US National and State HIV Prevention Funding Trends Against HIV Diagnosis Rates from 2008 to 2023

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BACKGROUND

To what extent has federal funding to state and local health departments influenced HIV diagnosis rates from 2008 to 2023?

State and local health departments play a central and crucial role in the facilitation and implementation of HIV prevention in the United States.

Potential **cuts** to core HIV prevention activities threaten to halt progress in ending the HIV epidemic.

Without direct evidence of their contributions, advocates and policymakers are less positioned to quantify how much is necessary in funding proposals.

Methods

Retrospective time-series regression modelling

Primary Input: National and State HIV Prevention Funding

Related Variables: Age, Race, Sex, PrEP uptake, state Medicaid expansion

Primary Output: HIV Diagnosis Rate

Data was collected from **2008 to 2023**:

(1) TAGGS through System for Award Management (SAM) codes:
- 93940 (Health Department Based HIV Prevention and Surveillance Activities), including EHE
- 93944 (HIV/AIDS Surveillance)

(2) AIDSVu Databases

A **forward model building approach** was completed to assess for collinearity, confounding, and effect modification. PrEP-uptake was determined to be *collinear*, while state Medicaid expansion acted as a *confounder and effect modifier*. Age, race, and sex were utilized in stratified models.

$ Funding to State Health Departments works to reduce new HIV diagnosis trends

RESULTS

For each $1 million increase in annual federal funding to state health departments, there was an associated 0.015 decrease in new HIV diagnoses per 100,000 (β= –0.0146; 95% CI: -0.030, 0.001; p = 0.066).

The results provide suggestive, yet non-significant association at the aggregate national level. The selection of the differenced model over the levels model was based on: (1) differenced model passed stationarity tests; (2) high AIC/BIC scores; (3) no significant autocorrelation.

AGE 13-24 years old experience greatest effect over time.

RACE Black (p<0.001***) and Hispanic (p = 0.006**) populations experienced greater reductions.

SEX Decreases were greater for males compared to females (p=0.029*).

EHE Compared to aggregated national coefficient, 13 of 28 EHE jurisdictions (46%) showed greater decreases.



The effect of HIV prevention funding is significantly *different* in Medicaid expansion vs non-expansion states (p < 0.001*).**

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DISCUSSION

First-of-its-kind analysis provides that state and local health departments should receive sustained and increased funding for HIV prevention activities.

While not a significant association, this research suggests that state and local health departments have a non-negligible influence based on their degree of funding for HIV prevention. The results also provide a detailed aggregate and disaggregate narrative of HIV prevention funding trends over time for each state.

Medicaid expansion, as explained by the model, suggests that concurrent policy solutions are necessary to amplify federal funding reach for HIV prevention.

The mixed outcomes of EHE jurisdictions imply a greater degree of scrutiny to short-term trends and changes in funding levels over time.

A primary limitation of the research rests in the assumption that changes in new HIV diagnosis rates are solely attributable to HIV prevention funding for state and local health departments, which is not the reality. Future research on funding should weigh possible influences of different prevention method streams to outcomes.

PLAIN LANGUAGE SUMMARY

HIV prevention funding for state and local health departments decrease new HIV diagnoses. Medicaid expansion increases this effect.