate All Sites</b>		
Mean	16%	15%
(Min-Max)	(2-47%)	(0-36%)
Median	14%	14%
IQR	7%-26%	10%-20%
<b>By Site</b>		
Clinic A	3%	2%
Clinic B	6%	13%
Clinic C	18%	8%
Clinic D	14%	10%
Clinic E	4%	20%
Clinic F	36%	30%
Clinic G	2%	2%
Clinic H	8%	14%
Clinic I	13%	14%
Clinic J	16%	16%
Clinic K	29%	33%
Clinic L	47%	36%
Clinic M	7%	6%
Clinic N	26%	17%
Clinic O	17%	10%
Clinic P	2%	0%
Clinic Q	26%	26%
Clinic R	33%	22%
Clinic S	13%	16%
Clinic T	10%	12%
Clinic U	12%	10%
Clinic V	18%	15%

**Table 34b: Percentage of clients who received an oral exam by a dentist at least once during the measurement year, New to Care Patients & Continuing in Care Patients (≥1 medical visit)**

2010 Data						2011 Data					
New to Care Patients		Continuing in Care Patients		All Patients		New to Care Patients		Continuing in Care Patients		All Patients	
Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%
20/167	12%	149/872	17%	169/1039	16%	8/64	13%	157/1031	15%	165/1095	15%

## INFLUENZA VACCINATION (HAB MEASURE GROUP 3)

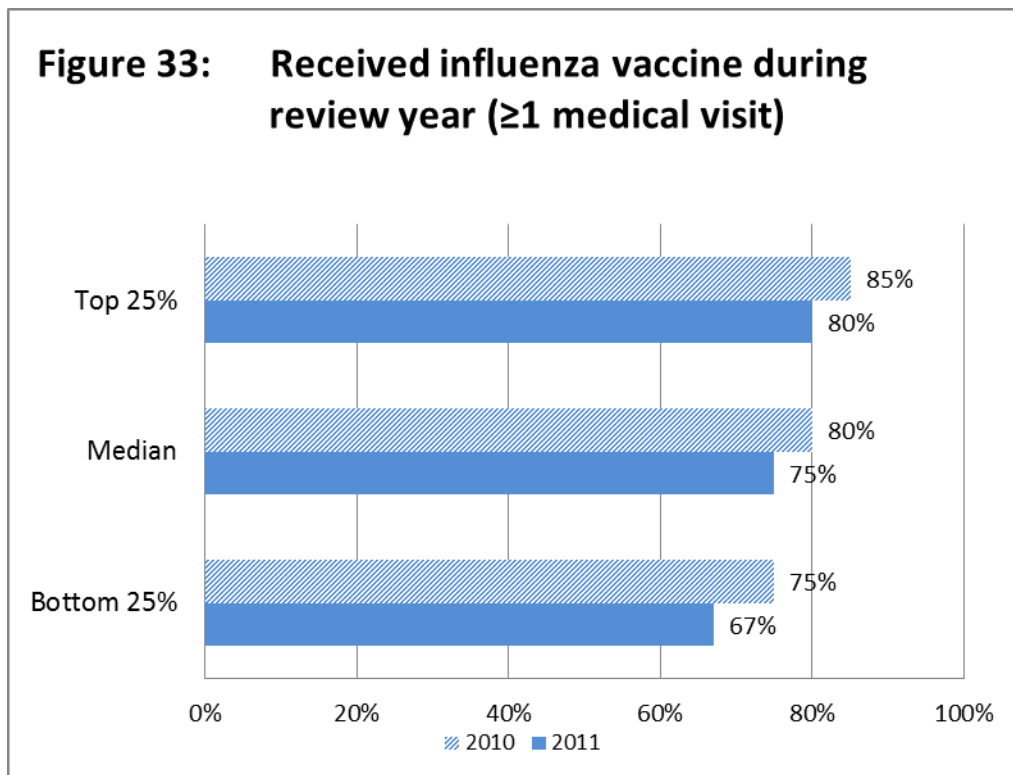
**Performance Measure:** Percentage of clients with HIV infection who have received influenza vaccination within the measurement year.

**Numerator:** Influenza Vaccination During Review Year

**Denominator:** One + medical visits, no vaccine allergy

### **Findings:**

The mean rate of patients meeting this measure was 80% in 2010 (median 80%) and 73% (median 75%) in 2011. In the 2011 review year, six sites had less than 67% of eligible patients receiving an influenza vaccine. The lowest clinic rate was 66 % in 2010 (lowest quartile 75%) and 50% in 2011 (lowest quartile 67%). The highest clinic rate observed in one site was 90% in 2010. (Table 35a). No statistically significant differences were observed in vaccination rates based on whether the patient was new to care or continuing in care for both review years (Table 35b).



**Table 35a: Percentage of clients with HIV infection who have received influenza vaccination within the measurement year, Aggregate & Site-Specific (≥1 medical visit)**

	2010	2011
<b>Eligible Patients</b>	n=1039	n=1090
<b>Number of Sites</b>	22	22
<b>Aggregate All Sites</b>		
Mean	80%	73%
Min-Max	(66-90%)	(50-86%)
Median	80%	75%
IQR	(75-85%)	(67-80%)
<b>By Site</b>		
Clinic A	75%	79%
Clinic B	90%	85%
Clinic C	88%	84%
Clinic D	80%	58%
Clinic E	88%	67%
Clinic F	81%	79%
Clinic G	75%	63%
Clinic H	66%	70%
Clinic I	80%	86%
Clinic J	73%	75%
Clinic K	85%	80%
Clinic L	80%	74%
Clinic M	80%	69%
Clinic N	87%	75%
Clinic O	85%	80%
Clinic P	74%	63%
Clinic Q	70%	74%
Clinic R	70%	50%
Clinic S	77%	61%
Clinic T	86%	82%
Clinic U	80%	80%
Clinic V	82%	81%

**Table 35b: Percentage of clients with HIV infection who have received influenza vaccination within the measurement year, New to Care Patients & Continuing Care Patients (≥1 medical visit)**

2010 Data						2011 Data					
New to Care Patients		Continuing in Care Patients		All Patients		New to Care Patients		Continuing in Care Patients		All Patients	
Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%
138/166	83%	685/868	79%	823/1034	80%	49/64	77%	751/1026	73%	800/1090	73%

## PNEUMOCOCCAL VACCINE (HAB MEASURE GROUP 3)

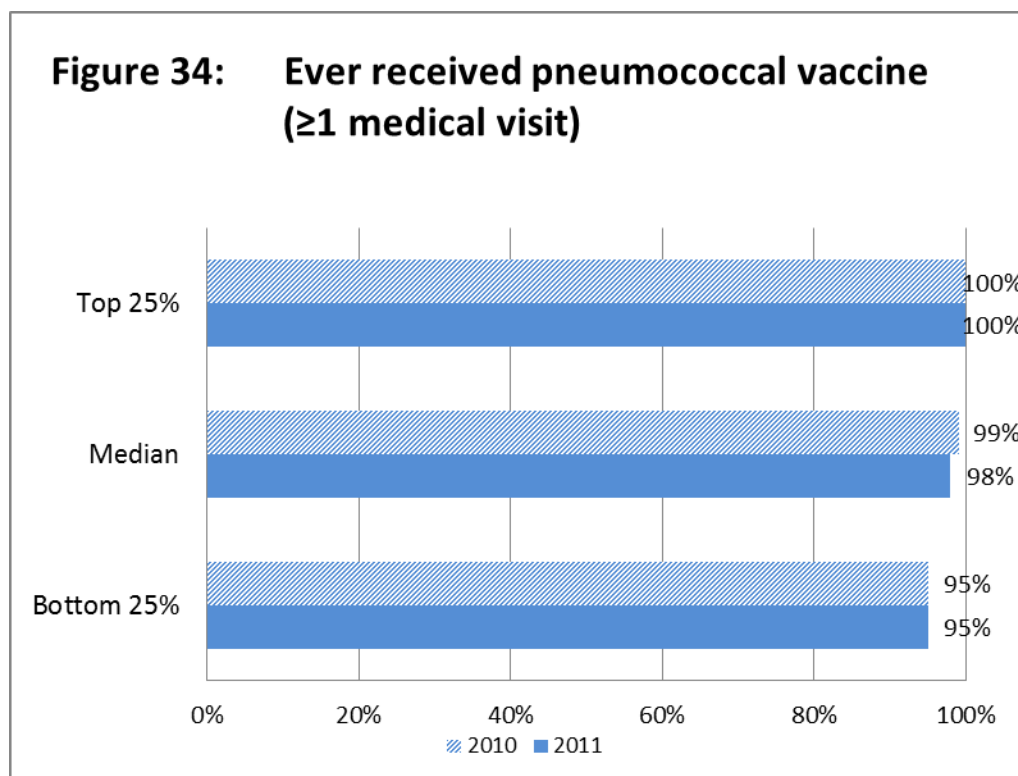
**Performance Measure:** Percentage of clients with HIV infection who ever received pneumococcal vaccine.

**Numerator:** Received Pneumococcal Vaccine Ever

**Denominator:** One + medical visits, no CD4 counts <200

### **Findings:**

For both review years, the mean rate of patients meeting this measure was high with 96-97% (median 99% in 2010 and 98% in 2011) of eligible patients receiving the pneumococcal vaccine. The lowest clinic rate was 89% in 2010 and 86% in 2011. The majority of clinics in both review years had rates of greater than 95% of eligible patients receiving the pneumococcal vaccine (Table 36a). For both review years, a statistical difference was observed with continuing in care patients having a higher rate of receiving the pneumococcal vaccine, 98% vs. 92% in 2010 and 98% vs. 71% in 2011 (Table 36b).



**Table 36a: Percentage of clients with HIV infection who ever received pneumococcal vaccine, Aggregate & Site-Specific (≥1 medical visit)**

	2010	2011
<b>Eligible Patients</b>	n=892	n=945
<b>Number of Sites</b>	22	22
<b>Aggregate All Sites</b>		
Mean	97%	96%
Min-Max	(89-100%)	(86-100%)
Median	99%	98%
IQR	95%-100%	95%-100%
<b>By Site</b>		
Clinic A	100%	91%
Clinic B	97%	95%
Clinic C	100%	100%
Clinic D	90%	90%
Clinic E	100%	100%
Clinic F	100%	95%
Clinic G	89%	86%
Clinic H	98%	98%
Clinic I	100%	100%
Clinic J	95%	98%
Clinic K	91%	92%
Clinic L	100%	98%
Clinic M	100%	96%
Clinic N	100%	100%
Clinic O	100%	100%
Clinic P	100%	100%
Clinic Q	97%	98%
Clinic R	98%	96%
Clinic S	98%	96%
Clinic T	100%	100%
Clinic U	95%	98%
Clinic V	95%	95%

**Table 36b: Percentage of clients with HIV infection who ever received pneumococcal vaccine, New to Care Patients and Continuing in Care Patients (≥1 medical visit)**

2010 Data						2011 Data					
New to Care Patients		Continuing in Care Patients*		All Patients		New to Care Patients		Continuing in Care Patients**		All Patients	
Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%
109/118	92%	759/774	98%	868/892	97%	29/41	71%	881/904	98%	910/945	96%

\*p=.0004

\*\*p < .0001

## PART VII: COUNSELING MEASURES

### ADHERENCE COUNSELING (HAB Measure Group 2- Modified)

**Performance Measure:** Percentage of clients with HIV infection on ARVs who were assessed for adherence in each six month period in the review year.

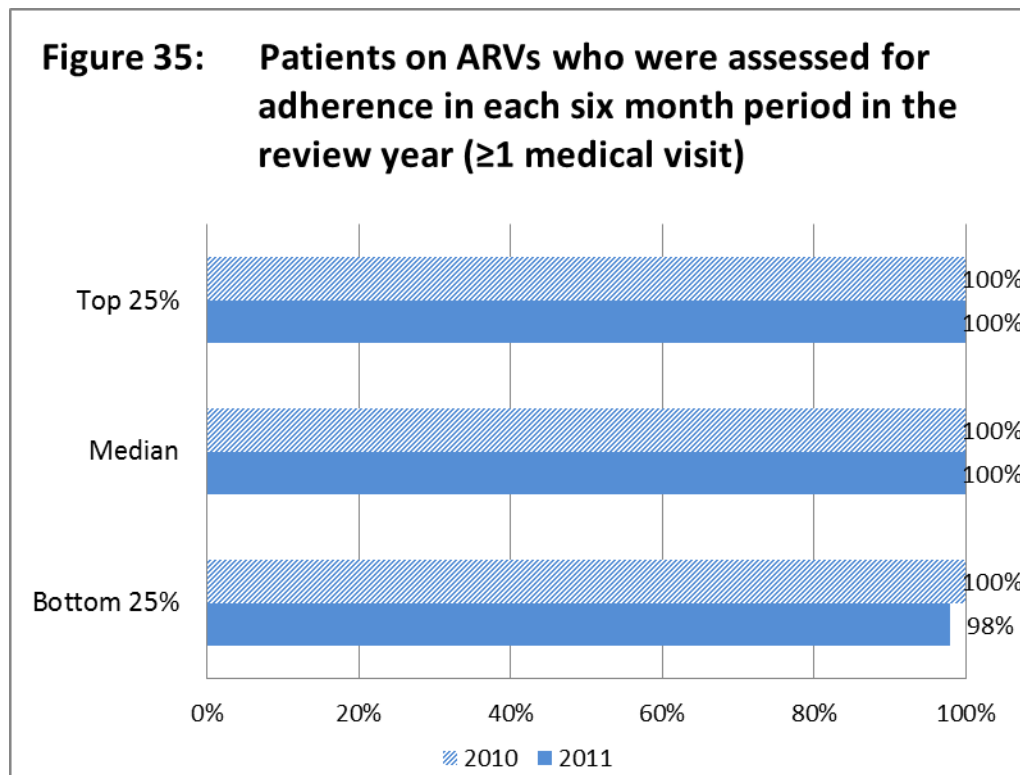
**Numerator:** Adherence assessment in each 6-month period during review year

**Denominator:** One+ visit with provider, enrolled and on ART prior to last 6 months

Note: The numerator for the HAB measure is defined as “assessed and counseled for adherence two or more times in the measurement year”. For this chart review cycle, adherence was assessed in each 6 month time period if the patient was on ARVs and we were not able to determine if the assessment occurred at least six months apart.

#### **Findings:**

For both review years, nearly all patients (99%) eligible for this measure received adherence counseling (median 100% for both review years). The lowest clinic rates were also high with 93% of eligible patients in 2010 and 92% of eligible patients in 2011 being assessed for adherence (Table 37a). For both review years, no statistically significant differences were observed by patient care status for new to care or continuing in care patients (Table 37b). Nearly 100% of the time (clinic average 100% in 2010 and 99% in 2011), a referral was given to the patient if an adherence problem was identified through the adherence assessment process.



**Table 37a: Percentage of clients with HIV infection on ARVs who were assessed for adherence in each six month period in the review year, Aggregate & Site-Specific ( $\geq 1$  medical visit)**

	2010	2011
<b>Eligible Patients</b>	n=753	n=902
<b>Number of Sites</b>	22	22
<b>Aggregate All Sites</b>		
Mean	99%	99%
(Min-Max)	(93-100%)	(92-100%)
Median	100%	100%
IQR	100%-100%	98%-100%
<b>By Site</b>		
Clinic A	100%	100%
Clinic B	100%	97%
Clinic C	100%	100%
Clinic D	100%	100%
Clinic E	100%	100%
Clinic F	100%	100%
Clinic G	98%	92%
Clinic H	96%	97%
Clinic I	100%	100%
Clinic J	97%	98%
Clinic K	100%	98%
Clinic L	100%	100%
Clinic M	100%	100%
Clinic N	93%	97%
Clinic O	100%	100%
Clinic P	100%	100%
Clinic Q	100%	100%
Clinic R	100%	100%
Clinic S	100%	100%
Clinic T	98%	100%
Clinic U	100%	100%
Clinic V	100%	100%

**Table 37b: Percentage of clients with HIV infection on ARVs who were assessed for adherence in each six month period in the review year, New to Care Patients and Continuing in Care Patients ( $\geq 1$  medical visit)**

2010 Data						2011 Data					
New to Care Patients		Continuing in Care Patients		All Patients		New to Care Patients		Continuing in Care Patients		All Patients	
Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%
37/37	100%	710/716	99%	747/753	99%	30/30	100%	864/872	99%	894/902	99%

## HIV RISK COUNSELING (HAB GROUP 2 MEASURE)

**Performance Measure:** Percentage of clients with HIV infection who received HIV risk counseling within the measurement year.

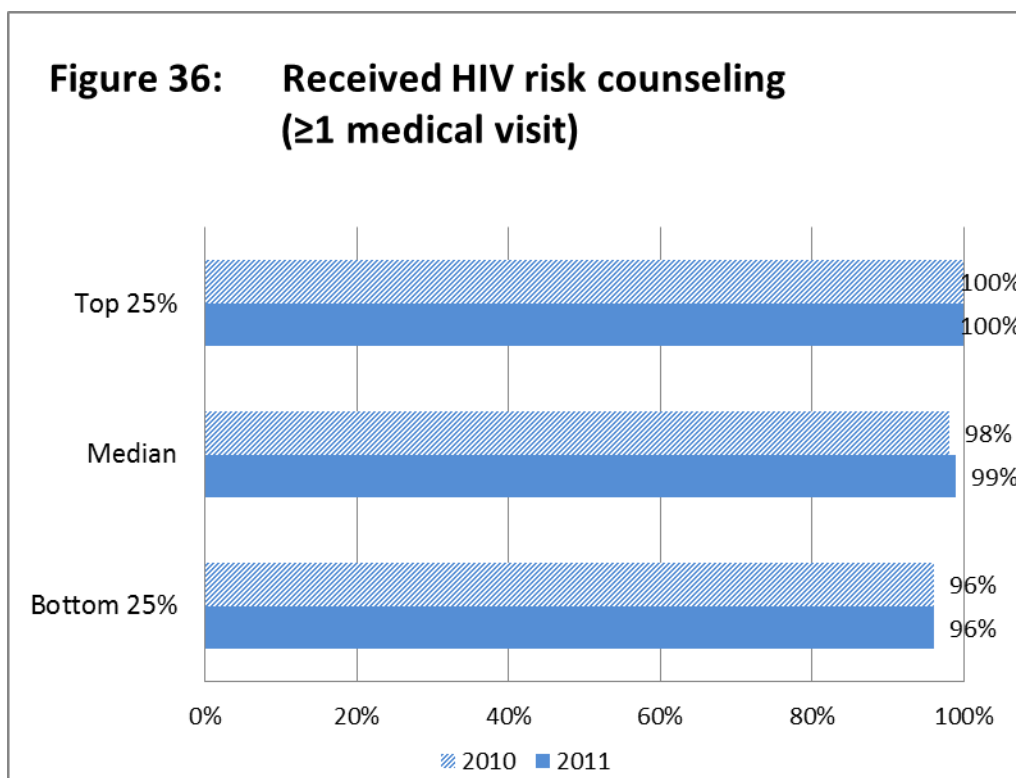
**Numerator:** HIV risk counseling during review year

**Denominator:** One+ medical visits with provider

### Findings:

For both review years, nearly all patients eligible for this measure, 96% in 2010 (median 98%) and (median 99%) in 2011, received HIV risk counseling. The lowest clinic rates meeting this measure were 70 % of eligible patients in 2010 (lowest quartile 96%) and 80% (lowest quartile 96%) of eligible patients in 2011.

Although for both review year, rates by patient care status were high, for the review year 2010, a statistical difference was observed with new to care patients having a higher rate of patients receiving HIV risk counseling (100%) when compared to continuing in care patients (95%).





**Table 38a: Percentage of clients with HIV infection who received HIV risk counseling within the measurement year, Aggregate & Site-Specific (≥1 medical visit)**

	2010	2011
<b>Eligible Patients</b>	n=1039	n=1095
<b>Number of Sites</b>	22	22
<b>Aggregate All Sites</b>		
Mean	96%	99%
(Min-Max)	(70-100%)	(80-100%)
Median	98%	99%
IQR	96%-100%	96%-100%
<b>By Site</b>		
Clinic A	100%	100%
Clinic B	96%	96%
Clinic C	100%	100%
Clinic D	96%	98%
Clinic E	100%	100%
Clinic F	96%	92%
Clinic G	83%	90%
Clinic H	96%	98%
Clinic I	100%	100%
Clinic J	96%	94%
Clinic K	100%	100%
Clinic L	100%	100%
Clinic M	100%	98%
Clinic N	96%	100%
Clinic O	100%	100%
Clinic P	96%	96%
Clinic Q	70%	80%
Clinic R	98%	98%
Clinic S	98%	98%
Clinic T	100%	100%
Clinic U	100%	100%
Clinic V	96%	100%

**Table 38b: Percentage of clients with HIV infection who received HIV risk counseling within the measurement year, New to Care Patients & Continuing in Care Patients (≥1 medical visit)**

2010 Data						2011 Data					
New to Care Patients*		Continuing in Care Patients		All Patients		New to Care Patients		Continuing in Care Patients		All Patients	
Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%
167/167	100%	832/872	95%	999/1039	96%	64/64	100%	1000/1031	97%	1064/1095	97%

\*p=.002 (Fisher's Exact Test)

## TOBACCO CESSATION COUNSELING (HAB MEASURE GROUP 3)

**Performance Measure:** Percentage of clients with HIV infection who received tobacco cessation counseling within the measurement year.

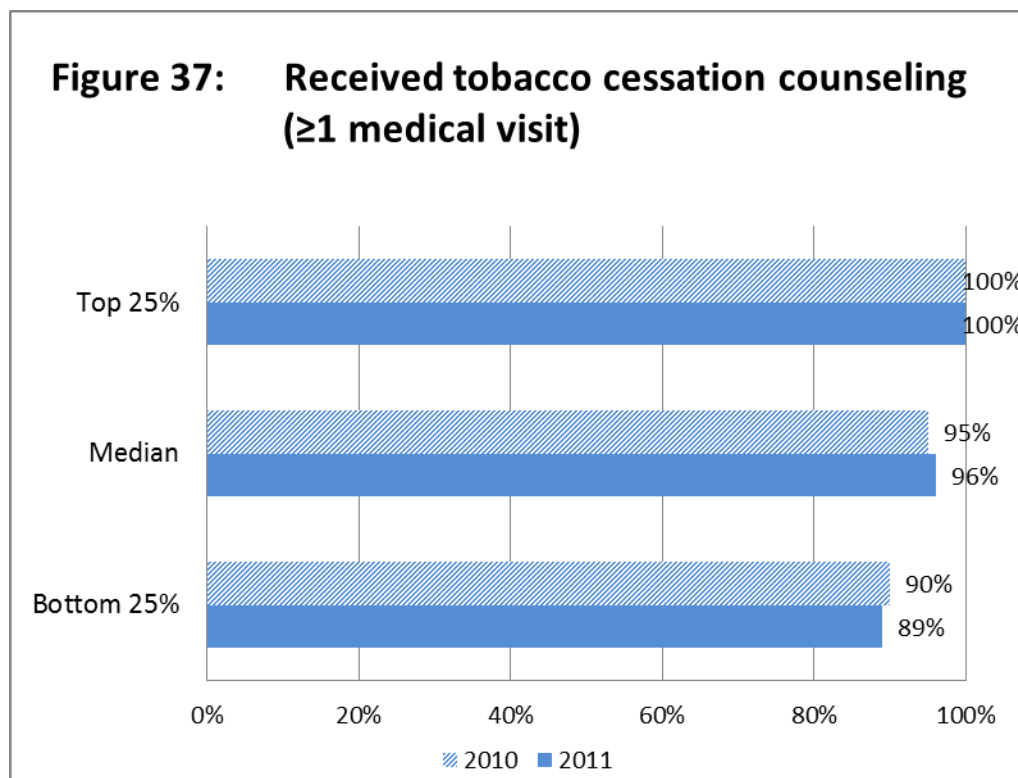
**Numerator:** Tobacco cessation counseling during review year

**Denominator:** One + medical visits, used tobacco products

### **Findings:**

For both review years, 91% of patients eligible for this measure received tobacco cessation counseling. The lowest clinic rate for both review years meeting this measure was 56% (lowest quartile 90%) (Table 39a).

No statistically significant differences were observed by whether the patient was new to care or continuing in care for both review years (Table 39b).



**Table 39a: Percentage of clients with HIV infection who received tobacco cessation counseling within the measurement year, Aggregate & Site-Specific ( $\geq 1$  medical visit)**

	2010	2011
<b>Eligible Patients</b>	n=389	n=411
<b>Number of Sites</b>	22	22
<b>Aggregate All Sites</b>		
Mean	91%	91%
Min-Max	(56-100%)	(56-100%)
Median	95%	95%
IQR	90%-100%	89%-100%
<b>By Site</b>		
Clinic A	100%	100%
Clinic B	90%	84%
Clinic C	95%	95%
Clinic D	94%	94%
Clinic E	71%	72%
Clinic F	64%	73%
Clinic G	95%	91%
Clinic H	100%	100%
Clinic I	100%	100%
Clinic J	100%	100%
Clinic K	100%	100%
Clinic L	92%	92%
Clinic M	88%	90%
Clinic N	67%	75%
Clinic O	100%	100%
Clinic P	56%	56%
Clinic Q	91%	96%
Clinic R	95%	96%
Clinic S	100%	100%
Clinic T	97%	97%
Clinic U	100%	100%
Clinic V	100%	100%

**Table 39b: Percentage of clients with HIV infection who received tobacco cessation counseling within the measurement year, New to Care Patients & Continuing in Care Patients ( $\geq 1$  medical visit)**

2010 Data						2011 Data					
New to Care Patients		Continuing in Care Patients		All Patients		New to Care Patients		Continuing in Care Patients		All Patients	
Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%
51/55	93%	305/334	91%	356/389	92%	28/29	97%	351/382	92%	379/441	92%

## CONCLUSION

Overall, across all clinical sites, HIV specific quality of care measures as assessed by the HAB, non-HAB and in+care performance measures were high with the exception of the viral load monitoring measure. On average, for both review years, 93% patients who were in active care had two or more medical visits with a provider at least three months apart. Rates of CD4 test monitoring were high in both years (89% and 87% mean clinic rates in 2010 and 2011 respectively) and even the lower performing sites had relatively good rates. Rates for viral load test monitoring were a bit lower, with on average, only 74% of patients were monitored at least every six months in 2010 and 72% in 2011. Regardless of criteria used, either the HAB performance measure (percent of AIDS patients prescribed HAART), or the percent of patients on HAART per current USPHS eligibility guidelines, HAART coverage was very high with almost all eligible patients on HAART during both review years. All pregnant women were prescribed HAART. Despite low numbers of patients who needed prophylaxis for opportunistic infections (reflecting the effective use of HAART), coverage remained high, with a clinic average of 97% of eligible patient prescribed PCP prophylaxis in 2011 and 85% prescribed MAC prophylaxis. HIV-specific counseling measures were also very high with 99% receiving adherence counseling for ART in both review years and 96% in 2010 and 97% in 2011 receiving counseling for HIV risk reduction.

Most importantly, viral suppression rates across all clinics were also very high with 89% of patients on HAART in 2010 and 91% of patients on HAART in 2011 had their last viral load count below detectable limits of <200 copies/ml. For continuing care patients on HAART, 76% percent of patients in 2010 and 77% patients in 2011 had all of their viral loads below detectable limits.

Ensuring quality primary care for HIV/AIDS patients remains a high priority as individuals continue to benefit from HAART. Some primary care measures remained high, while others represent areas for improvement. Strong performance was seen for HBV and HCV screening, with 100% screened in 2010 and 2011 for HBV and 99% in both years for HCV. Mean clinic rates of screening patients at least once for TB was also high at 89% in both years. Vaccination rates on average were high for pneumococcus (>95%) but lower for influenza (80% in 2010 and 73% in 2011). Counseling for tobacco cessation was also very high (91% in both review years).

There were a number of results that represent areas for improvement. STD screening for chlamydia and gonorrhea (GC) was low in 2010 (62% and 63% for chlamydia and GC respectively) and remained low at 61% for both in 2011. Somewhat higher rates were observed for syphilis screening (for both review years, 74% had a serologic syphilis test) however this rate is still low based on current CDC guidelines which recommend routine serologic screening for syphilis at least annually for all sexually active HIV-infected persons<sup>2</sup>. In women, PAP smears remained a challenge, with less than two-thirds of eligible women screened in the 2010 review year and even lower rates in 2011 with an average of 58% of women receiving a PAP smear. Also for women, just over one-half of the eligible women received a mammogram. Lipid screening tests rates could also be improved, with only three-quarters of patients being screened in both years regardless of definition used. Overall, 73% and 72% in 2010 and 2011 respectively had a full lipid screening panel done and 75% in 2010 and 74% in 2011 had any lipid test done. Some of the lowest performance was seen in documented oral screening by a dental provider in both 2010 and 2011.

Some quality measures had statistically higher rates for patients new to care when compared to patients already in care. While some of these differences were small, in 2010 two or more medical visits for new to care patients (99%) compared to continuing in care patients (93%), other differences between the patient care groups were larger. These included Pap smears (significant in 2010 but not in 2011) and all three STD screening tests (significantly higher in 2010 and 2011 for syphilis, chlamydia and gonorrhea). In 2010, continuing care

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<sup>2</sup> CDC Guidelines for the Prevention and Treatment of Opportunistic Infections in HIV-Infected Adults and Adolescents, MMWR March 24, 2009/58;1-198

patients had significantly higher rates of lipid screening (74% versus 59% for continuing versus new) which reversed in 2011 (71% versus 91% for continuing versus new). Screening for at least once for TB was significantly higher for continuing care in both years (92% versus 74% in 2010, and 91% versus 57% in 2011 for continuing versus new respectively)

In conclusion, in general, HIV care across the clinics remained at high levels of quality with more variable performance in areas related to primary care. However, even in the areas where there was lower quality, there were usually at least a few sites that had high levels of performance. These sites represent potential sites that could share best practices to help lower performing sites. Care for the newly diagnosed and those newly entering care tended to be as good or better when compared to continuing care patients, but the high rates of immunosuppression at entry to care highlights a gap in earlier diagnosis and entry which this review was not designed to address. Overall, based on the analysis of these performance measures, the Massachusetts clinics are providing a high level of quality with regards to their HIV/AIDS clinical care.

## Appendixes

## Appendix I

### VIRAL LOAD SUPPRESSION (HAB MEASURE GROUP 1 – MODIFIED- ONE VISIT ONLY)

**Performance Measure:** Percentage of patients, regardless of age, with a diagnosis of HIV/AIDS, on ART during the review year, whose last viral load in the review year was below detectable limits of quantification (<200 copies/ml).

**Numerator:** Last viral load in review year was below detectable limits

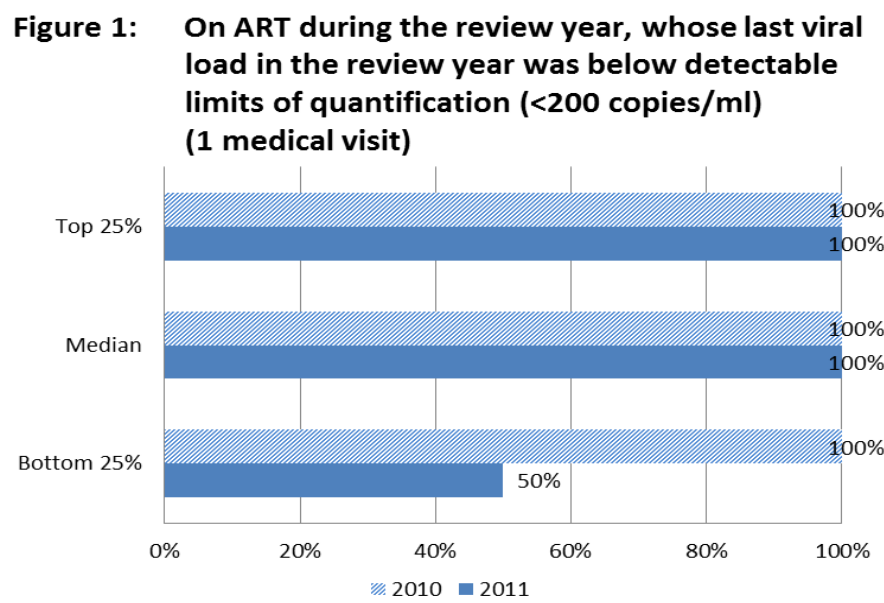
**Denominator:** One medical visit only more than 60 days apart, in care 6 or more months, on ART during the review year, date 1<sup>st</sup> prescribed for new ARV patients is before 7/1 of the review year, viral load in review year.

Note: The denominator for the HAB measure states "... prescribed ARVs for  $\geq 6$  months and had VL during the measurement year" Chart review data did not collect the length of time a patient was on ARVs. Instead patients were eligible for this measure if 1) a patient was continuing in care and on ART during the review year or 2) the date prescribed for patients newly starting ARVs for the first time was before 7/1 of the review year.

#### Findings:

Only 30 patients in 2010 and 27 patients in 2011 met the criteria for this modified "one visit" HAB measure. Due to the small number of patients meeting the eligibility criteria for this modified measure, rates presented below should be interpreted carefully. Also, there was no new to care patients that only had one visit in each review period, therefore, the comparison of new to care and continuing care patients was not done for this measure.

Rates of viral suppression for patients with one visit were slightly lower when compared to the same measure for patients with two or more visits. In 2010, for two or more visits, the clinic mean was 89% and for one visit the clinic mean was 86%. In 2011, for two or more visits, the clinic mean was 91% and for one visit the clinic mean was 75%. Three quarters of the sites in 2012 and two thirds of the sites in 2011 had rates of 100%. (Table 1)



**Table 1: Percentage of patients, regardless of age, with a diagnosis of HIV/AIDS, on ART during the review year, whose last viral load in the review year was below detectable limits of quantification(<200 copies/ml), Aggregate & Site-Specific (1 medical visit only)**

	2010	2011
<b>Number of Eligible Patients</b>	<b>n=30</b>	<b>n=27</b>
<b>Number of Sites</b>	18	12
<b>Aggregate All Sites</b>		
Mean	86%	75%
(Min-Max)	(0-100%)	(0-100%)
Median	100%	100%
IQR	100-100%	50-100%
<b>By Site</b>		
Clinic A	100%	----
Clinic B	----	100%
Clinic C	100%	100%
Clinic D	50%	100%
Clinic E	100%	50%
Clinic F	100%	----
Clinic G	100%	100%
Clinic H	100%	----
Clinic I	----	----
Clinic J	100%	50%
Clinic K	100%	0%
Clinic L	100%	100%
Clinic M	0%	0%
Clinic N	50%	100%
Clinic O	----	----
Clinic P	100%	100%
Clinic Q	50%	----
Clinic R	100%	----
Clinic S	100%	----
Clinic T	100%	----
Clinic U	100%	100%
Clinic V	----	----



## VIRAL LOAD SUPPRESSION (Modified in+care MEASURE- ONE VISIT ONLY)

**Performance Measure:** Percentage of patients with a diagnosis of HIV/AIDS with a viral load less than 200 copies/mL at last viral load test during the review year.

**Numerator:** Last viral in review year below 200 (or otherwise suppressed)

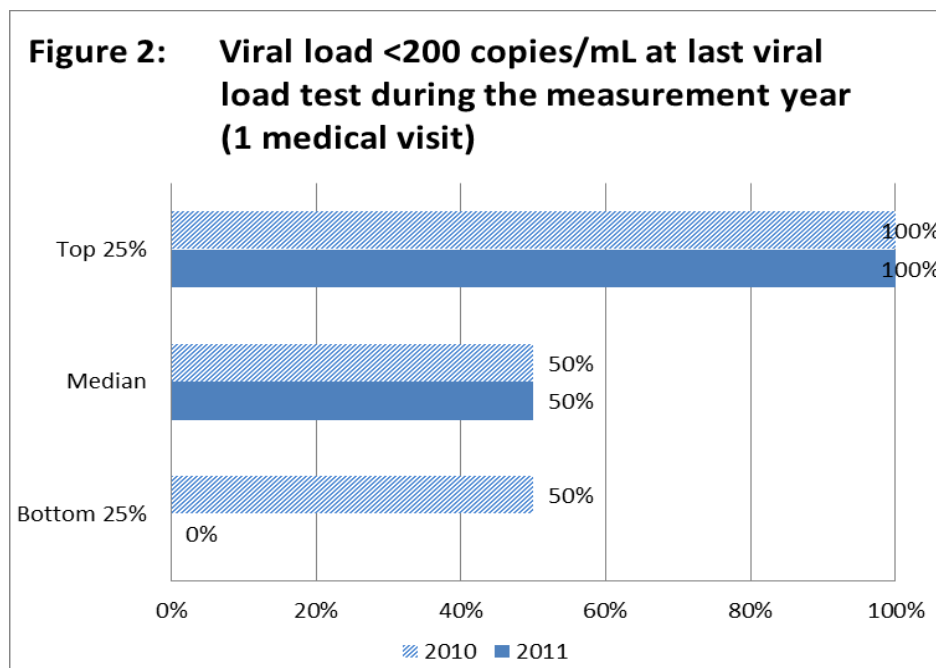
**Denominator:** One medical visit only, and not deceased, incarcerated > 90 days or LTFU during review year

### **Findings:**

Only 44 in 2010 and 29 patients in 2011 met the criteria for this modified “one visit” in+care measure. Due to the small numbers of patients meeting eligible for this modified measure, rates presented below should be interpreted carefully.

Rates of viral suppression for patients with one visit only were lower when compared to the same measure for patients with one or more medical visits. In 2010, for one or more visits, the clinic mean was 77% and for one visit only, the clinic mean was 60%. In 2011, for one or more visits, the clinic mean was 84% and for one visit only the clinic mean was 46%. The median rate for both review years for only one visit was 50%. (Table 2a).

In 2010, patients who had one medical visit only and were newly diagnosed/newly entering care were less likely to achieve viral suppression with their last viral load than patients who were continuing care (11% vs. 81%),  $p < .0001$  (due to small cell sizes, statistical significance was determined using the Fisher’s Exact Test). (Table 2b).



**Table 2a: Percentage of patients with a diagnosis of HIV/AIDS with a viral load less than 200 copies/mL at last viral load test during the review year, Aggregate & Site-Specific (1 medical visit only)**

	2010	2011
<b>Number of Eligible Patients</b>	n=44	n=29
<b>Number of Sites</b>	20	14
<b>Aggregate All Sites</b>		
Mean	60%	46%
(Min-Max)	(0-100%)	(0-100%)
Median	50%	50%
IQR	50%-100%	0%-100%
<b>By Site</b>		
Clinic A	100%	0%
Clinic B	0%	----
Clinic C	50%	50%
Clinic D	50%	
Clinic E	75%	0%
Clinic F	100%	100%
Clinic G	50%	100%
Clinic H	100%	----
Clinic I	----	----
Clinic J	50%	50%
Clinic K	50%	50%
Clinic L	50%	0%
Clinic M	0%	0%
Clinic N	25%	100%
Clinic O	----	0%
Clinic P	75%	88%
Clinic Q	50%	----
Clinic R	100%	----
Clinic S	100%	0%
Clinic T	100%	----
Clinic U	67%	100%
Clinic V	0%	-----

**Table 2b: Percentage of patients with a diagnosis of HIV/AIDS with a viral load less than 200 copies/mL at last viral load test during the review year, New to Care & Continuing Care Patients (1 medical visit only)**

2010 Data						2011 Data					
New to Care Patients		Continuing in Care Patients*		All Patients		New to Care Patients		Continuing in Care Patients		All Patients	
Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%
1/9	11%	25/31	81%	26/40	65%	0/1	0%	19/26	73%	19/27	70%

\*p< .0002 ( Fisher's Exact Test)

## VIRAL LOAD SUPPRESSION (Modified in+care MEASURE- TWO + VISITS)

**Performance Measure:** Percentage of patients with a diagnosis of HIV/AIDS with a viral load less than 200 copies/mL at last viral load test during the review year.

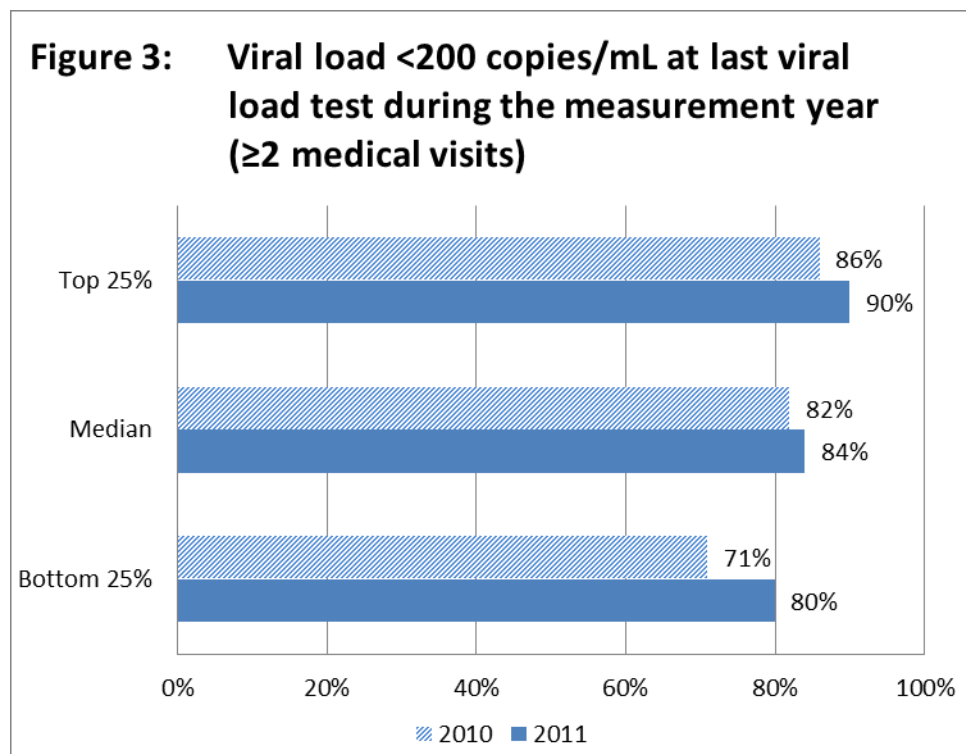
**Numerator:** Last viral load in review year below 200 (or otherwise suppressed)

**Denominator:** Two + visits, not deceased, incarcerated > 90 days or LTFU during review year

### **Findings:**

Rates of viral suppression for patients with two or more medical visits were similar to rates for the same measure for patients with one or more medical visits. In 2010, for one or more visits, the clinic mean was 77% and for two or more medical visits, the clinic mean rate was 78%. In 2011, for one or more visits, the clinic mean was 84% and for two or more medical visits, the clinic mean was 85%. The median rate was 82% in 2010 and 84% in 2011. (Table 3a)

In both years, patients who were newly diagnosed and newly entering care were less likely to achieve viral suppression with their last viral load than patients who were continuing care (56% vs. 83%,  $p < .0001$  in 2010 and 62% versus 86%,  $p < .0001$  in 2011). (Table 3b)



**Table 3a: Percentage of patients with a diagnosis of HIV/AIDS with a viral load less than 200 copies/mL at last viral load test during the review year, Aggregate & Site-Specific (≥2 medical visits)**

	2010	2011
<b>Number of Eligible Patients</b>	N=978	n=1039
<b>Number of Sites</b>	22	22
<b>Aggregate All Sites</b>		
Mean	78%	85%
(Min-Max)	(58-93%)	(69-98%)
Median	82%	84%
IQR	71%-86%	80%-90%
<b>By Site</b>		
Clinic A	77%	84%
Clinic B	71%	69%
Clinic C	67%	69%
Clinic D	83%	92%
Clinic E	83%	85%
Clinic F	86%	89%
Clinic G	83%	91%
Clinic H	69%	89%
Clinic I	61%	79%
Clinic J	72%	83%
Clinic K	87%	90%
Clinic L	84%	91%
Clinic M	76%	74%
Clinic N	67%	80%
Clinic O	90%	84%
Clinic P	82%	80%
Clinic Q	58%	81%
Clinic R	89%	88%
Clinic S	82%	84%
Clinic T	88%	98%
Clinic U	94%	98%
Clinic V	77%	86%

**Table 3b: Percentage of patients with a diagnosis of HIV/AIDS with a viral load less than 200 copies/mL at last viral load test during the review year, New to Care & Continuing Care Patients (≥2 medical visits)**

2010 Data						2011 Data					
New to Care Patients		Continuing in Care Patients*		All Patients		New to Care Patients		Continuing in Care Patients**		All Patients	
Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%	Num/Dem	%
86/151	56%	681/822	83%	766/973	79%	36/58	62%	844/978	86%	880/1036	85%

\*p < .0001

\*\* p < .0001