Progress along the HIV Care Cascade
HIV Surveillance and Epidemiology
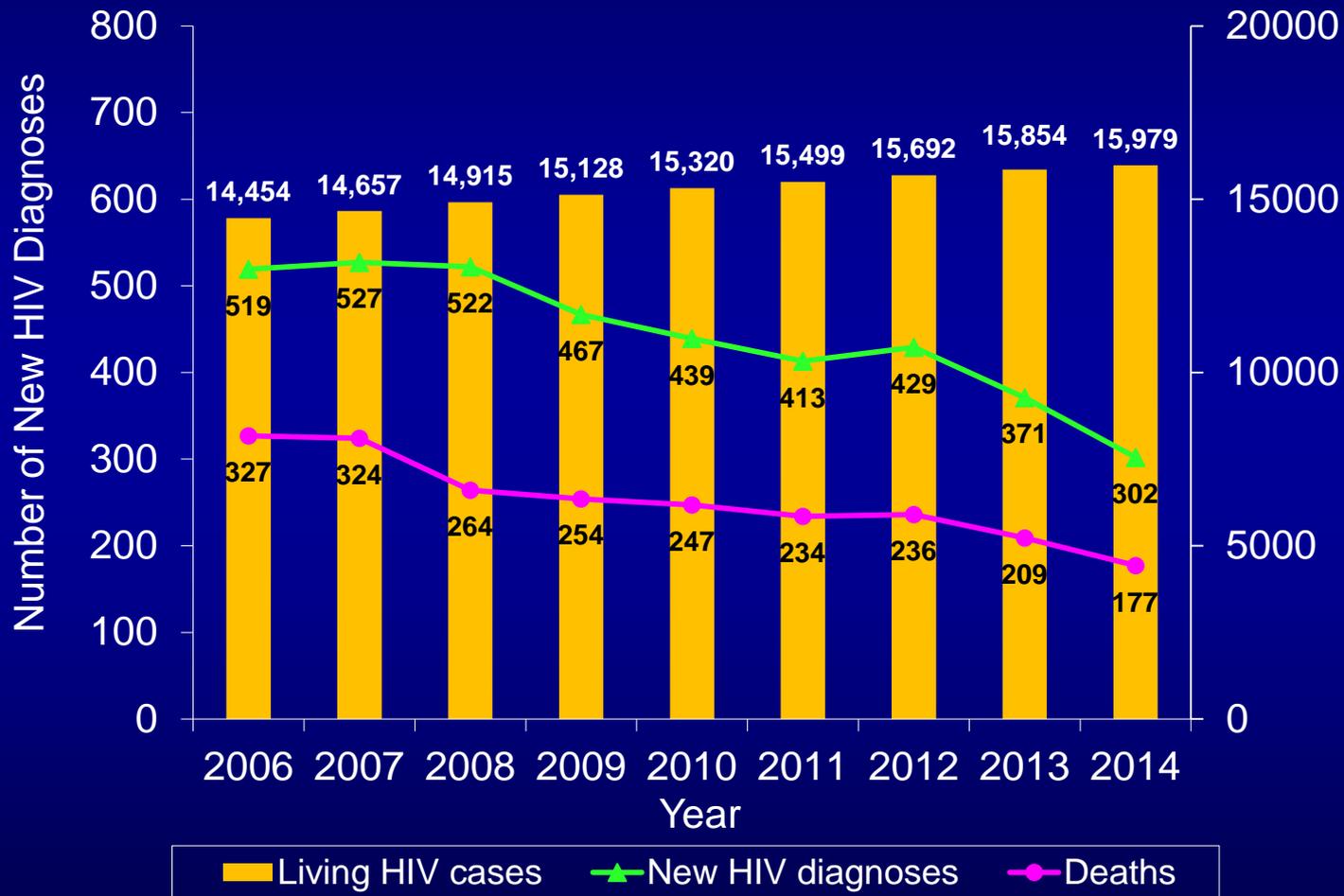
April 25, 2016
Susan Scheer, PhD, MPH
HIV Epidemiology Section
San Francisco Department of Public Health

POPULATION HEALTH DIVISION
SAN FRANCISCO DEPARTMENT OF PUBLIC HEALTH

# New HIV diagnoses, deaths, and prevalence, 2006-2014, San Francisco

Trends in persons diagnosed with HIV infection by demographic and risk characteristics, 2006-2014, San Francisco

	Year of Initial HIV Diagnosis[1]									
	2006	2007	2008	2009	2010	2011	2012	2013	2014	
Total Number	519	527	522	467	439	413	429	371	302	
Gender										
Male	90%	87%	89%	91%	89%	88%	94%	91%	93%	93% male
Female	7%	8%	8%	5%	8%	10%	5%	6%	5%	
Transfemale[2]	3%	4%	3%	4%	3%	2%	1%	3%	2%	
Race/Ethnicity										
White	54%	51%	49%	52%	48%	52%	49%	46%	45%	
African American	14%	15%	16%	15%	14%	16%	10%	13%	11%	
Latino	22%	20%	23%	21%	25%	20%	25%	25%	27%	55%
Asian/Pacific Islander	6%	9%	8%	8%	8%	8%	11%	13%	13%	people of
Native American	1%	0%	1%	0%	0%	0%	1%	1%	0%	color
Multi-race	3%	4%	3%	4%	5%	3%	2%	2%	4%	
Unknown	0%	0%	0%	0%	0%	1%	1%	1%	0%	
Age at HIV Diagnosis (years)										
13 - 17	<1%	<1%	1%	<1%	<1%	<1%	0%	0%	<1%	
18 - 24	12%	10%	10%	12%	13%	11%	12%	13%	12%	
25 - 29	13%	19%	16%	12%	13%	15%	17%	21%	17%	17%
30 - 39	34%	36%	35%	31%	31%	26%	31%	29%	30%	Over age
40 - 49	28%	24%	29%	27%	28%	31%	29%	25%	24%	50
50+	14%	10%	9%	17%	15%	17%	11%	12%	17%	
Transmission Category										
MSM	70%	66%	72%	71%	64%	72%	78%	77%	75%	75% MSM
PWID	8%	6%	6%	5%	8%	7%	3%	6%	6%	
MSM-PWID	16%	17%	12%	16%	15%	11%	10%	10%	11%	
Heterosexual	5%	8%	7%	5%	8%	6%	6%	5%	3%	
Other/Unidentified	2%	3%	3%	3%	5%	3%	3%	2%	5%	

1 Data include persons diagnosed with HIV infection in any stage and reported as of April 10, 2015. Percentages may not add to 100% due to rounding.
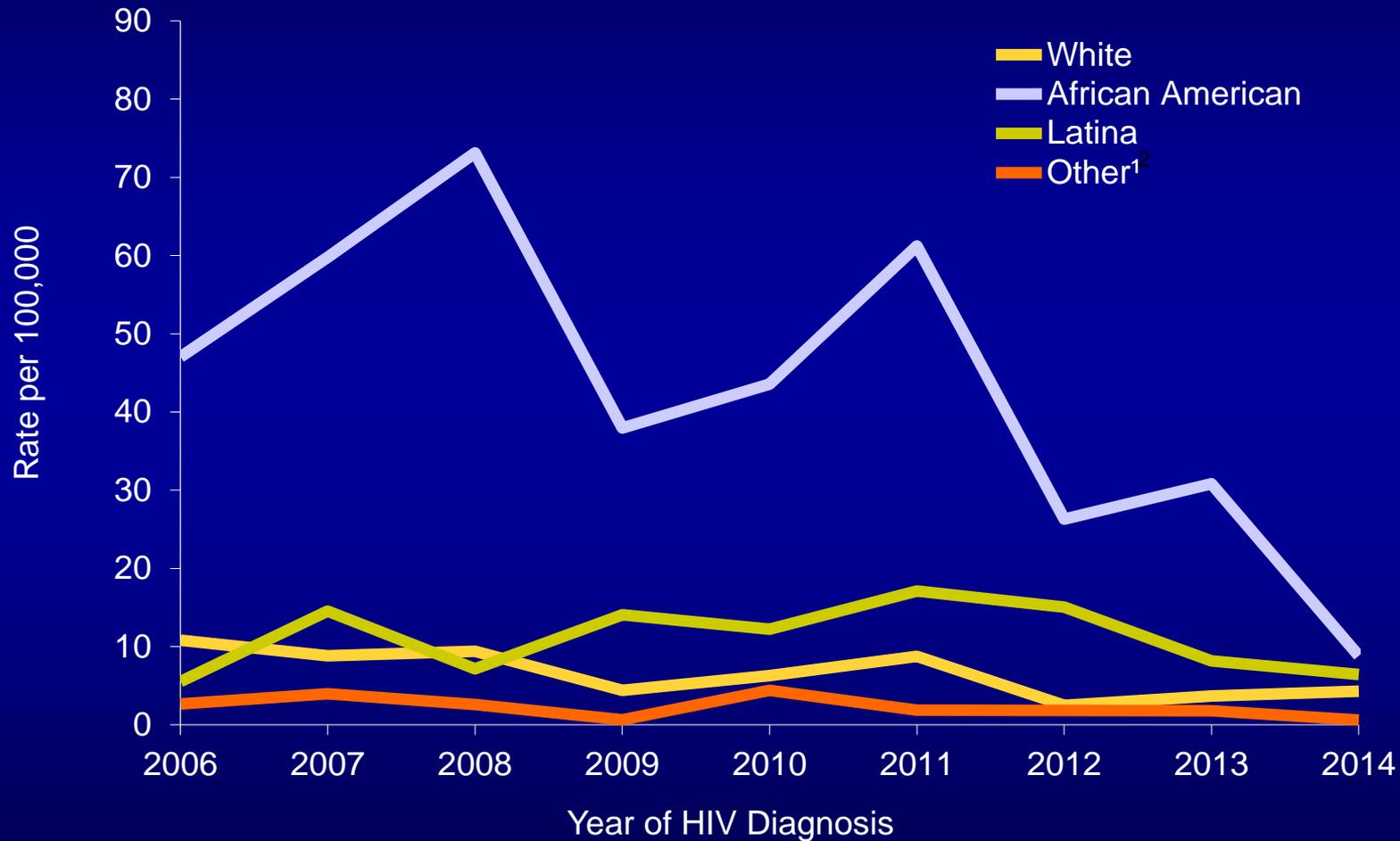2 Transfemale data include all transgender cases. Transmale data are not released separately due to potential small population size. See Technical Notes "Transgender Status".

Figure 2.2 Annual rates of men diagnosed with HIV infection per 100,000 population by race/ethnicity, 2006-2014, San Francisco
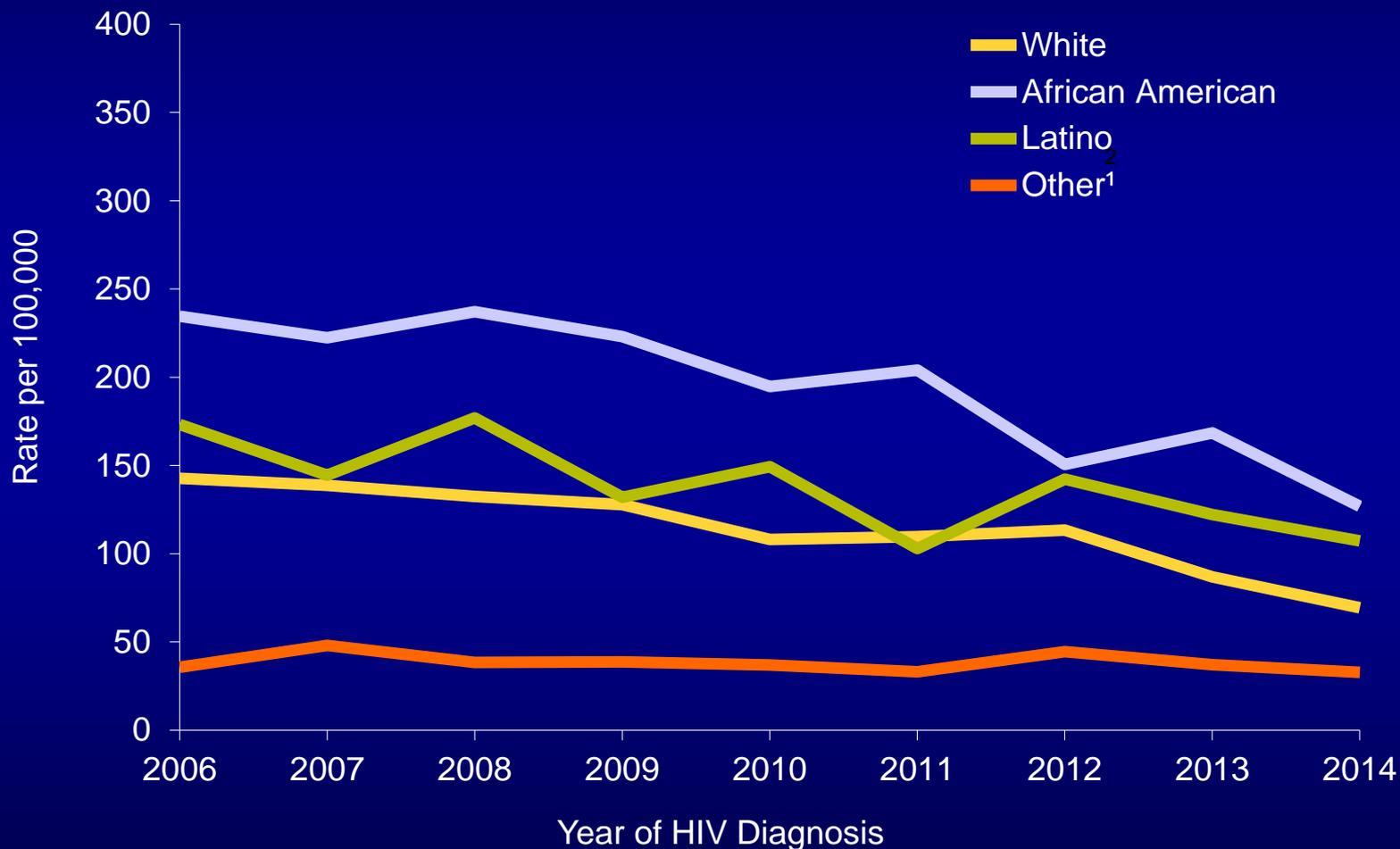

1 Cases in the "Other" race/ethnicity category include 68% Asian/Pacific Islanders, 4% Native Americans, 22% multiple races, and 3% unknown.

Figure 2.3 Annual rates of women diagnosed with HIV infection per 100,000 population by race/ethnicity, 2006-2014, San Francisco
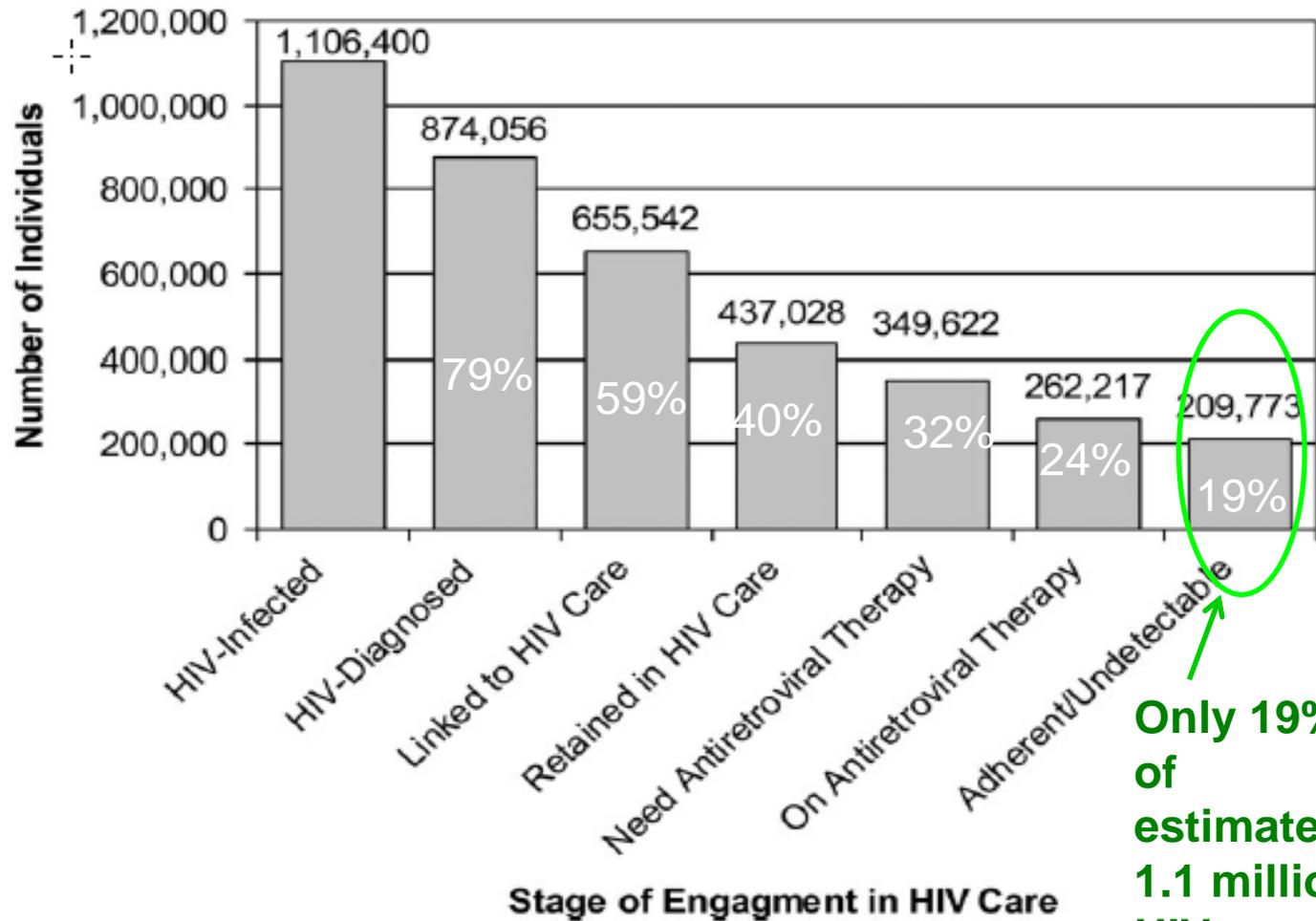
Number and percent of homeless persons diagnosed with HIV infection by year of diagnosis, 2006-2014, San Francisco
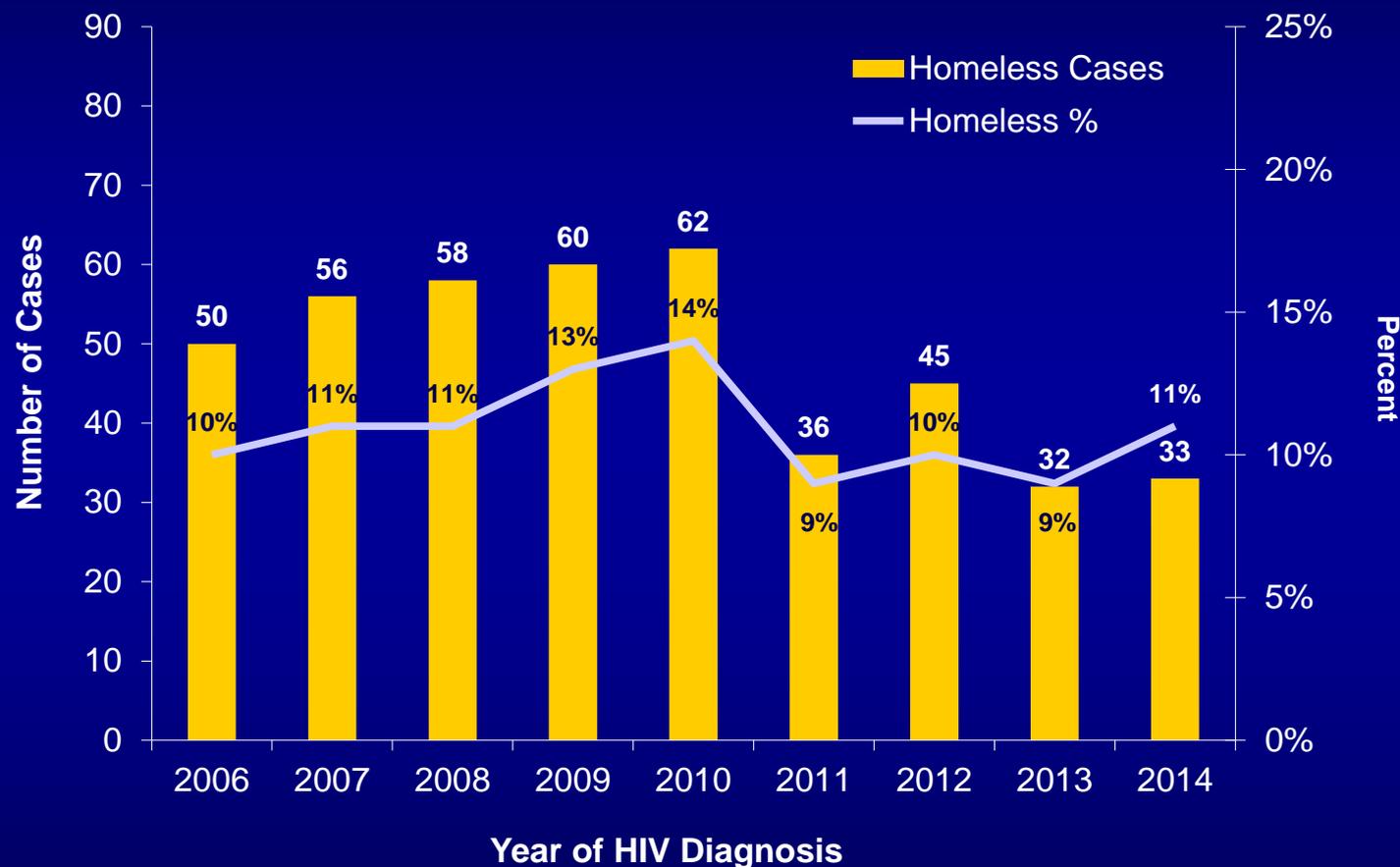
Using Surveillance Data to measure progress along the
Spectrum of Engagement in HIV Care

National Spectrum of Engagement in HIV care
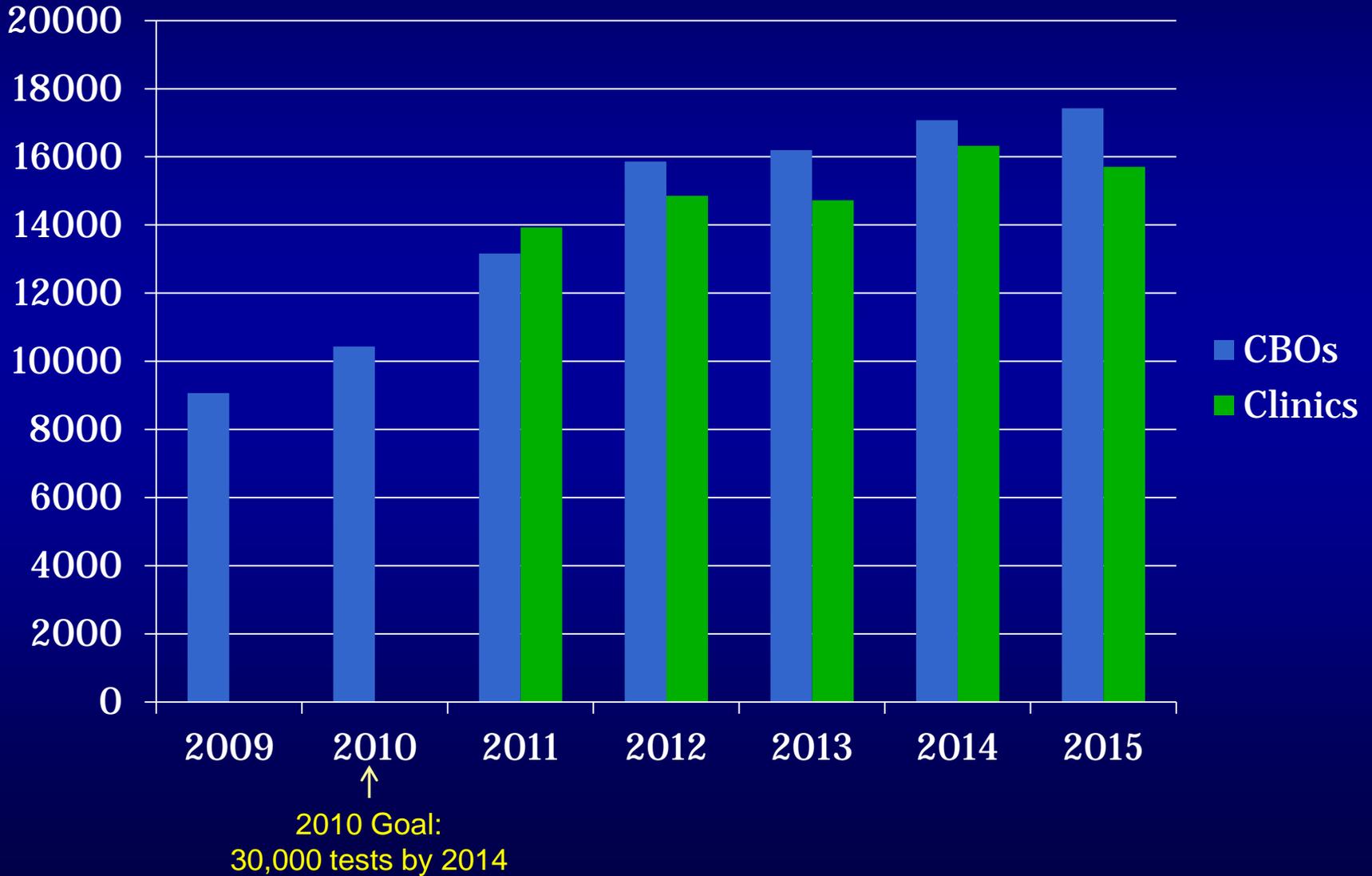# The Gardner Cascade

Gardner et al, CID 2010

Getting from infection to diagnosis
Step 1

Testing Trends among Men in SF

# HIV Testing Indicators: National HIV Behavioral Surveillance
MSM in San Francisco 2004-2014

Variable	HIV Testing Related Variables in 4 NHBS Waves Among MSM			
	MSM 2004	MSM 2008	MSM 2011	MSM 2014
HIV test in last 6 months	44%	55%	58%	64%
Unrecognized* HIV	22%	18%	7.5%	3%

NHBS unrecognized* infection: Participants are asked HIV status; those who state they are HIV-negative or state they don't know their status are HIV-tested. Those found to be HIV-positive in this process are classified as having had an unrecognized infection.

Variable	Most recent estimates of unrecognized infection in San Francisco compared to CA and the U.S.			
	MSM SF	Entire Population SF	Entire Population CA	Entire Population U.S.
Unrecognized* HIV	3%	6.4%	11%	13%

Proportion of Persons newly diagnosed with HIV who developed AIDS within 3 months of diagnosis
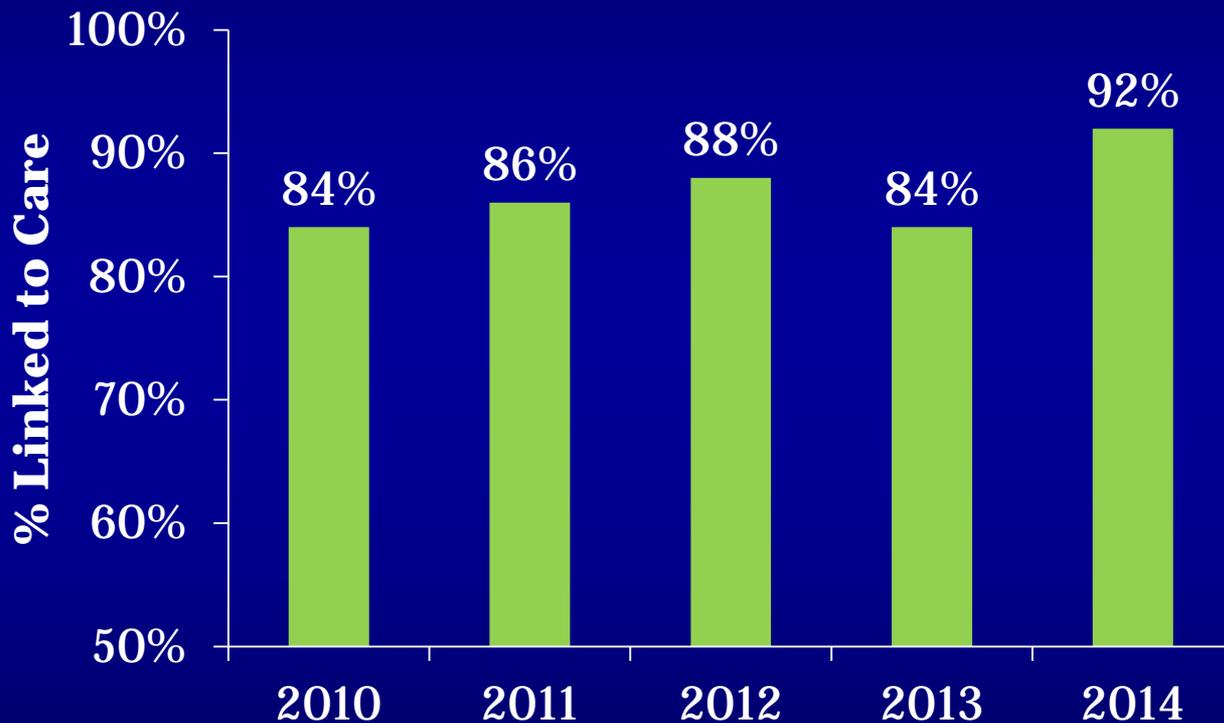## (Late Testers)
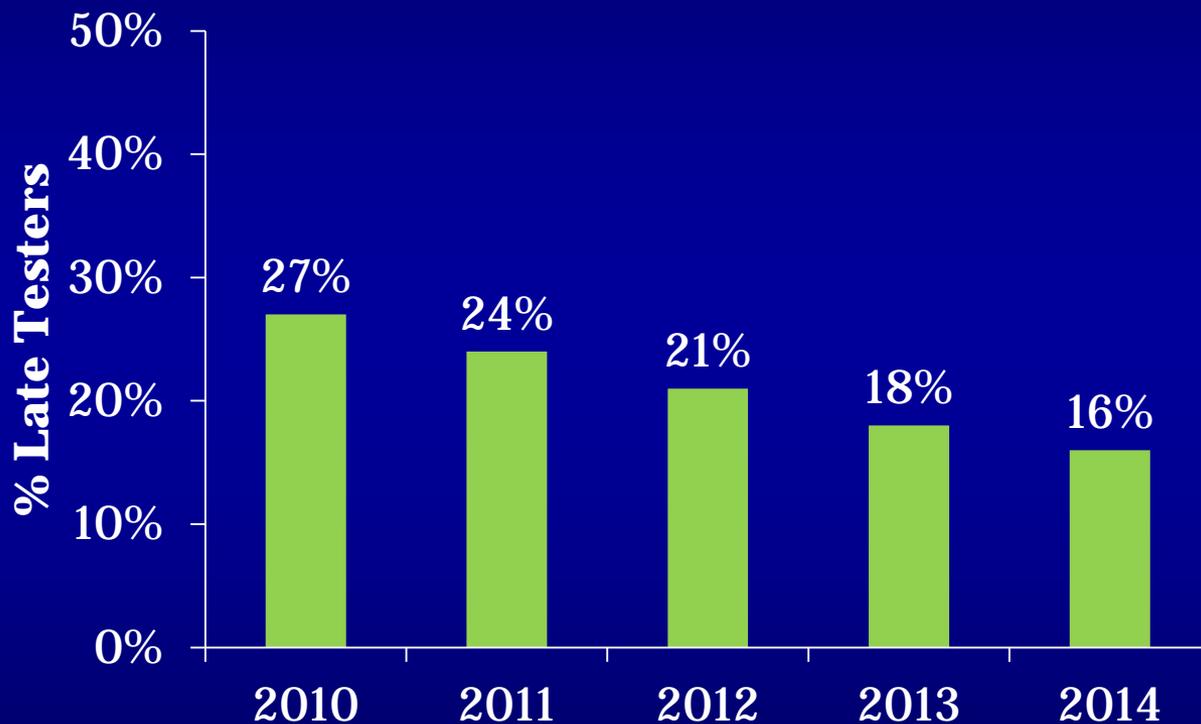
Getting from diagnosis to care
Step 2

Proportion of Persons newly HIV-diagnosed who were linked to care within 3 months (Linkage to Care)

Getting from care to treatment
Step 3

Universal OFFER of ART jointly recommended by UCSF Positive Health Program (SFGH Ward 86) and SFDPH: Jan 2010

"All patients, regardless of CD4 count, will be evaluated for initiation of antiretroviral therapy (ART)"
*Decision to start ART made by the individual in conjunction with the provider*

Modified from slide courtesy of Brad Hare, MD

Table 3.6 Estimate of ART use among persons living with HIV by demographic, risk, and socioeconomic characteristics, December 2014, San Francisco

|	Percent Receiving ART	
	Lower Level Estimate	Upper Level Estimate
Overall	**87%**	**94%**
Gender		
Male	87%	95%
Female	85%	92%
Transfemale[1]	85%	92%
Race/Ethnicity		
White	89%	95%
African American	83%	93%
Latino	85%	94%
Asian/Pacific Islander	83%	92%
Native American	77%	92%
Multiple race	85%	90%
Transmission Category		
MSM	87%	95%
PWID	83%	93%
MSM-PWID	87%	94%
Heterosexual	87%	92%
Housing Status, Most Recent		
Housed	88%	95%
Homeless	69%	85%
Insurance at HIV/AIDS Diagnosis		
Private	92%	96%
Public	87%	93%
None	83%	93%
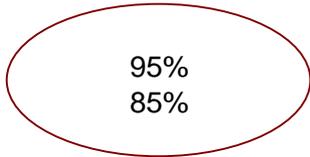
Homeless less likely to be prescribed ART

1 Transfemale data include all transgender cases. Transmale data are not released separately due to the potential small population size.

Estimate of ART use among living HIV cases with chart review[1] by nadir CD4 level, **December 2014**, San Francisco
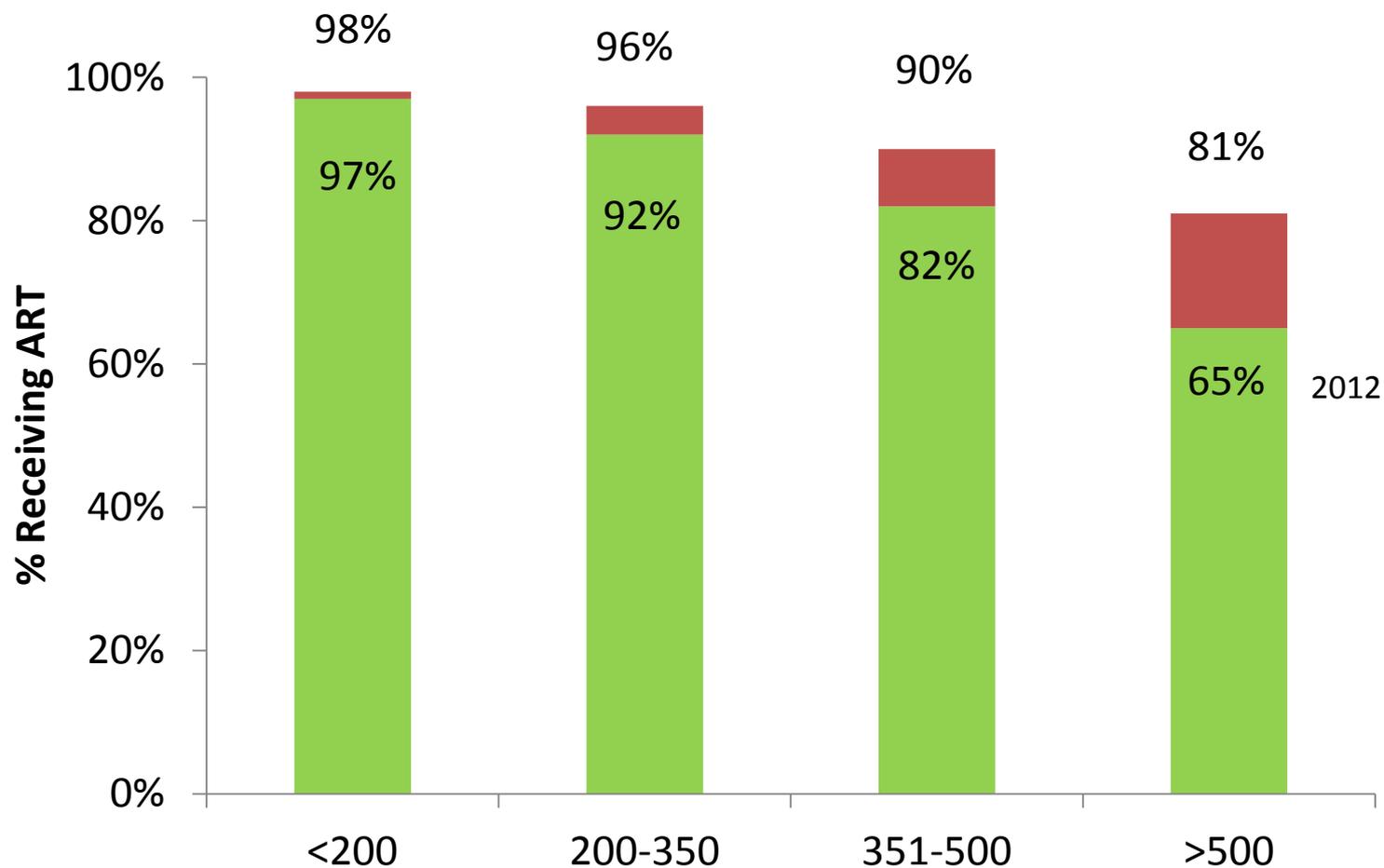
Proportion of Persons newly HIV-diagnosed who initiated treatment within 12 months (Time to treatment)
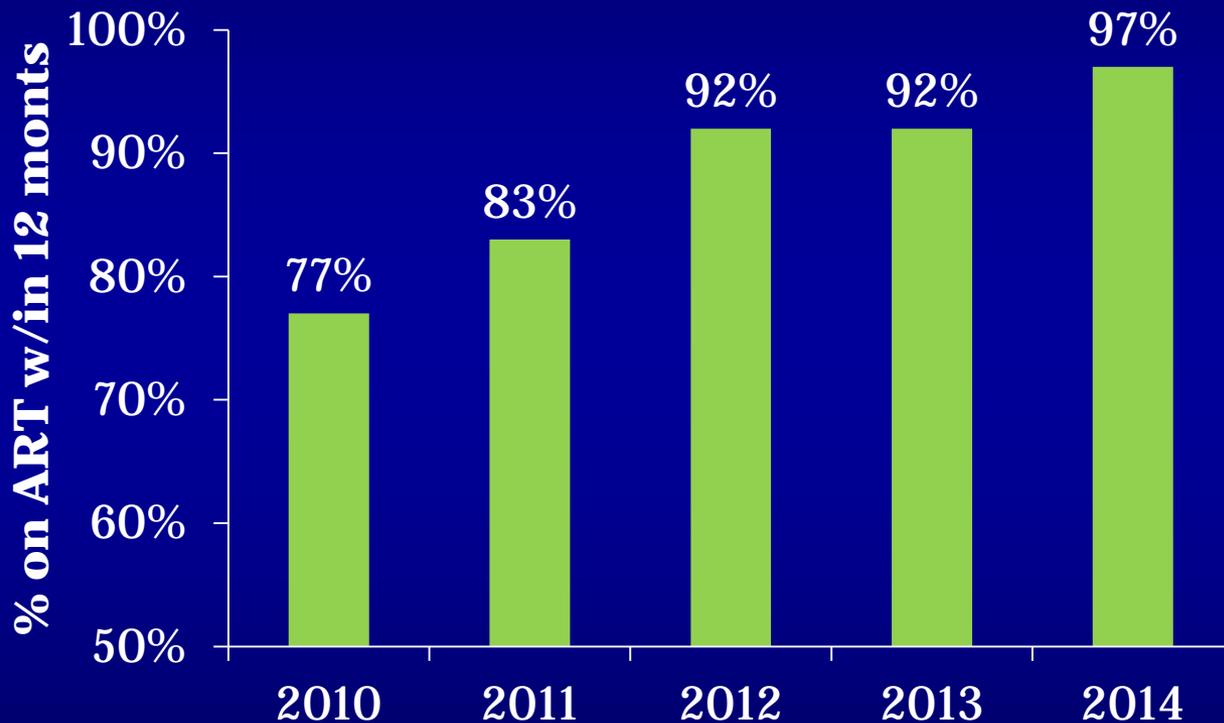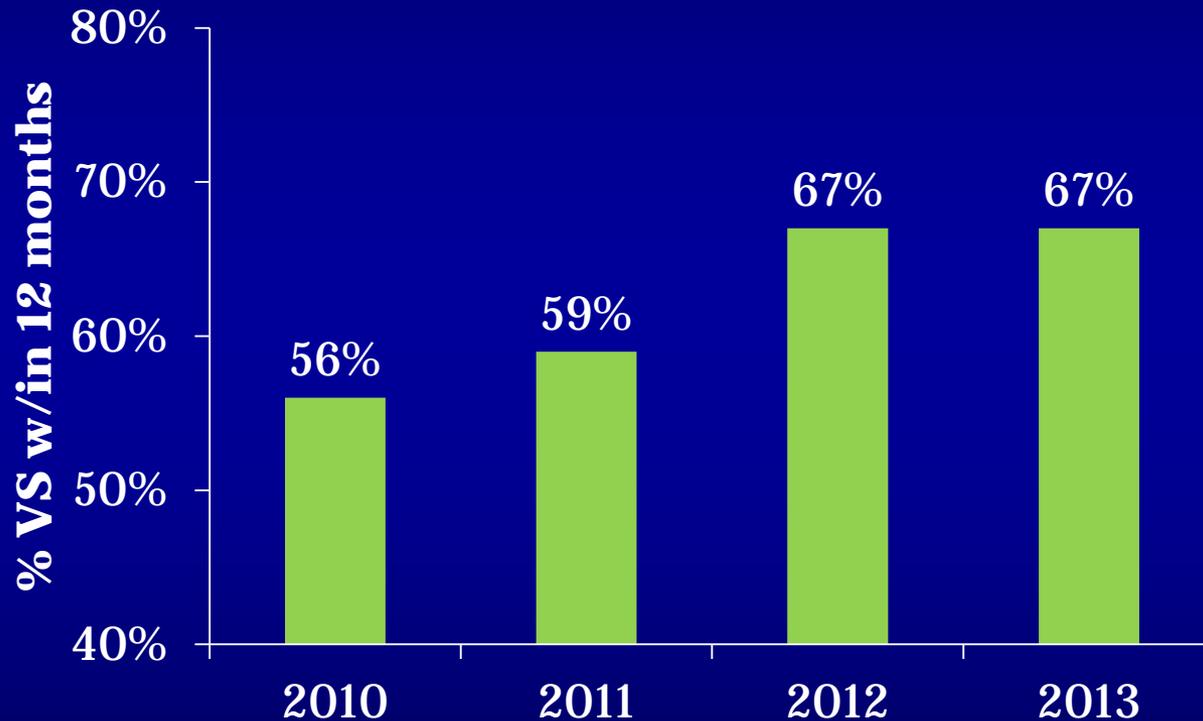
Getting from treatment to viral suppression Step 4

Proportion of Persons newly HIV-diagnosed who achieved viral suppression within 12 months (Time to Viral Suppression)

Kaplan-Meier estimates of time from HIV diagnosis to viral suppression among persons diagnosed with HIV by year of diagnosis, 2009-2013, San Francisco

	Median time between diagnosis and viral suppression (months)	Total cases included	No. virally suppressed as of 4/10/2015	No. (%) censored at the last lab test date
2009	11	455	380	75 (16%)
2010	8	431	373	58 (13%)
2011	6	400	351	49 (12%)
2012	5	433	369	64 (15%)
2013	4	367	302	65 (18%)

Spectrum of Engagement in HIV Care

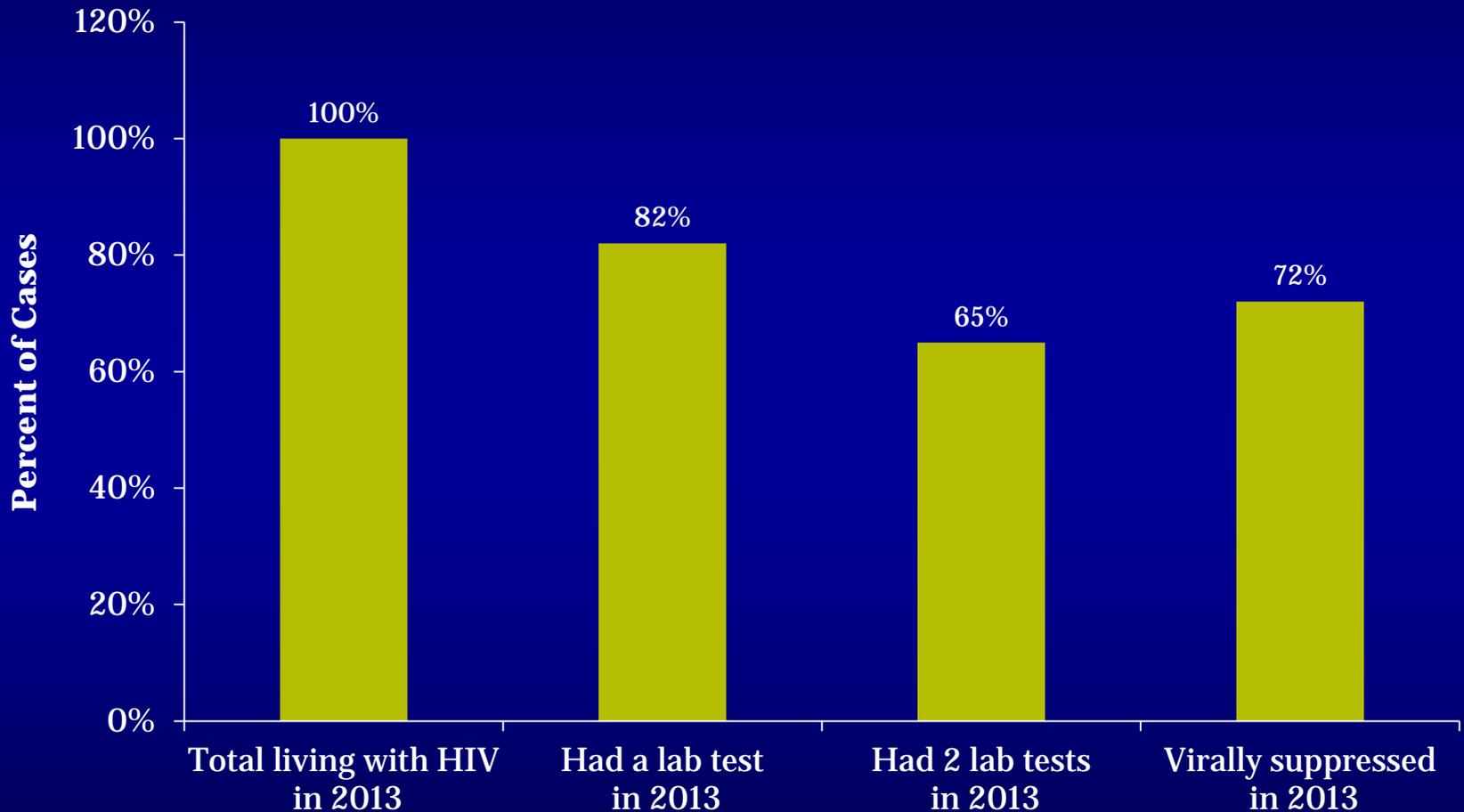## Putting it all together: Cascades

Continuum of HIV care among persons diagnosed with HIV, 2010-2013, San Francisco
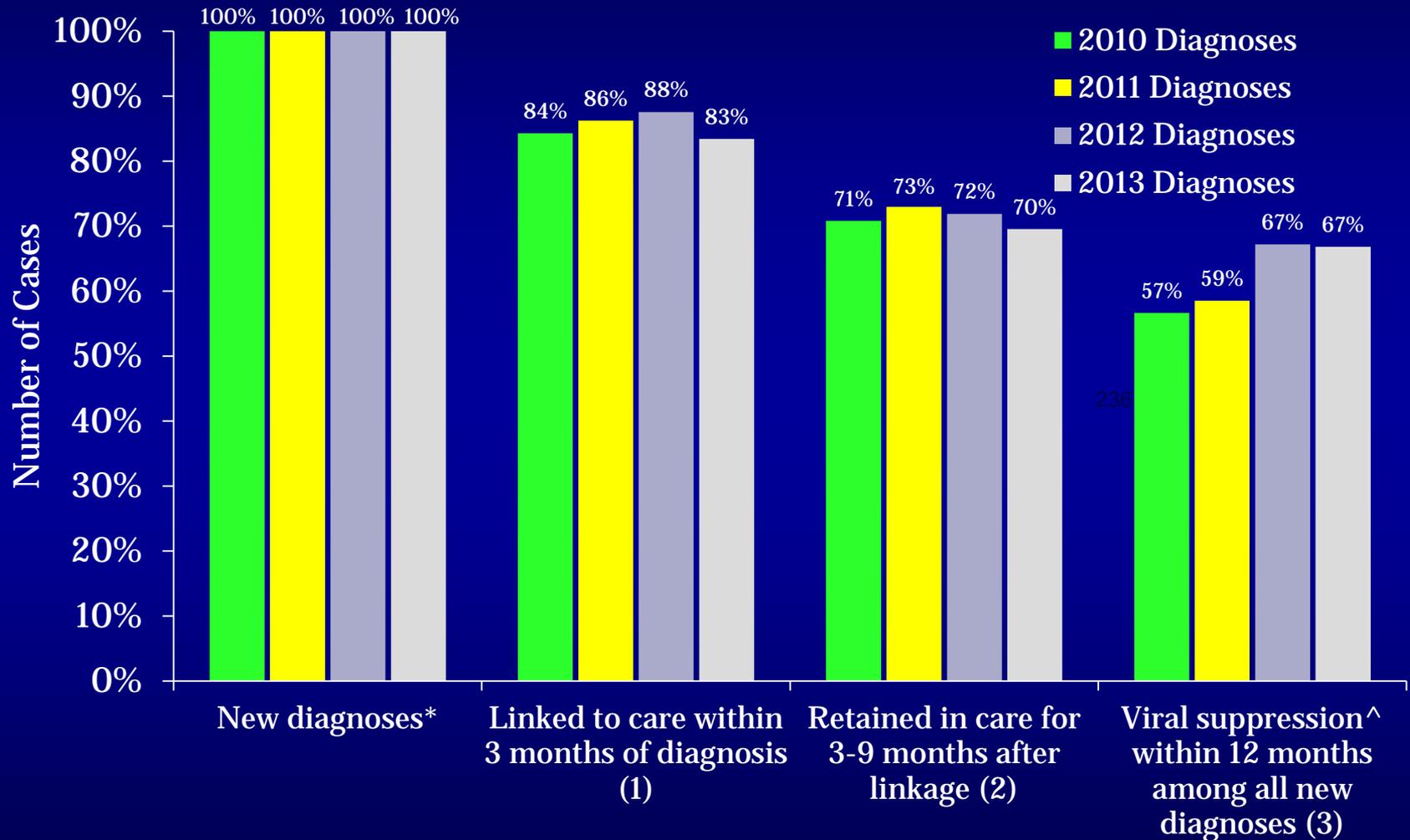
* Number of new diagnoses shown each year is based in the evidence of a confirmed HIV test and does not take into account patient self-report of HIV positive.

^ Defined as the latest viral load test during the specified period is <= 200 copies/mL.

Continuum of HIV care among persons living with HIV, 2013, San Francisco

Bar chart: Percent of Cases

- Total living with HIV in 2013: 100%
- Had a lab test in 2013: 82%
- Had 2 lab tests in 2013: 65%
- Virally suppressed in 2013: 72%

1. Includes San Francisco residents at diagnosis living with HIV at the end of 2013 and diagnosed by the end of 2012. Excludes persons who were non-San Francisco residents at time of HIV diagnosis but San Francisco residents at AIDS diagnosis. Excludes persons known to have moved out of SF.

Continuum of HIV care among persons living with diagnosed or undiagnosed HIV infection - San Francisco, California, United States

Bar chart showing Estimated Percent across five categories (Infected, Diagnosed/Aware, Received care, Prescribed ART, Virally suppressed) for three groups:

- San Francisco[1], 2013
- California[2], 2012
- United States[3], 2012

Category	San Francisco, 2013	California, 2012	United States, 2012
Infected	100%	100%	100%
Diagnosed/Aware	93%	84%	87%
Received care	69%	52%	39%
Prescribed ART	64%	N/A	36%
Virally suppressed	60%	40%	30%

1 The estimated percent received care and virally suppressed among all infected was derived by applying the 93% diagnosed/aware to the 74% who had >=1 lab test and 64% who were virally suppressed among those living with HIV diagnosis as shown in Table 3.3, respectively. Among those received care in 2013, 93% were known to have received ART. This 93% was then applied to the estimated 69% received care to derive the estimated 64% prescribed ART among all infected.
2 California data source: The Continuum of HIV Care in California - 2012. http://www.cdph.ca.gov/programs/aids/Documents/HIVCareContinuum-2012.pdf; posted December 1, 2014.
3 U.S. data source: CDC HIV Surveillance Supplemental Report 2015;20(No.2); published July 2015.

Summary

- **Routinely collected surveillance data provides a population-based data source to measure the success of the HIV prevention and care programs.**

- **Significant progress in SF; declining HIV cases and HIV-related deaths, improvements in HIV care indicators such as HIV status awareness, earlier HIV diagnosis and treatment initiation, linkage and engagement in care and time to viral suppression.**

- **Nevertheless, still have significant disparities.**

- **New diagnoses are disproportionately affecting people of color and MSM.**

- **Timely linkage to care, retention and viral suppression are less likely among women and transwomen, African Americans and Latinos, and PWID. Homeless persons are less likely to be on treatment.**

- **This data is available to you. Please ask if you would like to see something the affects your work or a population of interest.**

For questions or further information, please contact:

Susan Scheer, PhD, MPH
HIV Epidemiology Section
Population Health Division, SFDPH
susan.scheer@sfdph.org