

## **Molecular HIV Surveillance - Genotype Clusters Talking Points**

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### **What is Molecular HIV Surveillance?**

- HIV drug resistance testing is recommended for all people living with HIV in the United States to make sure the drugs prescribed to them will successfully treat their infection.
- Drug resistance testing is done by analyzing the genetic sequence of the virus itself.
- Public health agencies use surveillance activities to help prevent and control the spread of disease. Disease surveillance is the systematic collection and analysis of health data used to plan and implement public health activities.
- Molecular HIV Surveillance is part of routine HIV Surveillance and includes HIV genetic sequences from drug resistance testing. These sequences and other laboratory test results are reported to the Texas Department of State Health Services (DSHS).
- Transmission networks are groups of people with a very similar HIV genetic code. The HIV genetic sequences collected through molecular HIV surveillance can be used to identify transmission networks, which can help to focus HIV prevention and care strategies.

### **Why should we use molecular HIV cluster identification?**

- Public health agencies provide HIV Partner Services (also known as contact tracing), where persons who may have been exposed to HIV

are confidentially notified and offered testing. Information about who may have been exposed is gathered through confidential interviews with patients diagnosed with HIV. This is a useful tool to identify transmission partners, but not every patient is interviewed and patients may not provide the name(s) of his/her partners.

- The molecular transmission network data combined with the partner services data gives a better picture of what the true transmission network may look like. A transmission network, also called a cluster, consists of persons who are infected with a strain of HIV that has a similar genetic sequence.
- We can prioritize clusters with recent growth and rapid person-to-person transmission for HIV prevention, HIV Partner Services, and connection or re-connection to medical care.
- Ensuring that persons with HIV receive medical care is critical for keeping them healthy and able to live with HIV infection. In addition, persons who adhere to HIV medication regimens rarely transmit HIV to others because the medication dramatically lowers the amount of virus to undetectable levels.

### **How are these clusters identified?**

- HIV genotype sequences can be compared side by side to find similar sequences. These similar sequences are considered possible transmission partners.
- We use all the transmission partner links to construct transmission networks.
- We identify clusters which have indications of rapid person-to-person transmission and newly diagnosed people.
- We prioritize clusters that have had at least five new diagnoses in the past year.
- Texas DSHS receives genotype test results for about 50 percent of the people diagnosed with HIV each year; it is important to look at partner services interview data to find other people in the transmission network.

### **What do molecular HIV clusters NOT tell us?**

- Molecular clusters include ONLY those people who have been diagnosed and have an HIV sequence reported to DSHS.
- Two people may be linked because they have a similar HIV genetic sequence. This does not mean that one person transmitted HIV to the other. Genetic information only tells us that there is a link between two people, but cannot tell who gave the virus to whom.
- A link between two people with a similar HIV sequence could mean:
  - one person infected the other, or
  - they had a partner in common, or
  - an unknown person infected one or both known people.
- People can be missing from a cluster when genetic data alone is used because:
  - Not every person in a cluster may have been diagnosed yet.
  - Not every person in a cluster who is diagnosed has a genetic sequence available.
- A molecular cluster is not an outbreak of new HIV cases, but it may be a higher than normal pattern of linked new diagnoses.

### **What is DSHS doing?**

- We identify clusters that have rapid person-to-person transmission and recent growth.
- We work with local and/or regional health departments to connect or reconnect persons in the cluster who do not have routine HIV care into appropriate medical care.
- We work with local and/or regional health departments to test persons who are HIV negative and may be at higher risk of getting infected because they are linked to this cluster.
- We work with local and/or regional health departments to offer Pre-Exposure Prophylaxis (PrEP) to persons who are at higher risk of acquiring HIV. PrEP is a medication that, when taken daily, can prevent HIV infection in these persons.
- We work with communities across Texas to identify gaps in the health care system, public health outreach, and other factors that may be contributing to the growth of these clusters.

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- We encourage routine testing for HIV in medical care settings, which can lead to earlier diagnosis of HIV in persons who would not otherwise have been tested.
- We continue to educate healthcare providers and the public about risks for HIV infection and how to reduce or avoid these risks.