



Department
of Health

Organizational HIV Treatment Cascade Review

Preliminary Findings from the Review of Care Provided in 2018*

*All results are based on data received through 8/7/19 and are subject to revision.

AIDS Institute – Office of the Medical Director

A Quick History of Cascade Reviews

- Review of Care Provided in 2016
 - Organizational treatment cascades requested as one of four components in the quality of care review.
 - Cascades focused on presentation of methodology, key findings and QI plans.
 - Supplemented by patient-level data submitted through eHIVQUAL.
- Review of Care Provided in 2017
 - Increased emphasis on treatment cascades.
 - Detailed reporting
 - Service lines for nonactive patients
 - Indicator results by demographic groups for active patients

A Quick History of Cascade Reviews (cont.)

- Review of Care Provided in 2018
 - A single process that combines patient-level information previously reported through the eHIVQUAL application with the analysis and QI planning incorporated in recent submissions of organizational treatment cascades.
 - All HIV+ patients included on an Excel template submitted through the Health Commerce System (HCS).
 - Continued focus on HIV cascade of care indicators with limited changes.
 - Continued reporting of a methodology statement, key findings of the current review, a QI plan based on findings that includes consumer input, and updates on previously established QI goals.

How We Reviewed the 2018 Data

- As of 8/7/19, we had received 74 of 79 requested HCS submissions.
 - 3 submissions did not pass automated validation checks.
 - 4 other submissions removed from data set after review of outliers.
 - 1 organization had exceptionally low VLS rates found to be related in part to use of wrong VL threshold.
 - 3 large organizations did not report any “other new to care” patients.
 - 1 of these also had an exceptionally large number of newly diagnosed patients.
- Separate data received from Health+Hospitals (17 NYC public hospitals and D&TCs).
 - Each medical center treated as a separate “organization” for this review.
 - Data for current gender, housing status, exposure risk, and suppression within 91 days of diagnosis not available.

How We Reviewed the 2018 Data (cont.)

- Data sets scored separately and then combined:
 - 84 total organizations
 - 225 clinics providing HIV-specific care
 - 94,382 total patients (14,670 from H+H; 79,712 ROS)

Categorization of Patients

Category	Definition	Patients	Notes
Established Active	Diagnosed prior to 2018; seen prior to 2018; enrolled in care in 2018.	60,879	Includes patients with unknown diagnosis date.
Open Inactive	Diagnosed prior to 2018; “touched the system” in 2018 but not enrolled in care.	19,550	These are the “unknown status” patients who cannot be excluded for reasons listed below.
Newly Diagnosed	Diagnosed in 2018 (original diagnosis date, whether within organization or externally).	1,548	Includes newly enrolled as well as “lost to follow-up”; only patients internally diagnosed eligible for linkage measure.
Other New to Care	Diagnosed prior to 2018; not seen in 2016 or 2017; enrolled in care in 2018.	6,467	
Excluded	Incarcerated, relocated, receiving ongoing external HIV care in NYS or deceased as of 12/31/18.	5,938	Includes 32 externally newly diagnosed patients; internally diagnosed patients still eligible for linkage measure.

Characteristics of Patients

Category	Avg. Age	Black and/or Hispanic				MSM exposure risk				IDU exposure risk			
		Yes	No	Yes/No Ratio	UK	Yes	No	Yes/No Ratio	UK	Yes	No	Yes/No Ratio	UK
Established Active	50	67%	16%	4.2	17%	32%	38%	0.8	31%	5%	64%	0.078	31%
Open Inactive	51	60%	14%	4.3	26%	6%	10%	0.6	84%	2%	14%	0.12	84%
Newly Diagnosed	37	68%	14%	4.9	18%	37%	29%	1.3	34%	2%	64%	0.031	34%
Other New to Care	44	58%	17%	3.4	25%	35%	31%	1.1	34%	4%	62%	0.065	34%
Excluded	52	67%	19%	3.5	14%	11%	28%	0.4	62%	7%	32%	0.22	62%

Established Active Patients - Benchmarks

Benchmark	2018 (n = 218 Clinics)			2017 (n = 165 Clinics)		
	Percentage of Patients			Percentage of Patients		
	On ART	VL Test	Suppressed on Final VL	On ART	VL Test	Suppressed on Final VL
Average	97%	95%	83%	97%	95%	81%
25 th Percentile	98%	96%	79%	97%	97%	77%
Median	99%	99%	87%	99%	99%	86%
75 th Percentile	100%	100%	93%	100%	100%	91%

Established Active Patients – VLS Variation*

Group	Clinic Benchmarks		
	25 th Pct.	Med.	75 th Pct.
Black/African American (n=29,077)	79%	86%	91%
White (n=16,378)	81%	90%	97%
Asian (n=1,127)	95%	100%	100%
American Indian/Alaskan Native (n=401)	76%	100%	100%
Native Hawaiian/Pacific Islander (n=195)	75%	100%	100%
Non-Hispanic Ethnicity (n=30,417)	78%	87%	94%
Hispanic Ethnicity (n=14,592)	79%	89%	100%

Group**	Clinic Benchmarks		
	25 th Pct.	Med.	75 th Pct.
MSM risk (n=19,222)	82%	90%	100%
Hetero. risk (n=18,539)	80%	89%	96%
IDU risk (n=2,946)	79%	92%	100%
Perinatal risk (n=732)	60%	85%	100%
Blood exp. risk (n=375)	83%	100%	100%
Hemophilia risk (n=47)	100%	100%	100%
Stable housing (n=39,556)	82%	89%	98%
Temporary/Unstable housing (n=3,841)	62%	79%	100%

*Excluded due to unknown status: Race = 13,951; Ethnicity = 15,870; Risk = 18,826; Housing = 17,472.

**Patients may have multiple risk factors.

Established Active Patients – VLS Variation (cont.)

Group	Clinic Benchmarks		
	25 th Pct.	Med.	75 th Pct.
Age 0 to 12 (n=51)	78%	100%	100%
Age 13 to 19 (n=203)	53%	90%	100%
Age 20 to 24 (n=1,184)	67%	82%	100%
Age 25 to 29 (n=3,563)	69%	83%	100%
Age 30 to 39 (n=9,835)	77%	86%	100%
Age 40 to 49 (n=12,115)	80%	88%	96%
Age 50 to 59 (n=19,815)	82%	89%	97%
Age 60 plus (n=14,113)	85%	93%	98%

Region	Clinic Benchmarks		
	25 th Pct.	Med.	75 th Pct.
Bronx (9,671 pts.; 43 clinics)	77%	84%	90%
Brooklyn (9,092 pts.; 34 clinics)	71%	84%	90%
Lower Manhattan (20,291 pts.; 31 clinics)	76%	87%	90%
Upper Manhattan (5,125 pts.; 18 clinics)	77%	84%	100%
Queens (3,043 pts.; 9 clinics)	79%	86%	92%
Staten Island (365 pts.; 4 clinics)	65%	76%	88%
Central-West NYS (5,728 pts.; 28 clinics)	88%	91%	100%
Long Island (4,041 pts.; 15 clinics)	88%	92%	94%
Lower Hudson (1,046 pts.; 13 clinics)	88%	92%	100%
Mid-Hudson (634 pts.; 11 clinics)	85%	90%	100%
Northeast NYS (1,805 pts.; 12 clinics)	91%	93%	100%

Newly Diagnosed Patients - Linkage

Benchmark	Percentage of Patients Diagnosed Internally Who Were Linked within...			
	3 Days	7 Days	30 Days	90 Days
Average	42%*	57%	83%	89%
25 th Percentile	18%	34%	70%	83%
Median	40%	58%	87%	95%
75 th Percentile	60%	78%	100%	100%

*The average rate for 3-day linkage in the 2017 cascade data was 64%. This was reported as a single number, rather calculated from patient-level data including date of diagnosis and date of HIV care initiation.

Newly Diagnosed Patients – Linkage (cont.)

Percentage of Patients Diagnosed Internally Who Were Linked within 3 days by Age				
Age Group*	Clinic Benchmarks			
	Average	25 th Pct.	Median	75 th Pct.
13 to 19 (n=29)	51%	0%	50%	100%
20 to 24 (n=143)	45%	0%	36%	100%
25 to 29 (n=195)	41%	0%	37%	67%
30 to 39 (n=321)	38%	0%	33%	67%
40 to 49 (n=167)	34%	0%	25%	50%
50 to 59 (n=153)	46%	0%	33%	100%
60 or older (n=72)	40%	0%	20%	100%

*Seven patients with missing DOB or under 13 years old are not reported here

Newly Diagnosed Patients – ART & VLS

Benchmark	Internally Diagnosed in 2018 (n = 1,087)				Externally Diagnosed in 2018 (n = 461)			
	Percentage of Patients				Percentage of Patients			
	On ART	VL Test	Ever Suppressed (2018)	Suppressed within 91 days of diagnosis*	On ART	VL Test	Ever Suppressed (2018)	Suppressed within 91 days of diagnosis*
Average	88%	95%	70%	52%	90%	93%	67%	39%
25 th Pct.	78%	90%	50%	32%	96%	100%	59%	0%
Median	100%	100%	70%	50%	100%	100%	79%	43%
75 th Pct.	100%	100%	92%	71%	100%	100%	95%	58%

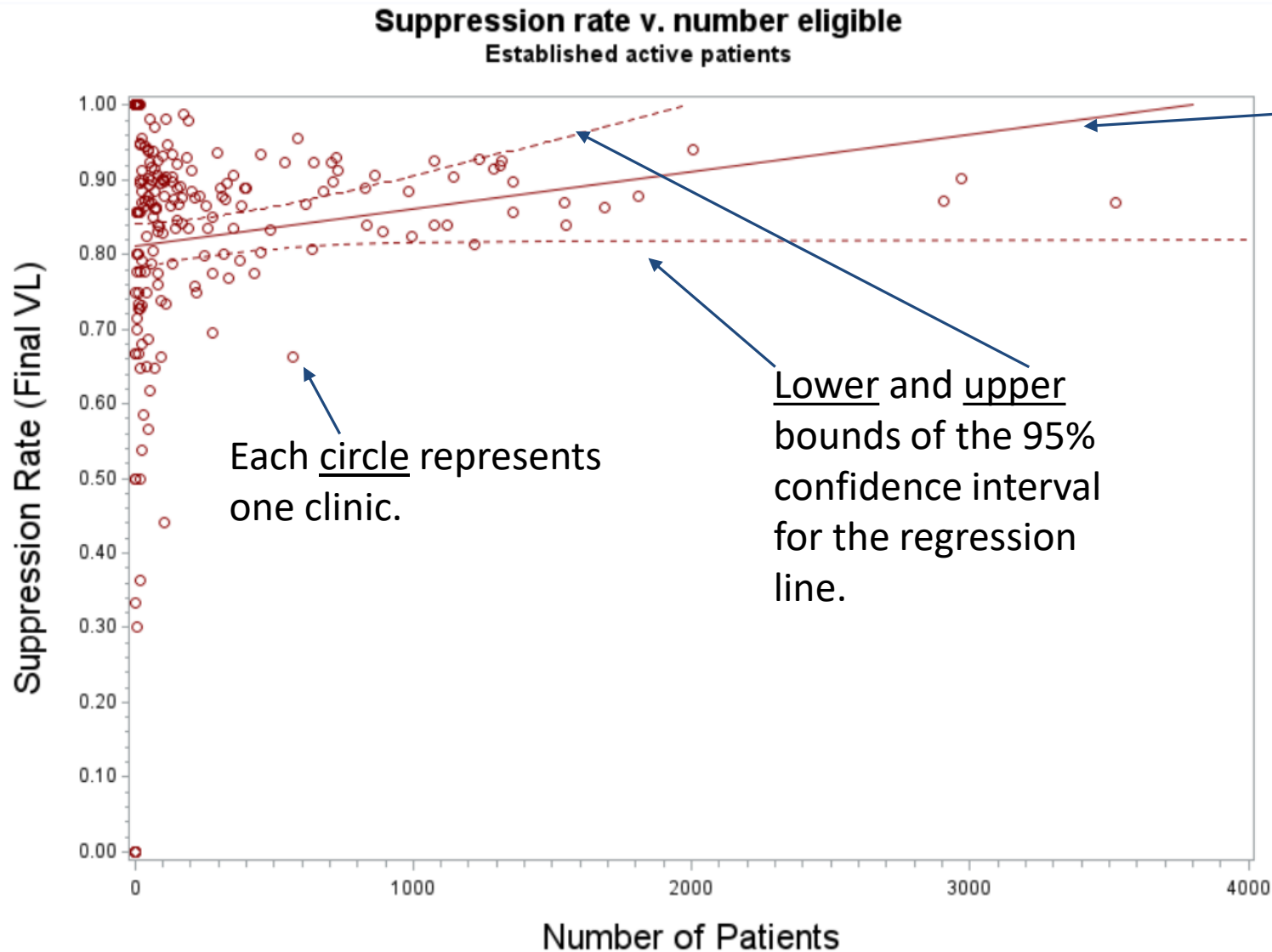
*30 patients (13 internally diagnosed and 17 externally diagnosed) with first suppressed VL on date of diagnosis have been removed from the scoring of timely suppression.

Other New to Care Patients – ART & VLS

Benchmark	2018 (n = 75 organizations)			2017 (n = 62 organizations)		
	Percentage of Patients			Percentage of Patients		
	On ART	VL Test	Suppressed on Final VL	On ART	VL Test	Suppressed on Final VL
Average	92%	96%	70%	90%	94%	68%
25 th Pct.	89%	92%	61%	90%	93%	62%
Median	97%	99%	73%	96%	97%	71%
75 th Pct.	100%	100%	80%	100%	100%	86%

VLS v. # of Elg. Pts. – Est. Active (218 clinics; 60,879 pts.)

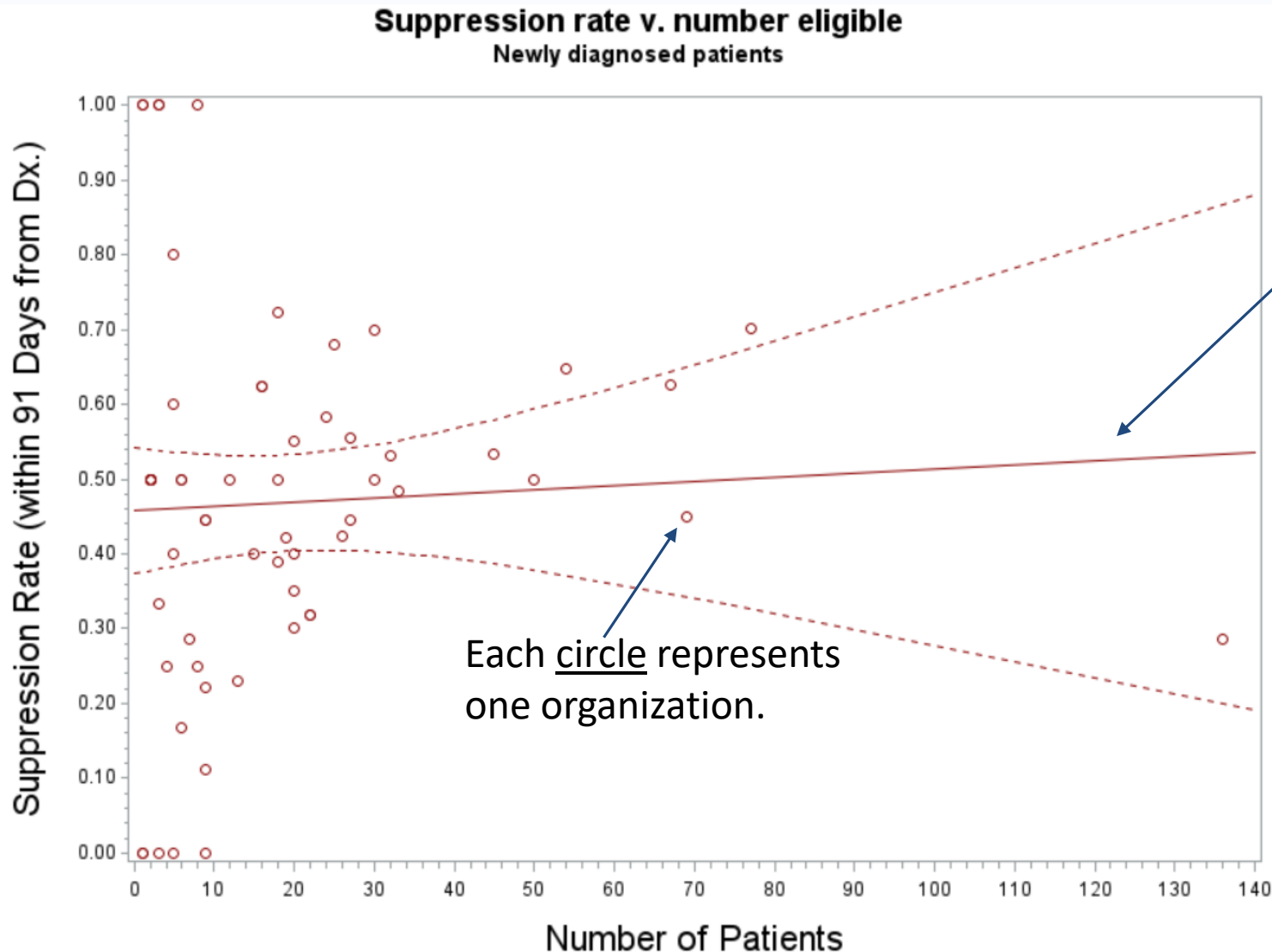
Linear regression is used as a first-order approximation for comparing different patterns. We know that the suppression rate can never exceed 100%!



Equation for Regression Line:
Suppression Rate = $0.811 + (4.96 * 10^{-5}) * (\text{Number of Patients})$

P value for two-tailed t-test of non-zero slope of regression line = 0.0549.

VLS v. # of Elg. Pts. – Newly Dx. (60 orgs.; 1157 pts.)*

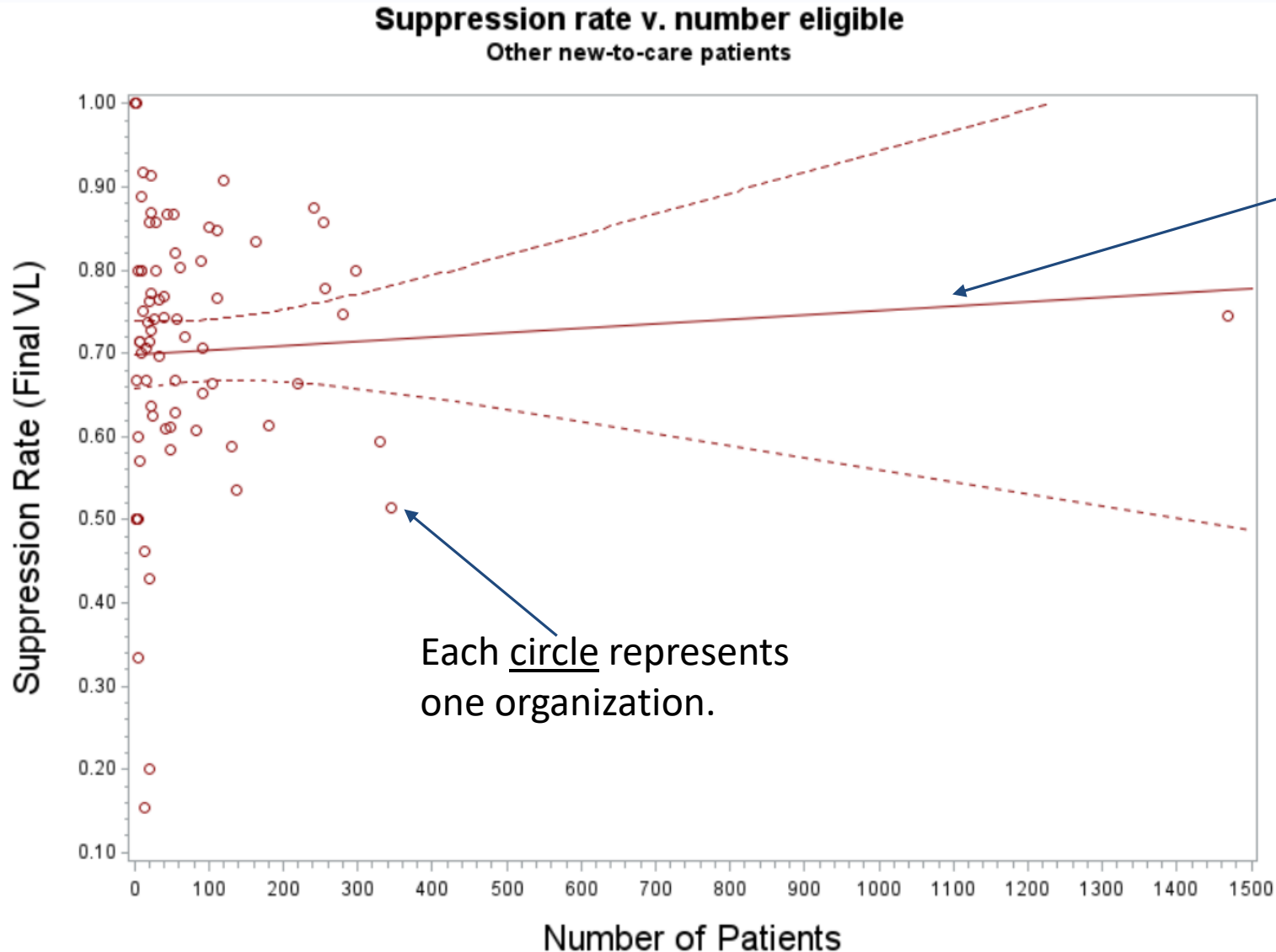


Equation for
Regression Line:
Suppression Rate =
 $0.458 + (5.66 * 10^{-4}) * (\text{Number of Patients})$

P value for two-tailed t-test of non-zero slope of regression line = 0.688.

*Data are not available for Health+Hospitals sites.

VLS v. # of Elg. Pts. – Other New (75 orgs.; 6,647 pts.)



Equation for
Regression Line:
Suppression Rate =
 $0.699 + (6.24 * 10^{-5}) * (\text{Number of Patients})$

P value for two-tailed t-test of non-zero slope of regression line = 0.610.

Matching of Active and Inactive Patients

- Using conservative “fuzzy” matching on name and DOB, we identified patients listed as “inactive” (not enrolled in HIV care) at one organization but active at another.
- Statewide, there were approximately 23,792 unique inactive patients, and 5,597 (24%) were matched with an active patient.

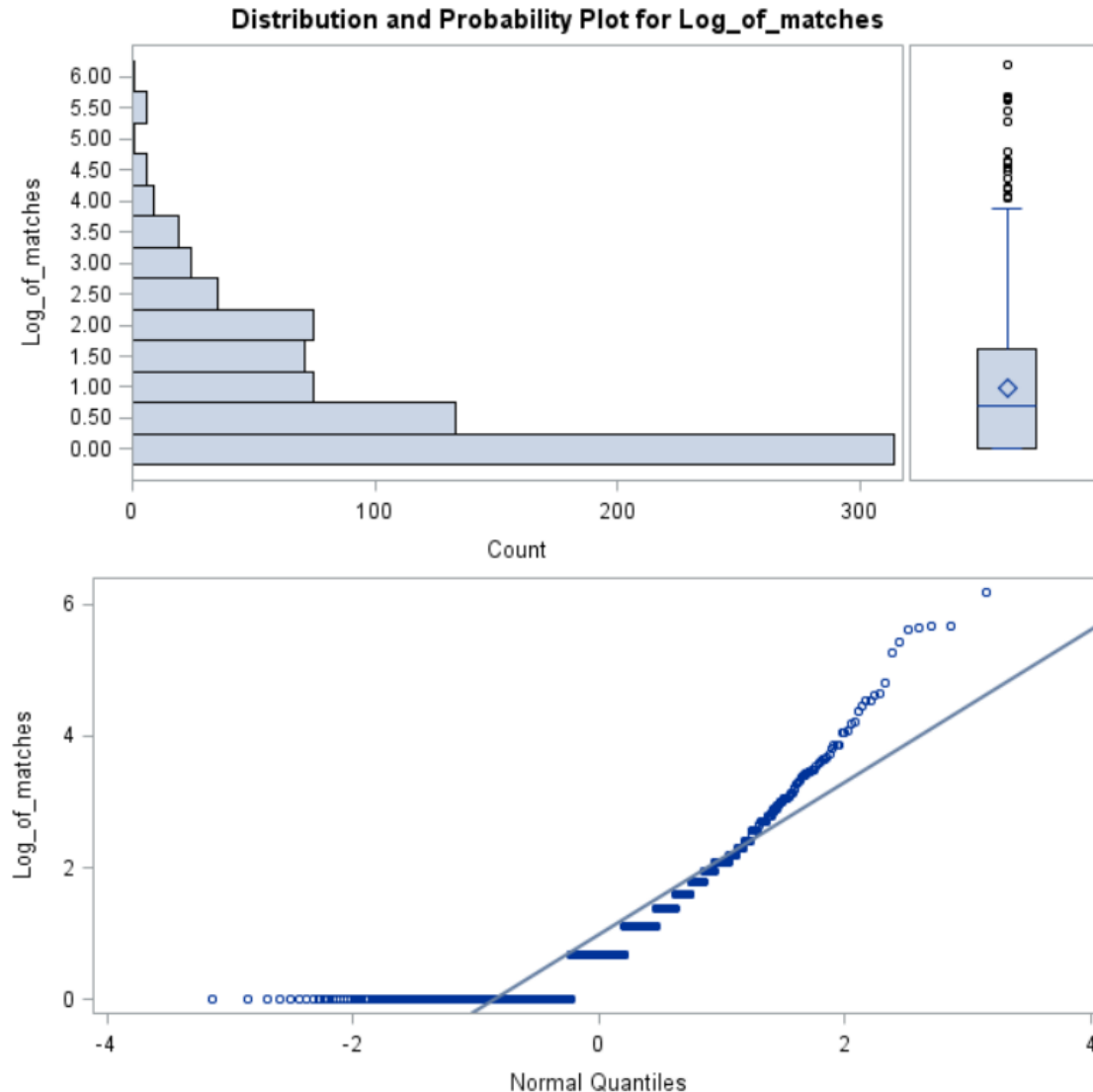
Enrollment Status of Inactive Patients (57 Pts. without DOB Excluded)

Status	All Inactive Patients		Matched Patients	
	Pts.*	%	Pts.**	%
Deceased	563	2%	17	0%
External HIV Care	4,861	19%	945	15%
Incarcerated	229	1%	15	0%
Relocated out of NYS	321	1%	17	0%
Unknown Status	19,617	77%	5,415	84%

*Total = 25,601 as some patients are reported as inactive at multiple organizations.

**Total = 6,409 as some patients are reported as inactive at multiple organizations.

Matching of Active and Inactive Patients (cont.)



- Distribution of the natural logarithmic of the number of matches per pair of organizations shows both normal and non-normal attributes.
- Factors that could influence the number of matches include caseloads, geographic proximity, transportation options, and collaborative arrangements.

Next Steps

- Formal report based on final data set.
- Additional analysis of 2018 data.
- Update of results published on health.data.ny.gov.
- Preparation for review of care provided in 2019.
- Will also conduct similar review of care provided in 2020.