University of Colorado Anschutz Medical Campus

Improving Rates of HIV Screening in the Emergency Department Through Clinical Decision Support (CDS)

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BACKGROUND

- CDC recommends persons screened for STIs receive comprehensive screening for gonorrhea (GC), chlamydia (CT), syphilis, & HIV[1].
- STI evaluation is common in emergency departments (ED), yet rates of comprehensive STI screening in EDs remain low[2].
- Clinical Decision Support (CDS) is an electronic health record (EHR) tool designed to help providers improve clinical care.

METHODS

- We analyzed all freestanding ED (FSED) encounters for patients ≥ 18 years with a GC-CT nucleic acid amplification test (NAAT) sent from any anatomic site in 11 FSEDs from 1/1/2022 – 11/21/2025 using Epic Slicer Dicer.
- Primary outcome was completion of HIV co-testing during the encounter and was compared between Metro Area FSEDs (5) vs Outlying FSEDs (6) across our statewide health system.
- We analyzed outcomes using statistical process control (Shewhart) charts, with P charts displaying binomial variables and Nelson's rules to identify special cause variation.

INTERVENTIONS

CDS Tool 1 (1/2024) : Comprehensive STI Screening Order Panel

- HIV 1/2 Antibody/Antigen Screen
- Syphilis Screening (treponema antibody)
- GC-CT NAAT (3 site, urine, throat, rectal, optional other sites)
- HCV antibody
- Optional vaginal pcr/trichomonas

***Lab orders are all prechecked for comprehensive screening**

CDS Tool 2 (1/2025) : Comprehensive STI Screening Agile MD Pathway

CDC guideline-based recommendations for screening

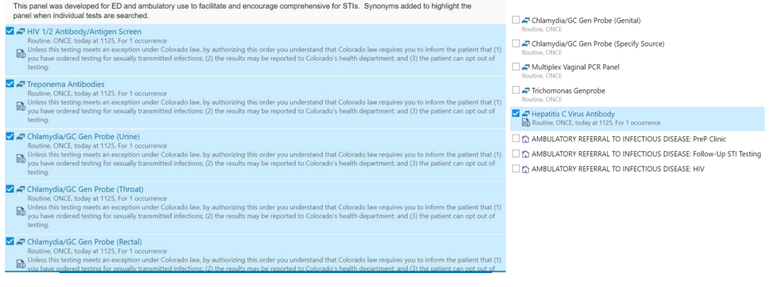
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Comprehensive STI Screening Order Panel (**CDS Tool 1 embedded into Tool 2**)

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CDC guideline-based recommendations for treatment (**& co-testing if not done**) + Linkage to ID Clinic (follow up referral for STI, PrEP & HIV care)

Figure 1. CDS Tool 1, Comprehensive STI Screening Order Panel



A Comprehensive STI Order Panel and STI Pathway in Emergency Departments (EDs) led to a rise in HIV co-testing rates with GC-CT screening from baseline of 3% to 16% Statewide & 23% in Metro for all health system freestanding EDs

RESULTS

HIV co-testing significantly increased among persons screened for GC-CT after implementation of CDS tools in these EDs

- **13,276** patients were screened for GC/CT between **2022-2025**.
- Average HIV co-testing rate of **3%** from 2022-2023 prior to the interventions (baseline).
- HIV co-testing rose to **11.7%** in 2024 following CDS Tool 1.
- HIV co-testing rose to **16.3%** in 2025 following CDS Tool 2.

Improvements were larger in our Metro region as compared to Non-Denver Metro Area (Outlying) FSEDs

- At Metro FSEDs, HIV co-testing rose to **15.5%** in 2024 and **23%** in 2025 from a baseline of **3.4%.**
- At Outlying FSEDs, HIV co-testing rose to **7.3%** in 2024 and **8.6%** in 2025 from a baseline of **2.0%.**

Percentage of positive HIV screens rose in our Metro FSEDs

- At Metro FSEDs, rates of positive screens rose to **0.16%** in 2024 and **0.23%** in 2025 from a baseline of **0.07%.**
- Outlying FSEDs rates of positive screens were lower and did not demonstrate consistent increases in the same time periods.

Figure 2. Rate of HIV Co-Testing in FSEDs

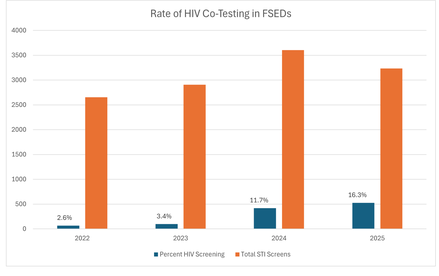
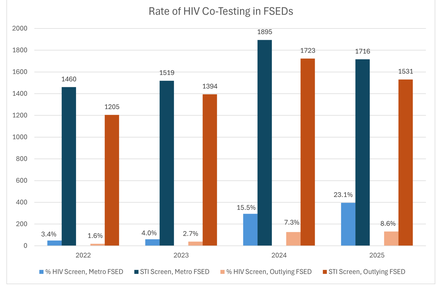


Figure 3. Rate of HIV Co-Testing in FSEDs by Site



CONCLUSIONS

- Rates of HIV co-testing demonstrated significant increases among persons screened for GC-CT after implementation of CDS tools in the freestanding EDs (FSEDs).
- Higher rates of co-testing and positive screening rates were observed in metro as opposed to outlying sites statewide.
- Next steps include retrospective chart review for identification of demographic factors associated with receipt of HIV screening among the same cohort and prospective ED provider survey for feedback to identify barriers, facilitators and regional practice differences.

ACKNOWLEDGEMENTS

Our team was supported with educational & coaching resources by the Institute for Healthcare Quality, Safety and Efficiency.

REFERENCES

1.CDC. Sexually transmitted infections treatment guidelines, 2021. Atlanta GA: US Department of Health and Human Services, CDC; 2021. https://www.cdc.gov/std/treatment-guidelines/toc.htm
2.Seballos SS, Lopez R, Hustey FM, et al. Cotesting for Human Immunodeficiency Virus and Sexually Transmitted Infections in the Emergency Department. Sex Transm Dis. 2022;49(8):546-550. doi:10.1097/OLQ.0000000000001642

Figure 4. Frequency of HIV Co-Testing, All FSEDs

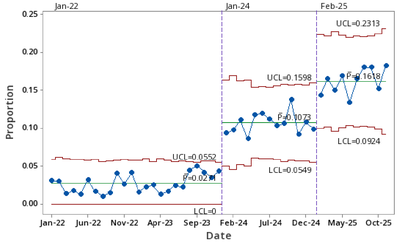


Figure 5. Frequency of HIV Co-Testing, Metro FSEDs

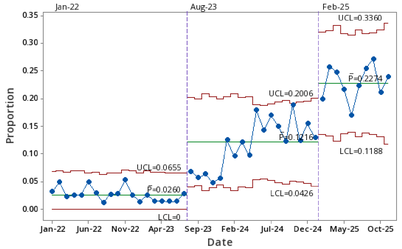


Figure 6. Frequency of HIV Co-Testing Outlying FSEDs

