

# From Clinical Trials to Clinical Impact: Scaling Up PrEP in a Boston Health Center

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# LONDON

## FAST-TRACK CITIES 2019

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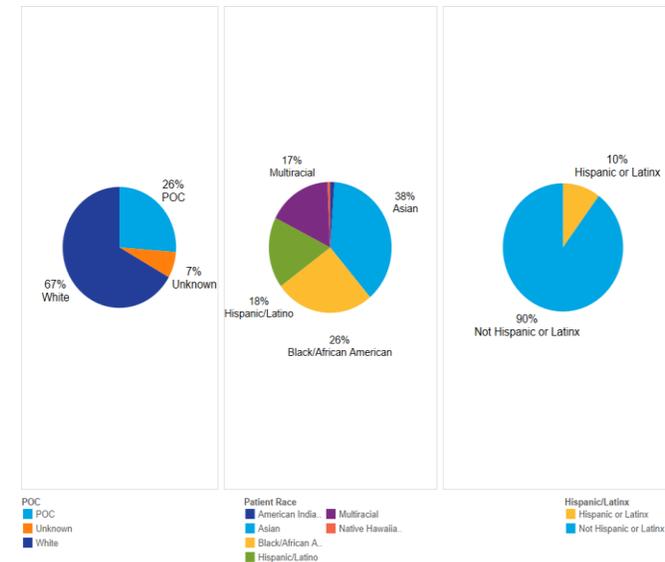
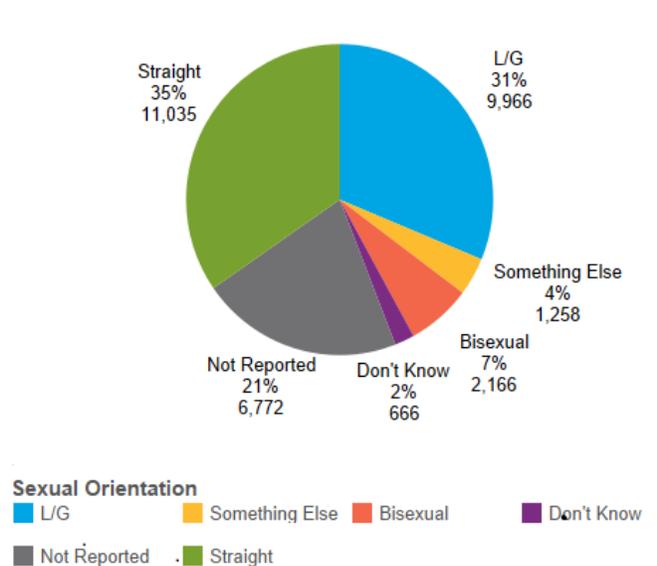


# Disclosures

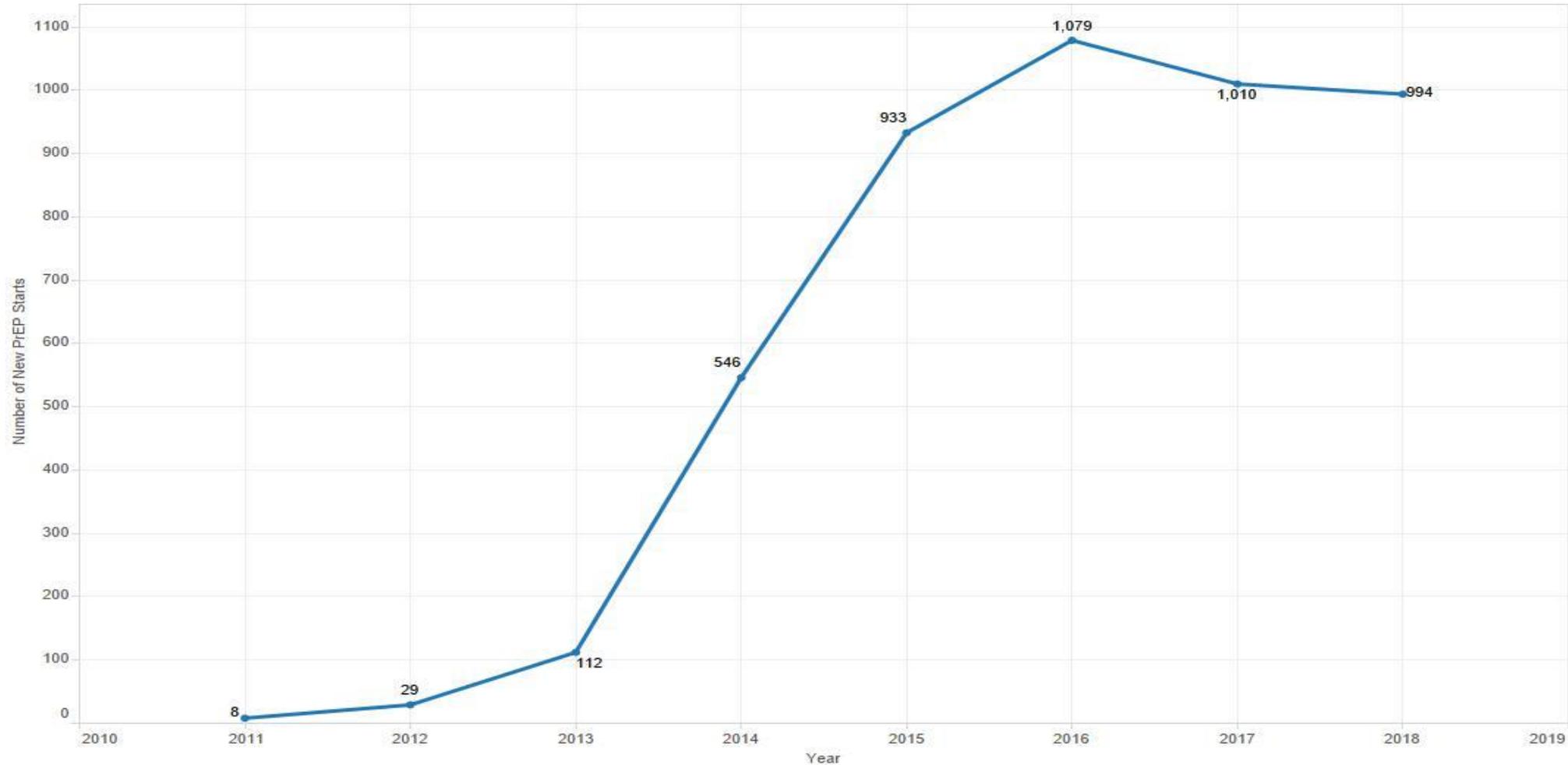


- Unrestricted research grants from Gilead Sciences to study PrEP in transgender men and to evaluate new forms of PEP
- Unrestricted research grant from Merck to evaluate PrEP product preference
- Unrestricted research grants from Janssen to study anti-HIV vaccines
- Scientific Advisory Boards of Gilead Sciences and Merck focused on HIV prevention

- Federally Qualified Health Center, founded 1971, neighborhood + LGBTQ focus, downtown Boston
- 26,624 primary care patients in 2017; 5,239 patients accessing other services (e.g. Dental, Behavioral Health)
- >2,500 PLHIV
- Conducted first PrEP studies in the US



# All patients starting PrEP at Fenway Health (n=4711)

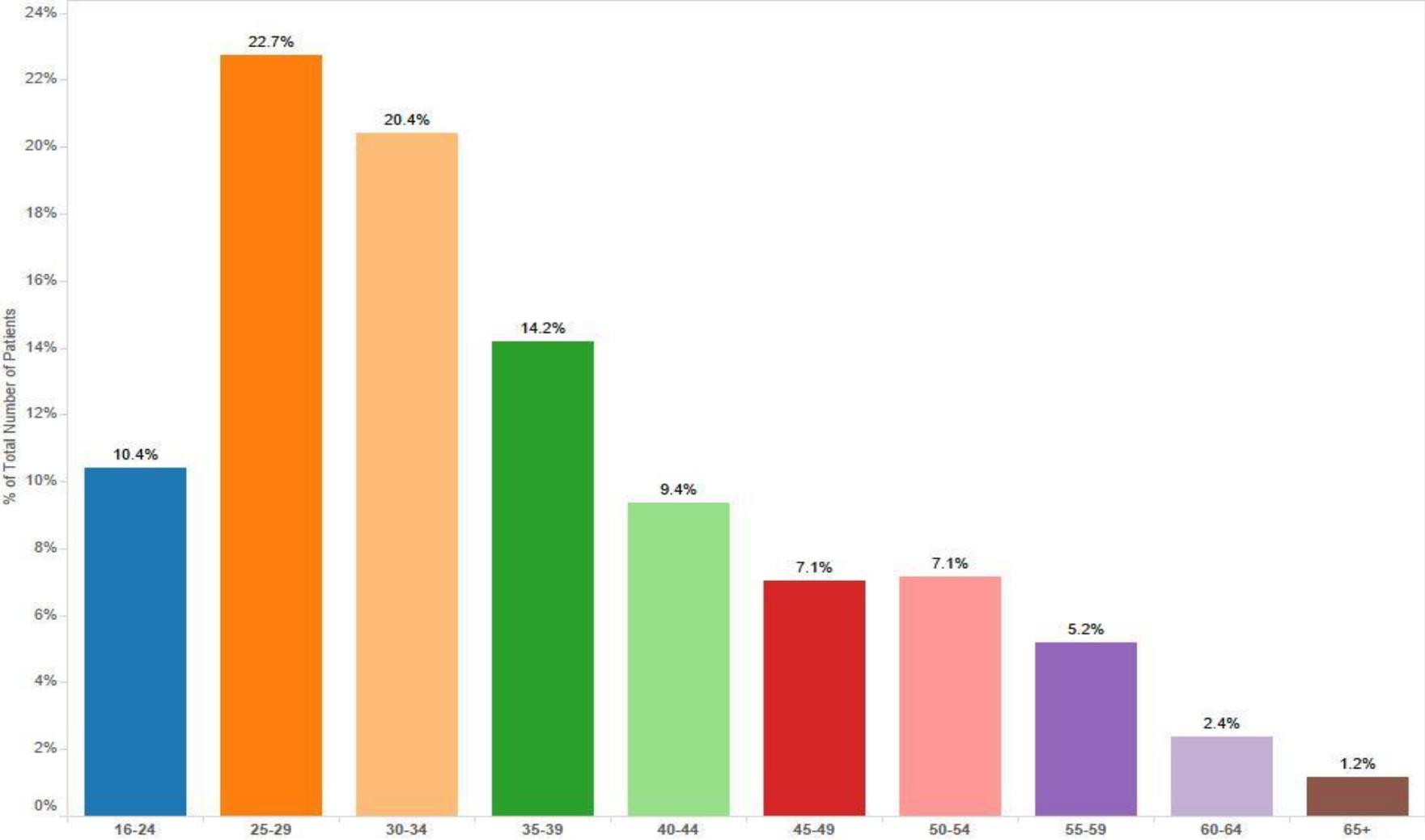


# Normalization of PrEP prescribing, Fenway Health

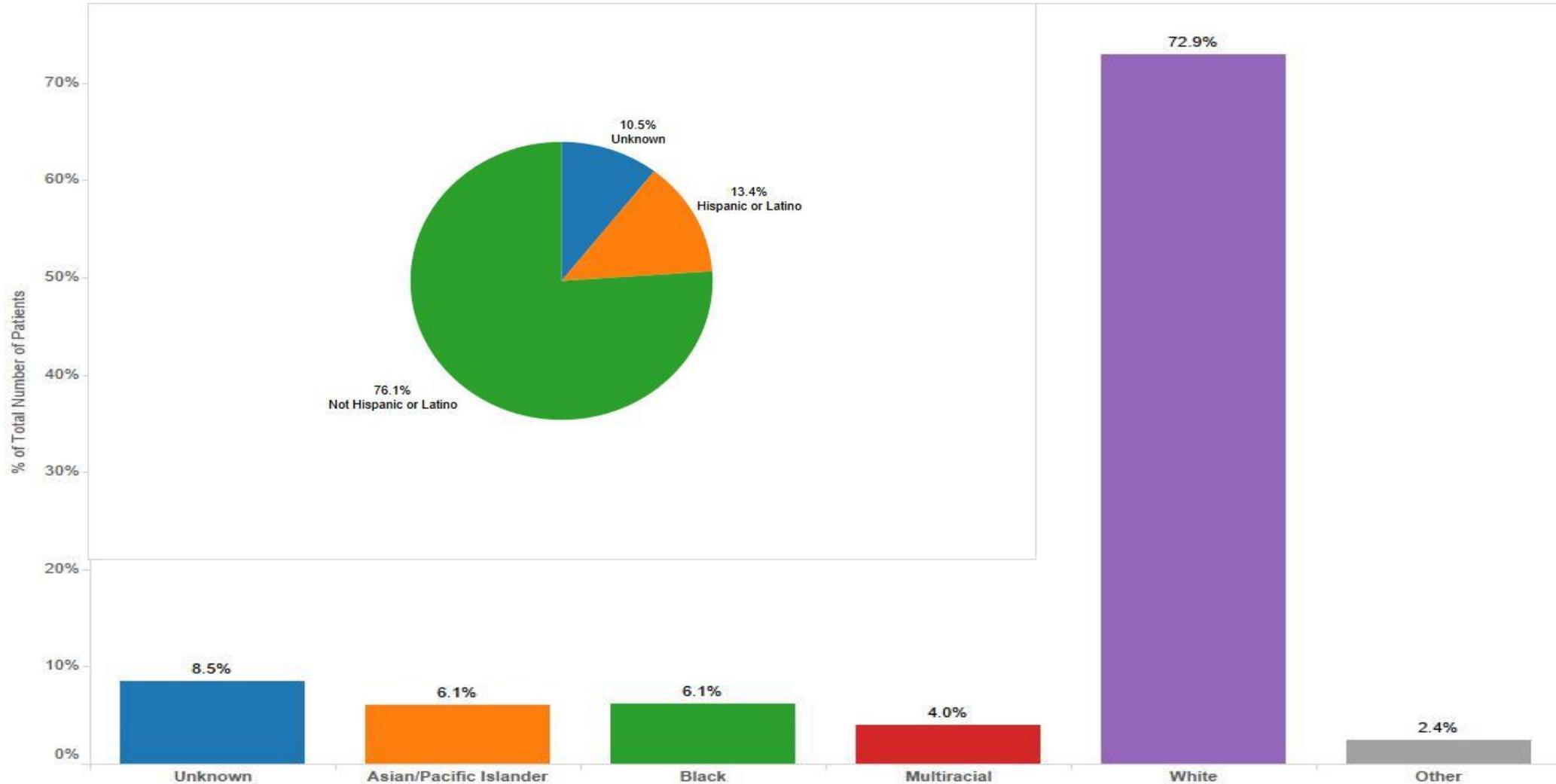


	Prescribing Providers	Prescribed Prep	%
2011	54	30	55.6%
2012	68	37	54.4%
2013	74	46	62.2%
2014	69	51	73.9%
2015	74	57	77.0%
2016	75	59	78.7%
2017	80	64	80.0%
2018	79	63	79.7%

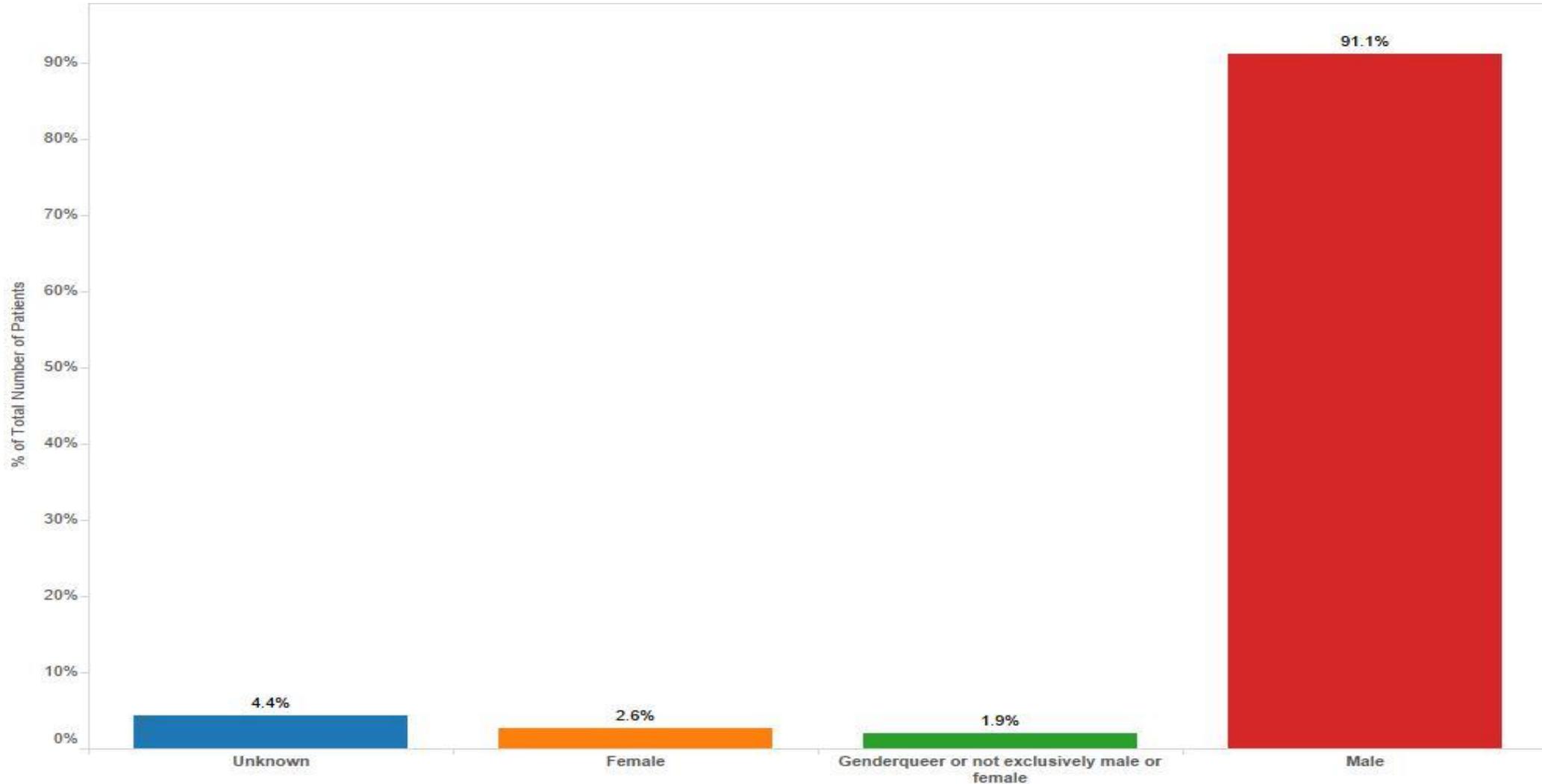
# Age Range of current Fenway Health PrEP users (N=3234)



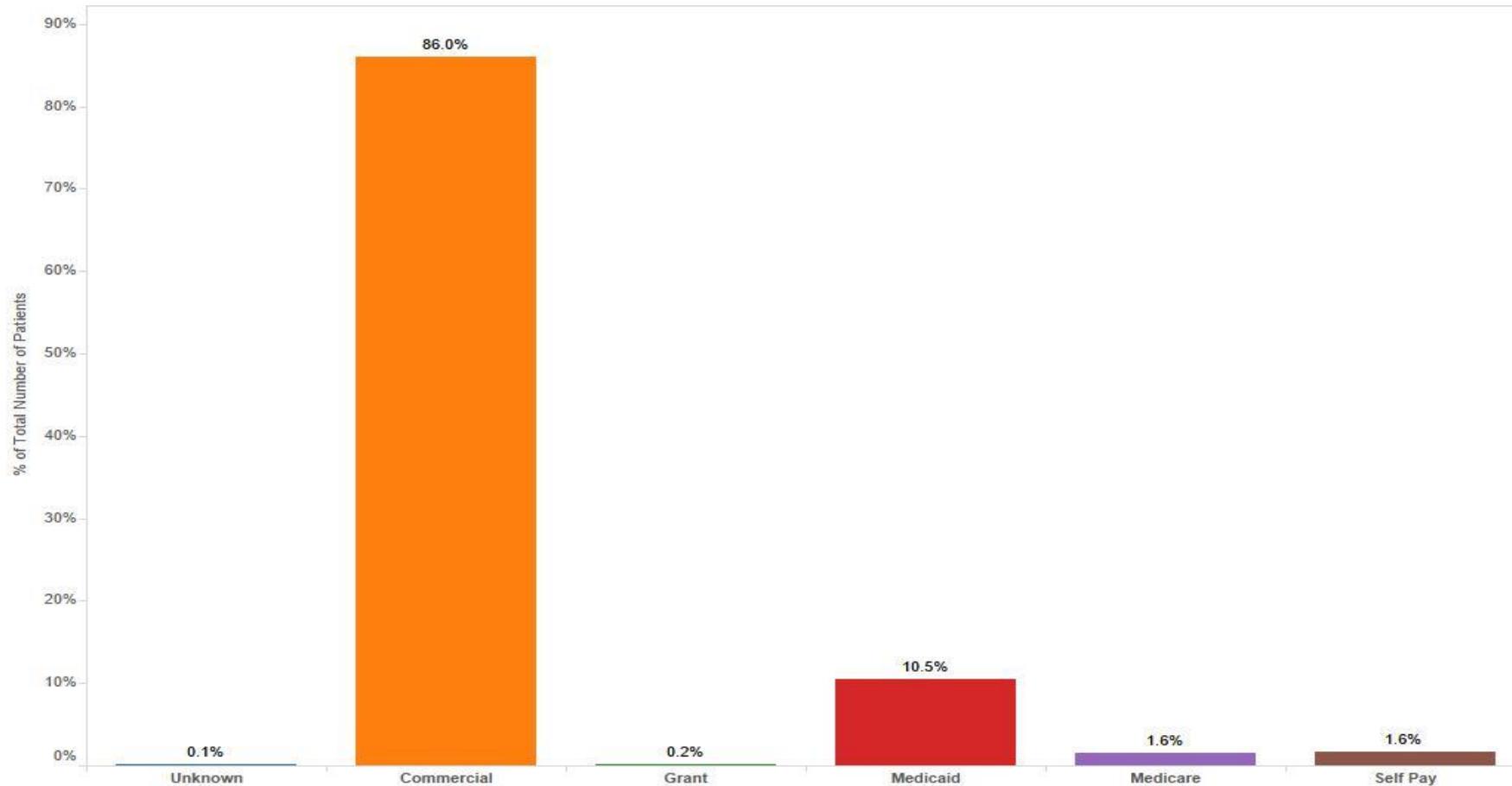
# Race/Ethnicity of Fenway Health PrEP users (N=3234)



# Gender Identity of Fenway Health PrEP users (n=3234)



# Insurance Type of Fenway Health PrEP users (n=3234)



# Impact of PrEP at Fenway Health



- Data were abstracted from EHR (Centricity™), used since 1997.
- Study sample was defined as all initially HIV-uninfected patients who had at least 2 HIV tests more than a month apart between 1/1/12 and 12/31/2017.
- Patients who received a prescription for PrEP at any point during the analytical period were defined as “PrEP users.”
- Chi-square tests were used to compare demographics and incident HIV infections between PrEP users and non-users.
- Fisher’s Exact tests were used to compare the demographics of those with incident infections who did or did not use PrEP.

# PrEP Uptake and HIV Seroconversion



Between 2012 and 2017:

- 16,128 HIV-uninfected pts were tested for HIV more than once: 3,965 (24.9%) of them initiated PrEP
- 180 (1.1%) of all who had >1 HIV test became infected
  - 163 (1.3%) of those not using PrEP became HIV-infected
  - 17 (0.4%) of those rx'ed PrEP became HIV+ (p<0.001)

**But 12 had discontinued PrEP >1 month prior to infection**

**i.e. only 5 (0.1%) reporting recent PrEP use became infected**

# Comparison of PrEP Users and Non-users Fenway Health, 2012-2017



Variable	PrEP users (N=3,965)	PrEP non-users (N=12,163)	p value*
<b>Gender</b>			
Male	81.5%	61.0%	<0.001
Female	1.4%	15.0%	
No response	17.1%	24.0%	
<b>Race</b>			
White	73.0%	70.7%	<0.001
Black	6.0%	7.9%	
Multiracial/Other	21.0%	22.4%	
<b>Ethnicity</b>			
Latinx	13%	12%	0.008
<b>Age</b>			
< 25 years old	11%	13%	<0.001
25-50 years old	86.0%	81%	
> 50 years old	3.2%	6.5%	

\*Chi-square tests

# HIV Seroconverters by PrEP Use Fenway Health, 2012-2017



Variable	HIV Seroconverters		p value
	No PrEP Use (N=163)	PrEP Use (N=17)	
<b>Gender</b>			
Male	82.2%	100%	NS
Female	1.8%	0	
N/R	16.0%	0	
<b>Race</b>			
White	70.6%	70.6%	NS
Black	7.4%	23.5%	
Multiracial/other	22.0%	5.9%	
<b>Ethnicity</b>			
Latinx	18.0%	0	P=0.08
<b>Age</b>			
< 25 years old	0	7.4%	NS
25-50 years old	100%	87%	
> 50 years old	0	5.5%	

# HIV Infections in PrEP Users

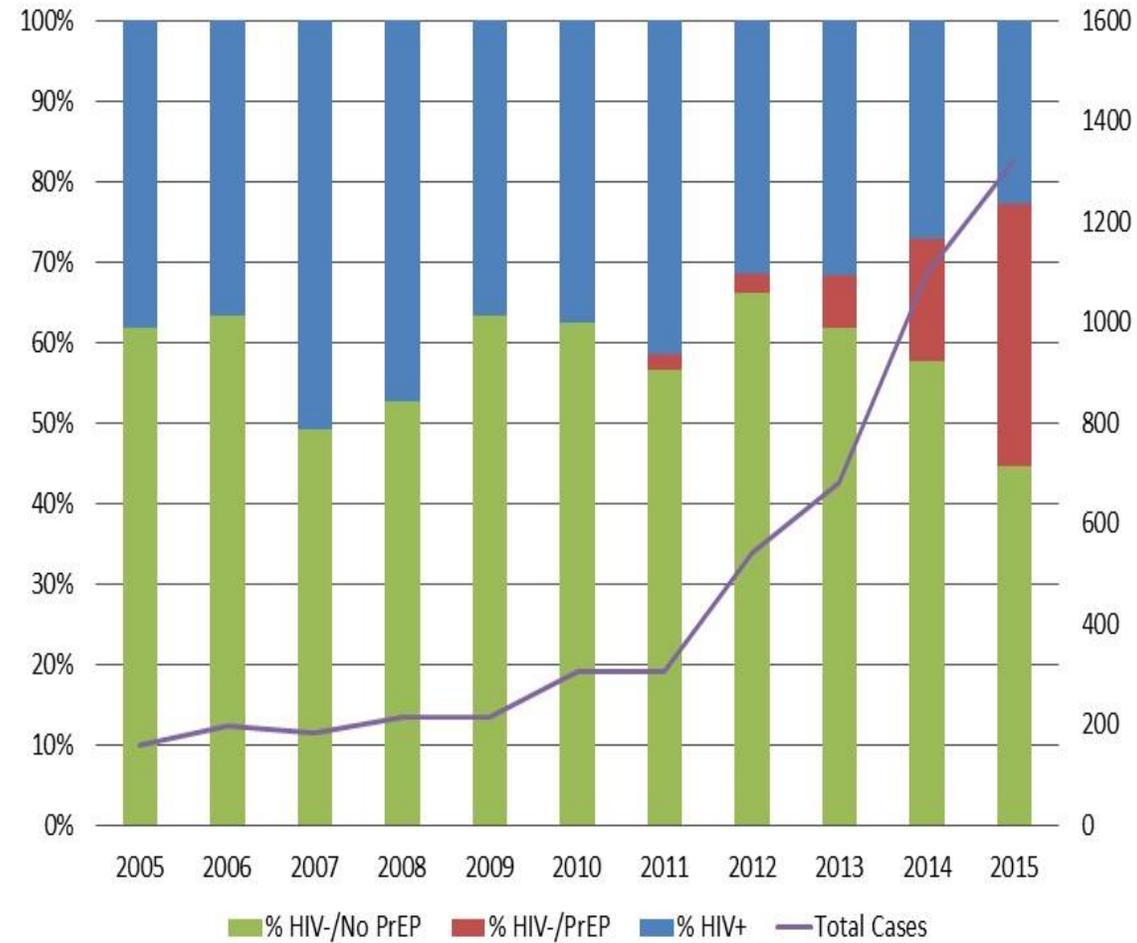
- 7 (41%) pts prescribed PrEP who became HIV-infected reported concomitant stimulant use.
- 6 (35%) had drug-resistant strains (1 K65R plus M184V; 3 M184V +/-M; A71T (PI minor polymorphism), E157Q (INSTI minor polymorphism).
- Of 12 (71%) who discontinued PrEP >1 month prior to HIV diagnosis, most common reasons for PrEP discontinuation included:
  - scheduling challenges (33%)
  - insurance barriers (33%)
  - changes in risk perception (17%)
  - perceived stigma (8%)

# HIV and STIs While Taking PrEP



- Of 5 pts with an active PrEP prescription who became infected:
  - 1 had a (+) HIV RNA test when prescribed PrEP
  - 2 may have had acute HIV when they initiated PrEP
  - 1 became HIV-infected during a one month PrEP hiatus
  - 1 insisted he “only missed (PrEP) a day now and then” after more than a year on PrEP (infected with M184V)  
He had syphilis and a rectal mass at the time of infection.
- Bacterial STI (BSTI) were common in all PrEP pts, with about 25% having a new BSTI each year.
- 52% of PrEP pts who became HIV-infected were diagnosed with a BSTI either at the appointment before or at the time of HIV diagnosis (and 1 acute HCV).

### Frequency of Bacterial STI infection, by HIV status and PrEP Use, among Male Patients, Fenway Health



Mayer, OFID, 2017

# Conclusions

- Of 16,128 at risk HIV-negative patients who tested for HIV at least twice between 2012 and 2017 at a Boston CHC, 25% initiated PrEP.
- Over 5 years, 1.3% of those who did not use PrEP became HIV-infected, compared to 0.4% of those ever prescribed PrEP and 0.1% of those with a current PrEP prescription at the time of infection ( $p < 0.001$ ); 1 possible PrEP failure
- PrEP users who became HIV+ included those who discontinued PrEP, and/or reported insurance barriers, scheduling challenges, changes in risk, concerns about stigma and substance use. Bacterial STI were quite common in this group.

# Virological suppression at Fenway Health



Year	Number clients	Last VL <200 copies	200+ copies	Missing/out of range
2018	2243	83.9%	4.8%	11.3%
2017	2241	84.4%	4.5%	11.1%
2016	2130	89.1%	5.2%	5.7%
2015	2085	83.9%	5.9%	10.2%
2014	2076	80.3%	7.9%	11.8%

# PrEP as a gateway to 1<sup>0</sup> care: local example



## Primary care utilization by PrEP users and non-users Fenway Health, 2012-2016 (N=5,857)

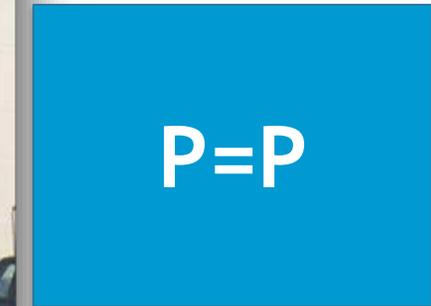
Flu vaccination	1.57 (1.47-1.67)
Tobacco screening	1.13 (1.09-1.16)
Depression screening	1.18 (1.15-1.22)
Hemoglobin A1c or glucose testing	1.83 (1.75-1.92)
Hemoglobin A1c testing	0.89 (0.79-1.01)
Glucose testing	2.03 (1.93-2.14)

Prevalence ratios obtained from Poisson models with generalized estimating equations. Adjusted models included age, gender, race/ethnicity, insurance type, and year, with diabetes, hypertension, and overweight/obesity additionally included in models for hemoglobin A1c and glucose testing.

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