Incident Reporting: Technical Requirements

This session provides a description and analysis of the XML format that will be utilized on 10/1/2010 for submission of incidents to the new MDCH Incident Reporting System. The session will start with a generic overview of XML files and schemas, and then move to a description of the specific requirements for incident reporting. Requirements will be reviewed through schemas and sample XML files.

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Session Outline

- XML Basics
- Incident Reporting and Warehouse
- Incident Report Examples
- Incident Report Schemas

XML Basics

- What is XML?
  - Extensible Markup Language
  - Hierarchically structured data stored in a mostly human-readable format
- Industry accepted standard for many purposes
  - Microsoft is investing heavily in XML formats (Office 2007+ use it natively)
  - Web pages may be written in it (XHTML)
  - Web-based services use it almost exclusively

XML Basics (continued)

- Elements are containers. They start with an opening tag, optional attributes, child elements and a closing tag.
- Tags are the items between angle brackets <TAG>
- End Tags begin with a slash </TAG>
- Attributes are included in the tag as name="value" items
- Text is everything between tags
- <ELEMENT1 attribute1="value1">
  text
  <ELEMENT2>text</ELEMENT2>
  </ELEMENT1>

XML Basics (continued)

- Short example:

```
<?xml version="1.0" encoding="iso-8859-1"?>
<!--
   Use Case:  Query of initial submission of critical incidents
   Expected response: Three incidents.
-->
<CriticalIncidentQuery
      xmlns:mdch="http://www.michigan.gov/mdch/CriticalIncidentQuery"
      xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
      xsi:schemaLocation="http://www.michigan.gov/mdch/critical_incident_query.xsd"
      QueryDate="2009-05-24" CreatorID="1181763">
   <Query PihpId="1181763" QueryId="AA432" Version="0.9" ShowDetail="true">
      <CmhspId>1181763</CmhspId>
      <BeginDate>2009-03-01</BeginDate>
      <EndDate>2009-06-30</EndDate>
   </Query>
   <Query PihpId="1181763" QueryId="AA473" Version="0.9" ShowDetail="true">
      <CmhspId>1182125</CmhspId>
      <BeginDate>2009-03-01</BeginDate>
      <EndDate>2009-06-30</EndDate>
   </Query>
</CriticalIncidentQuery>
```

XML Basics (Schemas)

- XML Schemas are the rules that say a particular XML file is valid
  - Makes sure required items exist
  - Makes sure values are valid
    - Correct data types
    - May have ranges or lists of acceptable values
  - Ensures document grammar is correct
    - Ordering of elements
    - number of times an element can be used

Web Services

- A programmatic method to call operations on a remote server
- Uses standard HTTP (or HTTPS) protocol, easing effort to use across firewalls

Incident Reporting via Web Service

- Why?
  - Moving from custom file formats (QI file) to more flexible formats for new DCH data gathering
  - Provides advanced scenarios such as querying the data directly
- How?
  - There will be MDCH data warehouse web services

Incident Reporting via Web Service

Codes used throughout the examples:

Action	Description
A	Add new incident
V	Void existing incident
R	Replace existing incident

Type	Description
01	Suicide
02	Non-suicide death

Sub Type	Description
02	Accidental
03	Homicide
07	*(not defined)*
08	*(not defined)*

Incident Reporting via Web Services

- Example 1

Initial submission of four incidents (one will be rejected)

Unique #	CONID	Action	Date	Type	Sub-type
9900001	00000000001	A	3/25/2009 15:23:00	01	
9900003	00000000002	A	3/25/2009	02	02
9900002	00000000103	A	4/11/2009	02	03
9900005	00000000100	A	2/8/2015	04	02

Incident Reporting via Web Services

- Example 1

Response file from initial submission

Unique #	Is Accepted	Errors
9900001	Yes	
9900003	Yes	
9900002	Yes	
9900005	No	502, 503, 508, 505 (No QI match for ConID= 00000100 and FY 2016)

Incident Reporting via Web Services

- Example 2

Query of initial Submission of critical incidents

PIHP ID	CMHSP ID	Begin Date	End Date
1181763	1181763	3/1/2009	6/30/2009
1181763	1182125	3/1/2009	6/30/2009

Incident Reporting via Web Services

- Example 2

Query response of initial Submission of critical incidents

CONID	Effective Date	Type	Sub Type
00000000001	3/25/2009	01	
00000000002	5/5/2009	02	02
00000000103	4/11/2009	02	11

Incident Reporting via Web Services

- Example 3

Alter one event, delete a second, add two events

Unique #	CONID	Action	Date	Type	Sub-type
9900001	00000000001	V	3/25/2009	01	
9900003	00000000002	R	4/25/2009 8:23:00	02	11
9900004	00000000005	A	5/2/2009	02	07
9900002	00000000103	A	4/11/2009	02	

Incident Reporting via Web Services

- Example 3

Alter one event, delete a second, add two events

Unique #	Is Accepted	Errors
9900001	Yes	
9900003	Yes	
9900004	Yes	
9900002	No	501 (The unique identifier has already been used)

Incident Reporting via Web Services

- Example 4

Query of events after update/delete/add has occurred

PIHP ID	CMHSP ID	Begin Date	End Date
1181763	1181763	3/1/2009	6/30/2009
1181763	1182125	3/1/2009	6/30/2009

Incident Reporting via Web Services

- Example 4

Query response of events after update/delete/add has occurred

CONID	Effective Date	Type	Sub Type
00000000001	4/25/2009	02	11
00000000005	5/2/2009	02	07
00000000103	4/11/2009	02	11

Incident Report Schemas

Critical Incident

- Submission
- Submission Response
- Query
- Query Response

Resources

- About XML and XML Schemas
  http://www.w3.org/XML/1999/XML-in-10-points
- Web Services
  http://msdn.microsoft.com/en-us/library/ms972326.aspx
  http://www.w3.org/standards/webofservices/
- Free XML viewers and validators
  XML Notepad 2007
  (http://www.microsoft.com/downloads/details.aspx?familyid=72d6aa49-787d-4118-ba5f-4f30fe913628&displaylang=en)

Thank You

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