

I SPEAK HL7. DO U? INTRODUCING THE NAACCR VOLUME V SUPPLEMENT

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and the NAACCR Supplement WG/Task Force

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Background

- NAACCR Pathology Data WG is charged with recommending a messaging standard for transmission of electronic reports from anatomic pathology laboratories to central cancer registries.
- These reporting guidelines have greatly evolved over the years, resulting in six versions from 1999 to 2011.
- Since April 2011, pathology laboratories and cancer registries have been able to choose between *two* recommended e-path standards.

A Word or Two about Standards

- HL7 (Health Level Seven) an international, approved standard developing organization (SDO)
- A messaging standard protocol for electronic data transmission within the healthcare domain
- **Versions of HL7:** 2.x (e.g., 2.3.1, 2.5.1, 2.6, 2.7), 3.0, which includes CDA (Clinical Document Architecture).
- NAACCR, also a volunteer member organization committed to maintaining standardization of cancer registry data.
- Standards for Cancer Registries **Volume V: Pathology Laboratory Electronic Reporting**
- Versions of Volume V: **2.2, 4.0**

**Enable interoperability of healthcare information
across different applications**

User Dilemma:

Which Standard Version to Use?

Standards for
Cancer

Registries

Volume V:

Pathology

Laboratory

Electronic

Reporting,

Version 2.2,

based on HL7

version 2.3.1

OR

Standards for
Cancer

Registries

Volume V:

Pathology

Laboratory

Electronic

Reporting,

Version 4.0,

based on HL7

version 2.5.1



Introduction to HL7 Messaging Standard Protocol

- An HL7 2.x message is comprised of a group of segments ordered in a defined sequence.

Example (HL7 snippet):

```
PID|1||123456789^^^SS||Doe&Mc^Jane^E|...<  
CR>
```

```
PV1|N||||594110NY^Attending^Doctor^^^DR|...<CR>
```

```
OBR|1||97865|11529-5^SURG PATH REPORT^LN^PATH  
REPORT^L|...<CR>
```

```
OBX|1|TX|22636-5^CLIN HISTORY^LN||white F with (L) UOQ  
breast mass|...<CR>
```

Objective

- ④ The Volume V Supplement, *a work in progress*, is to provide potential users (novice and/or the more advanced) with additional information about existing standard specifications for electronic pathology laboratory reporting to central cancer registries.
- ④ A resource document to bridge the gap between two NAACCR standards: Volume V version 2.2 and Volume V. version 4.0.

Approach

- ⦿ A sub group of the NAACCR Pathology Data WG, [the Supplement WG](#), canvassed its members and created a List of FAQs, and/or known issues most often raised by the path labs and/or [NPCR/AERRO](#) e-path project participants during an HL7 interface implementation.
- ⦿ “The List” became the blueprint for the outline of the Supplement, subsequently reviewed and approved by the Path Data WG.

NAACCR Volume V Supplement WG/Task Force

- Ted Klein, Klein Consulting, Inc. ★
- Jag Gill, Artificial Intelligence in Medicine (AIM)
- Sandy Jones, CDC/NPCR
- Andrea Downey-Franchuk, Manitoba
- Victor Brunka, AIM
- Lori Havener, NAACCR
- Jovanka Harrison, NYSCR, Supplement WG/TF
Chair

NATIONAL PROGRAM of CANCER REGISTRIES- ADVANCING E-CANCER REPORTING and REGISTRY OPERATIONS

- NPCR-AERRO: Started in 2006 with 18 states as part of the pilot project; today there are 47 states participating, plus Washington D.C.
- Objective: To help facilitate and implement electronic pathology laboratory reporting from national laboratories to state central cancer registries, based on the NAACCR's Volume V e-path reporting guidelines.

Supplement Outline

- ⦿ The Supplement consists of five chapters:
 - 1: Problem Statement, Goals, Scope
 - 2: Introduction to HL7 Standard Protocols
 - 3: Updates in Volume V version 4.0 affecting users of HL7 v.2.3.1
 - 4: Q&A: Detailed HL7 examples
 - 5: General Notes and Cautions

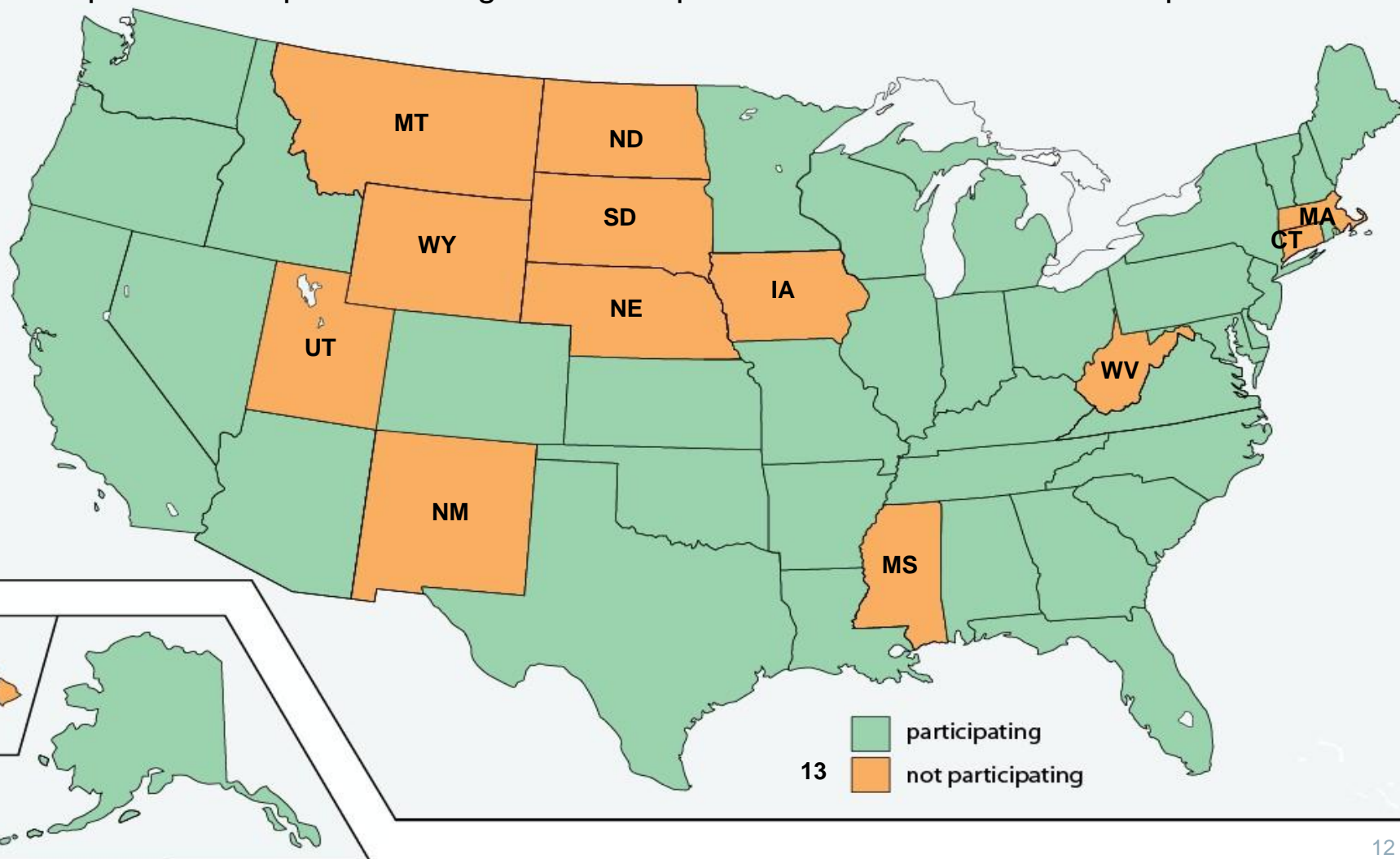
Chapter 1: Supplement Introduction

- ⦿ The adoption of the HL7 Standard version 2.5.1 has not been as fast as anticipated, making the HL7 v2.3.1 the most widely supported among pathology laboratory information systems in the U.S.
 - For example, laboratories and cancer registries participating in the NPCR/AERRO Project continue to express interest in implementing HL7 v2.3.1., therefore making Volume V, version 2.2 a continued much-used and useful document.

Volume V, v2.2-- A Success in 2011

NPCR-AERRO Participating States--Users of v2.2 Status as of March 15, 2011

Adapted from <http://www.cdc.gov/cancer/npcr/informatics/aerro/activities/epath.htm>

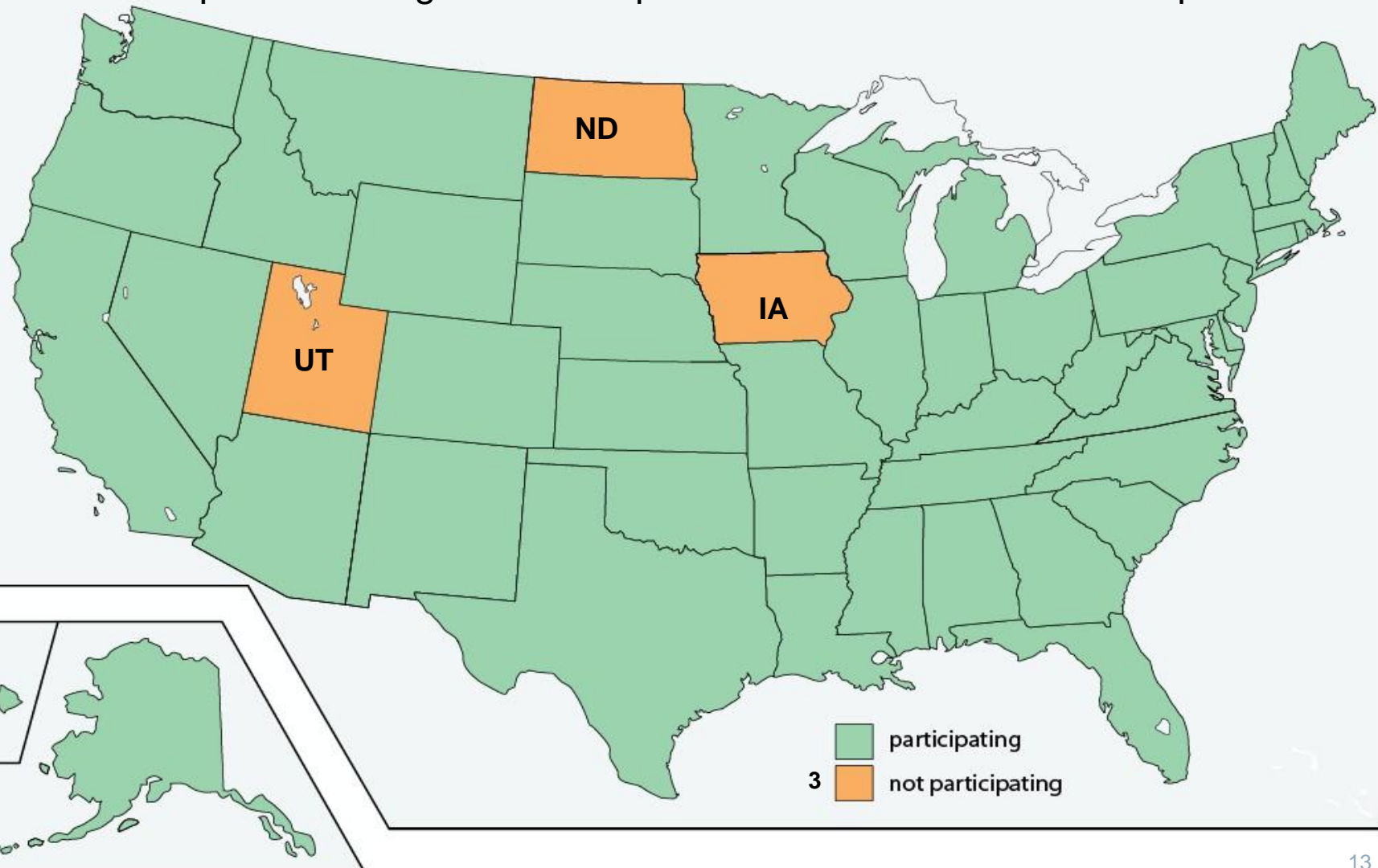


Volume V, v2.2--Still Going Strong

NPCR-AERRO Participating States-- Users of v2.2

Status as of April 26, 2013

Adapted from <http://www.cdc.gov/cancer/npcr/informatics/aerro/activities/epath.htm>



Chapter 2: HL7 Standard Protocols

- ⦿ Differences between HL7 v.2.3.1 and HL7 v.2.5.1 Standard Protocols
 - HL7 Version Does Matter
 - Optionality and Cardinality
 - Data Types
 - Specimen (SPM) Segment
 - Code Tables and Coded Data Types
 - Value Sets (list of coded values) defined in Vol. V
 - HL7 Backwards-compatibility rules
 - Enhancements/Additions to the *ORU^R01* (*Observation Result, Unsolicited*) Message

Chapter 2: Standards Continued

- ⦿ Differences between Volume V v2.2 and v4.0.
 - v2.2: Text Based Pathology Reporting, i.e., traditional narrative style reporting with broad section headings (Clinical History, Microscopic, Final Diagnosis).
 - Synoptically structured (aka synoptic like)
 - v4.0: Handles [Synoptic](#) Reporting – fully structured and encoded path reports; e.g, the electronic CAP Cancer Checklists (eCCs).
 - Sets of Q & A pairs, where the question may be “Surgical margin involvement”, and the answer could be “All surgical margins free of tumor”. Both the Q and the A are coded.
 - HL7 Backward Compatibility Rules as Applied in Volume V

Working Definition of Synoptic in Volume V, version 4.0

- The standardized and structured documentation of a Cancer Pathology Report, with common definitions, data items, and data item values.
- Synoptic is a term which typically refers to checklists (for example, College of American Pathologist Cancer Checklists) designed to ensure that key data fields are not omitted.

Synoptic Pathology: Canada at a glance

Table 1: Approximate Distribution of Facilities by Synoptic Pathology Reporting Level

Reporting Level	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Description	Narrative, No CAP content, Single text field data	Narrative, CAP content, Single text field data	Level 2+, Synoptic-like, structured format	Level 3+, Electronic reporting tools using drop-down menus	Level 4+, Standardized reporting language, Elements stored in discrete data fields	Level 5+, Common standards (data & messaging) with C-keys, SNOMED CT or other encoding
% BC/YK Hosp	5%	25%	50%	10%	10%	0%
% AB/NWT Hosp	0%	~50% ³	~50% ³	0%	0%	0%
% SK Hosp	0%	0%	100% ³	0%	0%	0%
% MB Hosp	20%	0%	80%	0%	0%	0%
% ON/NV Hosp	0%	0%	9%	0%	1%	90%
% QC Hosp	10% ³	30% ³	50%	10% ³	0%	0%
% NB Hosp	0%	0%	12%	0%	88% ¹	0%
% PEI Hosp	0%	0%	0%	0%	100% ²	0%
% NS Hosp	5%	~40%	50%	0%	<5%	0%
% NL Hosp	5%	35%	60%	0%	0%	0%

Chapter 3: Volume V Version 4.0

Updates Affecting Users of Version 2.2 (HL7 v.2.3.1)--Highlights

- ⦿ Introducing new LOINC codes in version 4.0.
 - Logical Object Identifiers Names and Codes (LOINC): a lexicon for laboratory test orders and results, used in the electronic exchange of information (e.g., in the HL7 protocol).
 - Impact of new LOINC codes on laboratory reporting to cancer registries
 - Forward adopting of new LOINC codes in HL7 standard v. 2.3.1
 - Work in Progress: LOINC codes for new tumor marker tests

Chapter 3 Continued: “Old” & “New” LOINC Codes

- “Old” LOINC codes: e.g., those recommended in Volume V, v2.2 (2008), may still be valid or obsolete.
- “New” LOINC codes: e.g., those recommended in Volume V, v.4.0 (2011).
- “Fresh & Upcoming” LOINC codes: continuously being developed for new tumor marker tests.

Chapter 4: Q&A with HL7 Examples

- ⦿ Divided into two main sections; the first section is devoted to specific questions related to Version 2.2, and the second section covers questions related to Version 4.0.
- ⦿ The HL7 examples included in the Supplement are improved, i.e., contain more details and better descriptions than their original versions.

Chapter 5: General Notes & Cautions

- ⦿ Will include practical tips, for example:
 - The closer to the Volume V standard the incoming HL7 message is, the less “work” for the following:
 - The sending laboratory:
 - It behooves the (national) lab to work with NPCR-AERRO in creating a message where “one standard fits all”.
 - The receiving cancer registry:
 - If reports are missing date of birth, or SSNs, or patient address, it will be more difficult to match and/or reconcile and consolidate reports from multiple sources.

HL7 Standard

**HL7 2.x
defines
structure
and
content for
health
system
messaging**

NAACCR's Volume V

**Standardizes
cancer
information
messaging
from the HL7
2.x and
clarifies
NAACCR
usage**

Local Implementation Guide

**Defines and constrains
NAACCR's Volume V to
meet local/state cancer
registry requirements**

You are here

Conclusions

- The Supplement is a resource document offering useful information to potential users of various levels of e-path and IT sophistication.
- For the novice user: a higher level overview and context within which e-path reporting occurs. Highlights the importance of NAACCR- specific, as well as HL7, standard versions.
- For the intermediate/advanced user: detailed, practical HL7 examples and explanations.

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