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Using Surveillance Data To Measure Progress Along The HIV Care Continuum

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Background

HIV viral suppression is necessary to prevent HIV disease progression and reduce forward transmission of HIV. Routinely collected HIV surveillance data can measure progress along the HIV care continuum and evaluate changes overtime.

Objective

To measure progress along the HIV care continuum using routinely collected population-based HIV/AIDS surveillance data.

Methods

Inclusion	Newly diagnosed HIV cases from 2009-2014	Surveillance data from SFDPH
Endpoints	**Proportion of cases:**	
	Linked to care within 3 months of diagnosis (Presence of CD4 or HIV viral load result)	
	Retained in care 6-12 months after linkage (subsequent CD4 or HIV viral load result)	
	Initiated ART within 12 months of diagnosis	
	Virally suppressed within 12 months of diagnosis (HIV load <200 copies)	
	Developed AIDS within 3 months of diagnosis	
	Died within 12 months of diagnosis	
	Time from HIV diagnosis to:	
	Linkage to care (presence of CD4 or HIV viral load result)	
	ART initiation (date prescribed in medical record)	
	Viral suppression (HIV load <200 copies)	
	AIDS diagnosis	
	Death	

Results

Demographic Characteristics of Persons newly diagnosed with HIV

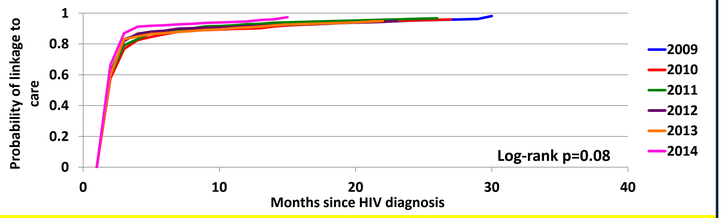
N=2530	n (%)		n (%)		n (%)
Gender		**Race**		**Risk group**	
Female	176 (7)	**Black**	333 (13)	**MSM**	1824 (72)
Male	2276 (90)	**White**	1226 (49)	**PWID**	150 (6)
		Latino	602 (24)	**MSM + PWID**	323 (13)
Transfemale	78 (3)	**Asian/ Pacific Islander**	249 (10)	**Heterosexual**	154 (6)
		Other/Unknown	120 (5)	**Other/Unknown**	79 (3)

Proportions of males, Latinos, Asians/Pacific Islanders, men having sex with men increased from 2009-2014 ($p \leq 0.01$).

Change in HIV care and prevention indicators: 2009-2014

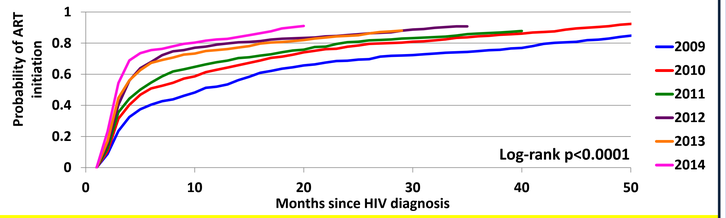
Indicator	2009 to 2014	P-value
Linked to care within 3 months of diagnosis	86% to 92%	0.02
Retained in care within 6-12 months of linkage	70% to 73%	0.31
Initiated ART within 12 months of diagnosis	63% to 91%	<0.0001
Virally suppressed within 12 months of diagnosis	49% to 82%	<0.0001
Developed AIDS within 3 months of diagnosis	27% to 16%	0.0006
Died within 12 months of diagnosis	3% to 1%	0.06

Time from HIV diagnosis to linkage of care



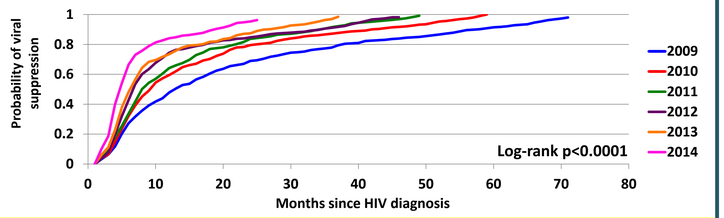
Median time to linkage: <1 month for all years

Time from HIV diagnosis to ART initiation



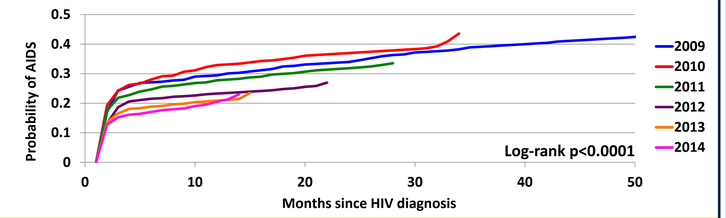
Median time to ART: 9 months in 2009 and 1 month in 2014

Time from HIV diagnosis to HIV viral suppression (VS)



Median time to VS: 11 months in 2009 and 3 months in 2014

Time from HIV diagnosis to AIDS diagnosis



Median time to AIDS: 88 months in 2009 and median not reached in 2014

Time from HIV diagnosis to death demonstrated no significant difference by year of diagnosis (data not shown).

Conclusions

- Significant improvements, exceeding the 2010 National HIV goals, in linkage to care within 3 months, HIV viral suppression, and fewer AIDS diagnoses.
- Surveillance data can measure progress along the HIV care continuum and success of HIV prevention and care programs.

Limitations

- Used CD4 counts and viral load results as proxy for care.
- Surveillance data does not include information on time from acquisition of infection to diagnosis or HIV-infected people who have not been tested for HIV.
- Out migration was not fully accounted.
- Incomplete death data for those who died out of state and after 2015.

Strengths

- Large sample with comprehensive data, matched with local, state and national laboratory, HIV, and death registries.
- San Francisco was an early adopter of "Test and treat" policy.

ABBREVIATIONS: ART—antiretroviral therapy; MSM—men who have sex with men; n—number; PWID—people who inject drugs; SFDPH—San Francisco Department of Public Health; UCSF—University of California, San Francisco; VS—viral suppression.

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