Trends in community viral load, new diagnoses, and estimated incidence of HIV, New York City, 2005-2008

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BACKGROUND

❖ Recent literature has associated transmission efficiency with viral load and suggests that population level virologic control might result in reduced HIV incidence.

OBJECTIVE

❖ To describe the trends in citywide community viral load (CVL), new diagnoses of HIV and estimated incidence in New York City during 2005-2008.

METHODS

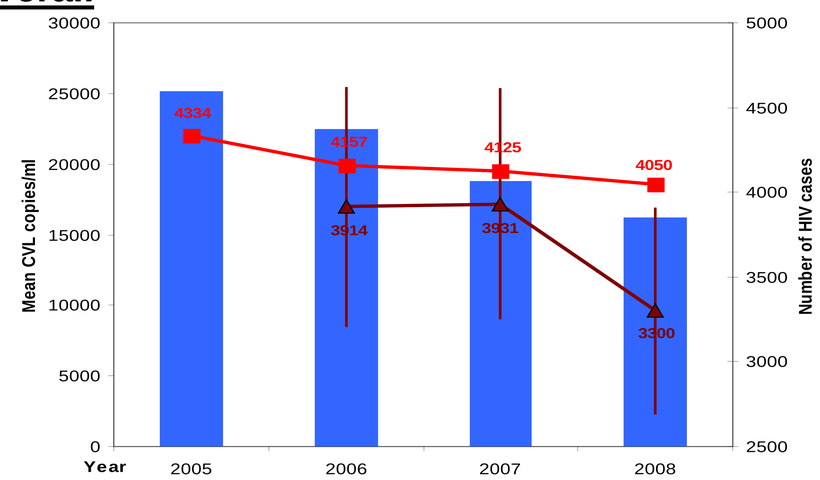
❖ Laboratory data routinely reported to surveillance as of September 30, 2010, were used to calculate mean CVL and enumerate new diagnoses of HIV in 2005-2008.

❖ Last mean CVL was calculated based on the viral load in the calendar year of individual NYC residents age 13 and older. An undetectable last VL was assigned a value of zero.

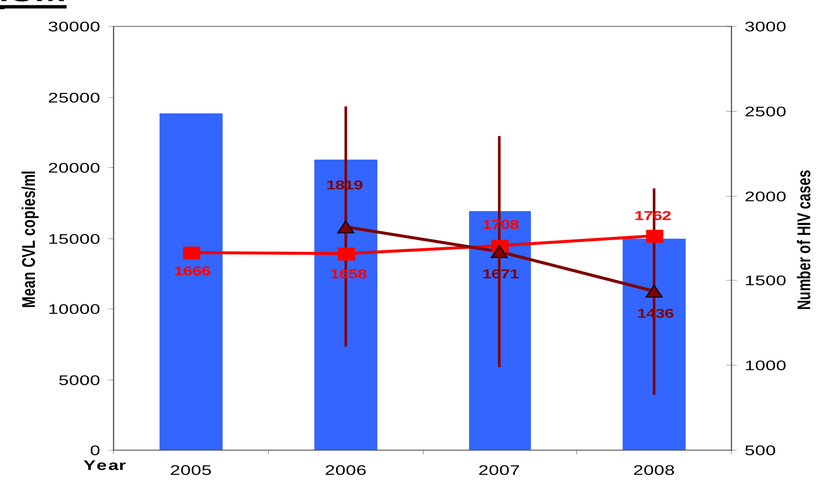
❖ Incidence was estimated using standard CDC statistical methodology combining the Stratified Extrapolation Approach (SEA) with results of serologic testing of remnant diagnostic specimens for recent HIV seroconversion (STARHS).

Mean CVL and new HIV infections in NYC, 2005-2008

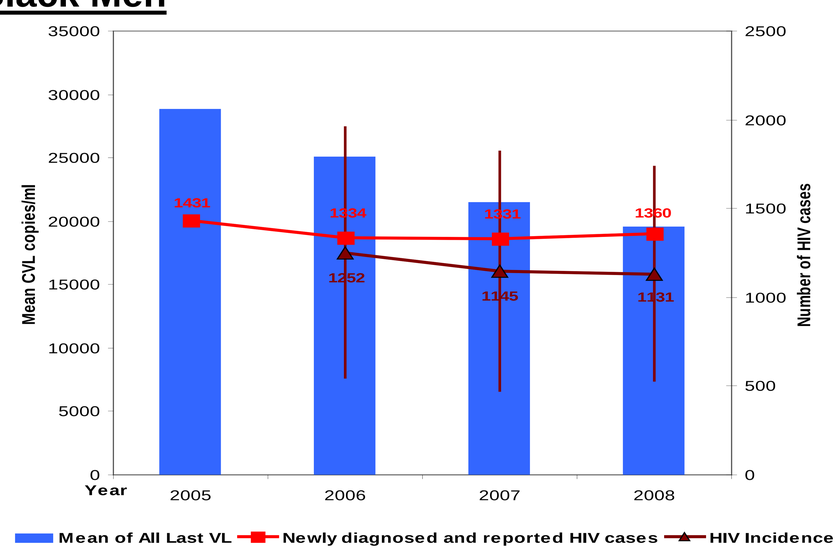
Overall



MSM



Black Men



RESULTS

❖Overall, mean CVL, number of new diagnoses and estimated incidence declined.

❖There was a statistically significant decline in overall CVL from 25,133 (95% CI 24,453, 25,813) in 2006 to 16,218 (95% CI 15,674, 16,762) in 2008.

❖Estimated incidence decreased overall from a rate of 59.5/100,000 population to a rate of 50.2/100,000 population; this decline was not statistically significant.

❖Among men who have sex with men (MSM) and black men, CVL significantly decreased in the 3 year period.

CONCLUSIONS

❖ In this three year period we observed significant declines in CVL and modest declines in overall new diagnoses of HIV and estimated incidence in the population.

❖ Trends in two epidemiologically important populations, MSM and black men, diverged from this pattern, showing declines in CVL and estimated incidence counterbalanced by an increase in new diagnoses, which represent a combination of new and established infections.

❖ Surveillance data are uniquely positioned to monitor trends in these three sentinel measures and to evaluate the strength and direction of the relationship between CVL, incident diagnosis and incident infection at the population level.

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