

All We Need to Know We Learned in Kindergarten

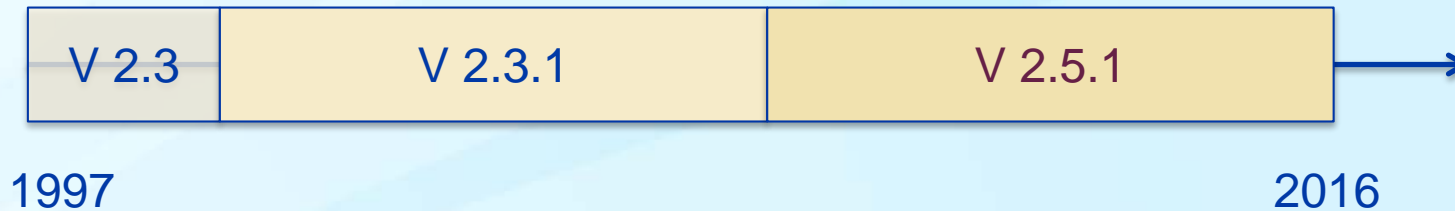
Rob Savage & Craig Newman
Northrup Grumman Contractors



What Did We Learn and How Should We Apply It?

Kindergarten

First Grade



In the beginning beautiful Registries arose from the primordial ooze



Beginning in the 1980's Local Registries Were Created

- ❑ **Captured immunization histories for a jurisdiction**
- ❑ **Designs met local needs and were based on current infrastructure (often client/server)**
- ❑ **The pertussis and measles outbreaks in the late 1980's demonstrated the value**
- ❑ **All Kids Count, Robert Wood Johnson and CDC envisioned the way forward => Immunization Registries that could give clinicians access to immunization histories in real time**

Great Idea Runs Into Communication Problems



How Could the Wild West Be Civilized?

- ❑ Move to the HL7 lingua franca**
- ❑ Bring the registry program folks to community of practice (AIRA and CIRSET)**
- ❑ Identify the core functions of registries**
- ❑ Identify the core data elements required to support core functions**
- ❑ Support (financially) the move towards IIS**

HL7 History

- ❑ Health Level 7 (HL7)
- ❑ ANSI Standard for clinical interoperability
- ❑ HL7 was founded in 1987 to promote communication between hospital data systems
- ❑ Goal was platform independent method of moving data between different systems
- ❑ Grammar for messaging was developed
- ❑ Standardized vocabulary was developed
- ❑ HL7 is named for the ISO Open Systems Interconnection Reference Model Application layer

Health Level 7 – HL7

- ❑ **International Standard**

- Needs to be flexible enough to support wide range of data models and requirements

- ❑ **Base standard is constrained by Implementation Guides**

- ❑ **Susan Abernathy (CDC) coordinated an effort to publish the first Immunization IG in 1997**

First IG -- 1997

USING THE HEALTH LEVEL SEVEN (Version 2.3) STANDARD PROTOCOL



National Immunization Program Data Management Division Version 1.0.2

May 1997

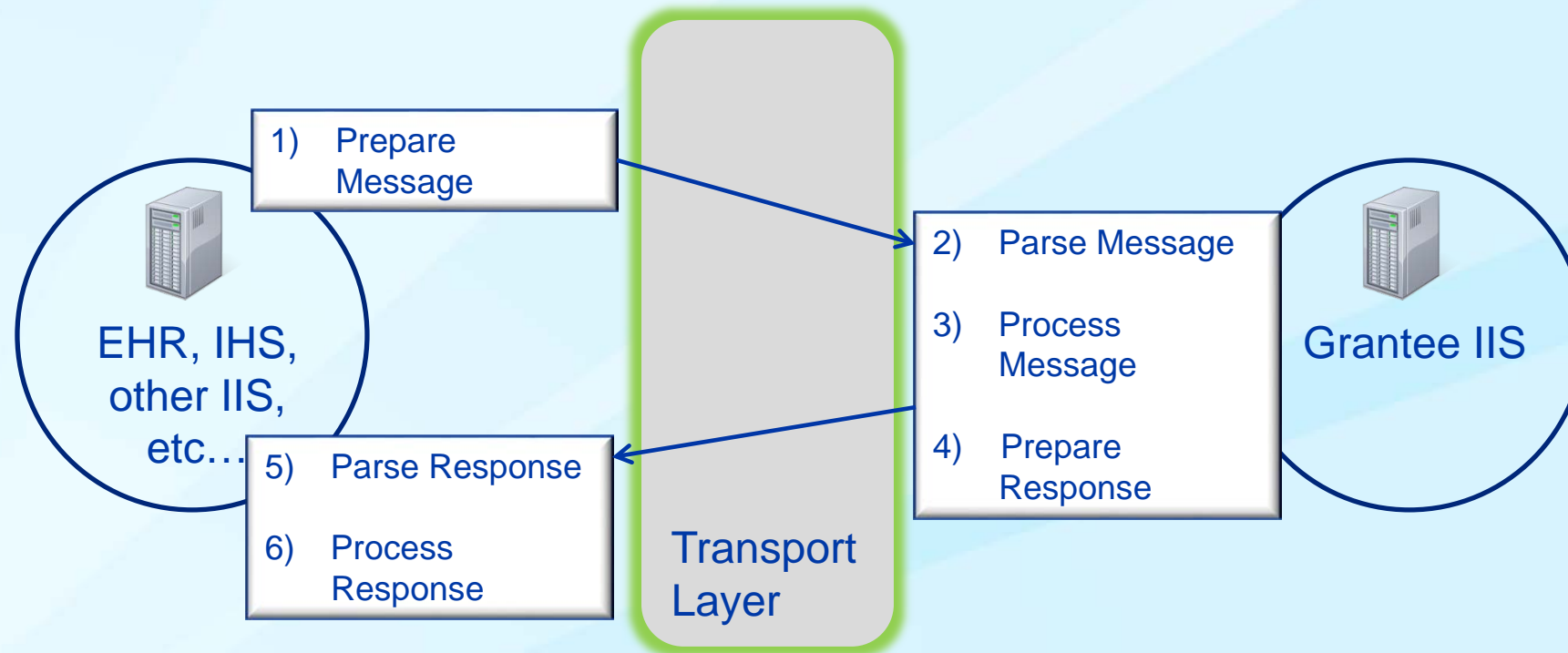
with CVX Vaccine Table and MVX Manufacturer Table updated January 14, 1998

This document is intended to help familiarize developers of immunization information systems with Health Level Seven (HL7) immunization message definitions and encoding rules. Developers will use these to convert data from the original format into a string of characters that comprise a nationally accredited standard message for transmitting immunization data. The samples and definitions herein are intended to demonstrate the structure of immunization data after translation to HL7 standard messages, but in no way can serve as a substitute for a thorough study of the entire set of HL7 specifications for electronic data interchange in health care environments.

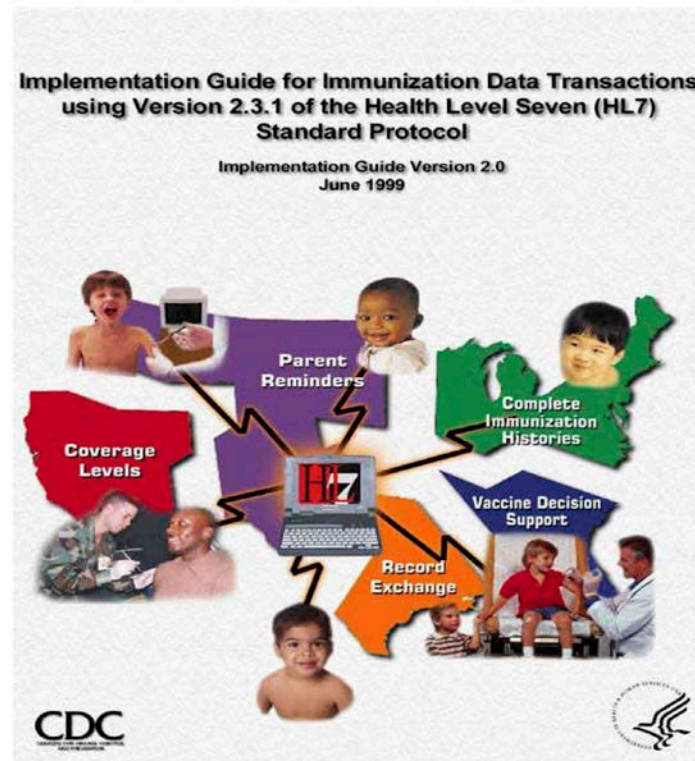
What's the Problem?

- ❑ Didn't support some key data concepts
- ❑ Existing system architectures did not fit with messages
- ❑ Repurposed some HL7 fields
- ❑ So loose that conformant systems couldn't be sure they could communicate
- ❑ Did not address transport layer

Messaging



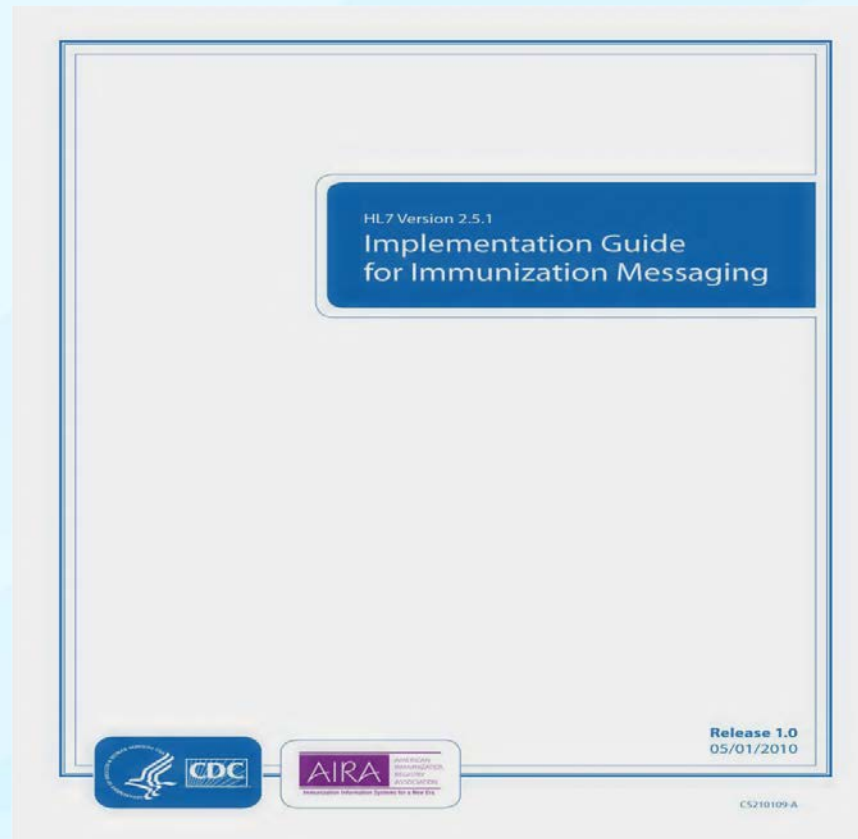
New and Improved IG



What's the Problem?

- ~~❑ Didn't support some key data concepts~~
- ❑ Existing system architectures did not fit with messages
- ❑ So loose that conformant systems couldn't communicate, requiring local negotiations
- ❑ Did not address transport layer
- ❑ Continued to repurpose HL7 fields
- ❑ Query clunky
- ❑ Limited input from EHR community

First Grade IG



What did we do right?

- ❑ Worked within IIS community and EHR community**
- ❑ Moved to release 2.5.1 and documented profiles**
- ❑ Balloted as Informative in HL7**
- ❑ Committed as community to move towards conformance, with ability for local tightening of profiles**
- ❑ Technical support from CDC and AIRA**
- ❑ Improved documentation of vocabulary**
- ❑ Stopped “cheating” with field usage**
- ❑ Clarified/corrected ACK response**
- ❑ Worked with NIST to create conformance testing tool**

What problems remain?

- ❑ **Typos and mistakes caught after the fact**
- ❑ **We aren't all conformant with IG**
- ❑ **Vocabulary usage needs constraints**

Where are we going?

❑ **HL7 balloting**

- Increases the visibility of the IG in the interoperability world
 - Promotes input from all members of the immunization community
 - Important for inclusion in future regulations
 - In ballot now!
- Community focus will remain on implementing Release 1.5 which is what will remain in the Meaningful Use Stage 3 and 2015 EHR Certification regulations

❑ **Guidance documents**

- AIRA published clarifications on complex topics
- ACK Guidance, RSP Construction, etc

And how are we getting there?

□ New authoring tools

- NIST is developing a suite of authoring, test case management and assessment tools for version 2.x implementation guides
- Technical elements drawn straight from HL7 databases
- Linking the tools is central to moving smoothly from writing the specifications to creating test scenarios to assessing systems
- Promotes consistency between documents in different domains to ease the development burden
- Provides a new, more definitive method of defining value sets

What did we learn in kindergarten?

- 1. Work together to identify goals**
- 2. Use goals to identify what data needs to be messaged**
- 3. Help each other be successful**
- 4. Share**
- 5. Talk to each other and listen to each other**
- 6. Color within the lines (HL7 and Functional Standards)**
- 7. Use tools to prevent mistakes and measure success**
- 8. When you go out into the world, watch out for traffic, hold hands, and stick together**