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ALPHA Health Summit

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Public health surveillance is

the ongoing systematic collection, analysis, and interpretation of outcome-specific data for use in the planning, implementation, and evaluation of public health practice.
Alaska Division of Public Health requires the reporting of certain health conditions and diseases.
Infectious Disease Surveillance System

1. Condition diagnosed by provider
2. Report to Alaska Section of Epidemiology
3. Confidential case review and interview by Section of Epidemiology
4. Record suspected or confirmed case into surveillance system
5. Institute control measure

Occurrence of reportable condition
Alaska's largest TB outbreak in 8 years contained on Y-K Delta

Alaska authorities have confirmed an outbreak of tuberculosis (TB) in a Yukon-Kuskokwim Delta village.
Alaska's largest TB outbreak in 8 years contained on Y-K Delta

1 active TB case occurs and is identified by provider
Provider reports TB case to State in March 2013
State investigates case
State records case in surveillance system
Aide assures patient takes medication on-time
State investigates new, related case!
State records case in surveillance system
Alaska's largest TB outbreak in 8 years contained on Y-K Delta

Provider reports TB case to State in March 2013

Feb 2014: 17 active cases
Infectious Diseases Reportable by Health Care Providers

<table>
<thead>
<tr>
<th>Hepatitis (type A, B, or C)</th>
<th>Rheumatic fever</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human immunodeficiency virus (HIV) infection</td>
<td>Salmonellosis</td>
</tr>
<tr>
<td>Influenza death, laboratory-confirmed by any testing methodology</td>
<td>Scombroid fish poisoning</td>
</tr>
<tr>
<td>Legionellosis (Legionnaires’ disease or Pontiac fever)</td>
<td>Shiga-toxin producing Escherichia coli (STEC) infection, including O157:H7</td>
</tr>
<tr>
<td>Leptospirosis</td>
<td>Shigelllosis</td>
</tr>
<tr>
<td>Leprosy (Hansen’s disease)</td>
<td>Streptococcus agalactiae (Group B streptococcus), invasive disease</td>
</tr>
<tr>
<td>Listeriosis</td>
<td>Streptococcus pneumoniae (pneumococcus), invasive disease</td>
</tr>
<tr>
<td>Lyme disease</td>
<td>Streptococcus pyogenes (Group A streptococcus), invasive disease and streptococcal toxic shock syndrome, including necrotizing fasciitis</td>
</tr>
<tr>
<td>Malaria</td>
<td>Syphilis</td>
</tr>
<tr>
<td>Mumps</td>
<td>Trichinosis (trichinellosis)</td>
</tr>
<tr>
<td>Pertussis (whooping cough)</td>
<td>Tuberculosis</td>
</tr>
<tr>
<td>Pregnancy in a person known to be infected with hepatitis B, human immunodeficiency virus (HIV), or syphilis</td>
<td>Typhoid fever</td>
</tr>
<tr>
<td>Prion diseases, including Creutzfeldt-Jakob disease (CJD)</td>
<td>Varicella (chickenpox)</td>
</tr>
<tr>
<td>Psittacosis</td>
<td>Vibrio infection, including cholera</td>
</tr>
<tr>
<td>Q fever</td>
<td>Yersiniosis</td>
</tr>
</tbody>
</table>
Untreated group A *Streptococcus* can result in rheumatic fever.

Symptoms include

- Inflammation of the heart
- Joint pain
- Involuntary movement
Rheumatic fever rates have decreased across the US.

Rheumatic fever surveillance has decreased.
Alaskan rheumatic fever surveillance was historically important.
Who is involved in rheumatic fever surveillance?

- **Primary**
  - Clinicians and other health care providers
  - Alaska State Division of Public Health, Section of Epi
We evaluated the surveillance system’s ability to capture rheumatic fever cases.
We compared external datasets to the surveillance system.
The data sets have overlapping populations.
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The data sets have overlapping populations.
We also conducted stakeholder interviews to understand interaction with the system.
Rheumatic fever surveillance captured 20 cases between 2000 and 2018.

- 15 years old
- 65% female
The majority of patients were American Indian/Alaska Native.
The majority of patients originated in the Anchorage/Mat-Su region.
More patients appeared in the Medicaid and IHS databases between 2003 and 2014.
Few patients in the surveillance system were from the Southwest region.
Summary

- Data from Medicaid and IHS indicate there is underreporting to the surveillance system

- Our next step was to interview surveillance system stakeholders to evaluate why there is underreporting
We interviewed 3 physicians to understand their interactions with the system.
We interviewed 3 physicians to understand their interactions with the system.

“I never knew rheumatic fever was a reportable disease.”

“Reporting [rheumatic fever] doesn’t immediately come to mind.”
We also interviewed 2 RN case managers.
We also interviewed 2 RN case managers.

“Strep is so common and not reportable...rheumatic fever is a result of strep and isn’t communicable itself.”
We talked to the Section of Epidemiology.
We talked to the Section of Epidemiology.

Is rheumatic fever surveillance still necessary?

How are other states using this information?
3 States said:

- Historical importance but no longer actively tracked
- May remove rheumatic fever from reportable list
Rheumatic fever surveillance

1. Occurrence of rheumatic fever
2. Condition diagnosed by provider
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Rheumatic fever will be removed from the reportable conditions list.
The reportable conditions list changes over time.

- **Conditions removed since 1991**
  - Amebiasis
  - Aseptic meningitis
  - Granuloma inguinale
  - Murine typhus fever
  - Rheumatic fever

- **Conditions added since 1991**
  - Arboviral diseases
  - Babesiosis
  - Campylobacteriosis
  - Candida auris
  - CP-CRE
  - Coccidiodomycosis
  - Cryptosporidiosis
  - Cyclosporiasis
  - Dengue virus infections
  - Giardiasis
  - Hantavirus
  - Hemolytic uremic syndrome
  - Hepatitis C
  - Influenza-associated pediatric mortality
  - Invasive pneumococcal disease
  - Listeriosis
  - Novel influenza A virus infections
  - Q fever
  - SARS
  - Smallpox
  - Vibriosis
  - Viral hemorrhagic fevers
  - Yellow fever
Reporting

- By phone or fax.
For more information, contact CDC
1-800-CDC-INFO (232-4636)

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.
Case definition for rheumatic fever

- Clinical diagnosis using the revised Jones Criteria:
  - Major criteria:
    - Arthritis
    - Carditis
  - Minor criteria
    - Subcutaneous nodules
    - Chorea
    - Erythema marginatum
  - 2015*: Echocardiogram
- No laboratory confirmation
<table>
<thead>
<tr>
<th>Condition</th>
<th>ICD-9 Code</th>
<th>ICD-10 Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rheumatic fever w/o heart involvement</td>
<td>390</td>
<td>I00</td>
</tr>
<tr>
<td>Rheumatic fever w/ heart involvement</td>
<td>391</td>
<td></td>
</tr>
<tr>
<td>Acute rheumatic pericarditis</td>
<td>391.0</td>
<td>I01.0</td>
</tr>
<tr>
<td>Acute rheumatic endocarditis</td>
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<td>I01.1</td>
</tr>
<tr>
<td>Other acute rheumatic heart disease</td>
<td>391.8</td>
<td>I01.8</td>
</tr>
<tr>
<td>Acute rheumatic heart disease, unspecified</td>
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<td>I01.9</td>
</tr>
<tr>
<td>Rheumatic chorea</td>
<td>392</td>
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<tr>
<td>Rheumatic chorea with heart involvement</td>
<td>392.0</td>
<td>I02.0</td>
</tr>
<tr>
<td>Rheumatic chorea without mention of heart involvement</td>
<td>392.9</td>
<td>I02.9</td>
</tr>
<tr>
<td>Chronic rheumatic pericarditis</td>
<td>393</td>
<td>I09.2</td>
</tr>
<tr>
<td>Rheumatic mitral insufficiency</td>
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<td>I05.1</td>
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<tr>
<td>Rheumatic aortic stenosis</td>
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<td>I06.0</td>
</tr>
<tr>
<td>Rheumatic aortic insufficiency</td>
<td>395.1</td>
<td>I06.1</td>
</tr>
<tr>
<td>Rheumatic aortic stenosis with insufficiency</td>
<td>395.2</td>
<td>I06.2</td>
</tr>
<tr>
<td>Diseases of other endocardial structures</td>
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<td></td>
</tr>
<tr>
<td>Other rheumatic heart disease</td>
<td>398</td>
<td></td>
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<tr>
<td>Rheumatic myocarditis</td>
<td>398.0</td>
<td>I09.0</td>
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<tr>
<td>Rheumatic heart disease, unspecified</td>
<td>398.90</td>
<td>I09.9</td>
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<tr>
<td>Rheumatic heart failure (congestive)</td>
<td>398.91</td>
<td>I09.81</td>
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<tr>
<td>Other rheumatic heart diseases</td>
<td>398.99</td>
<td>I09.89</td>
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