National surveillance for large outbreaks

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Burden of TB outbreaks

- Outbreaks continue to challenge TB control efforts
- Response can be resource-intensive, overwhelming
- Understanding burden of TB outbreaks is important
  - Direct resources
  - Advocate for additional resources
- Has been no national surveillance for outbreaks

Burden of TB outbreaks

- Universal genotyping provides tool to conduct systematic surveillance
- DTBE is currently developing a surveillance system to track potential large outbreaks in United States
  - Genotyping data
  - Program input
**Stakeholders**

- Local and state TB control programs
- National Tuberculosis Controllers Association
- Outbreak Detection Work Group
- Division of TB Elimination, CDC
- Feedback from stakeholders will be essential to ensure feasibility and utility of large outbreak surveillance

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**Planned uses of outbreak surveillance system**

- Measure the burden of large outbreaks nationally
- Determine resource needs for outbreak response, including investigation
- Identify situations where supplemental assistance is needed
- Characterize the features of large outbreaks
  - Settings (e.g., congregate versus household)
  - Populations (e.g., U.S.-born versus foreign-born)
- Test sensitivity and specificity of outbreak detection methods using genotyping data
- Advocate for additional resources for TB control

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**Phases of implementation**

- Pilot phase to begin April 1, 2014
  - Test feasibility of surveillance definitions, data collection methods
  - Obtain feedback from partners to revise system
  - Explore need for Office of Management & Budget (OMB) review
- Next phase (to be determined, but aim to begin April 1, 2015)
  - Implement changes to system based on feedback from stakeholders during the pilot phase
METHODS

Pilot phase

Large outbreak surveillance definition

- ≥10 cases over a 3-year period related by recent transmission

Detection methods

- Methods using genotyping data
  - Methods other than those based on genotyping data, as used by local or state programs
    - These outbreaks should be defined according to the reporting jurisdiction's usual practices

Notifications and reporting of outbreaks

- When detected by methods using genotyping data
  - DTBE epidemiologist and program consultant notify the state TB control program
  - Notifications will occur upon detection (usually at the start of each quarter), beginning April 1, 2014

- When detected by the local program through methods other than those methods based on genotyping data
  - Local programs notifies DTBE program consultant through the state TB control program
  - Notifications should occur at the start of each quarter or upon detection
Initial assessment after notification, during pilot phase
- DTBE epidemiologist and program consultant will contact state program to collect public health information for each situation
- Goal is to complete data collection within 2 weeks of notification
- To standardize data collection, DTBE will utilize a standardized form
  - Investigation activities performed
  - Number of cases in potential outbreak, including non-genotyped cases
  - Sites of transmission
  - State program assessment of outbreak

Data elements during initial assessment

Follow-up assessment, during pilot phase
- DTBE epidemiologist and program consultant will contact state program to collect public health information for each situation
  - Every quarter for the first year, then
  - Every 6 months until the outbreak subsides
- To standardize data collection, DTBE will utilize a standardized form
  - Updated number of cases in potential outbreak, including non-genotyped cases
  - Investigation activities performed
  - Aggregate data on evaluation and treatment of contacts
  - Sites of transmission
  - State program assessment of the situation
### Data elements during follow-up assessment

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Name</td>
<td>Full name of the patient</td>
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<tr>
<td>Date of Onset</td>
<td>Date when the patient became symptomatic</td>
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<tr>
<td>Symptoms</td>
<td>List of symptoms experienced by the patient</td>
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<tr>
<td>Contact Information</td>
<td>Contact details of the patient and the source of infection</td>
</tr>
<tr>
<td>Public Health Information</td>
<td>Information relevant to public health implications</td>
</tr>
</tbody>
</table>

### Flow of information

- **Interview Phase**: DTBE will interview state programs to obtain information.
- **Pilot Phase**: Begins April 1, 2014.
- **Next Phase**: To be determined, but aims to begin April 1, 2015.

- State programs will transmit public health information to DTBE using a standardized data collection instrument created based on experience during the pilot phase.

### Anticipated change with next phase of implementation

- **Pilot Phase**
  - DTBE will interview state programs to obtain information.

- **Next Phase**
  - To be determined, but aims to begin April 1, 2015.
    - State programs will transmit public health information to DTBE using a standardized data collection instrument created based on experience during the pilot phase.
EXPECTED BURDEN BASED ON 2012 GENOTYPING DATA

### Number of potential outbreaks* — 7 high-incidence jurisdictions, 2012

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>Q1</th>
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<th>Q3</th>
<th>Q4</th>
<th>Total</th>
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* Based on genotyping data

### Number of potential outbreaks* — 44 low-incidence jurisdictions, 2012

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</tr>
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</table>

* Based on genotyping data
Expected burden, based on 2012 genotyping data

- 24 potential outbreaks identified by genotyping data
- 5 of 7 high-incidence jurisdictions with ≥1 potential outbreak
- 10 of 44 low-incidence jurisdictions with ≥1 potential outbreak
- Summary: 15 jurisdictions with ≥1 potential outbreak
- 36 jurisdictions with no outbreaks

<table>
<thead>
<tr>
<th>Burden of potential outbreaks</th>
<th>7 high-incidence jurisdictions</th>
<th>44 low-incidence jurisdictions</th>
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<tbody>
<tr>
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</table>

Next steps

- Implementation of pilot phase planned for April 1
- Ongoing input from partners in preparation for next phase
  - Genotyping session during National TB Conference, June 2014

Questions?

- Please contact your program consultant following today's webinar if you have additional questions or comments.