American College of Cardiology: CDISC Implementation of RFD for ICD Registry

February 24th 2015
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Agenda

1. Introduction to NCDR
2. NCDR Today – Data Capture & Exchange
3. Enabling direct EMR integration (ACC/CDISC pilot)
AF Registry

Data Powering Performance

2500 hospitals
> 2000 cardiologists
20 million clinical records


ACTION Registry – GWTG
CARE Registry
ICD Registry
CathPCI Registry

STS/ACC TVT Registry
IMPACT Registry
PINNACLE Registry

PVI Registry

AF Ablation Registry

Helping Cardiovascular Professionals
More than 2,400 hospitals and over 2,000 outpatient providers worldwide participate in one or more of the ACC’s registries.

<table>
<thead>
<tr>
<th>Registry</th>
<th>Disease or Device</th>
<th>Sites</th>
<th>Records</th>
</tr>
</thead>
<tbody>
<tr>
<td>CathPCI</td>
<td>Percutaneous coronary interventions</td>
<td>1,700 95% share</td>
<td>17,000,000</td>
</tr>
<tr>
<td>ICD</td>
<td>Implantable cardioverter defibrillators</td>
<td>1,800 100% share</td>
<td>1,500,000</td>
</tr>
<tr>
<td>ACTION-GWTG</td>
<td>Acute coronary syndrome</td>
<td>1,000 38% share</td>
<td>920,000</td>
</tr>
<tr>
<td>PVI</td>
<td>Carotid artery revascularization</td>
<td>210 13% share</td>
<td>340,000</td>
</tr>
<tr>
<td>IMPACT</td>
<td>Congenital heart disease</td>
<td>95 49% share</td>
<td>40,000</td>
</tr>
<tr>
<td>PINNACLE</td>
<td>Coronary artery disease (50%), heart failure (40%), atrial fibrillation (25%), hypertension (80%)</td>
<td>3000 providers 15% share</td>
<td>18,000,000</td>
</tr>
<tr>
<td>STS/ACC TVT</td>
<td>Aortic stenosis</td>
<td>360 99% share</td>
<td>28,000</td>
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NCDR Today – Data Capture & Exchange

Hospitals/Practice
Collect & Submit Data

Registry Harvest and
prepare data for use

Data made available for
secondary use

Web Data Collection

Data
Quality
Process

NCDR EDW

Data Submission

Web Data Collection

Industry

Govt. Agencies

Research

(If not using EDC)
NCDR Today – Data Capture & Exchange

1. EDC pulls & transforms data to internal format
2. Record manually completed by staff (If not using EDC)
3. EDC Transforms and export in NCDR format
4. Transform to relational format
5. Transform to export format
6. Transform to local format for use

Data Quality Process
Data Submission
Web Data Collection
Data Export (External)
NCDR EDW

HIS
EDC
EMR

(If not using EDC)

Governments and Agencies
Industry
Research
### ACC / CDISC Pilot

#### Goals & Objectives

<table>
<thead>
<tr>
<th>Improve time-to-market for new data collection forms or updates</th>
<th>Reduce barriers for registry participation</th>
<th>Reduce burden of data entry &amp; collection</th>
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<tbody>
<tr>
<td>Facilitate supplemental studies</td>
<td>Less resources required</td>
<td>Reduced data entry</td>
</tr>
<tr>
<td>Reduce development &amp; maintenance costs</td>
<td>Leverage existing systems / technology</td>
<td>Data re-use through leveraging industry standards</td>
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<td>Reduced adoption latency</td>
<td>Lower costs of participation</td>
<td>Reduced transcription errors</td>
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by leveraging RFD for direct EMR integration
Retrieve Form for Data Capture (RFD)

- standards-based integration profile co-developed by CDISC and IHE
- supported by most EMR vendors
- provides a method to gather data within a EMR to meet the requirements of an external system (Registry)
- minimal work required to invoke\display forms within EMR
- forms can be pre-populated with data from EMR(e.g. CCD)
- data collection forms can be incorporated into existing workflow
1. From Patient record display, user\system selects form to be filled

2. EMR sends request for form with attached data extract (CCD)

3. NCDR prepopulates the form with data from extract

4. NCDR sends the prepopulated form

5. User manually completes the form

6. EMR sends the partially completed form to NCDR

7. NCDR transforms and stores the form to database

8. Retrieve partially completed form(s)

9. Complete form(s) and submit data for harvest

10. Retrieve completely completed form(s)
ICD Registry
RFD Project
Approach

Site Recruitment
- Identify Two Sites with Different EMR Vendors
  - Target: Complete by Q1 2015

Document Existing Process
- Conduct Site Visits / Document Current Process
  - Target: Complete by Q1 2015

Design Target Process
- Target: Complete by Q2 2015

Implement RFD Infrastructure
- Target: Complete by Q3 2015

Document Improved Process
- Target: Complete by Q4 2015

Publish Findings
- Target: Complete by Q1 2016
ICD Registry
RFD Project Approach