Data Driven Improvements to Reduce Stroke Readmissions

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Bottom line

One American dies from stroke every 4 MINUTES on average.

Improve the ease of:
- Post-hospital data collection
- Secure sharing of data with health departments and CDC

Learn → Act → Improve
Epidemiology of Stroke

- 5th leading cause of death
- 1 in every 20 deaths
- 75% of stroke victims survive
- Risk increases with age
- ~$33 billion annually

One American dies from stroke every 4 MINUTES on average

http://millionhearts.hhs.gov/learn-prevent/risks.html

Congress directs CDC to implement state-based registries*

- Academic or medical institution pilot prototype registry projects in 4 states (2001)
- Pilot prototype registry projects in additional 4 states (2004)
- Program grows to 11 states, includes expanded activities (2012)
- Program funds 9 states, includes expanded requirements across the continuum of care (2015)
Congress directs CDC to implement state-based registries* (2001)

Academic or medical institution pilot prototype registry projects in 4 states (2001)

Pilot prototype registry projects in additional 4 states (2004)

In hospital focus

In hospital, prehospital, and post hospital Focus (2012-present)

Program grows to 11 states, includes expanded activities (2012)

Program funds 9 states, includes expanded requirements across the continuum of care (2015)
Data Landscape

Pre-hospital
- Pre-notification
- Last known well

In hospital
- Hospital stroke care QI

Post hospital
- Readmissions
- Complications

Pre-hospital

In hospital

Post hospital
Current In-hospital Data Collection

- **Tool:** Get with the Guidelines

- **Challenges:**
  - Flexibility: Difficult to make changes quickly
  - Expensive
  - Data destination and ownership
Current Post Hospital Data Collection

- Nurse
- Access Database
- CDC
Goals

- Offer a common tool that states could adopt to collect post-hospital data
- Make it easy to use and secure
- Keep it inexpensive
- If feasible, build the outcome as an option into the upcoming FOA
## Decision Matrix

<table>
<thead>
<tr>
<th>Evaluation Criteria</th>
<th>Weight</th>
<th>Low Cost</th>
<th>Moderate Cost</th>
<th>Higher Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Survey</td>
<td>Email</td>
<td>Web</td>
</tr>
<tr>
<td>Collection of 30-day</td>
<td>14.9%</td>
<td>10</td>
<td>8</td>
<td>7.5</td>
</tr>
<tr>
<td>Follow-up data</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Telephone Interviews</td>
<td>16.5%</td>
<td>10</td>
<td>8.5</td>
<td>2.5</td>
</tr>
<tr>
<td>Secure Data</td>
<td>13.3%</td>
<td>5</td>
<td>7.5</td>
<td>5</td>
</tr>
<tr>
<td>Transmission</td>
<td>10.2%</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Data Privacy</td>
<td>8.5%</td>
<td>7.5</td>
<td>10</td>
<td>7.5</td>
</tr>
<tr>
<td>Role-Based Security</td>
<td>18.1%</td>
<td>10</td>
<td>7.5</td>
<td>5</td>
</tr>
<tr>
<td>Scalability</td>
<td>9.0%</td>
<td>5</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>Must-Have Differentiators</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Backwards Compatibility</td>
<td>3.2%</td>
<td>7.5</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>Speed of data delivery</td>
<td>1.4%</td>
<td>5</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Standards-Based Trans.</td>
<td>0.5%</td>
<td>2.5</td>
<td>7.5</td>
<td>2.5</td>
</tr>
<tr>
<td>Analytics Integration</td>
<td>1.5%</td>
<td>5</td>
<td>10</td>
<td>2.5</td>
</tr>
<tr>
<td>Auto-Dialer Integration</td>
<td>2.7%</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Weighted Score</td>
<td>8.1</td>
<td>8.4</td>
<td>5.6</td>
<td>6.0</td>
</tr>
</tbody>
</table>

**Scores on 0-10 scale, where 10 is highest and 0 is lowest**
Activities

Component 1: Build Capacity for Collection of 30 Day follow-up data on stroke continuity of care to reduce stroke readmissions

Expected Outcomes for the Project Period

Short-term outcomes:
- Increase data usage and data sharing to drive decision-making and system changes (all)
- Increase efficiency and effectiveness of pre-hospital discharge stroke care practices (all)
- Improve adherence to evidence-based care for stroke patients (all)
- Improve receipt and understanding of ongoing post-stroke care (in hospital, post-hospital)
- Improve adherence to secondary prevention in the transition of care (post-hospital)

Long-term outcomes:
- Improve transition of care from hospital to rehabilitation, home, and primary care provider, or long-term care facility.
- Reduce readmissions for complications after stroke.

Program Strategies

<table>
<thead>
<tr>
<th>Program Strategies</th>
<th>Annual Performance Measures</th>
<th>Minimum Reportable Data Elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategy 1: Develop a survey instrument to collect 30 day follow-up data from stroke patients.</td>
<td>Establish and implement a survey instrument that will collect all the data elements listed in the requirements document that supports the FDA.</td>
<td>Survey instrument, Survey Administration guides.</td>
</tr>
<tr>
<td>Strategy 2: Design and implement a technology solution to collect 30 day follow-up data from stroke patients.</td>
<td>Design and implement a technology solution that will (1) collect 30-day follow-up data from stroke patients and ensure that the survey instrument is (2) stored and delivered data to state health departments in a secure format utilizing processes such as HIPAA and SSL.</td>
<td>Objectives related to technology solution, Activities planned and completed for technology solution.</td>
</tr>
</tbody>
</table>
Journey’s stopping point

Epi Info™ 7
Information for grantees

- Epi-Info Suite demonstration for grantees at program kick-off
- Epi-Info documentation
- Program specific documentation
  - DHDSP Surveillance Project Implementation Plan
  - Coverdell 3-30 Day Follow-Up Web Data Collection & Analysis User Manual
Lessons Learned 1

outpatient

Health Department
Lessons Learned 2

Opportunities for linkage methods
Nurse Jane uses SMART Forms to Collect 30 day follow up Data

Added to patient History

User Centered Dashboard & Data Extract Portal

TO CDC
Coverdell- SMART on FHIR – GWTG Reporting

- EMR System
- Trigger
- Hospitalization
- FHIR
- SMART
  - For each pt. meeting stroke criteria
  - GWTG Reporting Using SMART App
- PH Sponsored SMART App
  - User Centered Dashboard & Data Extract Portal
- DOH
- TO CDC

Health Care Provider/Hospital
Thank you!

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Visit: www.cdc.gov | Contact CDC at: 1-800-CDC-INFO or www.cdc.gov/info

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