Pennsylvania
Department of Health

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HIV Cluster Detection and Response (CDR) in Pennsylvania: Why Physicians' Participation Matters

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Objectives

- Introduce the Pennsylvania HIV CDR
- Highlight how physicians' participation is crucial for CDR successes and improvements in patient care
- Discuss the progress made with HIV CDR and opportunities ahead to improve HIV care outcomes

What is HIV CDR?

- A tool in the fight against HIV
- Part of ongoing routine Core HIV Surveillance and Prevention activities
- Required activity by CDC since 2018
- All states, territories and metropolitan areas are required to carry out similar activities
- Future HIV funding is related to what extent Pennsylvania Department of Health (PA DOH) met CDR performance measures

What is HIV CDR? Cont'd

- PA HIV CDR is a strategy to monitor, detect and respond to any potential HIV transmission cluster and outbreak in PA
- To be used in conjunction with the PA DOH Emergency Operations Plan (EOP), and any other plans that may be applicable to the management of major clusters and outbreaks in PA

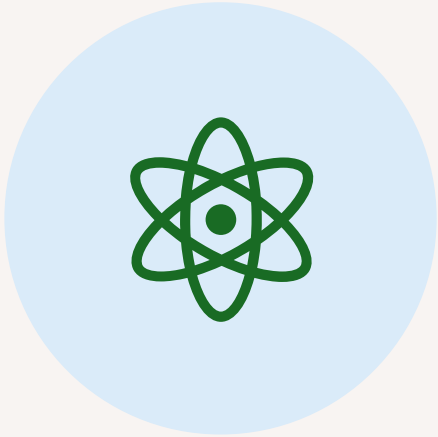
What is HIV Transmission Cluster/Outbreak?

- HIV cluster is an increase of cases above the expected numbers in a limited time period such as months or years in a particular geographic area

- HIV clusters or outbreaks refer to groups of people that are experiencing rapid HIV transmission

Types of HIV Transmission Cluster





TIME-SPACE CLUSTERS

- Time and space: compares most recent year of data to the average for previous three years
- Based on routine analysis of HIV diagnosis data

MOLECULAR CLUSTERS

- Reported by the laboratories as HIV drug resistance test results
- Based on analysis of the genetic material of the virus that causes HIV
- The cluster shares the same HIV strains

Responding to HIV Clusters

During HIV cluster response, success is achieved when **field staff** and **local partners** work together to meet the community's needs.

Partners may include:

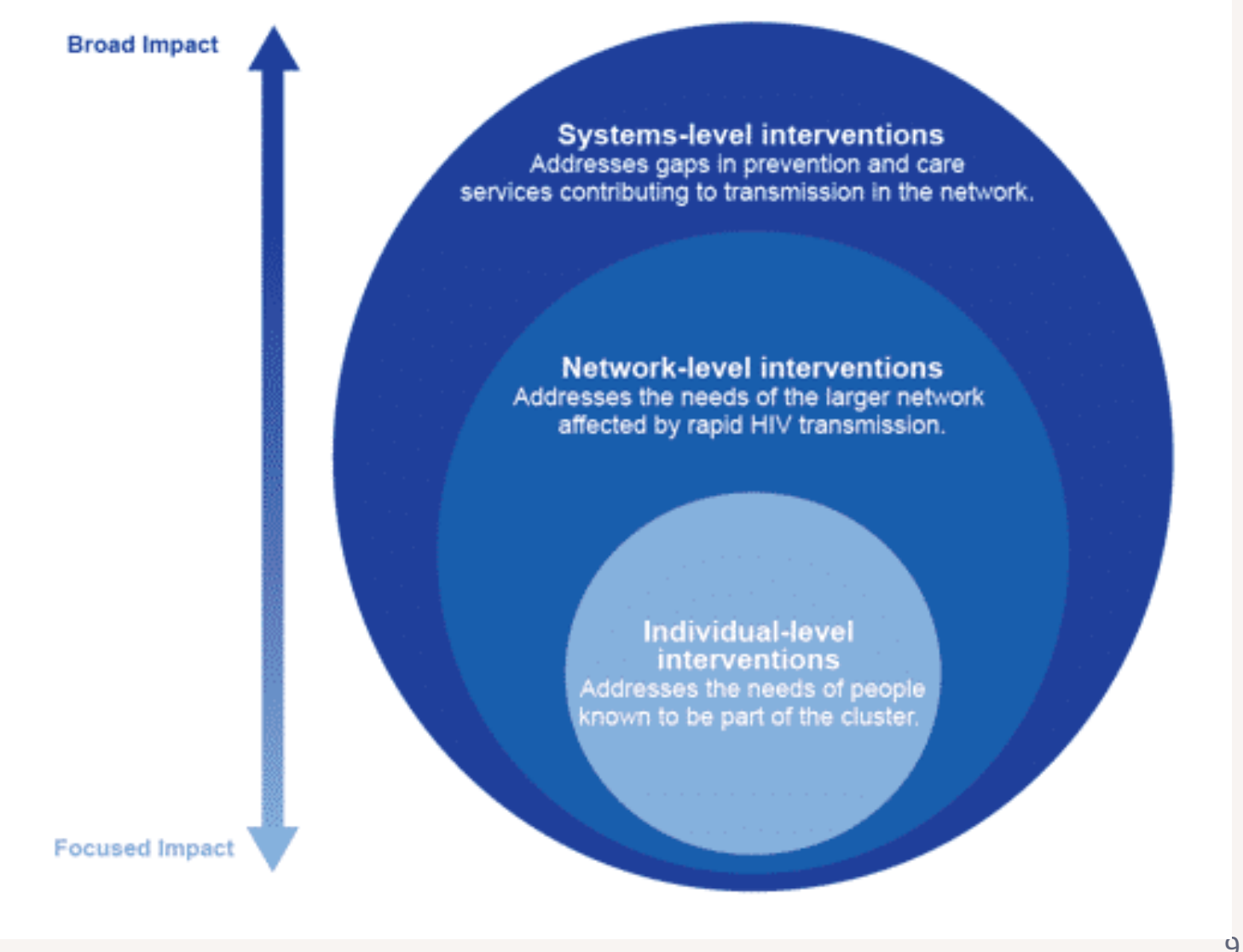
- **Health care providers**
- **Advocates**
- **Community leaders** and organizations

The response should reach:

- People with **undiagnosed HIV**
- People with **diagnosed HIV** not accessing care who need health education or partner services resources
- People without HIV who need **prevention services**

Responding to HIV Clusters, Cont'd

Responding to clusters could be at individual, network, and systems levels



Linkage to Care and Treatment

- The goal of treatment in HIV care is to achieve viral suppression which prevents HIV-related illness and complications. It also reduces onward transmission ("Undetectable = Untransmittable" or U=U)

- Linkage to care means connecting a newly diagnosed client (or re-engaging previously diagnosed clients who has fallen out of care) to medical services, ideally within 30 days of diagnosis or same-day or next-day linkage

- In HIV CDR, linkage to care and treatment ensures that clients identified within a cluster get rapid, supportive access to lifesaving care

- Why Linkage to Care is Important?
  - Individual Health: People live longer and healthier lives with ART
  - Public Health: Viral suppression breaks transmission chains in clusters
  - Equity: Linkage programs address barriers like stigma, transportation, unstable housing, or lack of insurance
  - EHE Goal Alignment: Rapid linkage to treatment is essential to EHE by reducing new infections

Importance of CDR to Ending the HIV Epidemic Initiative

- Ending the HIV Epidemic (EHE) initiative in the U.S. is built on four key pillars: diagnose, treat, prevent, and respond, each designed to collectively reduce new HIV infection by 90% by 2030.
- HIV CDR operationalizes the fourth pillar (respond) and strengthens diagnose, treat, and prevent by ensuring that public health action is targeted, timely, and data-driven.



Progress Made - Identified Clusters

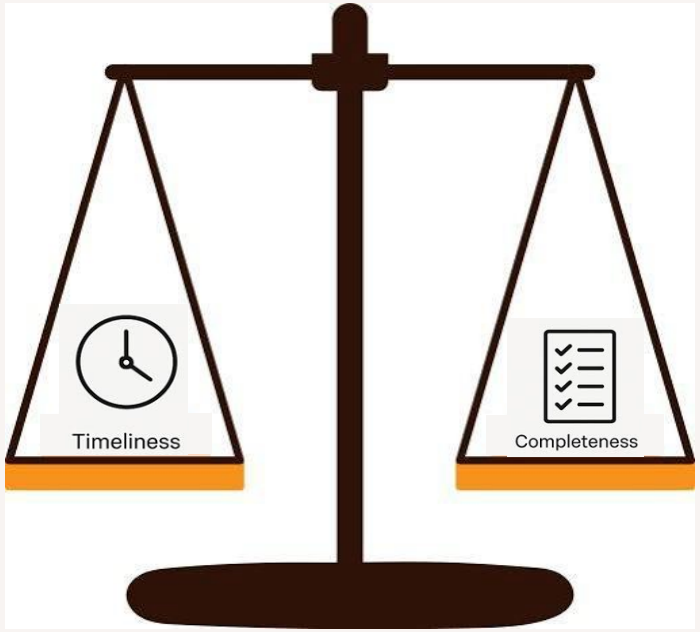
Number of identified Clusters by Type, Entity and Year of identification, 2018-2026, PA

Cluster Type	CDC National Clusters										
	2018	2019	2020	2021	2022	2023	2024	2025	2026	Total	
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	%
Molecular	1	2	1	0	1	1	0	1	0	7	17.9
Time-Space	0	0	0	0	0	0	0	0	0	0	0
	PA Clusters										
Molecular	0	4	2	1	0	0	1	0	2	10	25.6
Time-Space	1	1	5	7	2	2	1	3	0	22	56.4
Total	**2**	**7**	**8**	**8**	**3**	**3**	**2**	**4**	**2**	**39**	**100**

Data source: PA HIV surveillance

Current Challenges

- Sequence timeliness versus completeness



- Delayed sequence reporting

Importance of HIV CDR

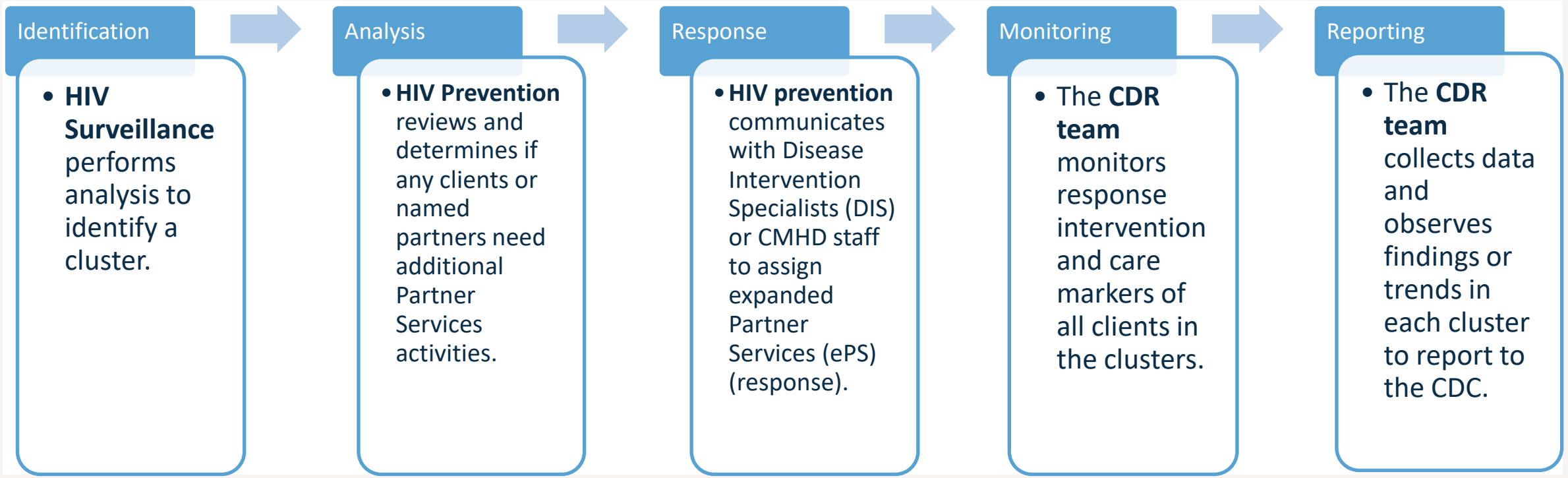
- Helps to identify rapidly growing transmission networks across Pennsylvania before they become an outbreak
- Implements appropriate and early interventions to stop ongoing transmission
- Enhances prevention and treatment when applicable. For example, linkage to care of HIV-positive partners, offering PrEP and PEP services to HIV-negative partners
- Improves engagement and retention in care for individuals lost to follow up
- Protects individuals and communities at risk
- Supports EHE pillars

HIV CDR Field Response



- Population: 13 Million
- 66 Counties (Excluding Philadelphia)
- 10 County/ Municipal Health Departments (CMHD), outside of Philadelphia

HIV CDR Program Overview



Engagement and Outreach Examples

Cluster of Interest

“I know my community best.”

- Identified cluster by HIV Surveillance
  - 29 Clients
- Field response requests determined by HIV Prevention

Non-Cluster of Interest

PWID vs. Accessible Services

- DOH DIS identified an increase of diagnoses along with named sexual and needle sharing partners
- Development of system approach response with providers in the area

Non-Cluster of Interest

“They are so young and just don’t care.”

- DOH DIS completed disease surveillance and partner services
- Development of geographic information system (GIS) interactive map
- Collaboration with providers for testing

Identified Benefits and Findings

Successes

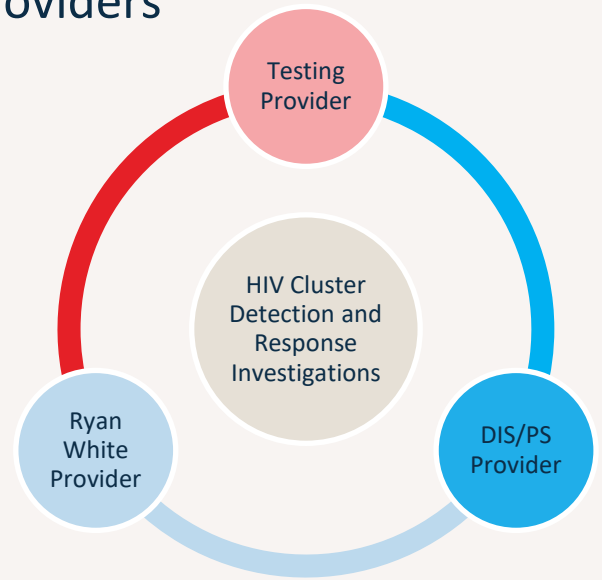
- Creating a space for open and direct communication channel
- Continuously incorporating an "expectation vs reality" viewpoint
- Identifying opportunities for system level approaches and collaboration for increasing services

Challenges

- Translating surveillance data and documentation requirements into priority response requests for field staff
- Communication appropriate for both higher leadership and DIS

Identified Gaps

- Systems approached communication with providers
- Education material for providers



Role of Physicians in PA HIV CDR

Why Physician Collaboration is Essential

Physicians see the patient

Clinical encounters provide context that surveillance data alone cannot capture.

Physicians influence action

Testing, diagnosis, treatment, prevention counseling, and care coordination can directly affect outcomes.

Physicians build trust

Strong provider–patient relationships can support engagement when public health teams need to connect with patients or care teams.

What Physician Participation Can Look Like

- **Recognize**: Consider acute HIV and appropriate testing when clinically indicated.
- **Report**: Support timely, accurate reporting of HIV diagnoses and required laboratory information.
- **Respond**: Collaborate with PA DOH when contacted regarding cluster investigations.
- **Connect**: Help patients newly diagnosed or out of care connect with appropriate services.
- **Prevent**: Discuss PrEP/PEP and other prevention strategies with patients who may benefit.
- **Partner**: Share clinical perspective that can strengthen cluster interpretation and response.

Why PA Physicians are Key Partners

Education

Promote HIV CDR education and CME opportunities for physicians and clinical teams.

Communication

Help disseminate practical information about HIV testing, treatment, prevention, reporting, and CDR.

Engagement

Identify strategic physicians and strengthen connections between healthcare and public health.

Sustainability

Build CDR awareness into ongoing professional education and clinical practice.

Shared Goal

Make the transition from surveillance alerts to timely clinical and public health action faster and stronger.

The Opportunities Ahead

- Strengthen the bridge between Pennsylvania's surveillance system and frontline clinical care.
- Expand physician awareness of what CDR is—and what it is not.
- Make engagement with public health easier, clearer, and more actionable for clinicians.
- Use partnership to accelerate care, prevention, and response when clusters are identified.

Discussion: How can PAMED and PADOH make CDR more visible, practical, and actionable for physicians?

Take Home Message

Public health brings the population-level perspective.
Physicians bring clinical expertise, patient relationships, and opportunities for intervention.

Together, we can turn surveillance alerts into timely action.

Thank you.

Questions



For More Information

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