HIV Cluster Detection and Response (CDR)

San Francisco, CA

HCPC Meeting

October 27, 2025

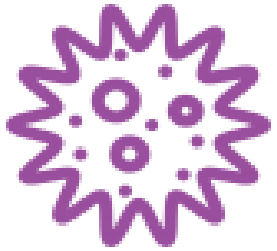
Agenda

- Introductions - *Thomas*
- Framing - *Thomas*
- CDR & Surveillance - *Sharon*
- How SF Responds - *Julia*
- Community Engagement - *Thomas*
- Q & A

‘Respond’ is one of the four Ending the HIV Epidemic pillars

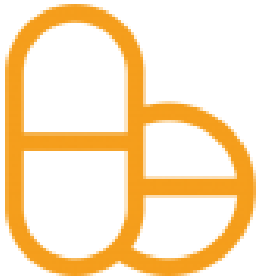
Diagnose

all individuals with HIV as early as possible after infection



Treat

HIV infection rapidly to achieve sustained viral suppression



Prevent

individuals from acquiring HIV, including using PrEP

Respond

to new clusters of HIV infection to reduce transmission

Overview

There are over 60 reportable diseases

HIV is one reportable disease, among many

California Department of PublicHealth

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DIVISION OF COMMUNICABLE DISEASE CONTROL

Communicable Disease Control Forms

Infectious Diseases Case Report Forms

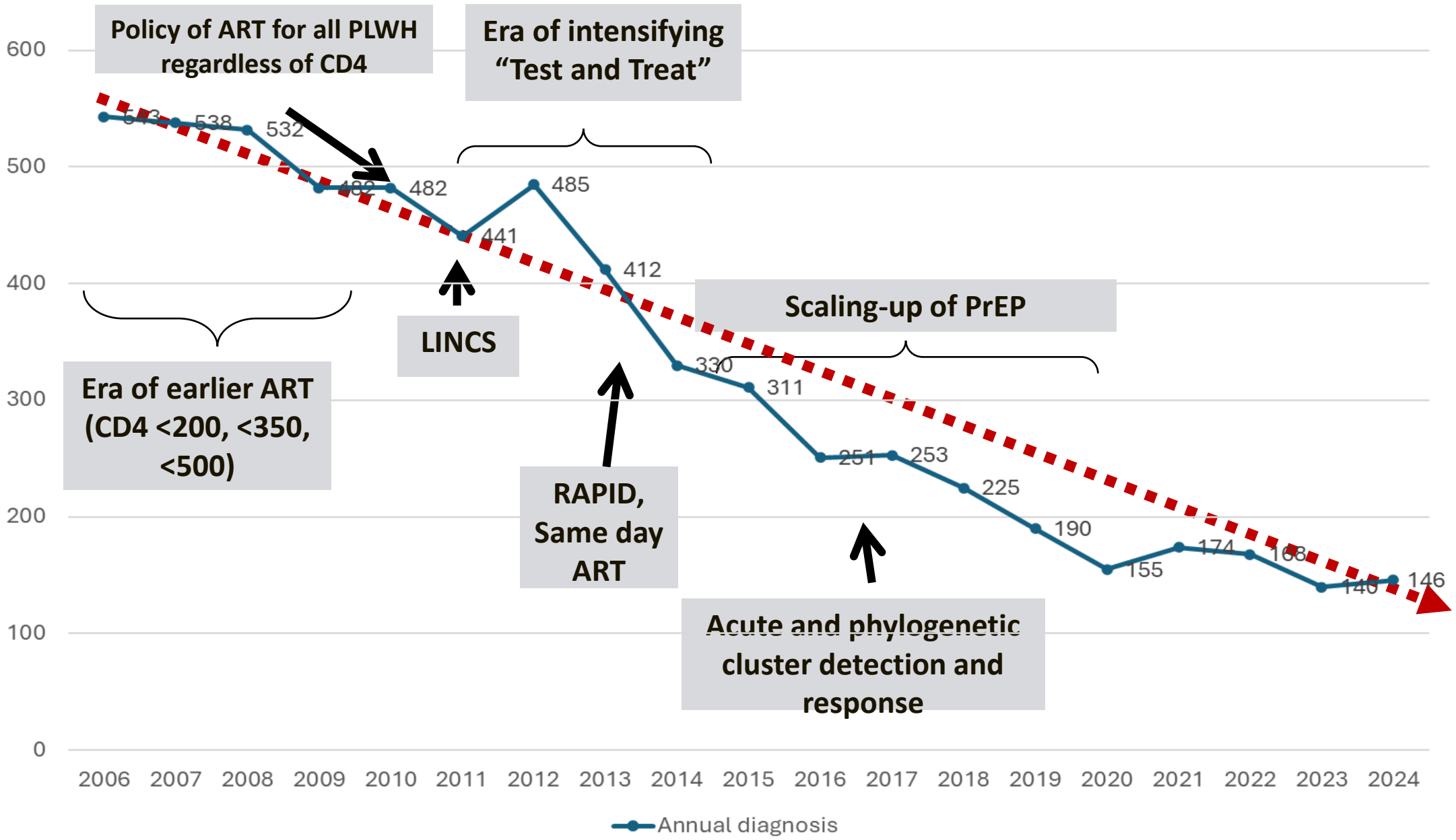
(Forms are provided for use by health professionals only)

Note: Reporting is mandated for all diseases on the list unless otherwise indicated.

Disease	Form Number	Form Title (PDFs are available in the CalREDIE Document Repository)
Anthrax (Human)	CDPH 8578	Anthrax (Human) Case Report
Babesiosis	CDPH 8270	Babesiosis Case Report
Botulism (Food or Wound)	CDPH 8547	Botulism Case Report
Brucellosis	CDPH 8607	Brucellosis Case Report

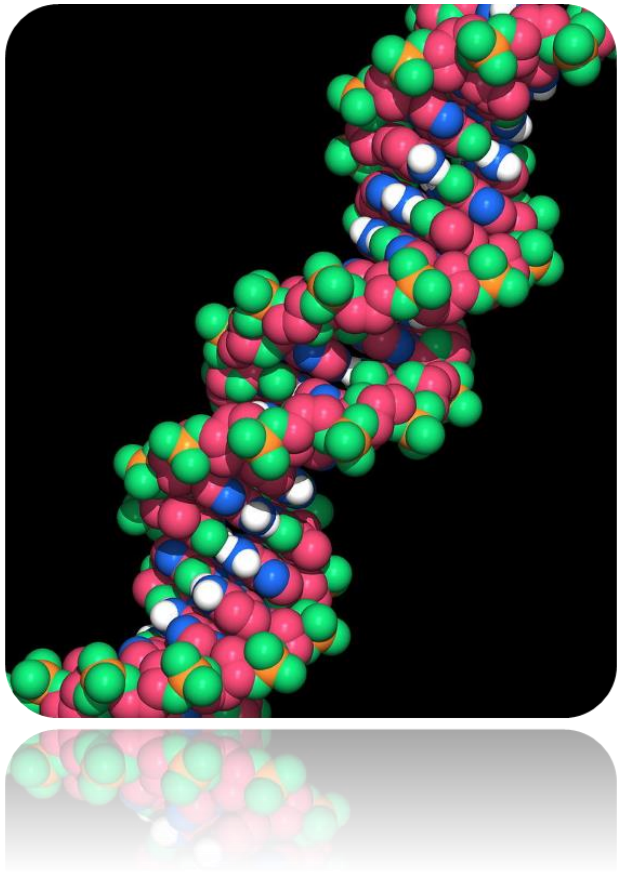
- COVID-19
- Mpox
- Mumps
- Syphilis
- HIV
- Gonorrhea
- Chlamydia
- Lyme Disease
- Measles
- HCV

Trends in HIV San Francisco

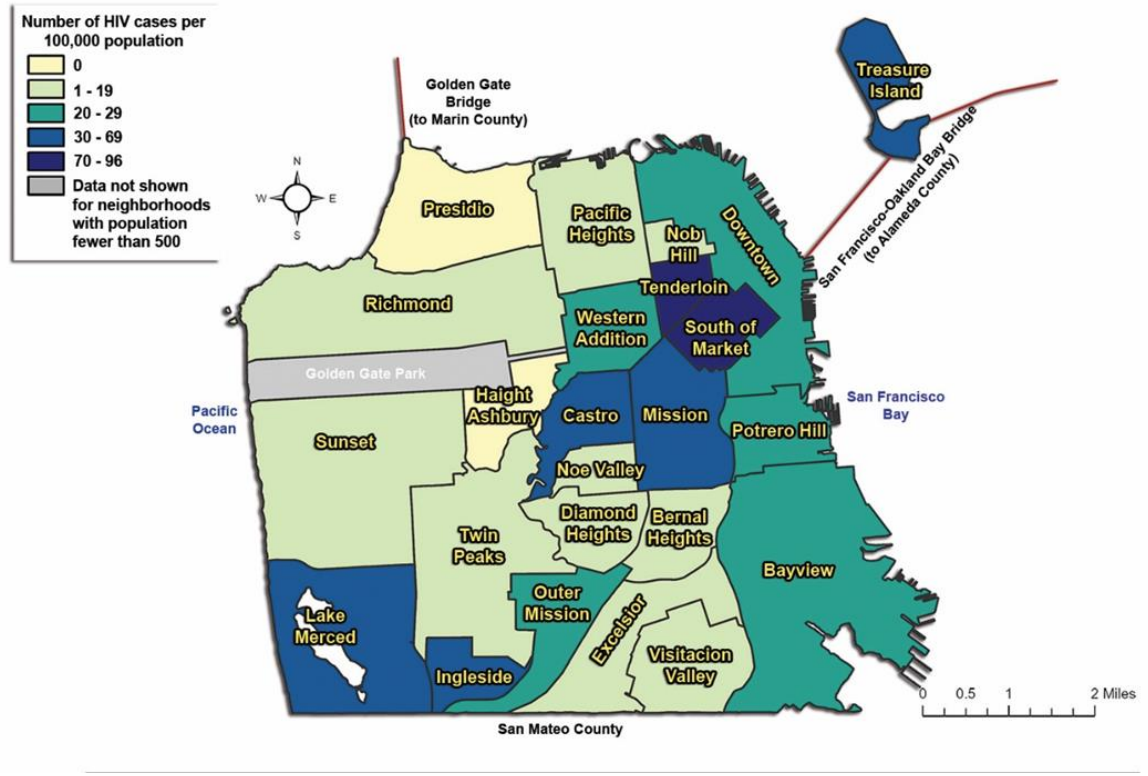


What is cluster detection and response (CDR)?

- HIV genetic sequence data are used to identify clusters
- Public health entities (local, state, CDC) have criteria to prioritize clusters with rapid and recent transmission
- A HIV cluster with many recent diagnoses may indicate rapid HIV transmission within a group of people in a location or social network
- Cluster detection can provide services tailored to the need of persons in the network experiencing rapid and recent HIV transmission
- **Goal:** Improve health outcomes and interrupt further transmission



Time-space Alerts



- Statistical methods detect increase in diagnoses in a particular geographic area or population
- May detect increases earlier than molecular clusters can
- Useful for types of HIV transmission that might warrant different investigative and intervention approaches

How do HIV sequences help identify clusters of rapid HIV transmission?

- When someone is diagnosed with HIV, the virus is genetically sequenced to identify drug resistance patterns that may affect what anti-viral treatment can be used.
- HIV mutates over time, leading to changes in the genetic sequence.
  - The more time has passed, the more mutations have occurred.
- When virus sequences compared and multiple sequences very similar, this could indicate HIV is spreading quickly.

How clusters of concern are identified

PWH has HIV genotype test ordered by provider. Lab test completed & sequence reported to health department (HD).

HD analyzes sequences using specialized software (genetic similarities of virus sequences)

Molecular clusters of concern identified: persons with virus sequences that are similar

Epidemiological line lists to HD "Response Team"

ACCGGATAACGGTTATCCG
ACTGGATAACGGTTATCCG

Direct transmission links and directionality cannot be determined

- Having genetically similar viruses does not indicate direct transmission between two people
- Cannot determine directionality (which virus is ‘older’)

How does SF assure privacy and confidentiality?

- Protections on data
  - California Health and Safety Codes (HSC) and strict confidentiality guidelines of the CDC, CDPH and the SFDPH
  - Data only used when there is clear public health need
  - Strict access controls
    - Encrypted and stored securely
    - Only accessed by a small number of staff who are required to take ongoing data security and confidentiality training
- HIV policy
  - HSC 121022 prohibits disclosure of HIV data to any third-party, unless authorized by law for **public health purposes (NOT legal purposes)**

CDR in San Francisco 2017 to 2025

- Goals:
  - 1. Utilize sequence data to identify persons living with HIV who are not in care and in high transmission clusters
  - 2. Monitor increasing drug resistance
- Since October 2017, SFDPH uses a program to identify clusters that meet a locally-defined criteria for a response.
- Currently 60% newly diagnosed persons, each year, have their virus genetically sequenced and are part of CDR

How SF Responds

Our response workgroup is multi-disciplinary and collaborative

- HIV Surveillance
- HIV/STI Branch Leadership
- HIV Partner Services and Linkage to Care Team (LINCS)
- Community Health Equity and Promotion

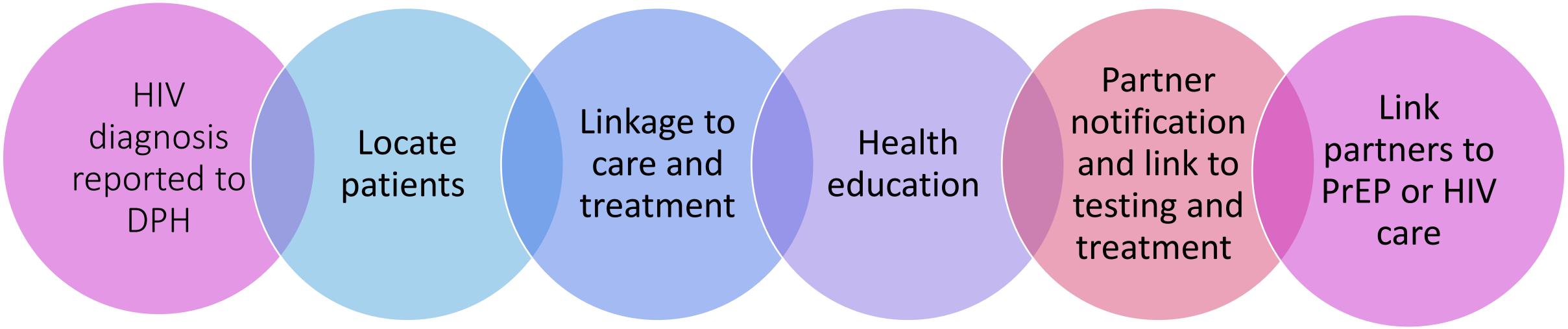
This work-group meets monthly to identify groups of related HIV diagnoses. We act as a safety net, and through partnership with LINCS can provide services.

What does the LINCS team do?

LINCS is staffed by disease intervention specialists and navigators

Link individuals with STIs and/or HIV and their partners to treatment, care, and prevention services

Trained to provide stigma-free, culturally competent care
Meet people where they are, including in the field



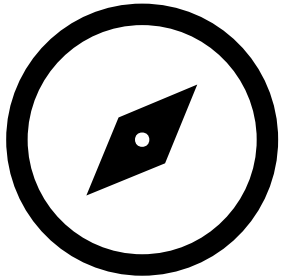
How does LINCS respond to a cluster?

- For clusters, we focus on persons who are not in care
- When we identify a group with related diagnoses, we:
  - **Offer LINCS Navigation** to anyone not-in-care
  - **Offer Partner Services** for anyone who did not receive it

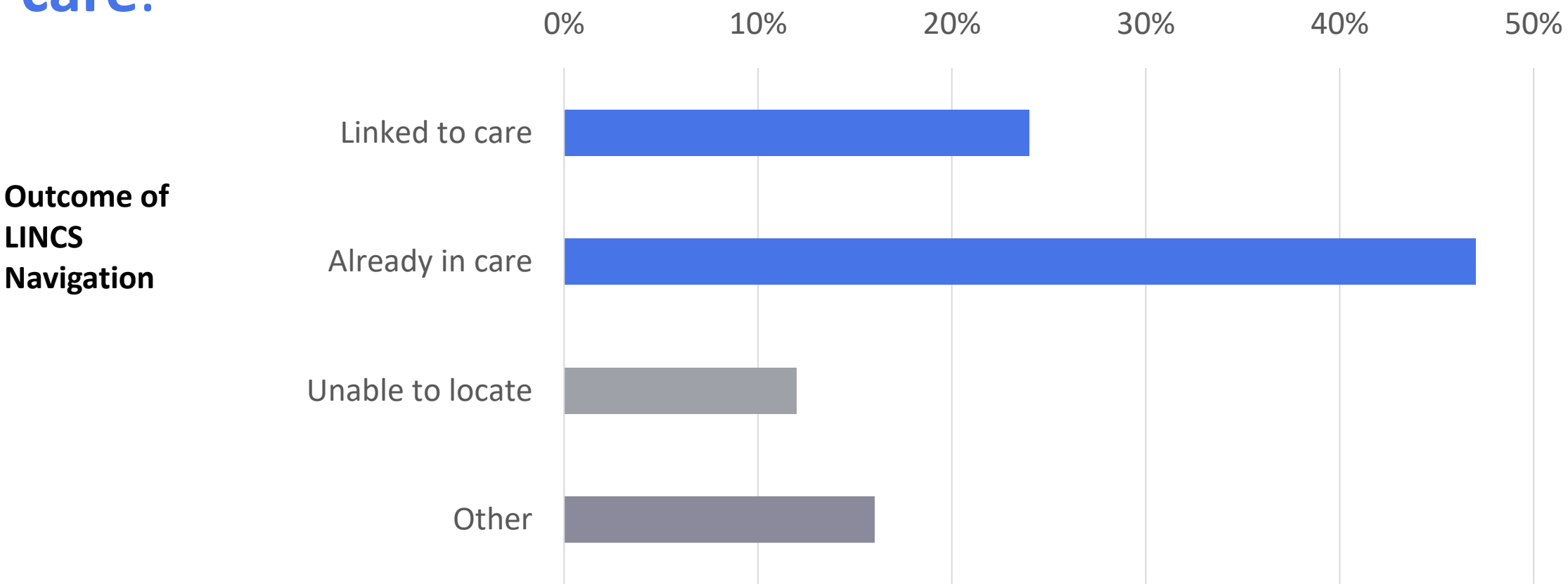
LINCS provides Navigation services to help find and connect people living with HIV to care

Navigation services include:

- 3 months of intensive support with appt reminders, escorts, transportation
- Guidance to health care services including benefits/system navigation
- Health education, motivational interviewing
- Address barriers to care (e. g. Transportation, food insecurity)



From 2022 to June 2025, of the 87 SF residents in clusters who were referred to LINCS Navigation, **>70% were successfully linked to care or confirmed to be in care.**



Community Testing Events

- Sometimes, we hear information from cluster members that helps us to identify a gap in services
- We learned a community was not accessing prevention and testing services. Cluster members identified locations that would benefit from these and other health resources
- Collaborative, integrated approach led to 3 events providing STI/HIV/HCV testing, linkage to treatment, and harm reduction supplies
  - 2 pop-up clinics, 1 door to door testing
- **Outcome:** Over 120 people engaged, and ~33% received testing

Community Engagement

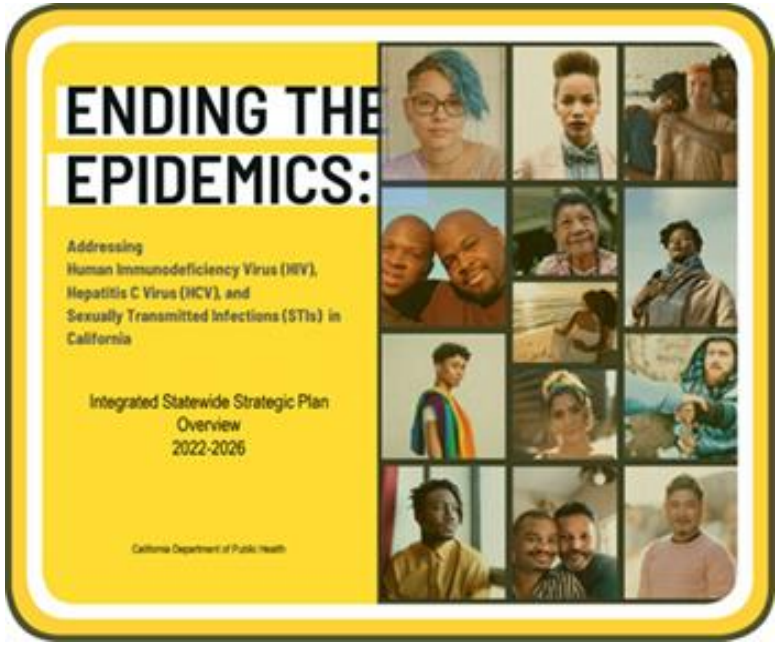
SF History CDR

- Presented to the HIV Community Planning Council in 2019 and in 2023
- Lee Jewel is part of the CDC Community Advisory Group
- Part of the Quarterly SF HIV/HCV/STI/Overdose Counselor Training

We participate in the California Community Advisory Board (CAB), which meets quarterly and as needed

Goals of the Community Advisory Board (CAB):

- **Help shape** effective and culturally appropriate approaches
- **Advise on how to carry out** cluster detection and response in real-world settings
- **Offer input** on important issues like data privacy, and other emerging concerns
- **Raise awareness** and improve community understanding of cluster detection and response efforts across California



State Partners

Summary:
How CDR help us achieve our ETE goals?

- Helps find people not in care who may benefit from HIV Navigation to re-link them to care services
- Early notice of clusters of viruses with drug resistance mutations
  - Outreach to persons with anti-viral resistant HIV who are not in care can improve individual health outcomes and prevent further transmitted drug resistance
- Identify systems-level gaps in access to care, testing, treatment, and harm reduction services
- Prevent continued rapid HIV transmission through linkage to HIV care, referral to PrEP, and addressing barriers

Thank You! Questions?

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Enma Mendoza
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Contact info:
Thomas Knoble
Thomas.Knoble@sfdph.org

Julia Janssen
Julia.Janssen@sfdph.org

Sharon Pipkin
Sharon.pipkin@sfdph.org