MOLECULAR HIV SURVEILLANCE IMPLEMENTATION

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BACKGROUND – MICHIGAN MHS

• MI began collecting HIV genotype sequence data in 2004 as VARHS (Variant, Atypical, Resistant HIV Surveillance)
  • GOAL: to assess rates of drug resistance and subtype prevalence
• Today, nearly 80% of all prevalent cases in Michigan have a genotype stored in the HIV surveillance registry, eHARS
• HIV genotype labs are imported into eHARS daily from over 20 labs across the county
HISTORY OF MHS IN MICHIGAN

• MI began connecting genotypes and transmission dynamics in 2009 as part of a partnership with the University of Michigan
  • Shared with researchers looking to discover relationships between cases – how the virus was spreading through the population
  • Several major publications

• Limitations were time and understanding
  • Electronic lab reporting for genotypes was less than prompt (up to 3 months from collection date)
  • Lacking community engagement necessary to support any intervention
MICHIGAN WORKS WITH CDC

• The Michigan MHS Coordinator served on several CDC workgroups
  • Ethics of HIV genotype data
    • What information identifies individuals
    • What are the legal and social implications of placing individuals in clusters of related virus
  • Cluster guidance
    • What community engagement looks like
    • What interventions are possible
    • What barriers exist in the translation of sequence data to outreach
1st CDC-Identified Michigan Cluster

- First cluster in 2015
  - Explored how to visualize
  - Discussed possible interventions or public health actions with 2 local health departments
Throughout 2016, Michigan provided CDC feedback on clusters. MI had 3 CDC identified clusters.

<table>
<thead>
<tr>
<th>MICHIGAN CLUSTERS FROM CDC</th>
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<tbody>
<tr>
<td><strong>Cluster 1</strong></td>
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<tr>
<td><strong>Total cases</strong></td>
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<tr>
<td>Suppressed VL</td>
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<tr>
<td>Undetectable VL</td>
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<tr>
<td>Age at HIV diagnosis</td>
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<tr>
<td>13–19</td>
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<td>20–29</td>
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<td>30–39</td>
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<tr>
<td>40–49</td>
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<tr>
<td>Race/ethnicity</td>
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<td>Amer. Indian/Native Alask.</td>
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<tr>
<td>Asian</td>
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<td>Black/African American</td>
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<tr>
<td>Hispanic/Latino</td>
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<td>White</td>
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<tr>
<td>Transmission category</td>
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<tr>
<td>MSM</td>
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<tr>
<td>MSM/IDU</td>
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<td>Recenty</td>
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<tr>
<td>Recent</td>
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<td>Longstanding</td>
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<td>Interviewed</td>
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<tr>
<td>New</td>
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<td>Provided partners</td>
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<td>Total # of partners</td>
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<td>STD Co-infection</td>
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INITIAL INTERVENTIONS

• MDHHS leadership discussed available resources, local dynamics and cluster characteristics
  • Decision was made to begin an intervention in 1 of 3 clusters
  • Shared list and cluster characteristics with local health departments
    • Alerted to oddslot transmission dynamics in their local environment
  • Re-initiated partner services/DIS outreach for those in cluster who were never interviewed and known partners that were never contacted
MICHIGAN AND SECURE HIV TRACE

- First local run of genotypes through TRACE in July of 2017
  - 11,256 total sequences imported
  - Produced 795 clusters
    - approximately 120 w/greater than 5 individuals
- Looking for a way to prioritize clusters
  - all 120 are not equally relevant considering limited resources
- Not a static environment – we plan to run entire genotype sequence database through TRACE monthly
PLAN TO PRIORITIZE CLUSTERS

- Genetic distance: we use .015 as recommended by CDC
  - In the future .005 may be used to focus on certain clusters
- Number of new cases in past 1 year used to limit clusters
  - We used a minimum of 3 new cases
- Clusters with new cases are prioritized by:
  - High VL
  - Status of Not in care (NIC)
  - STD Co-infection
  - No evidence of Partner Service or DIS counseling
FIRST LOOK AT PRIORITIZED CLUSTERS

• In September of 2017 - 15 prioritized clusters identified
  • Each with at least 3 new cases in past year
• Line lists for each of the 15 clusters were created using eHARS
  • 310 individuals total
  • Variables in line list include:
    • Recent VL, sex, race, Dx date, aids at dx, aids w/in 6 months, Dx facility info, TTH info
• PSWeb and MDSS used to add supplemental info:
  • If they were interviewed
  • How many partners identified
  • STD co-infections
NEXT STEPS:

GOAL:

• Share lists with HIV prevention staff (integrated programming) to understand general trends in new diagnoses
• Share lists with local health department to discuss possible interventions

PRE-PLANNING:

• Multiple presentations and community engagement events
• Monday – presented at meeting of Michigan HIV/AIDS counsel - local health officers
• Developed a technical guidance document that is posted on our website – www.Michigan.gov/hivstd
• Distribute letters to all LHDs, CBOs and Providers outlining MHS goals
**CLUSTERS AND DATA TO CARE (D2C)**

**Data to Care** is a new public health strategy that aims to use HIV surveillance data to identify HIV-diagnosed individuals not in care, link them to care, and support the HIV Care Continuum.

- Michigan MHS coordinator also produces D2C lists
  - Working towards:
    - Same LHD contacts
    - Same secure file transfer distribution system
    - Same distribution schedule (monthly vs. quarterly debated)
  - Streamlining LHDs into “districts” or leveraging DIS that work larger geographic areas
  - Multi-purpose lists will be cross-referenced to indicate when an individual on a D2C list is included in a molecular cluster
**CLUSTERS AND OUTBREAK MONITORING**

- Michigan HIV surveillance monitors patterns in new diagnoses in an effort to detect significant changes as quickly as possible
  - These programs flag regions and demographic groups with notable increases in new diagnoses
- MHS coordinator also facilitates local outbreak monitoring
  - Again – same LHD contacts, same sharing mechanism and distribution schedule
  - Multi-purpose lists will minimize the sharing of confidential information and allow for more efficient outreach
    - Avoiding multiple outreach events on an individual who may appear on multiple lists
INTerventions – The Details

• Cluster lists will contain all epidemiology data available
  • In Michigan there is not need for a DUA with LHDs
  • Lists will be prioritized for LHDs
  • LHDs will be compensated for outreach efforts for MHS
• MDHHS will provide recommendation/consultation for LHDs in terms of MHS outreach
  • When to re-interview for new partners
  • When to facilitate link to care
  • When to provide incentives for a re-interview or linkage to care
• Talking points provided
• How to relay information back to HIV surveillance partners
TRAINING LOCAL PS/DIS STAFF

- PS/DIS staff are being educated about MHS
- Initial post-test counseling interview – revising expectations
  - Life-long relationship between health departments and individuals living with HIV – encounters may occur
    - MHS, D2C, outbreak monitoring
    - Medical Monitoring Project (CDC-funded interview/medical record abstraction project designed to learn more about experiences and needs of people living with HIV)
THANK YOU!

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