Attachments

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Overview

- High Level Attachment Overview
- More Technical Overview
- References/reading list[s] for the brave
- AHCCCS Implementation
HIPAA Mandated Transactions

- First Report of Injury (not defined)*
- Health Care Payment/Remittance (ASC X12N 835)
- Health Care Enrollment (ASC X12N 834)
- Premium Payments (ASC X12N 820)
- Referral and Prior Authorization (ASC X12N 278 & NCPDP 5.1/1.1)
- Eligibility Inquiry and Response (ASC X12N 270/271)
- Health Care Claim/Encounter (ASC X12N 837 & NCPDP 5.1/1.1)
- Claim Attachments (ASC X12N 277 & 275+ CDA)*
- Claims Status Request and Response (ASC X12N 276/277)
Standards – Claims Attachments

- ASC X12N 277 Request for Additional Information (X12N/005010X213, X12N/005010X213E1, X12N/005010X213E2)
- ASC X12N 275 Additional Information to Support a HC Claim or Encounter (X12N/005010X210)
- HL7 Additional Information Specification (AIS) Implementation Guide
  - Ambulance
  - Emergency Department
  - Rehabilitation Services (9 rehab disciplines)
  - Clinical Reports
  - Laboratory Results
  - Medications
- HL7 Modifiers
Standards – PA Attachments

- ASC X12N 278 Health Care Services Review — Request for Review and Response (X12N/005010X217, X12N/005010X217E1, X12N/005010X217E2)
- ASC X 12N 275 Additional Information to Support a Health Care Services Review (X2N/005010X210)
- May be used in conjunction with HL7 claims attachments documents already developed
- Developing unique PA attachments for some attachment types (e.g. Home Health & DME)
X12 + HL7 = Claims Attachment

- X12 (SDO)
  - X12N Insurance
    - TG2 Healthcare
    - WG 5 & 9
- Transaction Sets
  - 275
    - segments
    - fields
- HL7 (SDO)
  - (HL7)
    - Orders TC
      - ASIG
- CDA Documents
  - Attachment Type
    - Header
      - Containers
    - Body
      - Containers
Solicited and Unsolicited Requests

- **Solicited Attachment Request** – The claim is sent and the payer is electronically requesting additional information (ANSI 277). The provider returns the additional information in an electronic attachment (ANSI 275).

- **Unsolicited Attachment** – The electronic attachment is sent in the same X12 envelope as the electronic claim. The provider knows the payer needs the additional information.
Solicited Claim Attachment

Request for payment by ASC X12N 837

Provider

Request for Additional information by ASC X12N 277

Payer

Additional information by ASC X12N 275 / HL7 CDA

Payment advice sent by ASC X12N 835—could be payment or denial
Solicited PA Attachments

Provider sends ASC X12N 278 Request for Prior Authorization

UMO sends ASC X12N 278 Response to Prior Authorization Request (with requested data)

Provider sends ASC X12N 275 + HL7 CDA with Additional Information

UMO sends ASC X12N 278 Response
Unsolicited Claim Attachment

Request for payment by ASC X12N 837 & 275/HL7 attachment

Provider

Payer

Payment advice sent by ASC X12N 835—could be payment or denial
Unsolicited PA Attachments

Provider sends ASC X12N 278 Request for Prior Authorization and ASC X12N 275 +HL7 CDA Additional Information

UMO sends ASC X12N 278 Response
Initial Attachment Types

Additional Information Specifications (AIS)
- Ambulance
- Rehabilitative Services
- Laboratory Results
- Medications
- Clinical Reports/Notes
- Emergency Department
Key Definitions

- **Attachment Information** means the supplemental health information needed to support a specific health care claim.

- **Ambulance Services** means health care services provided by land, water, or air transport and the procedures and supplies used during the trip by the transport personnel to assess, treat or monitor the individual until arrival at the [receiving facility]…

- **Clinical Reports** means reports, studies, or notes, including tests, procedures, and other clinical results, used to analyze and/or document an individual’s medical condition.
Key Definitions (continued)

- **Emergency Department** means a health care facility or department of a hospital that provide acute medical and surgical care and services on an ambulatory basis to individuals who require immediate care primarily in critical or life-threatening situations.

- **Laboratory Results** means the clinical information resulting from tests conducted by entities furnishing biological, microbiological, serological, chemical, immunohematological, hemotological, biophysical, cytological, pathology, or examinations of materials from the human body.
Medications means those drugs and biologics that the individual is already taking, that are ordered for the individual during the course of treatment, or that are ordered for an individual after treatment has been furnished.

Rehabilitation Services means those therapy services provided for the primary purpose of assisting in an individual’s rehabilitation program of evaluation and services. These services are: Cardiac rehab, medical social services, occupational therapy, physical therapy, respiratory therapy, skilled nursing, speech therapy, psychiatric rehabilitation, and alcohol and substance abuse rehabilitation.
Other Attachments Under Development by HL7
Attachments Special Interest Group

- Children’s Preventive Health Services
- Patient Information Unspecified Content
- Home Health (Claims and Prior Authorization)
- Periodontal Charting (with ADA SCDI)
- Consent Forms
- Durable Medical Equipment (22 types)
- ePrescribing Pharmacy for Prior Authorization
- Employee Assistance Program (EAP)
Types of Data

- Computer Decision Variant
- Human Decision Variant
Computer Decision Variant

- Fully structured and codified data using LOINC
- Each attachment component and answer part(s) is defined as discreet data with a LOINC
- Can be parsed and read by a machine for potential auto-adjudication
- Can also be rendered for human readability and viewing by an XSL stylesheet
Human Decision Variant

- Human readable
- Not required to have structured codified data
  - Send text or scanned information to be reviewed by person
- Uses a single LOINC value in the CDA Header to identify the attachment type
- May be text contained within XML tags or image documents
- XML text can be rendered using XSL to an internet browser for viewing
Why Both?

- The two variants do not differ in functional content
- To provide flexibility for lower and higher levels of implementation
- To achieve higher participation in electronic attachments
- To build for today and plan for the future without having to change standards
Types of Images

The non-XML body is used when an external file contains all of the information to be transmitted as the attachment.

1) Permissible File Types. The non_xml/@MT element should contain one of the file types listed in Table 4.

<table>
<thead>
<tr>
<th>File Type</th>
<th>File Name Suffix</th>
<th>MT Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plain text</td>
<td>.TXT</td>
<td>text/plain</td>
</tr>
<tr>
<td>HTML</td>
<td>.HTM, .HTML</td>
<td>text/html</td>
</tr>
<tr>
<td>Joint Photographic Experts Group image</td>
<td>.JPG, .JPEG</td>
<td>image/jpeg</td>
</tr>
<tr>
<td>Portable Document Format</td>
<td>.PDF</td>
<td>application/pdf</td>
</tr>
<tr>
<td>Portable Network Graphics image</td>
<td>.PNG</td>
<td>image/png</td>
</tr>
<tr>
<td>Graphics Interchange Format</td>
<td>.GIF</td>
<td>image/gif</td>
</tr>
<tr>
<td>Rich Text Format</td>
<td>.RTF</td>
<td>text/rtf</td>
</tr>
<tr>
<td>Tag Image File Format</td>
<td>.TIF</td>
<td>image/tiff</td>
</tr>
</tbody>
</table>

All receivers shall be able to render all of the file types listed in Table 5. Except for TIFF these file types are handled by most browser software. TIFF requires a plug-in. TIFF is included because it is far more compressed for "fax quality" copies of pages than the other formats. The TIFF images must be a monochrome image scanned at 200 bits per inch in the format of a TIFF file with the CCITT Group 4 subtype as defined by TIFF™ Revision 6.0 Final, June 3, 1992. This is equivalent to a facsimile transmission with "fine" resolution.

Other file types, such as DICOM and other variations of TIFF, may be used through trading partner agreements. File sizes may be limited by trading partner agreement.

When viewing files in a revisable format (such as RTF) receivers are encouraged to use software that is designed for viewing but does not permit revisions to be created.
What is LOINC©?

Logical Observation Identifiers Names and Codes
LOINC

- Provides sets of universal names and ID codes for identifying lab and clinical test results and other units of information meaningful to attachments
  - Code, observed component, property, time, source of observation, type of scale, method, class.
  - Can also identify sets of information
  - Must be transmitted without leading zeroes and with a hyphen before the check digit.
LOINCS in Attachments

- Used to identify requests for:
  - Entire attachment
  - One or more components of an attachment and their answer parts
  - Category of clinical report
  - Parts of a clinical report
  - Category of lab results
  - Category of medication information
  - Modifiers to the request for information
### Table 1.1 from ASIG

<table>
<thead>
<tr>
<th>Purpose of Attachment</th>
<th>X12N 277</th>
<th>X12N 275</th>
<th>HL7 CDA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Request for additional information to support a health care claim</td>
<td>Used in the STC segment to limit the scope or time frame of a request for information. e.g., • Send only abnormal results • Send results for up to 90 days before the related encounter</td>
<td>Restated in the STC segment</td>
<td>Not used in the CDA document</td>
</tr>
<tr>
<td>LOINC Modifier Codes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOINC Attachment Identifier</td>
<td>Used in the STC segment to request an attachment in its entirety, e.g., • Send the emergency department attachment</td>
<td>Restated in the STC segment</td>
<td>Used in the <code>&lt;document_type_cd&gt;</code> element of the header</td>
</tr>
<tr>
<td>LOINC Attachment Component</td>
<td>Used in the STC segment to request a specific attachment component or part of a clinical report, e.g., • Send the first blood pressure</td>
<td>Restated in the STC segment</td>
<td>Used in the computer-decision CDA variant in the <code>&lt;caption_cd&gt;</code> element of a <code>&lt;section&gt;</code> element to identify the attachment component being provided, e.g., This is the first blood pressure (composite data)</td>
</tr>
<tr>
<td>LOINC Attachment Component Answer Part</td>
<td>Not used in the 277 except within the CDA instance document in the BIN segment</td>
<td>Not used in the 275</td>
<td>Used in the computer-decision CDA variant in the <code>&lt;caption_cd&gt;</code> element of a <code>&lt;paragraph&gt;</code> or a <code>&lt;item&gt;</code> element within a <code>&lt;list&gt;</code> or a <code>&lt;td&gt;</code> element within a <code>&lt;table&gt;</code> to identify the answer part of an attachment component being provided, e.g., this is the diastolic or systolic component part of the first blood pressure</td>
</tr>
</tbody>
</table>
Example of LOINC Usage in Attachments

- **277 asks for**
  - Attachments or Components

**Electronic 277 Request**

- Uses STC segment to request LOINC values:
  - 18584-3 Body Weight
  - 15511-9 Origination Site Info
  - 15512-7 Destination Site Info

- **275 sends**
  - Component(s) consisting of Answer Part(s)

**Electronic 275 Response**

- Uses HL7 CDA within 275 BIN to send Answer Part(s) with LOINC values:
  - 3142-7 Body Weight, Stated
  - 18580-1 Orig Site Name
  - 18581-9 Orig Site Address
  - 18582-7 Dest Site Name
  - 18583-5 Dest Site Address
LOINC Modifiers

- Used to modify the scope of the request for additional information
- Used in conjunction with the LOINC
  - **Time Window** – describes the time range of the requested data in relationship to the claim
    - Example: 18803-7 = Include all data of the selected type that represents observations made 30 days or fewer before the starting date of service for the claim
  - **Item Selection** – provides specific criteria for selecting specific items within the time specified
    - Example: 18796-3 = Send *all abnormals* within the time window (e.g., if the request is for hematology results, send only the ones that were abnormal, including repeated administration of the same test in the time window)
Additional Information Specifications (AIS)
Cardinality

- The number of times a component may or must repeat
- 1st # = Minimum, 2nd # = Maximum
  - 1,1  Required, one iteration
  - 0,1  Optional, one iteration
  - 1,n  Required, multiple iterations
  - 0,n  Optional, multiple iterations
### Value Table (Section 3)

<table>
<thead>
<tr>
<th>LOINC Code</th>
<th>Component</th>
<th>Data Type</th>
<th>Card</th>
<th>Response Code / Numeric Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>18584-3</td>
<td>EMS TRANSPORT, BODY WEIGHT AT TRANSPORT (COMPOSITE)</td>
<td></td>
<td>0,1</td>
<td></td>
</tr>
<tr>
<td>3141-9</td>
<td>BODY WEIGHT (MEASURED) or BODY WEIGHT (STATE) or</td>
<td>NM</td>
<td>0,1</td>
<td>iso+</td>
</tr>
<tr>
<td>3142-7</td>
<td>BODY WEIGHT (STATE) or BODY WEIGHT (ESTIMATED)</td>
<td>NM</td>
<td>0,1</td>
<td>iso+</td>
</tr>
<tr>
<td>8335-2</td>
<td>BODY WEIGHT (ESTIMATED)</td>
<td>NM</td>
<td>0,1</td>
<td>iso+</td>
</tr>
</tbody>
</table>

Weight will be reported in iso+ units of either kilograms (KG) or pounds (LB).

<table>
<thead>
<tr>
<th>LOINC Code</th>
<th>Component</th>
<th>Data Type</th>
<th>Card</th>
<th>Response Code / Numeric Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>15517-6</td>
<td>EMS TRANSPORT, TRANSPORT DIRECTION</td>
<td></td>
<td>1,1</td>
<td>CE 1,1 HL79007</td>
</tr>
<tr>
<td>15517-6</td>
<td>I Initial trip</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15517-6</td>
<td>R Return trip</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15517-6</td>
<td>T Transfer trip</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15517-6</td>
<td>X Round trip</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**LOINC Code**

- **Component**: This component has a multiple choice answer part. Each answer part has its own LOINC. One must be chosen.
- **Value**: This denotes how the units are reflected.
- **Data Type**: This is the data type (numeric) for this element.
- **Card**: This is the answer part of the component. In this case, one must be chosen.
- **Response Code / Numeric Units**: Optional. If used, one selection must be chosen.
# Value Table (Section 3) continued

<table>
<thead>
<tr>
<th>LOINC Code</th>
<th>Component</th>
<th>Answer Part</th>
<th>Value</th>
<th>Data Type</th>
<th>Card</th>
<th>Response Code / Numeric Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>15511-9</td>
<td>EMS TRANSPORT, ORIGINATION SITE INFORMATION (COMPOSITE)</td>
<td></td>
<td></td>
<td></td>
<td>1,1</td>
<td></td>
</tr>
<tr>
<td>18580-1</td>
<td>EMS TRANSPORT, ORIGINATION SITE NAME</td>
<td></td>
<td>A name describing the place from which the patient was transported; may be &quot;home&quot; or &quot;office&quot;.</td>
<td>ST</td>
<td>0,1</td>
<td></td>
</tr>
<tr>
<td>18581-9</td>
<td>EMS TRANSPORT, ORIGINATION SITE ADDRESS</td>
<td></td>
<td></td>
<td>XAD</td>
<td>1,1</td>
<td></td>
</tr>
<tr>
<td>15512-7</td>
<td>EMS TRANSPORT, DESTINATION SITE INFORMATION (COMPOSITE)</td>
<td></td>
<td></td>
<td></td>
<td>1,1</td>
<td></td>
</tr>
<tr>
<td>18582-7</td>
<td>EMS TRANSPORT, DESTINATION SITE NAME</td>
<td></td>
<td>A name describing the place to which a patient was transported; may be &quot;home&quot;.</td>
<td>ST</td>
<td>0,1</td>
<td></td>
</tr>
<tr>
<td>18583-5</td>
<td>EMS TRANSPORT, DESTINATION SITE ADDRESS</td>
<td></td>
<td></td>
<td>XAD</td>
<td>1,1</td>
<td></td>
</tr>
</tbody>
</table>

- **Component with multiple answer parts.**
- **Data types are string and address.**
- **Cardinality for component is required. Site Name answer part is optional and Site Address answer part is required.**
## Value Table (Section 3) – Response Code Sets

<table>
<thead>
<tr>
<th>LOINC code</th>
<th>Component</th>
<th>Value</th>
<th>Data Type</th>
<th>Card</th>
<th>Response Code / Numeric Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>18699-9</td>
<td>PROVIDER, ED PRACTITIONER (COMPOSITE)</td>
<td>PROVIDER, ED PRACTITIONER IDENTIFIER (DEEDS 2.08)</td>
<td>CE</td>
<td>1,1</td>
<td>See note at left.</td>
</tr>
<tr>
<td>18602-3</td>
<td>PROVIDER, ED PRACTITIONER NAME (DEEDS Supplement)</td>
<td></td>
<td>PN</td>
<td>1,1</td>
<td></td>
</tr>
<tr>
<td>18700-5</td>
<td>PROVIDER, ED PRACTITIONER PROFESSION (DEEDS 2.09)</td>
<td>Health Care Provider Taxonomy</td>
<td>CE</td>
<td>0,1</td>
<td>PTX</td>
</tr>
<tr>
<td>18702-1</td>
<td>PROVIDER, ED PRACTITIONER ROLE (DEEDS Supplement)</td>
<td></td>
<td>CE</td>
<td>1,1</td>
<td>DEEDS2.10</td>
</tr>
</tbody>
</table>

Unique identifier for the professional who provides the emergency care. At some point use of the National Provider Identifier (NPI) will be mandated, until such time other identifiers such as UPIN or state license number are allowed.

Note: The @S attribute will indicate the authority assigning the identifier; for example, NPI, UPIN, or XX, where XX is the two-letter US Postal Service abbreviation for the state of the licensing authority.

References external code set – Provider Taxonomy

References code set list maintained by HL7 – (See section 5)
Response Code Set Example

5.1 DEEDS2.10: Code for ED Practitioner Role

The OID for this table is 2.16.840.1.113883.6.102.2.10. See DEEDS data element 2.10

<table>
<thead>
<tr>
<th>Code</th>
<th>DEEDS code for ED Practitioner Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>ED attending or staff physician</td>
</tr>
<tr>
<td>110</td>
<td>ED resident (includes interns, house staff at all postgraduate levels, and fellows)</td>
</tr>
<tr>
<td>120</td>
<td>Non-ED-based attending or staff physician (includes primary care physicians and other attending or staff physicians called to the ED once the patient arrives)</td>
</tr>
<tr>
<td>130</td>
<td>Non-ED-based resident (includes interns, house staff at all postgraduate levels, and fellows working on the service of a non-ED-based attending or staff physician)</td>
</tr>
<tr>
<td>200</td>
<td>Registered nurse</td>
</tr>
<tr>
<td>210</td>
<td>Nurse practitioner</td>
</tr>
<tr>
<td>220</td>
<td>Attending nurse practitioner</td>
</tr>
<tr>
<td>230</td>
<td>Other advanced practice nurse (clinical nurse specialist, nurse anesthetist, or nurse midwife)</td>
</tr>
<tr>
<td>240</td>
<td>Licensed practical nurse or licensed vocational nurse</td>
</tr>
<tr>
<td>300</td>
<td>Physician assistant</td>
</tr>
<tr>
<td>400</td>
<td>Respiratory therapist</td>
</tr>
<tr>
<td>500</td>
<td>Nurse’s aide</td>
</tr>
<tr>
<td>510</td>
<td>ED technician</td>
</tr>
<tr>
<td>520</td>
<td>Phlebotomy technician</td>
</tr>
<tr>
<td>530</td>
<td>ECG technician</td>
</tr>
</tbody>
</table>
Other Things to Know…

- If you send the attachment unsolicited, you must send the entire attachment based on the rules of cardinality.
- If you respond to a request for additional information, you only need to respond the specific components being requested.
- The HL7 IG identifies rules for compliance.
WARNING….

- It may begin to look “technical”…
275 Structure

- **X12**
  - **BIN**
    - [BIN01 = Byte Count]
    - [Standard 64MB limit]
  - **CDA**
  - **MIME**

- **X12**
275 – X12

ST*275*592100008*005010X210~
BGN*02*591910008*20090729~
NM1*PR*2*AHCCCS*****PI*866004791~
NM1*41*2*IMASUBMITTER*****46*12319~
NM1*1P*2*AHOSPITALINTOWN*****XX*1235212721~
NX1*1P~
N3*1301 SOUTH CRISMON ROAD~
N4*MESA*AZ*852093767~
NM1*QC*1*SAM*CAVITY****MI*123456789~
REF*EJ*987654321~
REF*BLT*111~
REF*EA*RECNO~
REF*D9*CHILD~
DTP*472*RD8*20090901-20090903~
LX*1~
TRN*1*PWKID~
DTP*368*D8*20090908~
CAT*AE*MB~
EFI*05~
BIN*118660*Message-ID: <31544005.1.1242244588954.JavaMail.csam@fcdev17>  
MIME-Version: 1.0  
:Content-Type: multipart/related; ref=namespaceboundary="-----_Part_0_23163273.1242244588907"  

-----_Part_0_23163273.1242244588907  
Content-Type: text/xml; charset=iso-8859-1  
Content-Transfer-Encoding: 7bit  
<?xml version="1.0" encoding="UTF-8"?>  

<ClinicalDocument>  
<typeID extension="POCD_HD000040" root="2.16.840.1.113883.1.13"/>  
<id extension="IMASUBMITTER" root="2.16.840.1.113883.1.119.2.74.1."">  
<title>Patient Information Unspecified Content</title>  
<confidentialityCode Display="Normal" code="N" codeSystem="2.16.840.1.113883.5.25" codeSystemName="Confidentiality"/>  
<effectiveTime value="20090513"/>  
<recordTarget contextControlCode="OP" typeCode="RCT">  
<patientRole classCode="PAT">  
<patient>  
<name>  
<given>Cavity</given>  
<given/>  
<family>Sam</family>  
</name>  
<administrativeGenderCode/>  
<birthTime/>  
</patient>  
</patientRole>  
</recordTarget>  
</ClinicalDocument>
275 – BIN, 2
275 – X12

SE*21*592100008~
GE*1*592100008~
IEA*1*592100008~
The Clinical Document Architecture (CDA)

This is more than business …..
CDA - Facts

- Release 1 ANSI accredited in 2000
- Designed to accommodate the electronic exchange of clinical documents
- Release 2.0 retains the simplicity of rendering and clear definition of clinical documents formulated in R1, it provides state-of-the-art interoperability for machine-readable coded semantics.
  - Based on the HL7 Clinical Statement model - fully RIM-compliant
  - capable of driving decision support
  - retains the simple rendering of legally-authenticated narrative
- Not all features of the CDA are germane to attachments
Why the CDA?

- Preserve the notion of predictable content
- Low impact option of providers and payers
- Suitable for EDI and Web-based approaches
- Based on newer technology
- Provides flexibility to implement at multiple levels
Flexibility of the CDA

- The two variants [CDV/HDV] do not differ in functional content
- Provides for lower and higher levels of implementation
- Goal is to achieve higher participation in electronic attachments
- To build for today and plan for the future without having to change standards
Use of XSL Stylesheets

- Stylesheet takes data from both HDV and CDV and “renders” it to an internet browser screen for human viewing
- A non-normative stylesheet is provided by HL7 and works with all attachment types – not mandated for use
Stylesheet Translation

XSL Style Sheet:
Mapping rules in a standard language

Style Sheet Processor
Human Readable Data

Birthdate: September 24, 1932

History of Present Illness

Henry Levin, the 7th is a 67 year old male referred for further asthma. He was hospitalized twice last year, and already twice this year. He was weaned off steroids for the past several months.

Past Medical History

- Asthma
CDA Structure - Header

- Header
  - Patient
  - Event
  - Attachment Control Number (linkage)
  - Other Administrative Data
  - Always defined in discreet XML elements
CDA Structure – Header Example
(Part I)

<clinical_document_header>
  <id EX="a123" RT="2.16.840.1.113883.3.933"/>
  <document_type_cd V="18682-5" DN="AMBULANCE SERVICE CLAIMS ATTACHMENT "/>
  <origination_dttm V="2000-08-12"/>
  <originating_organization>
    <originating_organization.type_cd V="CST"/>
    <organization>
      <id EX="2983795672" RT="2.16.840.1.113883.4.6"/>
      <id EX="jkf12542f" RT="2.16.840.1.113883.1.1"/>
      <organization.nm V="ABC Emergency Medical Services"/>
    </organization>
  </originating_organization>
</clinical_document_header>
CDA Structure - Header Example
(Part II)

```xml
<patient>
  <patient.type_cd V="PATSBJ"/>
  <person>
    <id EX="184569" RT="2.16.840.1.113883.3.933"/>
    <person_name>
      <nm>
        <v3dt:GIV V="Jon"/>
        <v3dt:FAM V="Jay"/>
        <v3dt:MID V="J"/>
      </nm>
    </person_name>
  </person>
  <is_known_by>
    <id EX="184569" RT="2.16.840.1.1138863.19.1.4"/>
    <is_known_to>
      <id EX="9854687254" RT="2.16.840.1.113883.19.1.2"/>
    </is_known_to>
  </is_known_by>
</patient>

<local_header descriptor="Att_ACN">
  <local_attr name="attachment_control_number" value="XA728302"/>
</local_header>
```

52
Form vs. Non-Form Based Attachments

- **Form Based**
  - Typically based on existing paper forms
  - Attachment content is static
  - Similar to X12 IG with internal code set

- **Non-Form Based**
  - No paper precursor
  - Content not static
  - Similar to X12 IG with external code set
  - References LOINC database
CDA Body

- Body
  - Single `<non_xml>` element that contains a reference to an external file (text documents or scanned images)
  - One or more section elements that defines the attachment content
CDA Structure – Body Example
(HDV – non-XML)

<body>
  <non_xml MT="image/gif">
    <v3dt :REF V= »prescription-glasses.gif »/>
  </non_xml>
</body>
CDA Structure – Body Example
(HDV non-XML) MIME

--192.168.0.132.1.111780.1044168570.525.24086
Content-Type: image/gif
Content-Transfer-Encoding: base64
Content-Disposition: attachment; filename=prescription-glasses.gif
R0lGODlhAAJ9AfAAAP///wAAACwAAAAAAAJ9AUAC/wQShrqcb06SrNITm57bTvqB0dWRUMal
nmqubkuib01DyHIrYz2zPPzDZUbEouo5oJNpiuVPDIXngptIqkIP5aFesq2eIDGLDPhsiuU47
nsVbiOqotjtnPp+f8a17FATFrez95Yid6FkZ4e24cdocSiIJzJWWL5WekWNVjot9kUZ8YZ
tfmpF/q5VmWFmR14xBkrO6topNmKm6u7y9vr+/u7J+k5WVure5wJlhTafKuICrWGbkhrfS2c
(Editor’s note: 149 lines have been suppressed for readability.)
SmW6Sr0UTL2M5ut4yN5k7soG7vici6fc6QHbTh+khPZMrOHMrvfaCpkaUNm0rvTUBcSEJ6cQ
o+wwjU0oJrAQ74fqZ+jewudY7N5KEOp6m6rVEcMoOqbVaD/lubkQyba+eiRj0TwZ/LteWkAmt
Yf8QcMmwRGcKAAjRZjSYm+ojQq30FLzu24EAzrJ8XCkAzl4fTKEA3TUA3XkA3b0A3fEA7j
0C0IAAUAOw==
--192.168.0.132.1.111780.1044168570.525.24086
Vision Prescription Attachment

Provider: K Jackson, MD
Patient: Daniel Smith  Patient ID: 63548429
Attachment Control Number: AB165487

Click here to view report.
Rendered HDV Non-XML Example (Part II)

NEW ENGLAND EYE INSTITUTE

SPECTACLE PRESCRIPTION ONLY

FOR: Daniel Smith  DATE: 10/3/94

ADDRESS: ___________________________

<table>
<thead>
<tr>
<th>Rx</th>
<th>SPHERICAL</th>
<th>CYLINDRICAL</th>
<th>AXIS</th>
<th>PRISM</th>
<th>BASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>D.V</td>
<td>-3.25</td>
<td>-0.25</td>
<td>130</td>
<td></td>
<td></td>
</tr>
<tr>
<td>O.D</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O.S</td>
<td>+0.50</td>
<td>-1.00</td>
<td>80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N.V</td>
<td>+2.00</td>
<td>ADD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O.D</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O.S</td>
<td>+2.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

REMARKS: ____________________________

P.D.: ______  1 /

DATE OF EXAM: 10/3/94  EXPIRATION DATE: ______________

DR.  ______________  LIC. #: 3775
<body>
  <section>
    <caption>Body Weight (estimated)</caption>
    <paragraph>
      <caption>Body Weight (estimated)</caption>
      <content>275 lb</content>
    </paragraph>
  </section>
  <section>
    <caption>Transport Direction</caption>
    <paragraph>
      <caption>Transport Direction</caption>
      <content>Initial trip</content>
    </paragraph>
  </section>
</body>
Patient:  

Patient ID: 184569  

Attachment Control Number: XA728302  

**Body Weight (estimated)**  

Body Weight (estimated). 275 lb  

**Transport Direction**  

Transport Direction. Initial trip
CDA Structure – Body Example (CDV)

<body>
  <section>
    <caption><caption_cd V="18584-3" S="2.16.840.1.113883.6.1"/>
    Body Weight at Transport</caption>
    <paragraph>
      <caption><caption_cd V="8335-2" S="2.16.840.1.113883.6.1"/>
      Body Weight (estimated)</caption>
      <content>275 lb</content>
      <local_markup descriptor="dt_nm" ignore="all">275</local_markup>
      <coded_entry>
        <coded_entry.value V="lb" S="2.16.840.1.113883.5.141"/>
      </coded_entry>
    </paragraph>
  </section>
  <section>
    <caption><caption_cd V="15517-6" S="2.16.840.1.113883.6.1"/>
    Transport Direction</caption>
    <paragraph>
      <caption><caption_cd V="15517-6" S="2.16.840.1.113883.6.1"/>
      Transport Direction</caption>
      <content>Initial trip</content>
      <coded_entry>
        <coded_entry.value V="I" S="2.16.840.1.113883.12.9008" SN="HL79007"/>
      </coded_entry>
    </paragraph>
  </section>
</body>
ABC Emergency Medical Services (2983795672)
AMBULANCE SERVICE CLAIMS ATTACHMENT

Patient: Patient ID: 184569
Attachment Control Number: XA728302

Body Weight (estimated)
Body Weight (estimated). 275 lb

Transport Direction
Transport Direction. Initial trip
XML Stylesheet (XSL)

- Stylesheet takes data from both HDV and CDV and “renders” it to an internet browser screen for human viewing
- A non-normative stylesheet is provided by HL7 and works with all attachment types – not mandated for use
Example of XML - Header

<clinical_document_header>
  <id EX="a123" RT="2.16.840.1.113883.3.933"/>
  <document_type_cd V="18682-5" DN="AMBULANCE SERVICE CLAIMS ATTACHMENT "/>
  <origination_dttm V="2000-08-12"/>
  <originating_organization>
    <originating_organization.type_cd V="CST"/>
    <organization>
      <id EX="298379"/>
      <organization.nm V="ABC Emergency Medical Services"/>
    </organization>
  </originating_organization>
  <patient>
    <patient.type_cd V="PATSBJ"/>
    <person>
      <id EX="184569" RT="2.16.840.1.113883.3.933"/>
      <person_name>
        <nm>
          <v3dt:GIV V="Jon"/>
          <v3dt:FAM V="Jay"/>
          <v3dt:MID V="J"/>
        </nm>
      </person_name>
    </person>
  </patient>
  <local_header descriptor="Att_ACN">
    <local_attr name="attachment_control_number" value="XA728302"/>
  </local_header>
</clinical_document_header>
Example of XML - Body

<body>
  <section>
    <caption>Body Weight (estimated)</caption>
    <paragraph>
      <caption>Body Weight (estimated)</caption>
      <content>275 lb</content>
    </paragraph>
  </section>
  <section>
    <caption>Transport Direction</caption>
    <paragraph>
      <caption>Transport Direction</caption>
      <content>Initial trip</content>
    </paragraph>
  </section>
  <section>
    <caption>Rationale for Choice of Destination</caption>
    <paragraph>
      <caption>Rationale for Choice of Destination</caption>
      <content>Patient was transported to nearest facility for care of symptoms, complaints or both.</content>
    </paragraph>
  </section>
  <section>
    <caption>EMS TRANSPORT, DISTANCE TRANSPORTED</caption>
    <paragraph>
      <caption>EMS TRANSPORT, DISTANCE TRANSPORTED</caption>
      <content>7 mi</content>
    </paragraph>
  </section>
</body>
Example of XSL Stylesheet

ABC Emergency Medical Services (298379)
AMBULANCE SERVICE CLAIMS ATTACHMENT

Patient: Provider’s Pt ID: 184569
Attachment Control Number: KCA728302

Body Weight (estimated)
Body Weight (estimated), 275 lb

Transport Direction
Transport Direction, Initial trip

Rationale for Choice of Destination
Rationale for Choice of Destination, Patient was transported to nearest facility for care of symptoms, complaints or both.

EMS Transport, Distance Transported
EMS Transport, Distance Transported, 7 mi

EMS Transport, origination site
EMS Transport, Origination Site Name, HOME
EMS Transport, Origination Site ADDRESS, 124 Elm St, Elmo, UT 85912

EMS Transport, Destination Site Information
EMS Transport Destination Site Name, Alfred Newman Neurological Institute
EMS Transport, Destination Site Address, 25 Centsheap Ave, Whatmeworry, UT 85912

EMS Transport, Admitted At Destination Facility On Transfer
EMS Transport, Admitted At Destination Facility On Transfer, Yes
Data Types and Attributes

- Specified in the value table for each AIS
- CDA for attachments uses the `<local_markup>` element to send structured data or PCDATA in the body
  - XAD – Address
  - CE – Coded
  - CX – Extended ID
  - DT – Date
  - NM – Numeric
  - PN – Person Name
  - ST – String
  - TQ – Time and Quantity
  - TS – Time Stamp
  - TX - Text
“No Information” Indicator

- If an answer part cannot be sent, the “no information” indicator is sent in natural language (HDV) or local markup (CDV).

- Values are:
  - NASK – not asked
  - ASKU – asked but unknown
  - OTH – other, may be where observation was made but result could not be determined
Reading List … 1

CDAR1AIS0000R021, HL7 Additional Information Specification, Implementation Guide
(This specification replaces Additional Information Message Implementation Guide 11 December 2001) Release 2.1 Based on HL7 CDA Standard Release 1.0 May 2004

“The proposed use of the attachment transactions can be better understood by reading the following documents, in this sequence:

- ASC X12N 277 (004050X150) Health Care Claim Request for Additional Information Implementation Guide; a product of the insurance subcommittee (X12N) of Accredited Standards Committee X12.
- ASC X12N 275 (004050X151) Additional Information to Support a Health Care Claim or Encounter Implementation Guide; a product of the insurance subcommittee (X12N) of Accredited Standards Committee X12.
- Six HL7 additional information specifications (AIS) containing the LOINC code tables specific to requests for additional information. These specifications may be read in any order.
- The HL7 publication: LOINC® Modifier Codes (For use with ASC X12N 277 Implementation Guides when Requesting Additional Information to support a Health Care Claim).”
Reading List … 2

- HIPAA and ClaimsAttachments, *Preparing for Regulation*, May 2004. Written by the Attachments Special Interest Group (ASIG) at Health Level Seven (HL7). © Copyright 2003-2004 Health Level Seven, Inc. All rights reserved.


- Health Level Seven (HL7) Data Types, Release 1.0, December 2003 (ANSI/HL7 DT R1-2003)
Reading List ... 3:

- Health Level Seven (HL7) Vocabulary Domains, March 2006.
- Compliance statements that refer to elements of a CDA document here are identified using the notation defined in XML Path Language (XPath), which is available at http://www.w3.org/TR/XPath. XPath expressions are also used in the AIS Value Tables to show how each Attachment Component or Attachment Component Answer Part can be located within the clinical document.

- This may or may not be all the information needed!!!
Successive Approximations
Claim Attachments at AHCCCS
### Electronic Attachment Numbers

<table>
<thead>
<tr>
<th>Organization</th>
<th>Attachment Number</th>
<th>Submission Month</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abrazo Health</td>
<td>2521</td>
<td>9/1/2009</td>
<td>3</td>
</tr>
<tr>
<td>Carondelet</td>
<td>471</td>
<td>10/1/2009</td>
<td>529</td>
</tr>
<tr>
<td>Artisan Prosthetics</td>
<td>44</td>
<td>11/1/2009</td>
<td>374</td>
</tr>
<tr>
<td>FMC-NA</td>
<td>88</td>
<td>12/1/2009</td>
<td>675</td>
</tr>
<tr>
<td>GRHC</td>
<td>328</td>
<td>1/1/2010</td>
<td>2214</td>
</tr>
<tr>
<td>Iasis Healthcare</td>
<td>28</td>
<td>2/1/2010</td>
<td>978</td>
</tr>
<tr>
<td>Globe CRNA</td>
<td>33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MIHS</td>
<td>1228</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phoenix Childrens</td>
<td>34</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total: 4773
Approximate # of Pages

The paper info is based on Kofax scanned detail and Electronic from EDI # of bytes in the transmission report, using 60KB per page. Sept 09 info is based on 9/24 to 9/30.

<table>
<thead>
<tr>
<th>Supplemental Documents</th>
<th>Paper</th>
<th>Electronic</th>
</tr>
</thead>
<tbody>
<tr>
<td>09/2009</td>
<td>49,089</td>
<td>212</td>
</tr>
<tr>
<td>10/2009</td>
<td>241,754</td>
<td>35,475</td>
</tr>
<tr>
<td>11/2009</td>
<td>205,150</td>
<td>19,292</td>
</tr>
<tr>
<td>12/2009</td>
<td>165,530</td>
<td>71,728</td>
</tr>
<tr>
<td>01/2010</td>
<td>210,449</td>
<td>117,654</td>
</tr>
</tbody>
</table>
Implementation Goals:

- Successive Approximations
  - Moving in the direction of the standard
  - Introducing the concepts to staff and providers
  - Growing in-house understanding of the transaction
  - Building the Infrastructure for future iterations of the transaction and coming HIE/HIT messages
Implementation Goals:

- Evolution, not Revolution
  - Small steps, tolerated by our environment
  - A standard needs to be standard: not restrictive but not configured individually for each trading partner
  - Need to be sensitive to other trading partners in our market
  - Be conscious of “ripple effects” of one payer decisions
Goals of Completed Project:

- Reduce paper claim attachments and associated costs for agency and providers
- Implementation of ASC X12N/005010X210 Additional Information to Support a Health Care Claim or Encounter (275) transaction
  - Image files in allowed formats
  - Upload from web by providers
Scope of Completed Project

- Redesign of claim attachments process, enabling providers to submit these documents electronically.
- Automate matching attachments to the claims they support
- Ability to upload attachment images via web portal as an alternative to submitting a 275 transaction
- Creation of companion document for the 275
- Creation of user documentation for the web upload
- End user training specific to electronic claim attachments for both agency and trading partner resources.
Current/Future Imaging Process

Current Attachment Imaging Process

Mail Sorted and Batched
1500 UB Multiple [clm + attach]
Attachment

Mail Room

Pass Manual Validation

Kofax

ScanOCR
Assign ID
Correction to OCR
Completion
ECS Build for PMMIS
Released to Fortis

Fortis

CRN Link [CRN to Fortis
Doco – Manual Linking]

Fail Validation
Return to Provider,
[i.e., No PMMIS CRN]

Provider

Electronic Attachment/
Documentation File

275 Sent or Uploaded

Proposed Addition to the
existing process.
One attachment
Changes to Validation Process
Matching Process

- Get all attachments from Fortis (View CLAIM/Documents/VU)
- Query for PWK number in PMMIS (Table CL_PWK_LNK)
- If PWK matches Attachment Number:
  - Insert PWK/CRN into PMMIS (Table CL_LNK_TYP)
  - Update PMMIS_UPDATED field in Fortis (View CLAIM/Documents/VU)
- If PWK does not match Attachment Number, move to next PWK
Engaging providers:

- Identify a common pain point
- Understand desired outcome
- Do your homework!!
- Articulate the value proposition for THEM
- Recognize their reality
Provider Reality…

- “Attachments are a billing issue.”
- Today we click on each tab on our screen and print it for you, what will we have to do now?
- What’s a .tiff, .gif, … extension?
- How big is 64MB?
- Does this mean we have to make changes to our 837s?
Internal Development Reality

- X12 and who? What’s an HL7?
- So what’s this stuff in the middle of an X12 transaction?
- Human Decision Variant [HDV]/Computer Decision Variant [CDV]?
- CDA who?
- XML? Umm, we’re the EDI Team…
- OID? …root, tree, branch, huh????
Mime

- MIME?
  Isn’t that the guy with the painted face in the imaginary box?
EDI vs. XML

- EDI staff are traditionalists…
  - X12 transactions because they’re mandated
  - CMS requires flat file positional layouts
  - Proprietary file formats
  - Batch is a beautiful thing

- XML developers are in a completely different area… that web stuff…
  - Batch XML? Why would you want to do that?
  - What kind of service will you need?
What do you need?

- Can’t assume everyone understands the resource and industry/standard knowledge needed to begin to develop attachments
- X12 & HL7
  - Attachment Booklets Currently only available in CDA R1
    - Where to find attachment information?
    - What do these things really look like?
- CDA R1 Standard
Challenges:

- 4010 837 / 5010 275
- “Unique Attachment Number”
  - Unique is really unique
  - Length:
    - 4010 837 = 80
    - 5010 275 CLM Attachment = 50
    - 5010 837 = 50
- X12 Validation, CDA Schema, Schematrons, Conformance?
- CDA R1, CDA R2
  - CDAR1AIS0000R021, HL7 Additional Information Specification Implementation Guide, Release 2.1
  - Based on HL7 CDA Standard Release 1.0
- Adjunctive vs. Embedded vs. Secure Website location
Challenges:

- Trading Partners may not be X12 and/or HL7 members
  - “In addition, the folder "CDAR1" contains the narrative describing the CDA Release 1 Standard, and its subsequent adaptation using the XML Schema Standard. These documents are work products of the HL7 Structured Documents -and- HL7 XML committees. Additional information is available in the HL7 Bookstore at www.HL7.org.”

- Incomplete documentation
  - “Disclaimer: The schema and stylesheet files that are provided are not part of the balloted content of the standard. Their use by implementers of the standard is entirely optional. HL7 intends to issue improvements to these documents from time to time without changing the official balloted recommendation.”
  - “I tried to do the table formatting with CSS2 rules, but Netscape doesn't seem to handle the table rules well (or at all:-( so I just gave up”

- Schema Challenge
Challenges:

- Small widely dispersed population of experts
  - Guy in NZ with the MIME creator
- Acknowledgements
Tips and Tricks

- 10 PWKs on 837s
- Create a way to relate “64MB” to billing clerk’s world
- Test from within your network and from outside your network [use a variety of browsers…]
- Provider Communication and Over-communication
- Yellow/Orange Highlighter on a document saved as a .tif will “uncompress” the .tif and blow up!
Tips and Tricks

- Pictures from MaryKay’s old cell phone blow up too!
- No spaces in the file name within the CDA
- Don’t give up – you are NOT nuts, it will come together, humble is good
- Recognize every small success [you’ll need it…]
- Flowers and cookies to the helpful pilot folks
Questions?