Using Electronically Archived Medical Information for Public Health

Analysis of American Indian/Alaska Native Communicable Disease Diagnoses from the Indian Health Service National Data Warehouse

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No system for aggregate data
State/local health jurisdiction (LHJ) data difficult to obtain
Misclassification in LHJ

What’s available from the NDW?

Epi Data Mart (EDM) contains data on:
- Patient registration & demographics
- Patient encounter information

Six Communicable Diseases

- ICD-9 (clinical modification) codes for:
  - Hepatitis A
  - Hepatitis B & C
  - Gonorrhea
  - Chlamydia
  - Pertussis
- 2007-2011
- Reporting sites in Oregon

Analysis

- Compare NDW with:
  - 2 clinic reporting systems
  - Calculate sensitivity, predictive value positive
  - Oregon notifiable disease system
  - Race-corrected

Indian Health Service (IHS) National Data Warehouse (NDW)

- Repository of clinical data
  - Pulled from IHS/Tribal/Urban clinic electronic medical records, reporting systems
  - Compiled since 2000
  - Managed by IHS, Albuquerque office

THE NDW FOR OREGON AI/AN COMMUNICABLE DISEASE SURVEILLANCE

Oregon Sites Reporting to NDW, 2007-2011
Northwest Portland Area Indian Health Board

NDW vs. 2 Clinic Reporting Systems

- 965 encounters with case-defining diagnoses
- 3 (0.3%) absent from NDW

NDW vs. Oregon System

<table>
<thead>
<tr>
<th>Condition</th>
<th>NDW</th>
<th>Oregon</th>
</tr>
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<tbody>
<tr>
<td>Hepatitis B</td>
<td>29</td>
<td>73</td>
</tr>
<tr>
<td>Hepatitis C</td>
<td>515</td>
<td>346</td>
</tr>
<tr>
<td>Gonorrhea</td>
<td>14</td>
<td>22</td>
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Hepatitis B Diagnoses:

- NDW vs. Oregon System

- Oregon System

Hepatitis C Diagnoses:

- NDW vs. Oregon System

- Oregon System

Hepatitis C Diagnoses:

- NDW vs. Oregon System

- Oregon System
Hepatitis C Diagnoses: NDW vs. Oregon System

Gonorrhea Diagnoses: NDW vs. Oregon System

Chlamydia Diagnoses: NDW vs. Oregon System

Conclusions

- Clinic reporting to NDW accurate
- Data limitations of NDW
- Representativeness at state-level: depends

Next Steps

- Test accuracy of NDW at area level
- Conduct analysis for Washington
- Share results with key stakeholders
Acknowledgements

- Co-Authors
  - Dr. Victoria Warren-Mears
  - Dr. Richard Leman
  - Dr. Thomas Weiser
- NNANHB, Atlanta-based supervisors
- NPAIHB, Northwest Tribal Epicenter
- Portland Area IHS and Tribal Clinics
- IHS Division of Epidemiology and Disease Prevention

Resources Required for NDW

- IHS clearance and permission
- Access to statistical software package (e.g., SAS)
- Personnel to manage data collection, quality (Albuquerque)