

# Benchmarking HIV Quality Measures in the US OPERA HIV Cohort

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## BACKGROUND

- Healthcare providers in the US are often required to calculate and submit HIV specific quality measure achievement results related to their clinical practice but these measures are not consistently required across payer types or practices, and as such, there is limited benchmarking data available.
- The National Quality Forum (NQF) has endorsed nine, HIV specific, quality measures for infectious disease.<sup>1</sup>

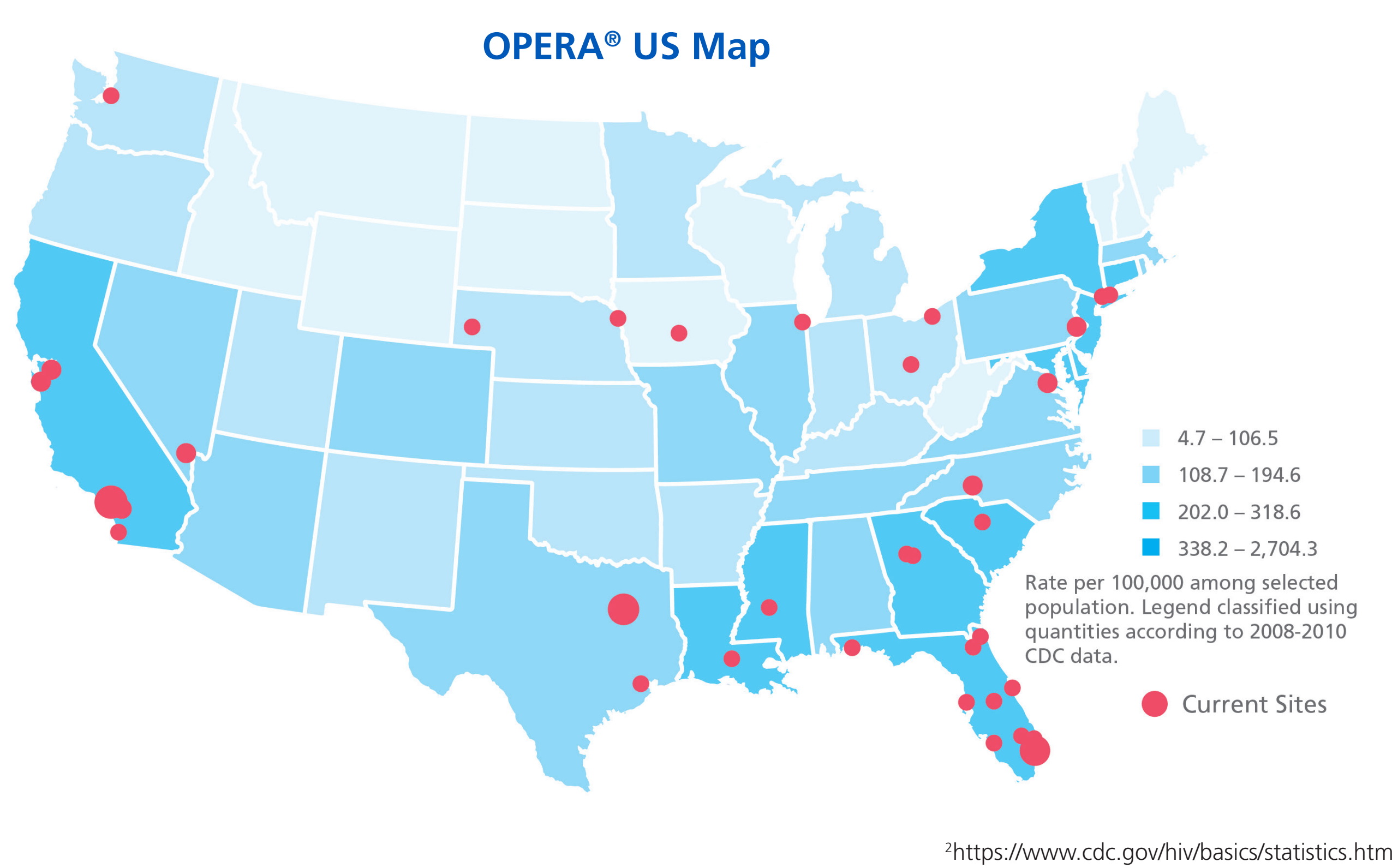
### OBJECTIVE:

To benchmark four NQF endorsed HIV quality measures in a large, national cohort of HIV+ patients and to describe variability in measure achievement by select demographic and clinical characteristics.

## METHODS

### Study Population

The study population was selected from the Observational Pharmaco-Epidemiology Research and Analysis (OPERA) cohort, which includes prospectively-captured, Electronic Health Record (EHR) data from 85 clinics across 54 cities throughout the U.S. The EHR data used for the study is from routine outpatient visits for patients living with HIV who were seen at least once between January 1, 2013 and December 31, 2016. There were 75,579 patients with HIV in the OPERA database through 2016, representing approximately 8% of the HIV patients diagnosed and linked to care in the U.S.



### Four NQF Endorsed Quality Measures

- NQF measures (Table 1) were calculated for performance years 2014, 2015, and 2016.<sup>1</sup>
- For measure 2079 where a 24-month performance period was required, the year shown was the period in which the last 12 months were measured.
- Patients who met both 2079 and 2080 in the same year were considered "Engaged" in care.

Table 1. NQF Quality Measures

Measure # and Name	Measure Description
<b>2079</b> HIV Medical Visit Frequency	Percentage of HIV patients with ≥1 medical visit in each 6-month period of the 24-month measurement period (minimum of 60 days between visits).
<b>2080</b> No Gaps in HIV Medical Visits	Percentage of HIV patients, with a visit in the first six months, who had a medical visit in the last 6 months of the measurement year. Note that the original NQF measure has been inverted in this analysis (no gap vs a gap).
<b>2082</b> HIV Viral Load Suppression	Percentage of patients with a HIV viral load less than 200 copies/mL at the last HIV viral load test during the measurement year.
<b>2083</b> Prescription of ART	Percentage of HIV patients with at least one prescription for antiretroviral therapy at any point during the measurement year.

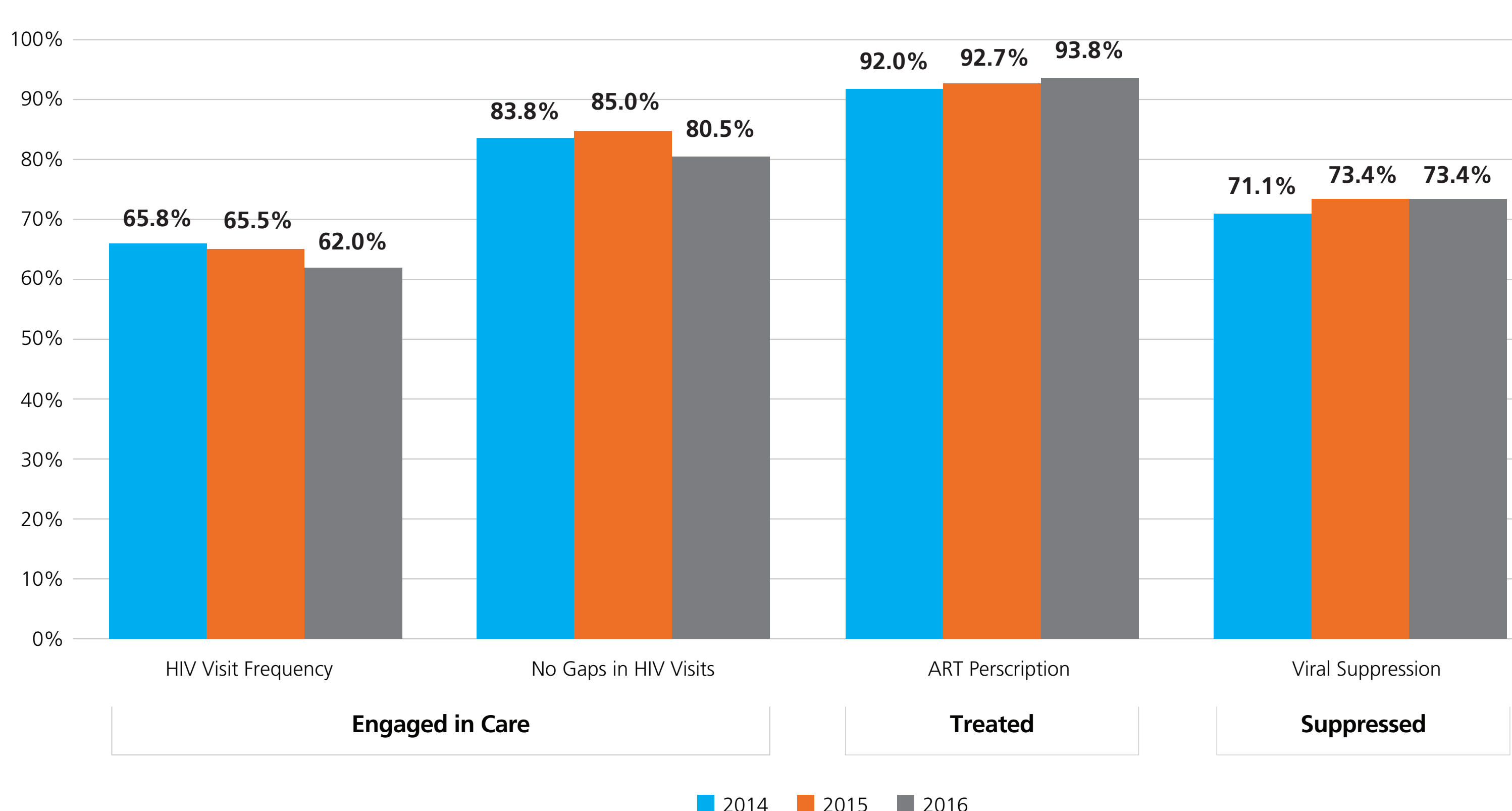
### Analysis

- The number and percent of patients meeting the criteria for each NQF measure was calculated. Ratios were not standardized to account for changes in OPERA demographics.
- Patient demographic and clinical characteristics were described as of January 1st of each performance year, unless otherwise noted.
- Statistical comparisons of patient characteristics by criteria achievement (met vs. not met) were made using Pearson's chi-square or Fisher exact tests for categorical variables and Wilcoxon rank-sum test for continuous variables.

## RESULTS

- The number of patients in the OPERA sample for each performance year ranged from a low of 23,059 for NQF #2079 in 2014 to a high of 42,285 for NQF #2082/2083 in 2016.
- Median age in the OPERA sample across all performance years and measures was 47-48 years with 10-18% of patients <30 years of age; 46-51% ages 30-49 and 35-41% of patients 50 years of age or older. Roughly 83% of patients evaluated for measure adherence were male, 35-40% were African-American and 25% were Hispanic or Latino. Approximately 50% received care in the Southern US while another third received care in the West.
- Risk of infection in the OPERA sample was documented as MSM only in 43-49% of patients, IVDU only in 3-4%; MSM and IVDU in 3-4% with the remainder documented as neither MSM or IVDU. Roughly 15-25% of patients had a prior diagnosis of AIDS; between a quarter and a third of patients had a history of syphilis.
- Figure 1 depicts the percent of patients, unadjusted, who met each quality measure criteria by performance year and measure.
  - Patient engagement diminished between 2014-2016: the percentage of patients with visits at least every six months (#2079) and with a visit in the last six months declined.
  - ART prescription ratios increased modestly as did ratios for viral suppression.

Figure 1. Percentage of Patients in OPERA Meeting NQF Quality Measures by Measure and Performance Year



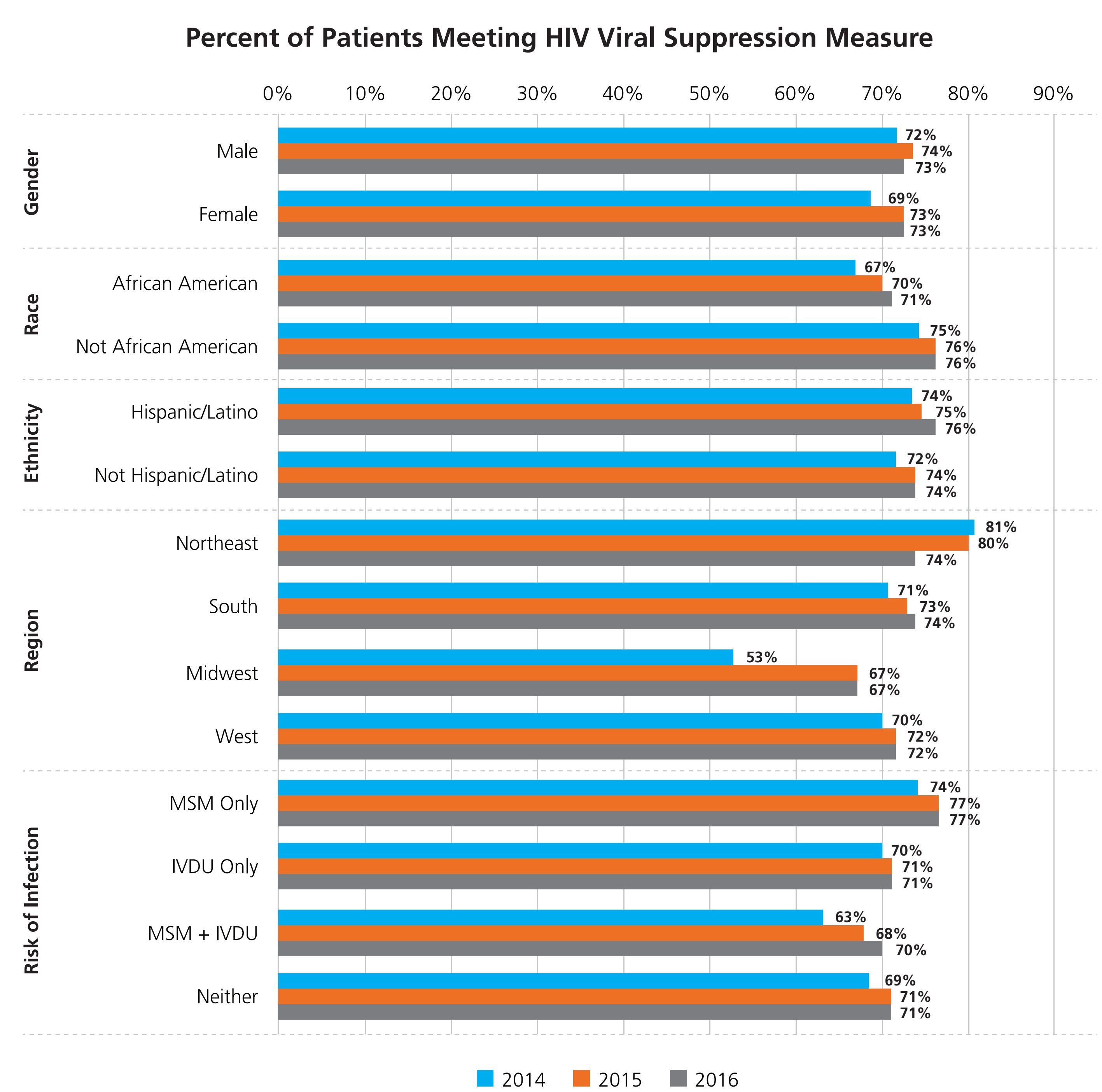
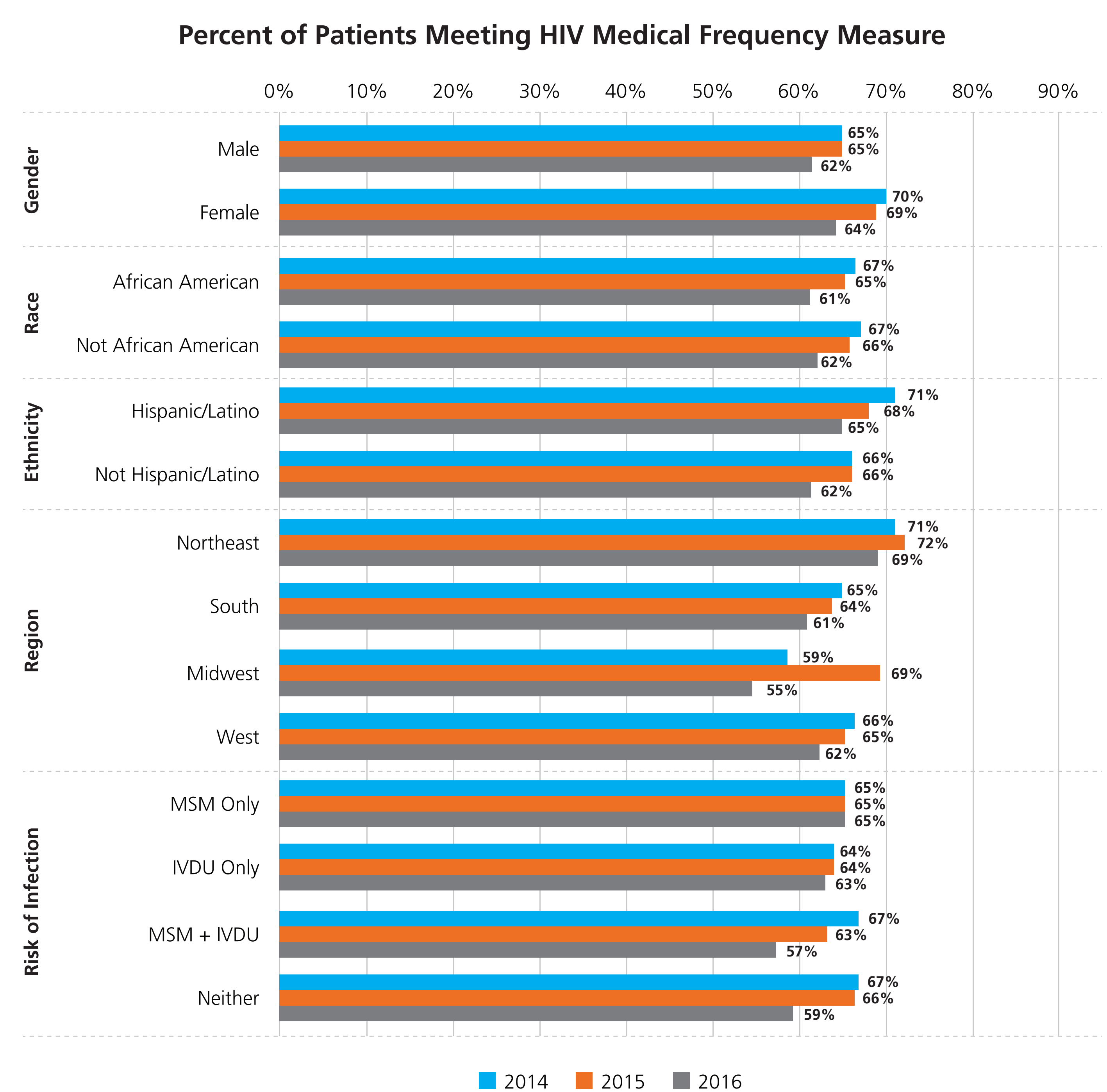
- Unadjusted trends observed in Figure 1 varied by age group (Table 2). Younger patients were significantly less likely to meet each of the NQF measures. While levels of engagement in patients <30 years of age was largely unchanged, the proportion of patients prescribed ART and who achieved viral suppression increased notably.

Table 2: HIV+ Patients in OPERA Meeting NQF Quality Measures by Measure & Year

NQF Measure	Age Group	2014 Performance Year		2015 Performance Year		2016 Performance Year	
		Total Population	% Meeting Criteria	Total Population	% Meeting Criteria	Total Population	% Meeting Criteria
HIV Visit Frequency NQF# 2079	< 30 yrs	2,409	51.7%	3,096	51.7%	3,821	50.1%
	30-49 yrs	11,850	63.4%	13,058	62.5%	13,822	58.4%
	50+ yrs	8,800	72.9%	10,840	73.1%	12,374	69.7%
No Gaps in HIV Visits NQF# 2080	< 30 yrs	3,485	75.4%	4,301	77.6%	5,062	76.5%
	30-49 yrs	13,709	83.0%	14,385	83.6%	14,953	78.8%
	50+ yrs	9,842	87.9%	11,430	89.5%	12,784	84.2%
Viral Suppression NQF# 2082	< 30 yrs	5,051	57.8%	6,020	61.7%	7,421	64.5%
	30-49 yrs	17,581	70.0%	17,852	71.8%	19,433	72.1%
	50+ yrs	12,025	78.4%	13,315	80.8%	15,431	79.4%
ART Prescription NQF# 2083	< 30 yrs	5,051	85.1%	6,020	86.9%	7,421	91.0%
	30-49 yrs	17,581	92.2%	17,852	93.2%	19,433	93.8%
	50+ yrs	12,025	94.4%	13,315	94.6%	15,431	95.1%

- Across all measures; females and Hispanics/Latinos had significantly higher rates of measure achievement. Achievement rates were consistently highest in the Northeast.
- Figure 2 depicts measure achievement by patient characteristics for measures #2079 and #2082.

Figure 2: Percent of Patients Meeting HIV Visit Frequency and Viral Suppression Measures, by Patient Characteristic and Measure Year



## KEY FINDINGS:

- In an evaluation of four NQF endorsed measures of quality care, there appears to be room for improvement in the care of people living with HIV.
- Keeping younger people engaged in care seems to be of particular concern.

## DISCUSSION & CONCLUSIONS

- Only the NQF ART prescription measure reached the UNAIDS 90% target while the proportion who are virally suppressed continues to fall well short of the 90% target in all age groups.
- Engagement, as measured by visit frequency and visit gaps, appears to be declining. This may be an artifact of increasing ART prescription as better drugs may translate into less need for tight monitoring and guidelines which recommend starting early and monitoring less frequently. However, there is still significant opportunity for improvement in achieving viral suppression.
- Keeping younger people engaged in care seems to be of particular concern, especially among patients less than thirty years of age. While the percentage of patients with ≥ 1 ART prescription rose above the 90% threshold in 2016, only 65% were virally suppressed. Only half of these patients visited their HIV clinician every six months while a quarter had a gap in their visit schedule. Future work should more formally assess the relationship between engagement and viral suppression in younger, ART prescribed patients.
- Measure achievement also varied by gender, ethnicity, US census region and route of infection.

## REFERENCES

<sup>1</sup>Department of Health and Human Services, National Quality Forum (2017, August 16). *NQF-Endorsed Measures for Infectious Disease, 2016-2017, Technical Report*. Retrieved November 3, 2017, from [http://www.qualityforum.org/Projects/i-m/Infectious\\_Disease\\_2016-2017/Final\\_Report.aspx](http://www.qualityforum.org/Projects/i-m/Infectious_Disease_2016-2017/Final_Report.aspx)

<sup>2</sup><https://www.cdc.gov/hiv/basics/statistics.html>

