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The Potential Impact of Reaching Ending the HIV Epidemic Targets in Missouri, United States

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BACKGROUND

- The Ending the HIV Epidemic (EHE) initiative set ambitious targets for HIV care and prevention to substantially reduce new HIV infections in the US by 75% in 2025 and 90% by 2030
- Progress towards these targets varies across US jurisdictions
- We sought to assess in the state of Missouri, which has limited investments in public health, how potential epidemic trajectories might be affected by either achievement of targets or disruptions that affect access to HIV care and treatment in public sector programs

METHODS

- We adapted an established HIV epidemic model, Goals, to represent the HIV epidemic in Missouri
- We calibrated Goals to CDC estimates of HIV prevalence by sex and to prevalence of diagnosed HIV in men who have sex with men and people who inject drugs
- We used public data on new HIV diagnoses, AIDS deaths, access to HIV medical care, viral suppression, and PrEP prescriptions to parameterize and validate the model
- We analyzed a scenario in which EHE coverage targets were reached and pessimistic scenarios in which some people insured through Medicaid lost access to ART or PrEP, in comparison to a "business as usual" counterfactual (Tables 1 and 2)
- We modeled the effects of reaching EHE targets in 2030, as the latest CDC estimates suggest Missouri was unlikely to have reached these in 2025 (Figure 1)

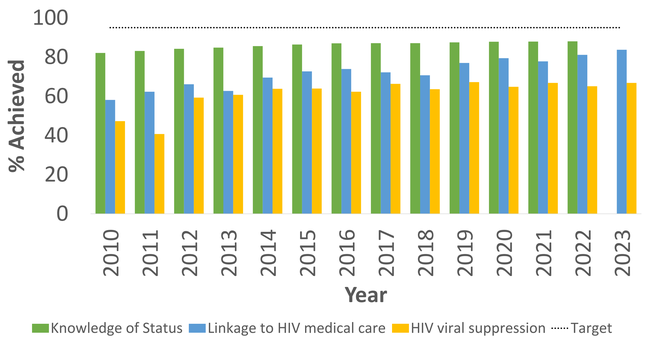


Figure 1. Progress towards US EHE care targets in Missouri. Estimates are from the National HIV Surveillance System (NHSS).

Reaching US EHE care and prevention targets could prevent 35% of new HIV infections in Missouri through 2030

Table 1. Scenarios analyzed

Business as usual: Service coverages remained constant at 2023 levels through 2030
EHE targets reached: 95% knowledge of status, 95% linkage to care, 95% viral suppression, and 50% PrEP coverage among people with indications for PrEP by 2030
Medicaid disruptions: Loss of ART or PrEP coverage among Medicaid recipients (Table 2)

Table 2. Medicaid disruption parameter assumptions

Parameter	Value (Range)
Persons on ART covered via Medicaid*	40% (25%-50%)
PrEP clients covered via Medicaid*	25% (15%-35%)
Medicaid recipients who lose coverage	10% (5%-95%)
Duration of coverage loss	9 months (6-12)

*Medicaid exposure among ART and PrEP clients was based on data from clinics in St. Louis and Kansas City

RESULTS

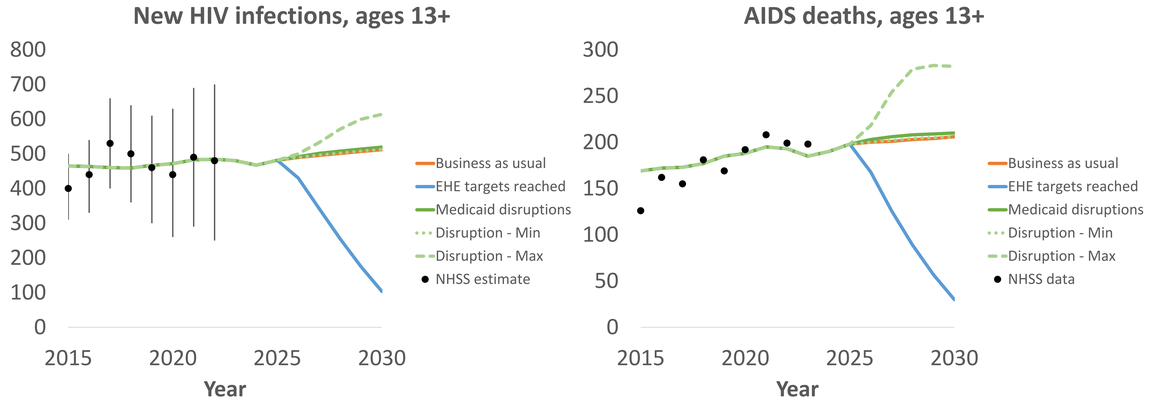


Figure 2. Historic and projected trends in new HIV infections (left) and AIDS deaths (right) in Missouri. Estimates and data from the National HIV Surveillance System (NHSS) are shown for comparison

Table 3. Projected annual and cumulative new HIV infections in Missouri, ages 13+.

Scenario	Annual new HIV infections			Total new HIV infections	
	2020	2030	% change, 2030 vs. 2020	2024-2030	Difference from BAU (%)
Business as usual (BAU)	472	512	+9%	3,453	Ref
EHE targets reached by 2030		103	-78%	2,255	-1,198 (-35%)
Medicaid disruption scenarios					
Point estimate		519	+10%	3,483	+29 (+1%)
Minimum		513	+9%	3,458	+5 (+0%)
Maximum		614	+30%	3,766	+313 (+9%)

RESULTS (continued)

- We estimated that 472 new HIV infections occurred in 2020 (Table 3)
- New infections increased in the business as usual scenario to 512 in 2030, a 9% increase over 2020 levels (Figure 2)
- Reaching EHE coverage targets drove down new infections rapidly, leading to 78% (103) fewer new infections in 2030 than in 2020
- Coverage of ART fell by up to 9% and PrEP by 7% due to modeled Medicaid disruptions in pessimistic scenarios, which resulted in 519-614 new infections in 2030, up to a 30% increase compared to 2020
- We projected that 3,453 new infections would occur cumulatively in 2024-2030 in the business as usual scenario
- Reaching EHE targets could prevent 35% of new infections in 2024-2030, while public sector disruptions could increase new infections up to 10% in this period

CONCLUSIONS

- Reaching EHE targets for HIV care and prevention could substantially reduce new HIV infections
- Failure to preserve access to ART and PrEP for those in need could accelerate the HIV epidemic in Missouri
- **Key Limitation:** Planned implementation of Medicaid work requirements may disrupt access to HIV services, but the magnitude and duration of these effects are uncertain

ADDITIONAL KEY INFORMATION

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PLAIN LANGUAGE SUMMARY

Reaching national HIV care and prevention targets by 2030 could dramatically reduce new HIV infections in Missouri, but policies that limit access to healthcare could accelerate HIV in the state.