

# Confusing standards: common misconceptions about disease surveillance standards

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## Objective

This talk will point out the inconsistencies and misunderstandings of the word 'standard'. Specifically, it will discuss HL7, syndrome definitions, analytical algorithms and disease surveillance systems.

## Introduction

Domains go through phases of existence, and the electronic disease surveillance domain is no different. This domain has gone from an experimental phase, where initial prototyping and research tried to define what was possible, to a utility phase where the focus was on determining what tools and data were solving problems for users, to an integration phase where disparate systems that solve individual problems are tied together to solve larger, more complex problems or solve existing problems more efficiently. With the integration phase comes the desire to standardize on many aspects of the problem across these tools, data sets and organizations. This desire to standardize is based on the assumption that if all parties are using similar language or technology, then it will be easier for users and developers to move them from one place to another.

Normally the challenge to the domain is deciding on a vocabulary or technology that allows seamless transitions between all involved. The disease surveillance domain has accomplished this by trying to use some existing standards, such as Health Level 7 (HL7), and trying to develop some of their own, such as chief complaint-based syndrome definitions. However, the standards that are commonly discussed in this domain are easily misunderstood. These misunderstandings are predominantly a communication and/or educational issue, but they do cause problems in the disease surveillance domain. With the increased use of these standards due to meaningful use initiatives, these problems will continue to grow and be repeated without improved understanding and better communication about standards.

## Methods

After reviewing presentations and participating in many discussions at conferences and with public health officials, a number of topics were identified that many believe use or are standards. These topics included HL7, syndrome definitions, analytical algorithms definitions and the definition of what is or is not a disease surveillance system. Next, the common understandings of each were compiled and compared with actual definitions and real world experiences from users of the standards. From this, a list of misunderstandings or poorly communicated aspects of each topic was derived.

## Results

The results of this process have pointed out a number of inconsistencies with general assumed knowledge and actual truth related to many standards. The HL7 standard is just one example of a standard that is misunderstood in many aspects. Many believe that HL7 is a transport protocol, others believe that is a file format, others believe that it defines specific locations for data elements and still others believe that HL7 'set the language, structure and data types required for seamless integration from one system to another' (1). Each of these beliefs has nuggets of truth in them but do not explain the full story of HL7. Those that believe an HL7 message from one hospital can be fully read and understood in the exact same way as a second hospital may also be mistaken. Even though this is the hope of a standard, to have a standards-based tool that can be used over and over in different situations, real world experience tells us a different story about this so-called standard. Similarly, each topic has beliefs that are partially true, but by not understanding the whole truth, the standards can lead to complications.

## Conclusions

Standards are highly beneficial to a domain. They provide efficiency in tool development and promote interoperability between organizations. Sadly, fully understanding a standard can sometimes be difficult, and misunderstandings can allow decisions to be made on untrue assumptions about a standard. The word standard has a meaning attached to it that can easily confuse someone into believing a capability exists that actually does not. Through improved education and communication, we can benefit from these standards without getting caught in their traps.

## Keywords

Standards; HL7; syndrome definition; detector interfaces; system definition

## References

1. Wikipedia, Health Level 7, [http://en.wikipedia.org/wiki/Health\\_Level\\_7](http://en.wikipedia.org/wiki/Health_Level_7) (as of August 31, 2011).

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