Common and Unique Barriers to the Exchange of Inpatient and Emergency Department Visits Data in the Environmental Public Health Tracking Program

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2019 Needs Assessment Survey

Background
The Environmental Health Tracking Program (Tracking Program) receives hospital and ED data annually from 25 to 30 states. How do we improve quality of hospital discharge data to inform public health science and practice?

Approach
A Cross Sectional Survey for 26 recipient programs
- Data source
- Acquired data attributes
- Data from bordering states
- Data quality and validation
- Partnership with data agency/organization

Results & Lessons
What have we learned during the Needs Assessment Survey?
What are the next steps?
Environmental Health Tracking Network

Nationally Consistent Data Measures (NCDM)
Survey Questionnaire

- Data source/ data sharing
- Acquired data attributes
- Data from bordering states
- Data quality and validation
- Partnership with data agency/organization

*OMB Control No. 0920-1154.*
*GenIC “Formative Research to Identify Common and Unique Barriers to the Exchange of Hospital Inpatient and ED Data”*
RESULTS
1. Data Sources and Timeliness

**Data Type**

- All-payer Claims: 23%
- Observation stay files: 31%
- Outpatient/non-inpatient discharge: 31%
- Emergency department: 85%
- Inpatient discharge: 100%

**Hospitalization Data Lag**

- 4 years: 8%
- 3 years: 19%
- 2 years: 42%
- 1 year: 27%

**ED Visits Data Lag**

- 4 years: 17%
- 3 years: 21%
- 2 years: 38%
- 1 year: 25%

*Total for column is not 100% because of multiple choices*
# 2. Data Sharing Agreements

<table>
<thead>
<tr>
<th>Data user agreement or data sharing agreement</th>
<th>Data agreement type</th>
<th>Data agreement</th>
<th>Data fee cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data user agreement or data sharing agreement</td>
<td>Data agreement type</td>
<td>Data agreement</td>
<td>Data fee cost</td>
</tr>
<tr>
<td>Memorandum of understanding</td>
<td>Memorandum of understanding</td>
<td>Memorandum of understanding</td>
<td>Memorandum of understanding</td>
</tr>
<tr>
<td>IRB review was required</td>
<td>IRB review was required</td>
<td>IRB review was required</td>
<td>IRB review was required</td>
</tr>
<tr>
<td>No agreement in place</td>
<td>No agreement in place</td>
<td>No agreement in place</td>
<td>No agreement in place</td>
</tr>
<tr>
<td>Other (interdepartmental service agreement, IRM exempt etc.)</td>
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</tr>
</tbody>
</table>

- **Data agreement type**
  - Annually: 40.90%
  - As needed: 22.70%
  - Every 3 years: 9.10%
  - Every 4-5 years: 9.10%
  - Other (6 months, every new staff on board): 18.20%

- **Data agreement**
  - Our program does not pay a fee: 69.20%
  - $1001-5000: 11.50%
  - Over $5000: 11.50%
  - Other: 7.70%
## 3. Acquired Data Attributes

<table>
<thead>
<tr>
<th>Protected Health Information (PHI)</th>
<th>Record level identifiable data set with PHI</th>
<th>15 (57.7%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Record level de-identified data set with PHI removed</td>
<td>7 (26.9%)</td>
</tr>
<tr>
<td></td>
<td>Aggregated data set (not record level)</td>
<td>2 (7.7%)</td>
</tr>
<tr>
<td></td>
<td>Other (Hospital data only has PHI)</td>
<td>2 (7.7%)</td>
</tr>
<tr>
<td>The scope of data</td>
<td>We receive full records/all discharges for all diagnosis (in addition to those needed to calculate NCDMs)</td>
<td>21 (80.8%)</td>
</tr>
<tr>
<td></td>
<td>We only receive records/discharges with specified data elements required to calculate NCDMs</td>
<td>4 (15.4%)</td>
</tr>
<tr>
<td></td>
<td>Other (access to server, secure network, CITRIX etc.)</td>
<td>1 (3.8%)</td>
</tr>
<tr>
<td>Spatial resolution of data</td>
<td>Street address level</td>
<td>8 (30.8%)</td>
</tr>
<tr>
<td></td>
<td>Census tract level</td>
<td>3 (11.5%)</td>
</tr>
<tr>
<td></td>
<td>Zip code level</td>
<td>9 (34.6%)</td>
</tr>
<tr>
<td></td>
<td>County level</td>
<td>1 (3.8%)</td>
</tr>
<tr>
<td></td>
<td>Other (block group, street level, community level, county town level)</td>
<td>5 (19.2%)</td>
</tr>
<tr>
<td>Necessary elements to identify Transfer</td>
<td>Yes, a combination of variables is provided</td>
<td>16 (61.5%)</td>
</tr>
<tr>
<td></td>
<td>Yes, patient ID is provided</td>
<td>6 (23.1%)</td>
</tr>
<tr>
<td></td>
<td>No, but data provide identifies/flags transfers</td>
<td>3 (11.5%)</td>
</tr>
<tr>
<td></td>
<td>No, data are too aggregated to identify transfers</td>
<td>1 (3.8%)</td>
</tr>
</tbody>
</table>
4. Data Cleaning

Who is responsible for removing duplicates?

- Data provider: 12, 46.2%
- State program: 9, 34.6%
- Other: 5, 19.2%

How does your program correct errors/problems you find with the data?

- Other (missing values, reformatting): 47.1%
- Errors are not corrected: 5.9%
- Our program asks the data agency/organization/department to correct and resubmit the data: 47.1%
## 5. Data from Border States

<table>
<thead>
<tr>
<th>Receiving Border Data?</th>
<th>%</th>
<th>State or City Represented</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes, all bordering states</td>
<td>11.5%</td>
<td>Michigan, Kansas, New Hampshire</td>
</tr>
<tr>
<td>Yes, some but not all bordering states</td>
<td>23.1%</td>
<td>Wisconsin, Missouri, New Mexico, Minnesota, Vermont, Washington</td>
</tr>
<tr>
<td>Attempted the border data, but still do not have border data</td>
<td>23.1%</td>
<td>Maine, Florida, Massachusetts, Maryland, New York State, Oregon</td>
</tr>
<tr>
<td>No attempting of border data</td>
<td>42.3%</td>
<td>Louisiana, Connecticut, Utah, New York City, Colorado, California, Arizona, New Jersey, Rhode Island, Iowa, Kentucky</td>
</tr>
</tbody>
</table>
Lessons Learned

Timeliness:
Need a standard DUA with data layout and format, data quality check, and shared timeline for regular data.

Granularity:
Need effective communication with the data providers.

Data cleaning:
Use the Tracking resources (tools, documents, generic SAS scripts, and technical support).

Border sharing:
Need a good system [e.g. State and Territorial Exchange of Vital Events (STEVE)].
Next Steps

The survey results will help Tracking Program

- To understand the knowledge gaps and perceived barriers to the utilization and accessibility of hospital data
- To inform the development of resources that can provide solutions for more efficient and timely data exchange.
- To improve the ongoing data call process including routine data validation and data sharing practices.
Engage Diverse Audiences with Accurate and Timely data

Info by Location - Community snapshot

Dashboards - Data storytelling

Data Explorer - Self-guided investigation
Thank you!

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Centers for Disease Control and Prevention

The findings and conclusions in this presentation are those of the author(s) and do not necessarily represent the official view of the Centers for Disease Control and Prevention.
NCDM Hospitalization and Emergency Department Visits Data

**Hospitalization (Inpatient Discharge) data**
- Asthma
- Chronic Obstructive Pulmonary Disease (COPD)
- Carbon Monoxide Poisoning
- Heat Stress Illness
- Acute Myocardial Infarction

**Emergency Department Visits Data**
- Asthma
- COPD
- Carbon Monoxide Poisoning
- Heat Stress Illness