

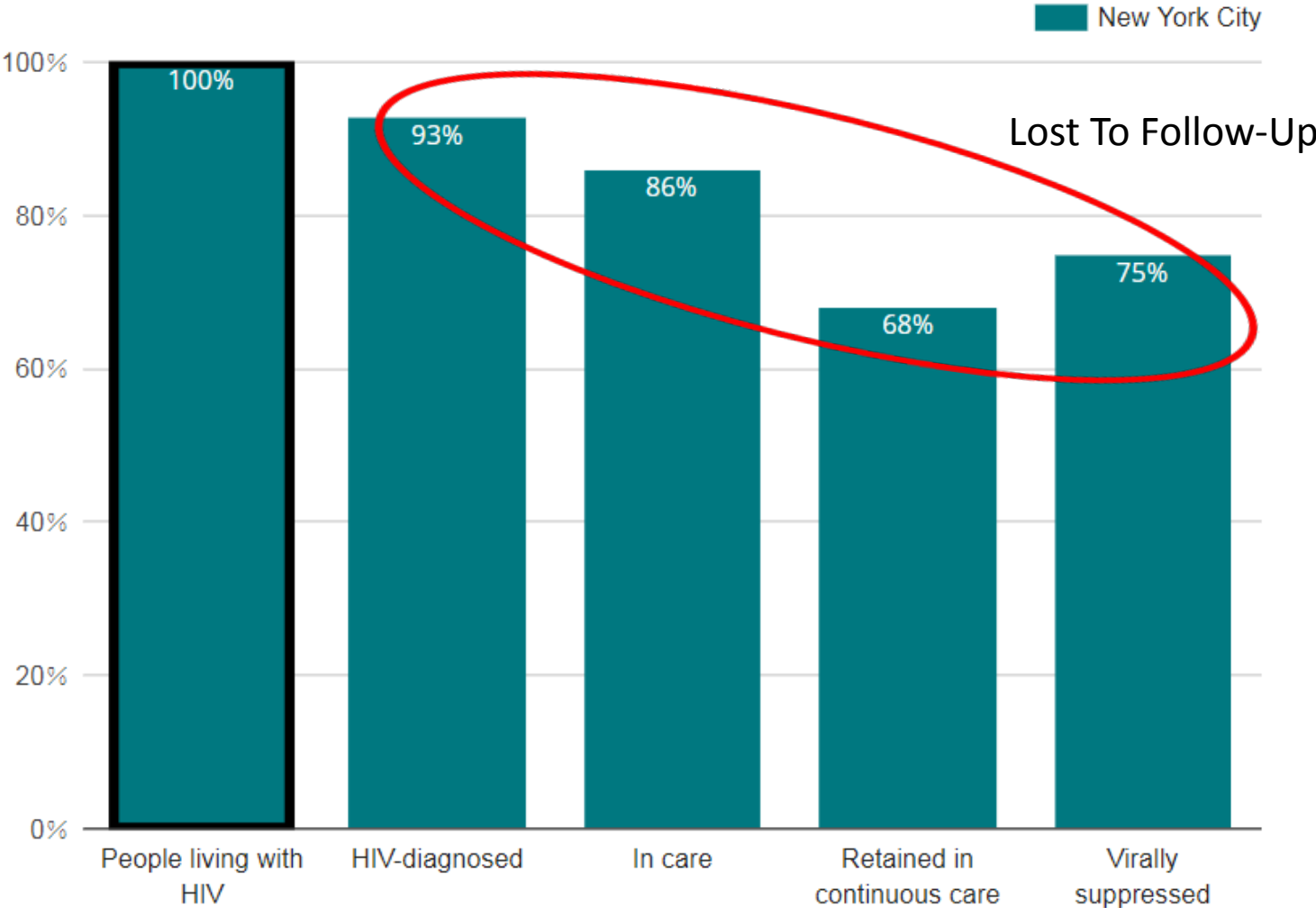
HASA-Healthix 'Bottom-Up' Project

Pete Gordon, MD
Medical Director, Comprehensive Health Program
NYP/Columbia University

Agenda

- Background
 - NYC HIV and HCV Care Cascades
 - ETE initiatives to drive HIV and HCV Testing and Linkage to Care
- ETE efforts and the role of Health Information Technology (HIT)
 - EMRs, Tableau Dashboards, RHIOs
- HASA-Healthix Bottom-Up Demonstration Project
- Discussion

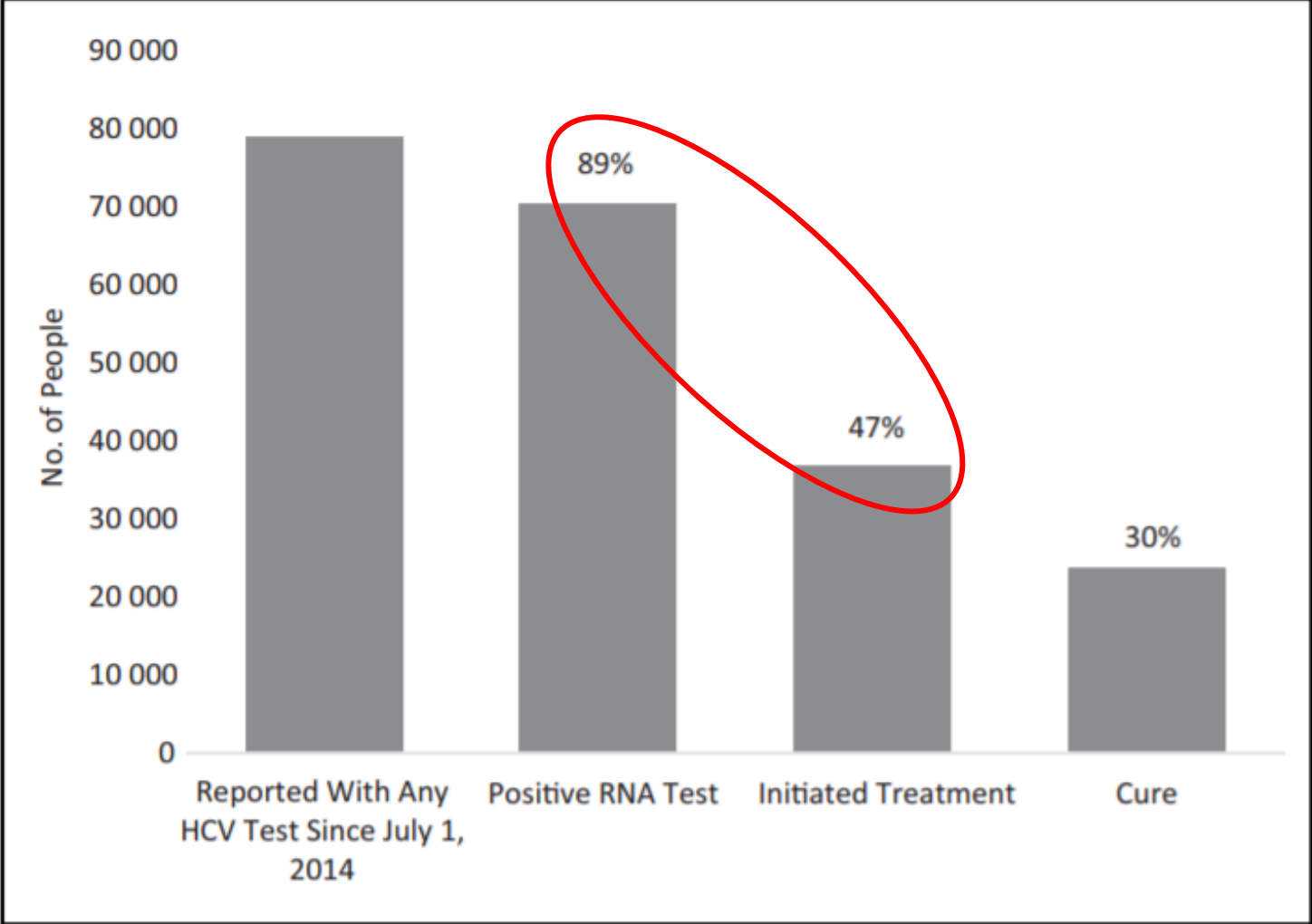
2017 NYC HIV Care Cascade



N = 90,450

Data reported to the NYC HIV Epidemiology and Field Services Program by March 31, 2018. ETE Dashboard.

2017 NYC HCV Care Cascade



New York Presbyterian Hospital

- ❖ 2 major academic medical centers (Columbia and Cornell)
- ❖ 5 hospital sites in NYC
- ❖ 13 community ambulatory care sites, 7 school based clinics
- ❖ 665,517 unique patients seen in 2016
- ❖ 2,162,052 ambulatory care visits in 2017
- ❖ 105,000 inpatient visits
- ❖ 24,586 staff
- ❖ 7,145 clinicians
- ❖ Operating budget: 5.6 billion
- ❖ **64,108 HIV tests (last 12 months)**
- ❖ **64,741 HCV tests (last 12 months)**



Integrating HIV/HCV Testing and Linkage Efforts into NYP Clinical Workflows

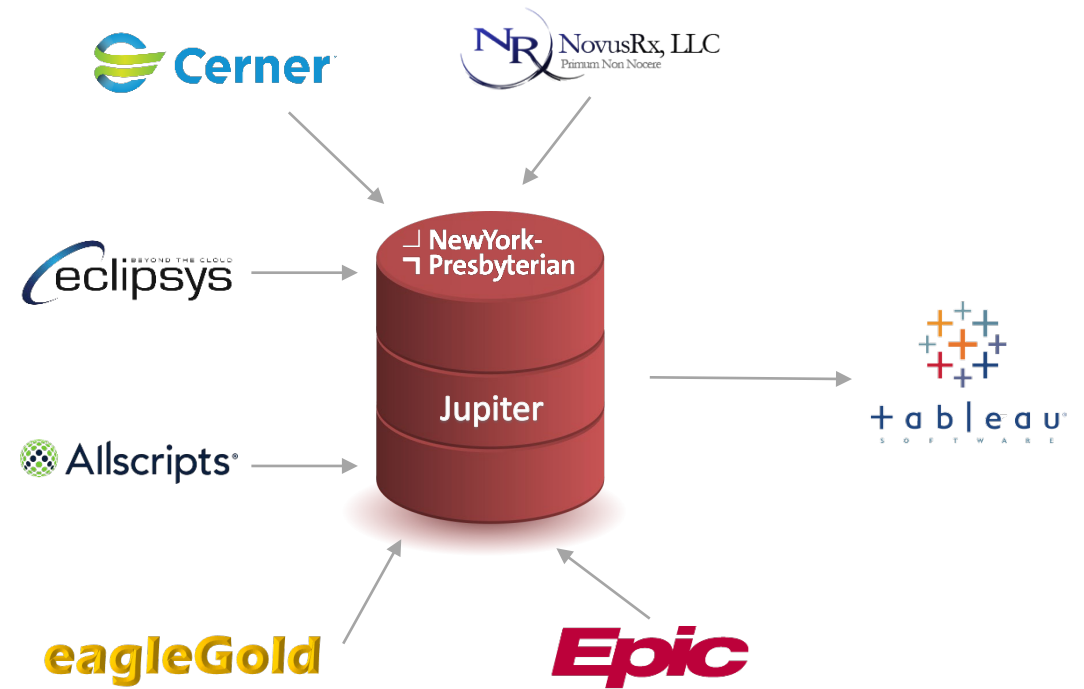
❖ Challenges

- Large complex institution with a multitude of competing priorities
- Just beginning its journey towards becoming an 'integrated care delivery system'
- Complex staff governance
 - NYP, Columbia, Cornell
- Three different EMRs
 - Eclipsys, EPIC, Allscripts



Utilizing Flexible IT Software for Data Aggregation and Visualization

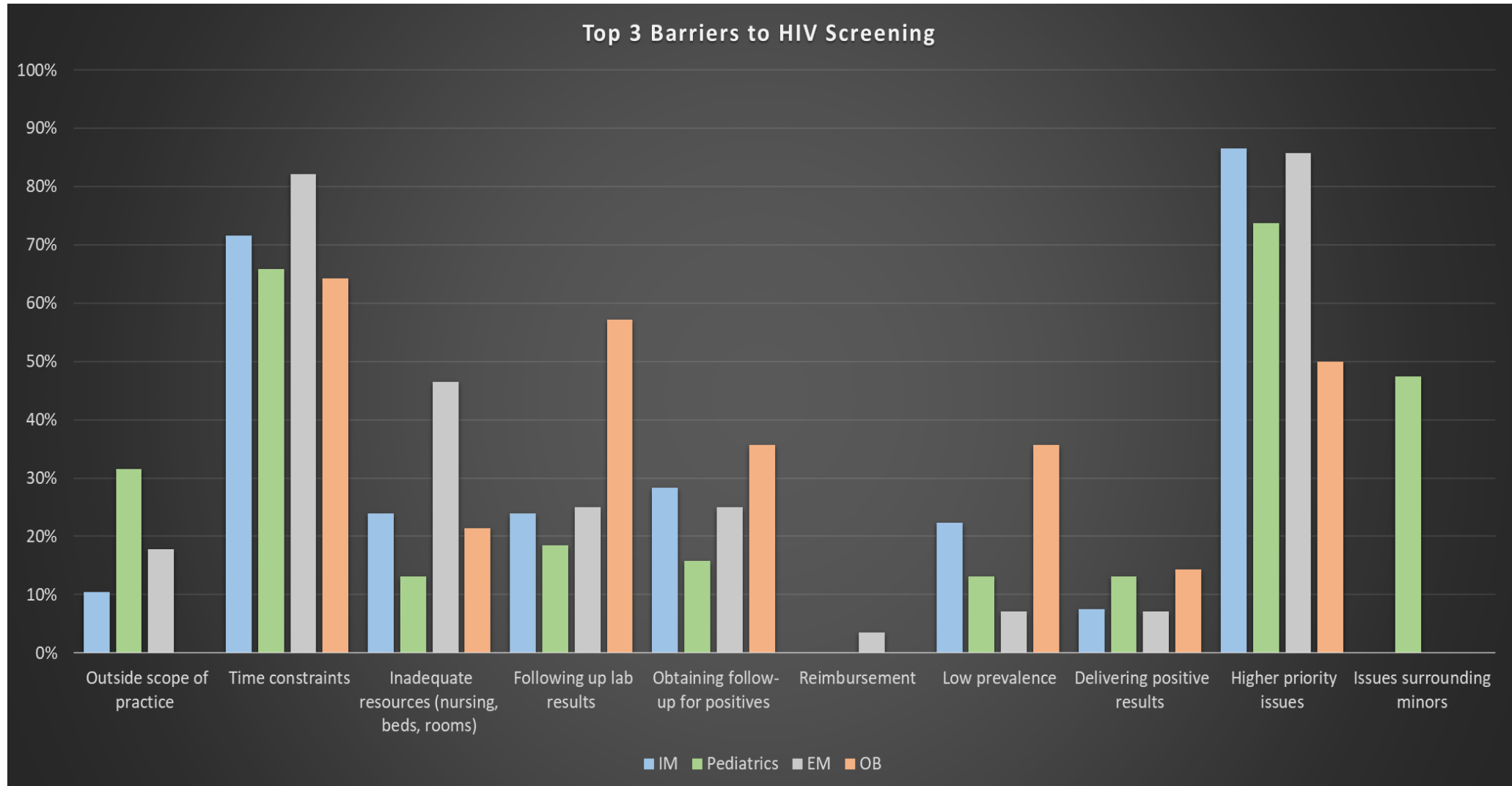
- ❖ Most healthcare systems utilize multiple electronic information systems
 - NYP: Sorian, EAGLE, Epic, AllScripts, Eclipsys
- ❖ Underlying IT networks (often) use standard languages and coding
 - HL7, ADT, NDC, CCD
- ❖ Data warehouses/Data Marts offer advantages to EMR data extracts
- ❖ ‘Off the shelf’ tools, like Tableau, are ideally suited for developing dashboards that are agnostic to EMRs



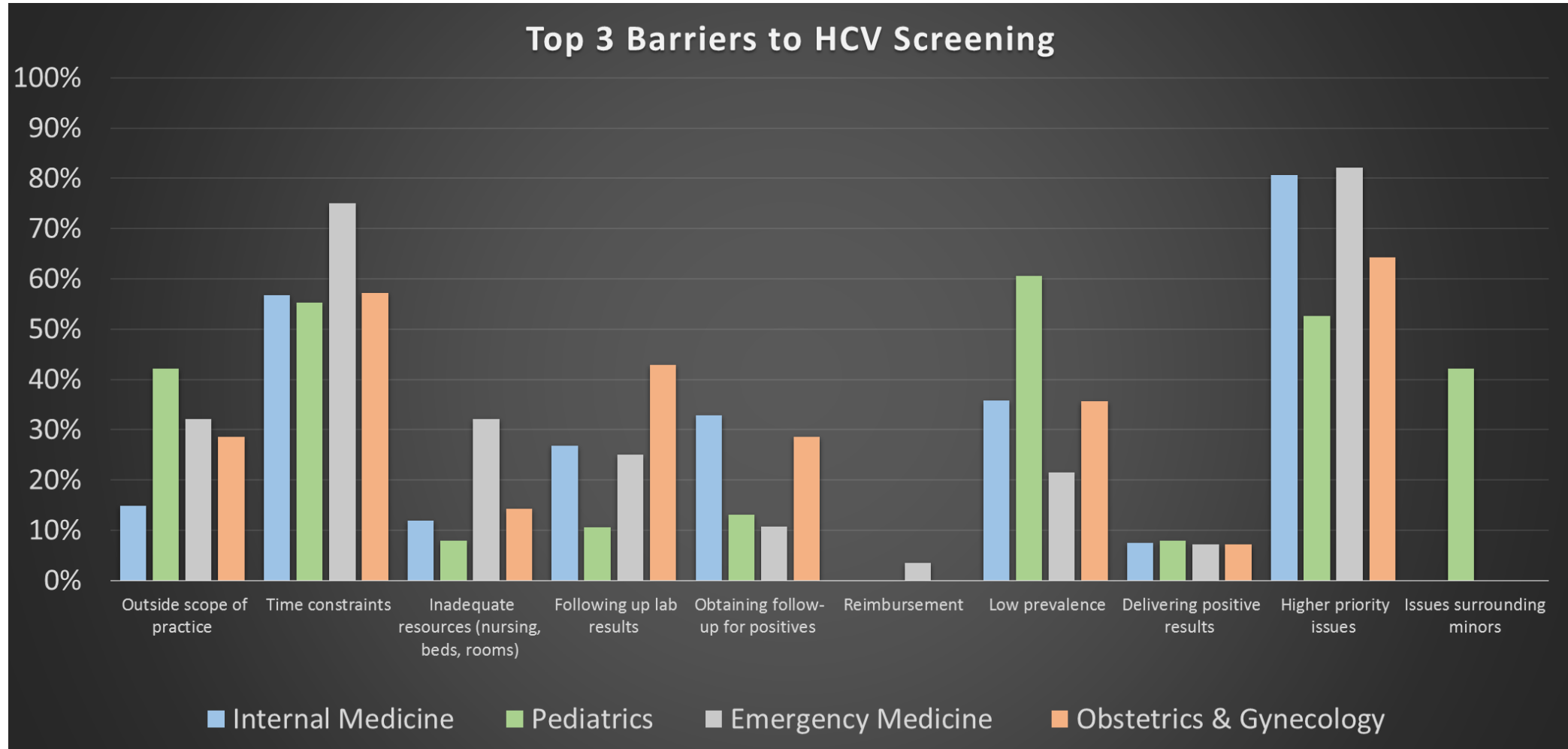
How do you drive organizational change around HCV and HIV Testing and LTC?

- ❖ Meet with stake holders, subject matter experts, and leadership to explore barriers, potential facilitating factors, and possible solutions
 - Sexual Health Survey
 - ED Champion (Focus Y2 addition)
 - NYS HIV and HCV ETE Initiatives
- ❖ Fully leverage IT tools
 - EMR 'smart' order sets
 - Dashboard development (benchmarking and measurement tools, workflow management, corralling complexity)
 - Individual Provider Reports
 - Harness Health Information Exchange (HIE) advancements

Barriers to HIV Screening



Barriers to HCV Screening



Changes to the NYP Eclipsys Order Sets

NYP ED General Order Set

There is no evidence of Hepatitis C screening for this patient. Please consider HCV testing. Please check the test below so that it will be added to the AM lab draw.

Hep C Testing

Order	Collection Priority	Collection Date	Comment
- Hep C Testing - 1 item(s)			
<input type="checkbox"/> Hepatitis C Virus Antibody	STAT	T	

NYP General Admission Order Set

HEPATITIS C SCREENING Section

[Link to DOH FAQ Page on Hep C](#)

Comments:

There is no evidence of Hepatitis C screening for this patient. As per NYS public health law and evolving HCV epidemiology, NYP recommends an HCV Ab test be performed. Please check the test below so that it will be added to the AM lab draw.

Previous Hepatitis C Tests

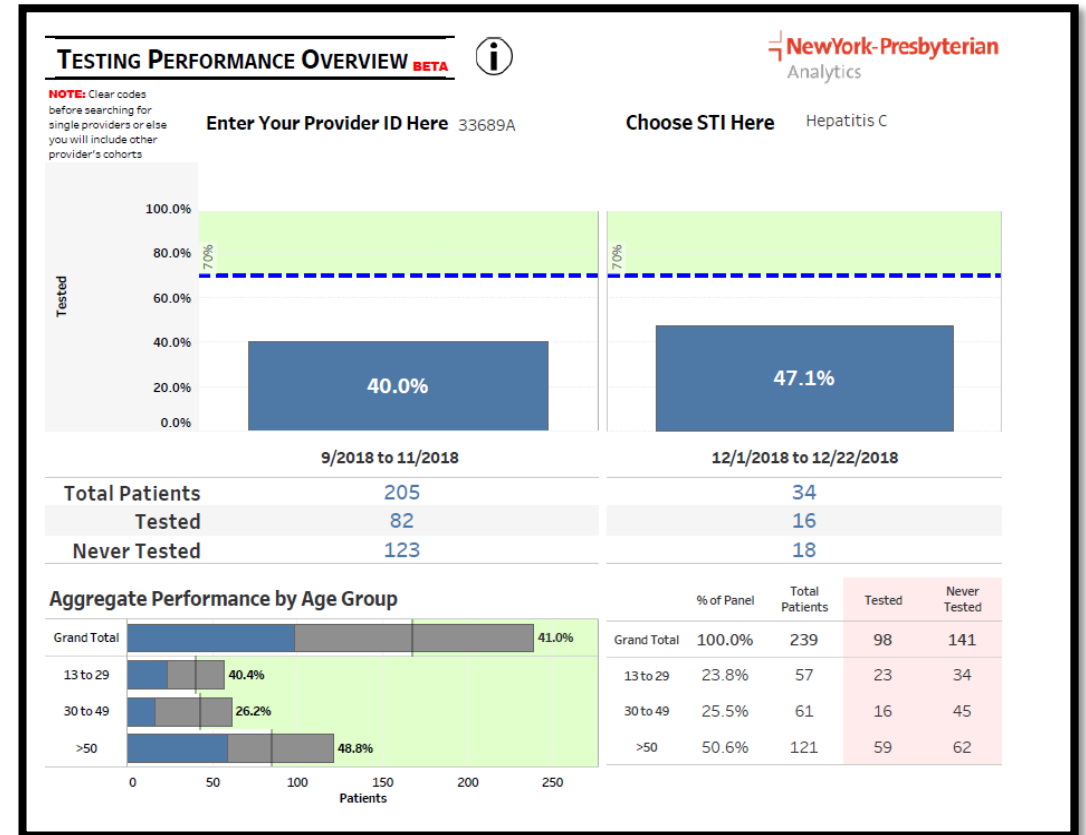
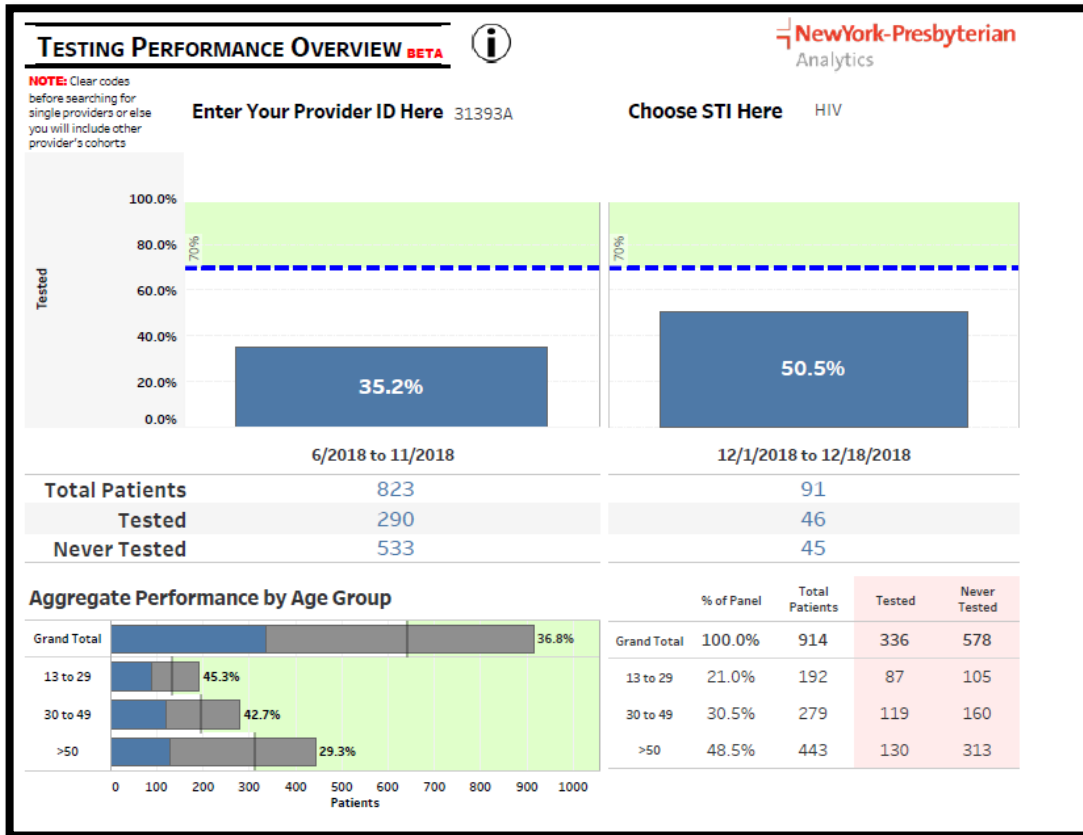
Hepatitis C Virus Antibody order

Order	Collection Date	Collection Priority
<input type="checkbox"/> Hepatitis C Virus Antibody	T+1	AM Draw Phlebotomy

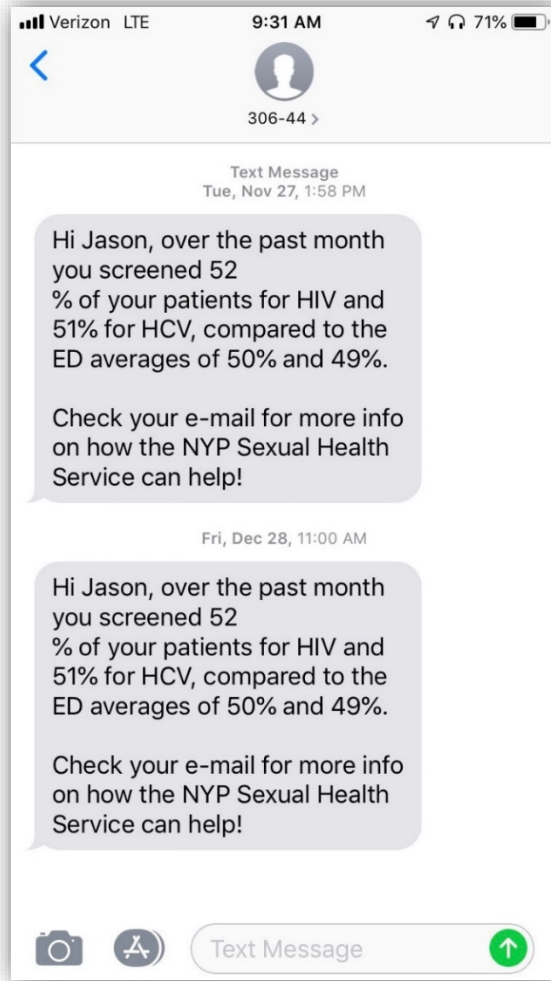
Reason for not ordering HEP C:

Using Tableau to Deliver Provider Specific HIV and HCV Testing Performance Reports

Using Provider Feedback to Improve HIV and HCV Testing



Text & Email Notification



HIV & HCV screening - Individual provider feedback!

Greetings!

We have attached your individual HIV and HCV screening rates over the month of December and the prior 6 months.

For comparison, the averages for all attendings in our department for the month of December was:

- HIV screening rate: 45%
- HCV screening rate: 44%

Our goal is to increase the overall ED screening rate to 70%.

Explanation for screening rates:

The Denominator:

- * Every patient you saw at Milstein Hospital, Allen Hospital
- * Over the age of 18
- * For which you were the primary author for a note

The Numerator

- * Number of those patients who had a lifetime HIV (or HCV) screening

If you ever have a patient you need to refer for HIV, HCV, and PEP/PrEP services you can call 917-580-1682 from 9a-5p Monday – Friday.

If you ever see someone that is HCV positive; please call this number for a patient navigator to come down and link them to care.

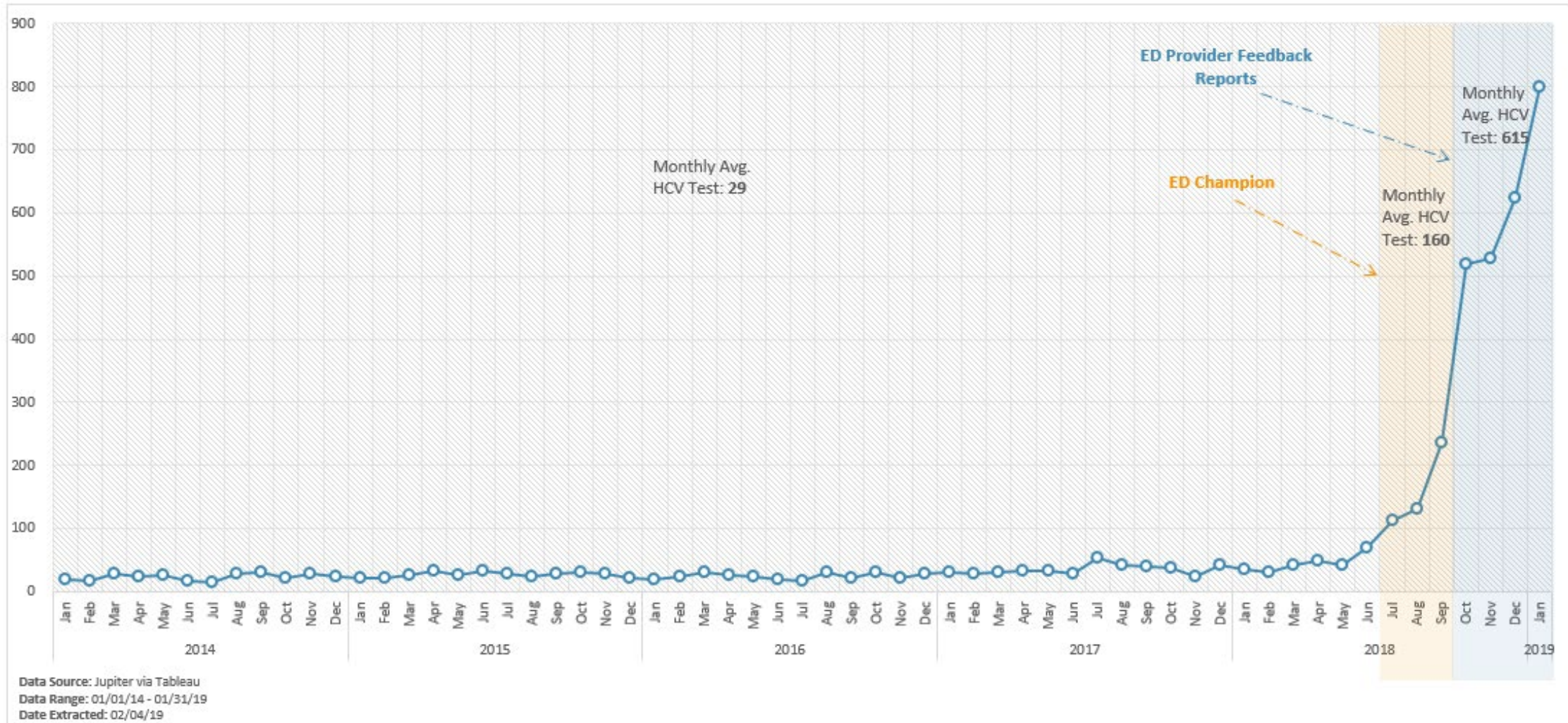
Please feel free to reach out to me with any questions, comments or concerns.

We would love your feedback on what you think about the project, suggestions for improvement or anything else!

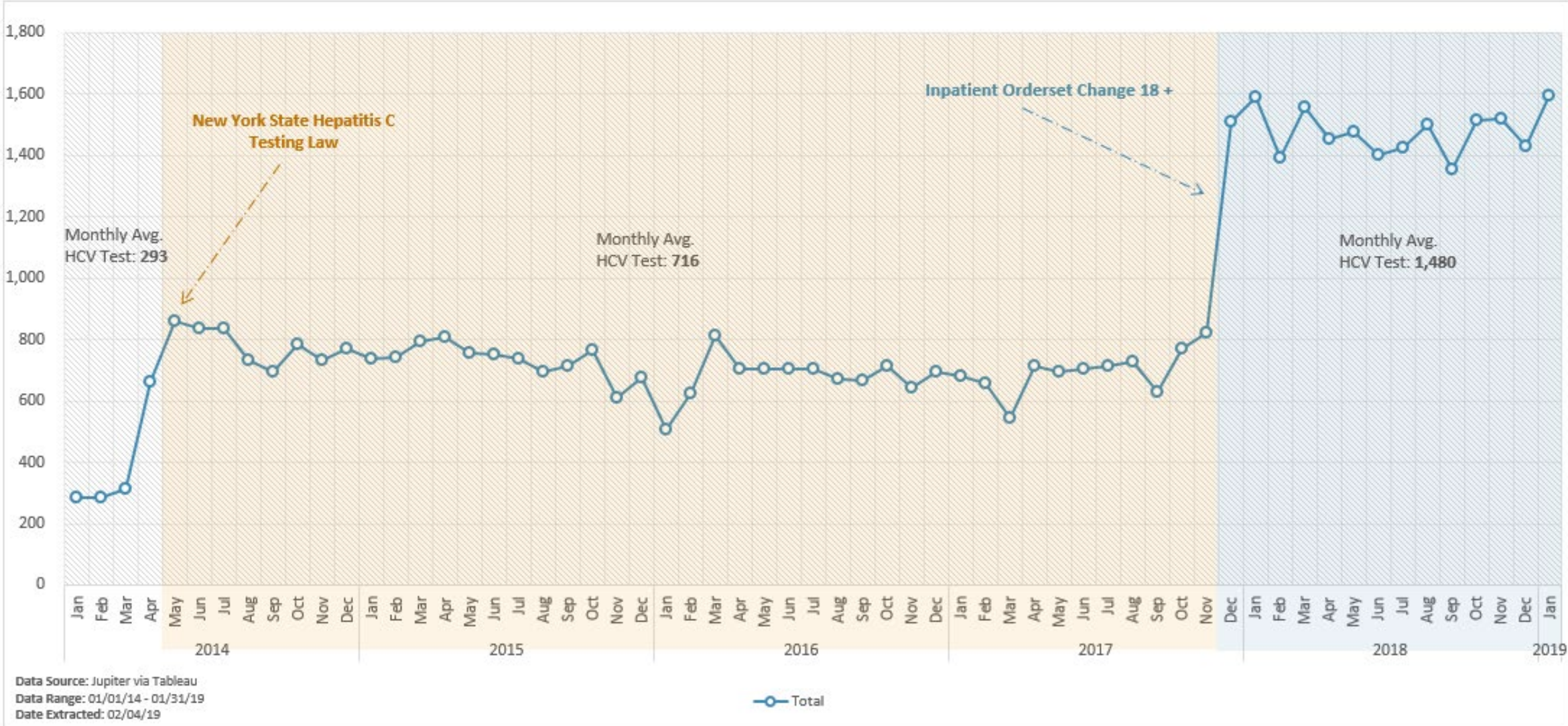
Sincerely,

Fereshteh & the NYP Sexual Health Service team

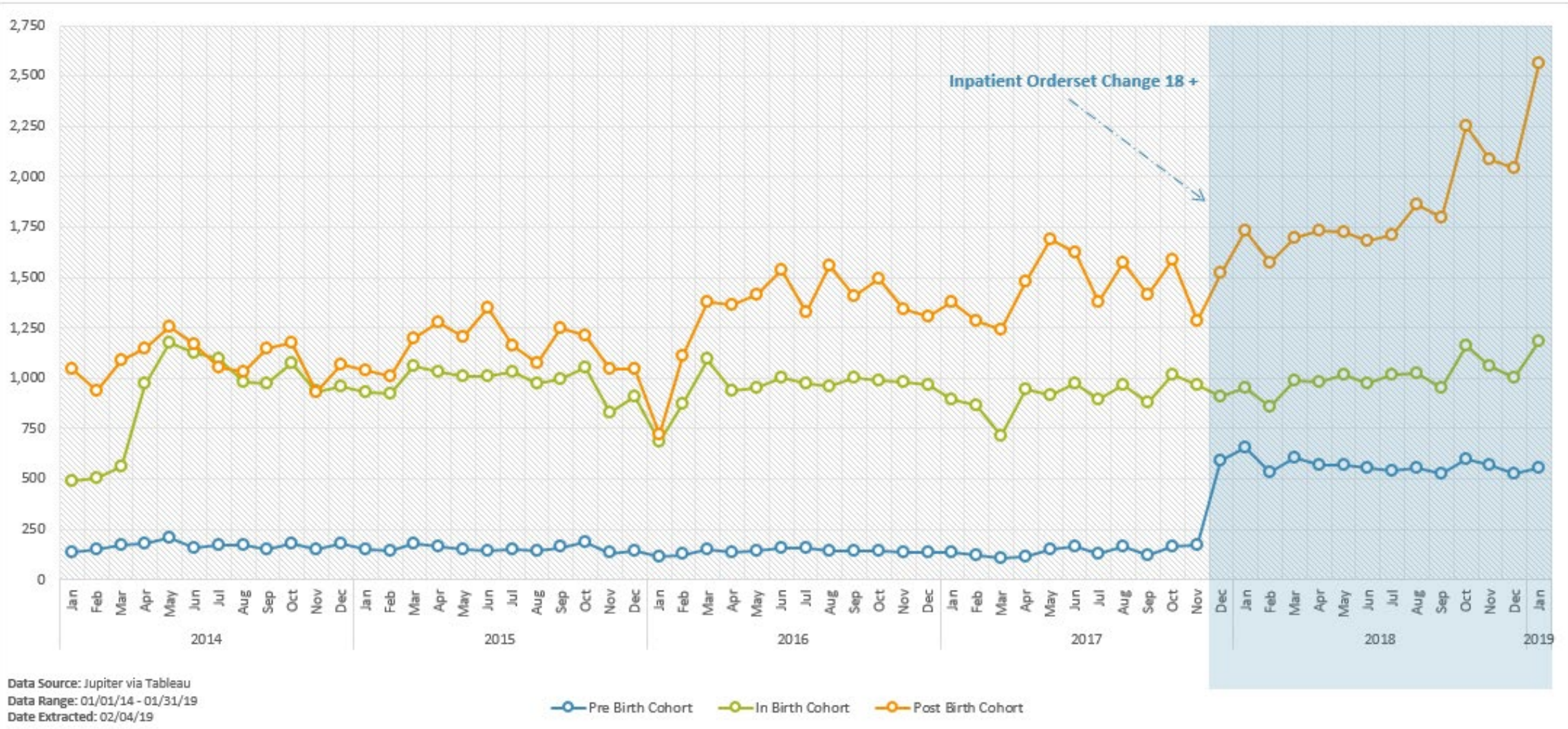
NYP/Columbia ED HCV Testing 2014 -2019



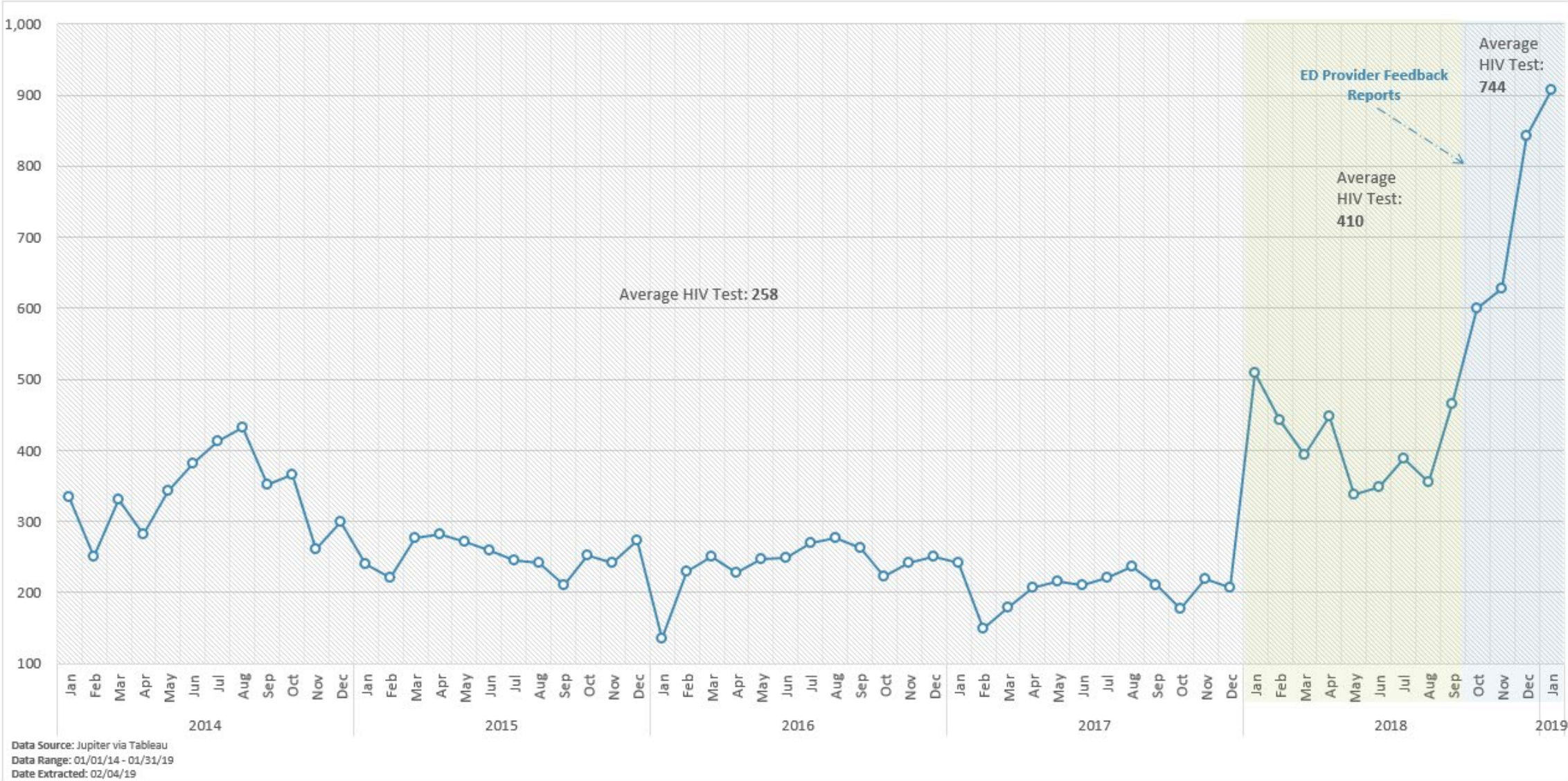
NYP/Columbia Inpatient HCV Testing 2014-2019



NYP/Columbia HCV Testing by Birth Cohort 2014-2019



NYP/Columbia ED HIV Testing 2014-2019



NYP/Columbia Historical HCV Testing



Using Tableau Dashboards to Facilitate Institutional and Multi-Institutional HIV and HCV Linkage to Care

- New Diagnoses
- Potential LTFU individuals

HIV OUTREACH DASHBOARD

Linkage Legend

- Last Linkage: <=6 mo
- Last Linkage: >6mo & <=9mo
- Last Linkage: > 9mo
- Never Linked



HIV Outreach Needed Qualifier

(Multiple values)

Campus

(Multiple values)

Recent Positive Test

(All)

Has HIV ICD

(All)

No

Yes

Outreach Legend

(HOVER OVER FOR INFO)

Outreach Legend

- New NYP HIV+
- Known HIV+ | Needs Linkage
- Known HIV+ | No RNA Test History
- No HIV ICD | Non-Linked +RNA
- No HIV ICD | Multiple Positive Results

Admit Date	MRN	DOB	Linkage Status	Outreach Type	ICD	Last +A/b
2/23/2019			Black	+	✓	2/23/2019
2/22/2019			Black	+	✓	2/22/2019
			Black	+	✓	2/22/2019
			Black	+	✓	2/22/2019
			Black	○	✓	1/18/2019
			Green	◆	✓	2/22/2019
			Black	◆		2/23/2019
2/21/2019			Black	+	✓	2/21/2019
			Black	+	✓	1/10/2019
			Black	+	✓	2/21/2019
			Black	+	✓	2/21/2019
			Black	+	✓	2/21/2019
			Black	◆	✓	2/21/2019
			Black	◆		2/23/2019
2/20/2019			Black	○	✓	
			Black	◆		2/20/2019
			Green	◆		2/14/2019
			Green	◆	✓	2/20/2019
2/19/2019			Black	◆		2/20/2019
			Black	◆	✓	2/20/2019
2/18/2019			Black	◆	✓	2/21/2019
2/18/2019			Green	◆		12/7/2018
2/18/2019			Black	+	✓	2/18/2019
2/16/2019			Black	◆		2/17/2019
			Black	◆		2/20/2019
2/15/2019			Red	+	✓	2/16/2019
			Black	◆		2/14/2013
			Black	◆		2/15/2019
			Black	◆		2/15/2019
			Black	◆		2/16/2019
			Black	◆		2/17/2019
			Black	△		2/15/2019
			Black	◆		6/23/2015

Past 2mo patients to Outreach

180

Max Database Test

2/24/2019

HIV OUTREACH DASHBOARD

Linkage Legend

- Last Linkage: <=6 mo ■
- Last Linkage: >6mo & <=9mo ■
- Last Linkage: > 9mo ■
- Never Linked ■

HIV Outreach Needed Qualifier (Exclusion Filter)

Null

Enter search text

- (All)
- Null
- Known Patient with no ICD
- No ICD and Not Linked
- Outreach Needed - Child HIV
- Outreach Needed - No RNA
- Outreach Needed - Potential New HIV Patient

Cancel Apply

Campus

(Multiple values)

Recent Positive Test

(All)

Has HIV ICD

- (All)
- No
- Yes

Outreach Legend

(HOVER OVER FOR INFO)

Day Range

8

Count of Patients
to Outreach in
Last 8 day(s)

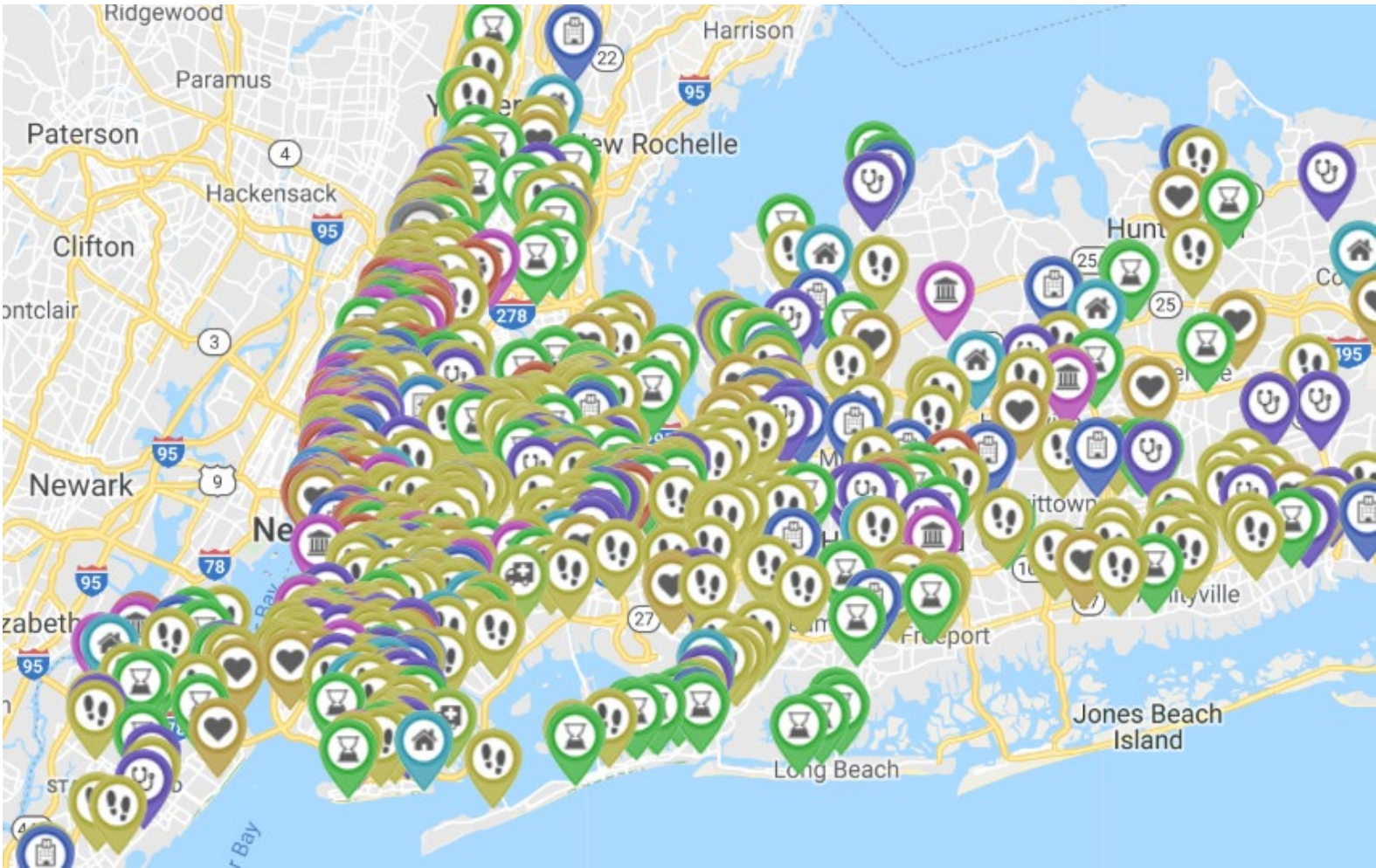

8

Admit Date	MRN	DOB	Last +A/b	RNA
9/18/2018				
9/17/2018				9/17/2018
9/17/2018				9/17/2018
9/14/2018			9/17/2018	9/14/2018
9/15/2018			9/15/2018	9/15/2018

Admit Date	MRN	DOB	Linkage Status	Outreach Type	ICD	Last +A/b	RNA
9/17/2018				!			9/17/2018
9/17/2018				!			9/17/2018
9/17/2018				◆	✓	9/17/2018	9/17/2018
9/14/2018				◆	✓		9/14/2018
9/15/2018				◆	✓	9/15/2018	9/15/2018
9/13/2018				!			9/14/2018
9/12/2018				!			9/13/2018
9/11/2018				!			9/16/2018
9/13/2018				◆	✓		9/13/2018
9/10/2018				!			9/11/2018
9/11/2018				◆	✓		9/11/2018
9/9/2018				◆	✓	9/10/2018	9/11/2018
9/9/2018				◆	✓		9/9/2018
9/7/2018				!			9/7/2018

Past 2mo patients
to Outreach

63

Healthix
 40 Worth Street, 5th Floor
 New York NY 10013
 1-877-695-4749
 Contact Us

Filter by Facility Type Select All

- | | | |
|--|---|---|
| <input checked="" type="checkbox"/> Health Systems and Hospitals | <input checked="" type="checkbox"/> Community Based Organizations | <input checked="" type="checkbox"/> Emergency Management Services |
| <input checked="" type="checkbox"/> Ambulatory | <input checked="" type="checkbox"/> NYS Medicaid Health Homes | <input checked="" type="checkbox"/> DSRIP PPS |
| <input checked="" type="checkbox"/> Physician Practices | <input checked="" type="checkbox"/> NYC and NYS Public Health Organizations | <input checked="" type="checkbox"/> Pharmacy |
| <input checked="" type="checkbox"/> Federally Qualified Health Centers | <input checked="" type="checkbox"/> Health Plans | <input checked="" type="checkbox"/> SHIN-NY HIES |
| <input checked="" type="checkbox"/> Long Term Care | <input checked="" type="checkbox"/> Home Care | |
| <input checked="" type="checkbox"/> Behavioral Health Organizations | <input checked="" type="checkbox"/> Laboratory/Radiology | |

Healthix Clinical Portal Integrated into an Institutional EMR

HARK 443 CLINIC Gordon, Peter

Allergies: No Known Drug Allergies, ALMOND (FOOD), NUTS (FOOD), SHELLFISH (FOOD), STRAW... **Exp D/C:**
Wt: kg 0 **Dry(Dosing)Wt:** kg 0 **Ht:** cm **CrCl:** mL/min **SCr:** 0 **BSA:** sq. m **BMI:** kg/m2

Patient List | Novelist | Orders | Results | Patient Info | Documents | Flowsheets | iNYP | Handoff/Snapshot | Clinical Summary | Dz Mgmt | Paper Documents | Micro-Epi | RHIO

Healthix Welcome, Gordon Peter | Sign Out

NOTIFICATIONS | TRAINING | HELP

Patient Search > Search Results SUMMARY REPORT

Female • 64 Years

Q4 2011 2013 2014 2015 2016 2017 2018 Q1 2019

SELECT ALL
DESELECT ALL
PREFERENCES

SUMMARY

DEMOGRAPHICS

ALLERGIES

MEDICATIONS

VACCINATIONS

DX/PROCEDURES

ADV DIRECTIVES

iMOLST

ENCOUNTERS

OBSERVATIONS

LAB RESULTS

MICRO/PATH

CARDIOLOGI

OB RESULTS

RAD RESULTS

RESP RESULTS

DOCUMENTS

PAYER DATA

ENCOUNTERS

DATE	SOURCE	SOURCE TYPE	MRN	ENCOUNTER NUMBER
03/09/2017	MSMC	MSMC		
01/25/2017	St. Lukes Hospital	STLH		
12/22/2016	St. Lukes Hospital	STLH		
12/16/2016	St. Lukes Hospital	STLH		
12/16/2016	St. Lukes Hospital	STLH		
12/07/2016	St. Lukes Hospital	STLH		
11/23/2016	St. Lukes Hospital	STLH		
11/23/2016	St. Lukes Hospital	STLH		
11/01/2016	St. Lukes Hospital	STLH		
10/26/2016	St. Lukes Hospital	STLH		

1

ALLERGIES

DATE	DESCRIPTION	ALLERGY TYPE	SOURCE (TYPE)
------	-------------	--------------	---------------

MEDICATIONS

EFFECTIVE DATE	DESCRIPTION	DOSAGE	SOURCE (TYPE)
----------------	-------------	--------	---------------

DIAGNOSES

DATE	DESCRIPTION	CODE	SOURCE (TYPE)
	Human immunodeficiency virus	B20 (I0)	St. Lukes Hospital
	Presence of cardiac pacemaker	Z95.0 (I0)	St. Lukes Hospital

Two Examples of How Healthix (or HIEs in general) Can Drive LTC Efforts

- Institutional

- Healthix Clinical Portal as a source of unique information
 - ❑ Working telephone numbers
 - ❑ Updated addresses
 - ❑ Clinical information (labs, providers, current and past hospitalizations)

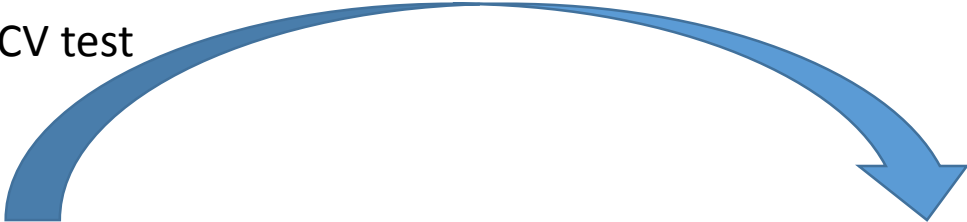
- Regional

- Healthix *Clinical Alert Notifications*
 - ❑ Real-time alerts generated when an individual 'touches' anywhere in the Healthix network of participating institutions
 - ❑ HASA-Healthix Demonstration Pilot
-

Healthix Clinical Portal as a source of unique information

- Healthix consent
- HIV or HCV test

Sometime later....

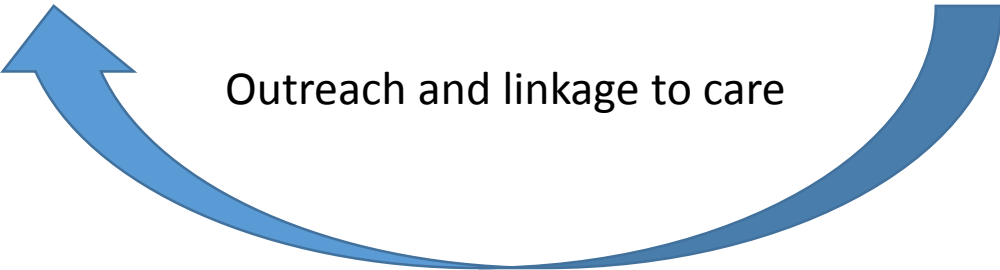


Initial HIV or HCV test positive,
confirmatory test positive



1. HIV/HCV navigator attempts to contact patient but inaccurate contact information
2. Navigator logs onto Healthix:
 - Checks contact information
 - Checks care engagement site or current hospitalization/SNF

Outreach and linkage to care



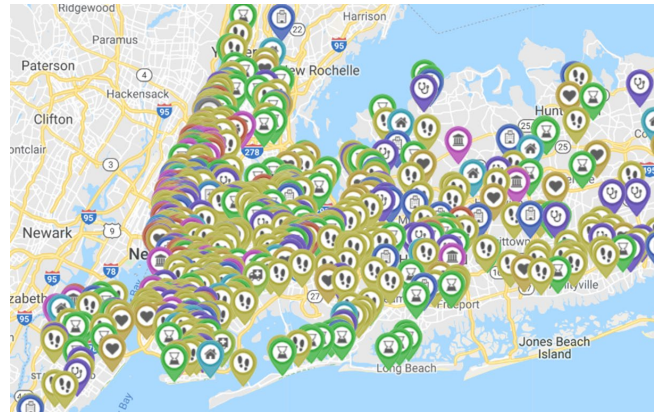
Healthix Clinical Alert Notifications

How it works...

ACN_Primary_Care	Last_Primary_Visit_Dt_Like	Last_Primary_Visit_AtendingMName	Last_Primary_Visit
CHP Adult	3/7/2018	SHALLEY, NOGA	VCH443
CSS Chelsea	3/7/2018	YOON, CECKUA J	AGE252
CSS Chelsea	3/7/2018	MISSEL, LAWRENCE	AGE252
CSS Chelsea	3/7/2018	MATHUR-VASOH, USHA	AGE252
CHP Adult	3/7/2018	JURISAGU-VOUGSARIS, ANDREA	VCM630
CSS Chelsea	3/8/2018	MISSEL, CHRISTINA D	AGE252
CSS Chelsea	3/8/2018	YOON, CECKUA J	AGE252
CSS Baker	3/8/2018	VARAMONDI, CARLOS MARTIN	AGE250
CSS Chelsea	3/8/2018	MISSEL, CHRISTINA D	AGE252
CSS Chelsea	3/8/2018	MISSEL, CHRISTINA D	AGE252
CHP Adult	3/9/2018	SARKO, DOROTHY JARTU	VCH443
CHP Adult	3/9/2018	SARKO, DOROTHY JARTU	VCH443
CSS Chelsea	3/12/2018	MISSEL, CHRISTINA D	AGE252
CSS Chelsea	3/12/2018	MISSEL, LAWRENCE	AGE252
CSS Baker	3/12/2018	DEHMAN, ELIJAH N	AGE250
CSS Baker	3/12/2018	VARAMONDI, CARLOS MARTIN	AGE250
CHP Adult	3/12/2018	SCHERER, MATTHEW LOUIS	VCH443
CSS Chelsea	3/12/2018	MISSEL, CHRISTINA D	AGE252
CSS Chelsea	3/12/2018	MISSEL, CHRISTINA D	AGE252
CSS Chelsea	3/12/2018	MISSEL, CHRISTINA D	AGE252
CHP Adult	3/13/2018	ELLMAN, TANYA MICHAELE	VCH443
CHP Adult	3/13/2018	ELLMAN, TANYA MICHAELE	VCH443
CHP Adult	3/13/2018	ELLMAN, TANYA MICHAELE	VCH443
CSS Chelsea	3/13/2018	VOIGLER, BARRY AMELIA	AGE252
CHP Adult	3/13/2018	PATTERSON, KRISTINE BLAIR	VCH443
CSS Baker	3/14/2018	VARAMONDI, CARLOS MARTIN	AGE250
CSS Chelsea	3/14/2018	MATHUR-VASOH, USHA	AGE252
CHP Adult	3/14/2018	SHALLEY, NOGA	VCH443
CSS Chelsea	3/14/2018	GUESER, MARSHALL JAY	AGE252
CHP Adult	3/14/2018	SHALLEY, NOGA	VCH443
CHP Adult	3/15/2018	BURGENY, KAREN F	VCH443
CHP Adult	3/15/2018	MORRISON, ELLEN ANN BRAHNE	VCH443
CHP Adult	3/15/2018	VILLARREAL, JASON	VCH443
CSS Chelsea	3/16/2018	WILKIN, TIMOTHY J	AGE252
CHP Adult	3/16/2018	OLENDER, SUSAN	VCH443



LTFU Subscription File



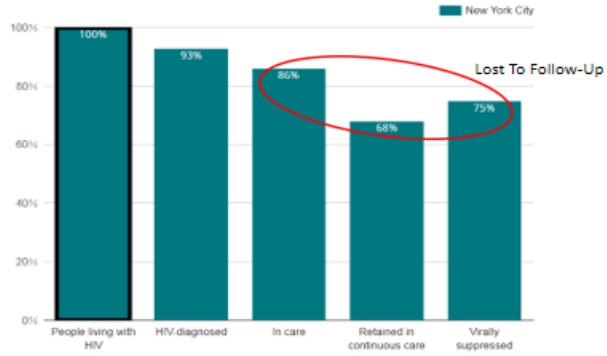
Clinical Alert

- Registration event
 - ED visit
 - HASA
- Lab value

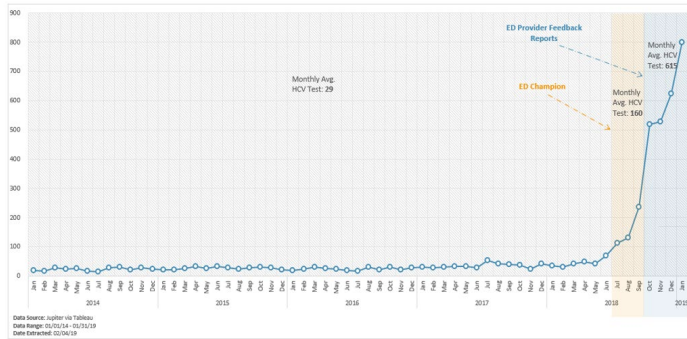


EMR (SHM), Care Coordination Dashboard, Outreach Team

2017 NYC HIV Care Cascade



NYP/Columbia ED HCV Testing 2014 -2019



HIV OUTREACH DASHBOARD

Linkage Legend

- Last Linkage: <45 mo
- Last Linkage: >45 mo & <60 mo
- Last Linkage: > 90 mo
- Never Linked

HIV Outreach Needed Qualifier (Exclusion Filter)

- All
- Known Patient with no ICD
- No ICD and Not Linked
- Outreach Needed - Child only
- Outreach Needed - No RFL
- Outreach Needed - Potential New HIV Patient

Outreach Legend

- Count of Patients to Outreach in Last 7 day(s): 8
- Next 3mo patients to Outreach: 63

Admit Date	MRN	DOB	Linkage Status	Outreach Type	ICD	Last #A/B	BSA
9/18/2018						9/17/2018	
9/17/2018						9/17/2018	
9/14/2018						9/13/2018	
9/13/2018						9/14/2018	
9/11/2018						9/14/2018	
9/10/2018						9/14/2018	
9/9/2018						9/13/2018	
9/7/2018						9/13/2018	

Healthix Clinical Alert Notifications

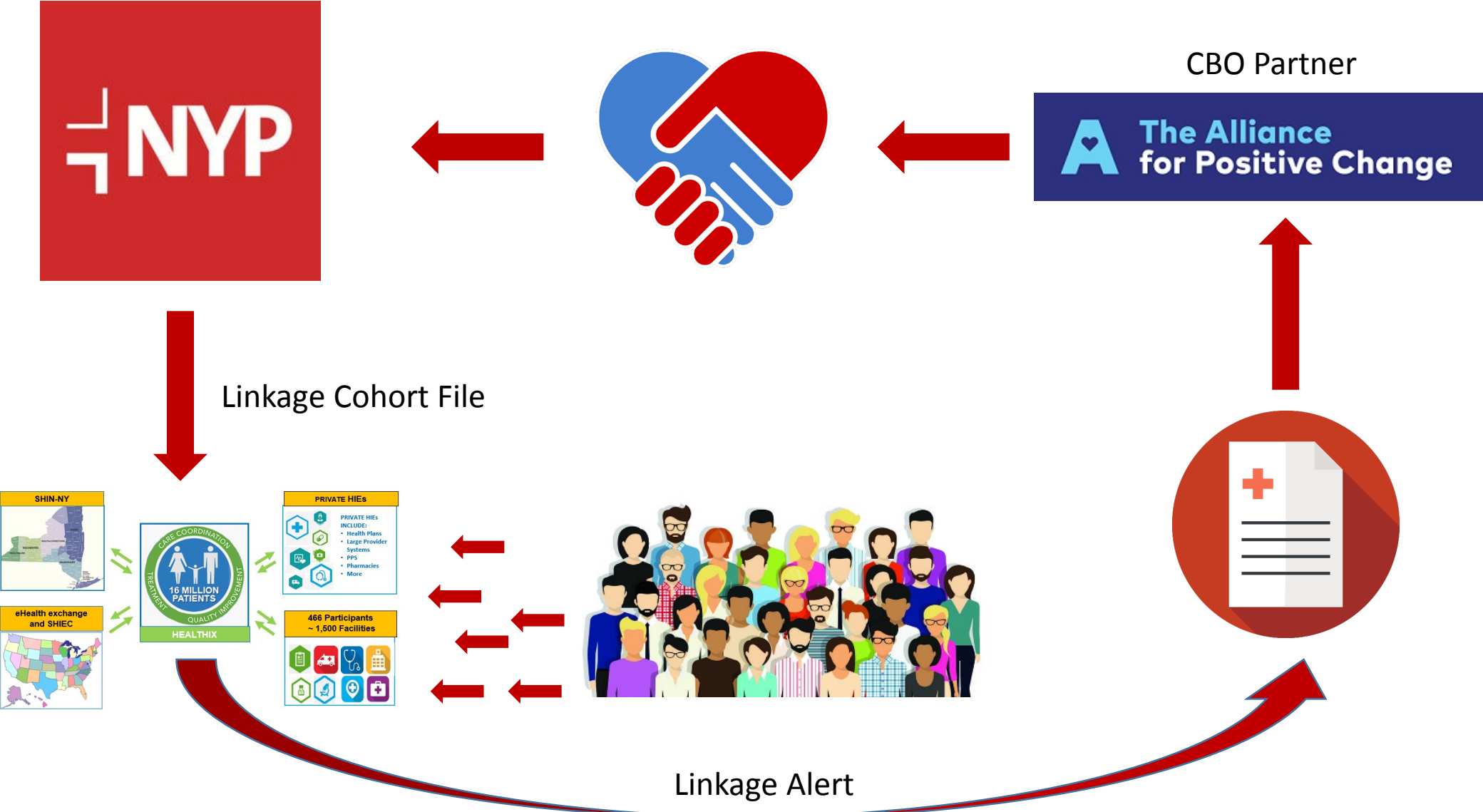
How it works...



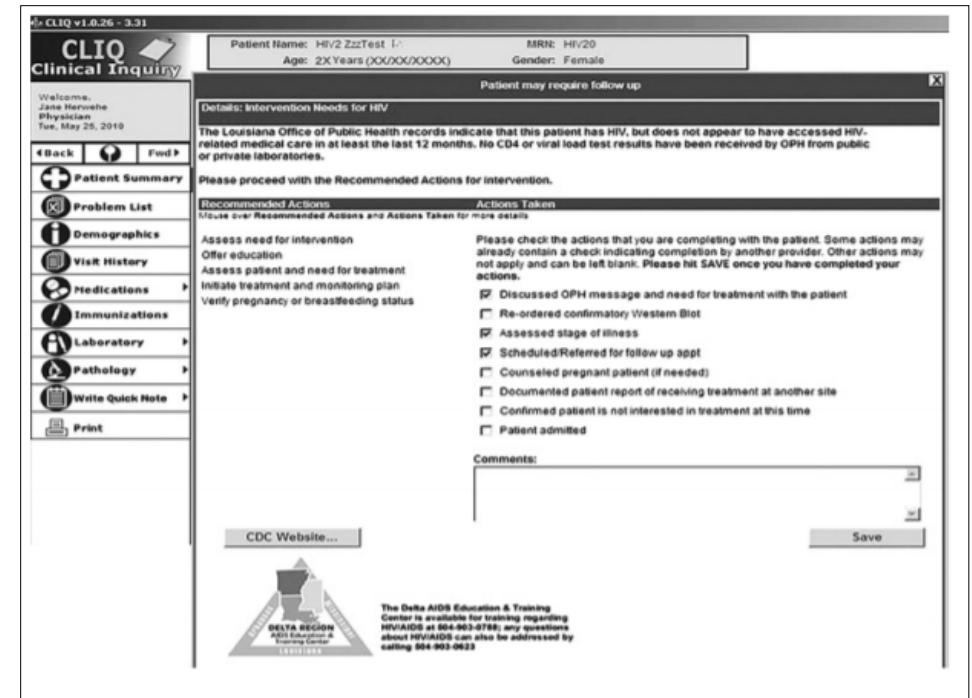
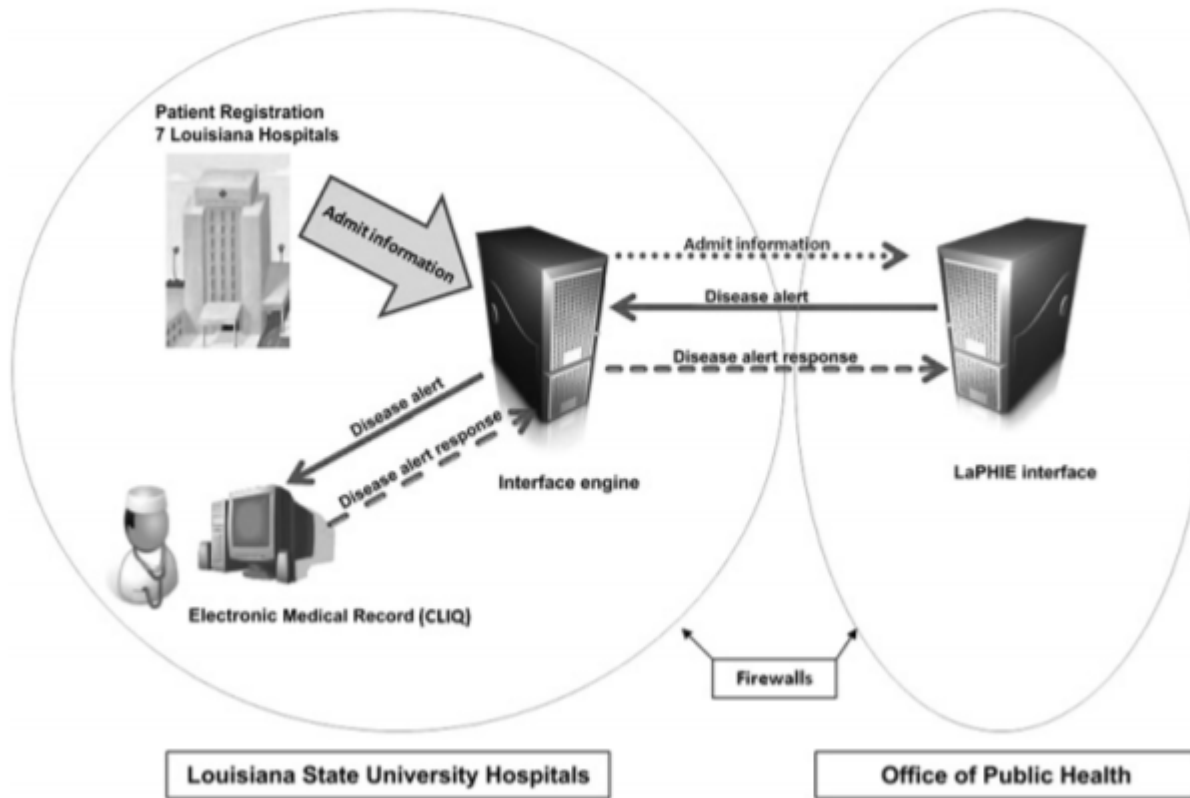
HASA-Healthix Bottom-Up Pilot Project

- Collaboration involving:
 - Housing Works
 - Alliance for Positive Change
 - NYP/Columbia/Cornell
 - CUNY Center for Implementation Science
 - Healthix
 - HASA
- Supported by NYC City Council and DOHMH/PHS
- Build interface between HASA and Healthix → Registration and demographic data flows into RHIO
- Obtain client consent while at HASA
- Generate real-time LTFU and clinical alerts
- Field a Rapid Response Care Coordination team to respond to alerts
- Engage LTFU clients in real-time, attempt to re-engage in care, enroll in Health Home program
- Carefully evaluate

HASA -Healthix Bottom –Up Pilot Project

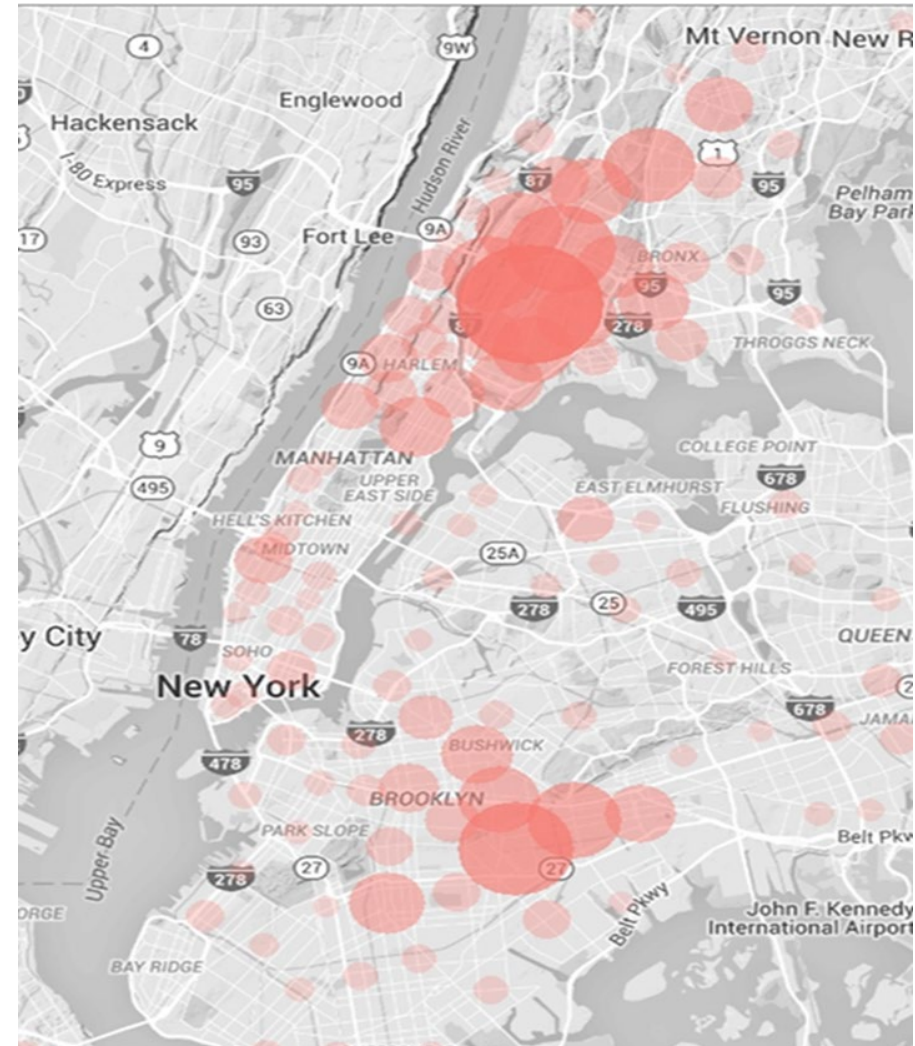


This has been done before... LaPHIE Project



HASA -Healthix Bottom –Up Pilot Project

- Utilizes Health Information Exchange (Healthix) to 'see' across institutions, geographic areas, and fragmented care
- Alerts can focus on new diagnoses that have not been successfully linked to care, known diagnoses that are LTFU, or individuals failing care
- Potentially allows for more efficient use of often scarce outreach resources
- Scalable -> citywide -> statewide
- Additional possibilities, but important privacy considerations



Acknowledgements:

NYP/Columbia

- Jason Zucker, MD
- Kenneth Ruperto
- Jacek Slowikowski
- Dan Feller
- Susan Olender, MD
- Mila Gonzalez

Housing Works

- Ginny Shubert
- Juliet Glazer

Alliance for Positive Change

- Sharen Duke
- Brooke Brailey
- Cynthia Rossi
- Jamila Allen

Healthix

- Tom Moore
- Tina Lowry
- Sana Ali

CUNY

- Denis Nash
- McKaylee Robertson

HASA

NYC City Council

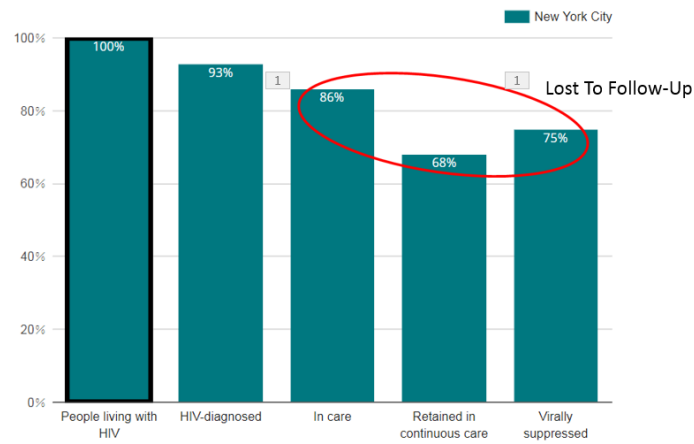
DOHMH/Public Health

Solutions

Gilead FOCUS Program

Questions?

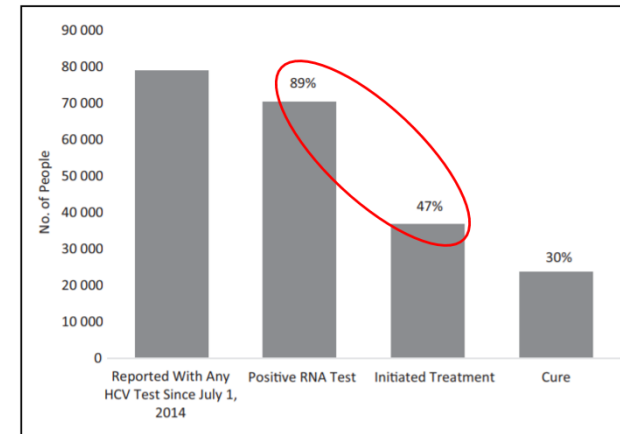
2017 NYC HIV Care Cascade



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2017 NYC HCV Care Cascade



Winters et al. Public Health Reports; 2018