



AIRA
AMERICAN IMMUNIZATION
REGISTRY ASSOCIATION

Interoperability Training

Spring 2021 – Course Introduction

Interoperability is Communication

Human vs Computer

Interoperability is Communication

- We will compare:
 - Human communication
 - Computer interoperability
- Conclusion
 - What you know about human communication often applies to interoperability.
 - The technical language often hides this reality.



Definitions

from Google Dictionary

Communication

The imparting or exchanging of information or news

Interoperability

The ability of computer systems or software to exchange and make use of information



Definitions

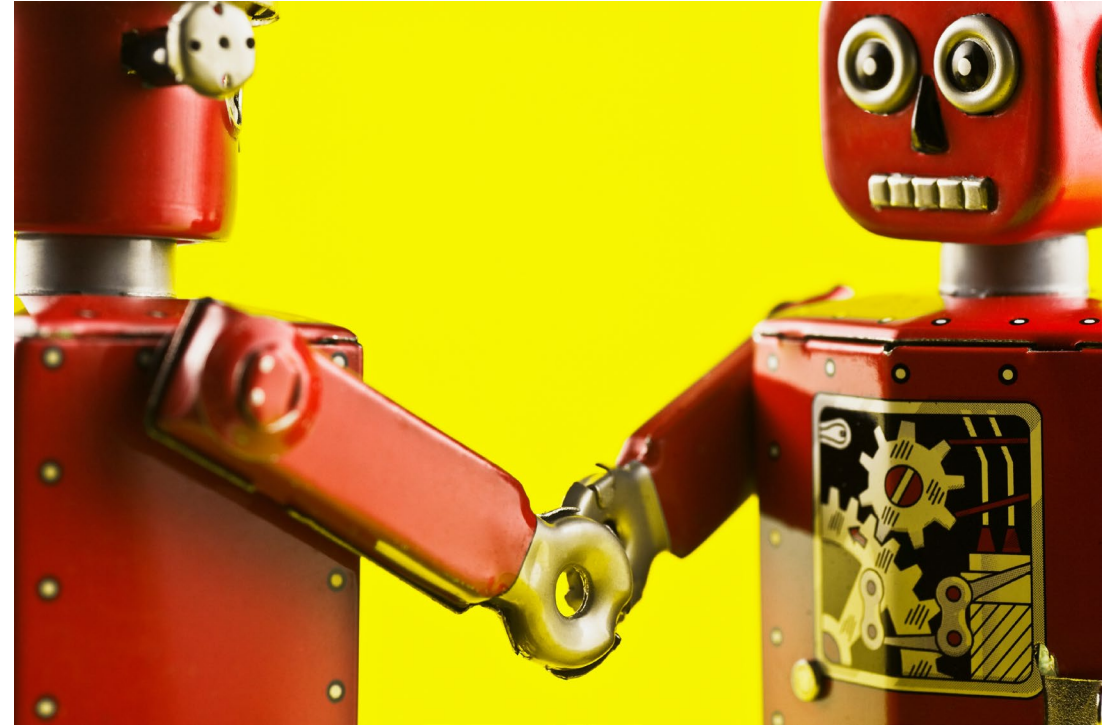
from Google Dictionary

Communication

The imparting or exchanging of information or news

Interoperability

The ability of computer systems or software to exchange and make use of information



Grammar

- In order to communicate you need to understand grammar.
- Grammar are the rules on how to construct and understand language.



Internet Meme



Grammar

- Don't think:
 - High school grammar
- Think:
 - You are in a foreign country and want to eat at a café.
 - How do you put your words together, so the other person understands you?





Grammar

- Rules for making sense:
 - Rules for construction
 - Needed for understanding

Language		Example
English	#1	Dog bites man.
	#2	Man bites dog.
	#3	Man dog bites.

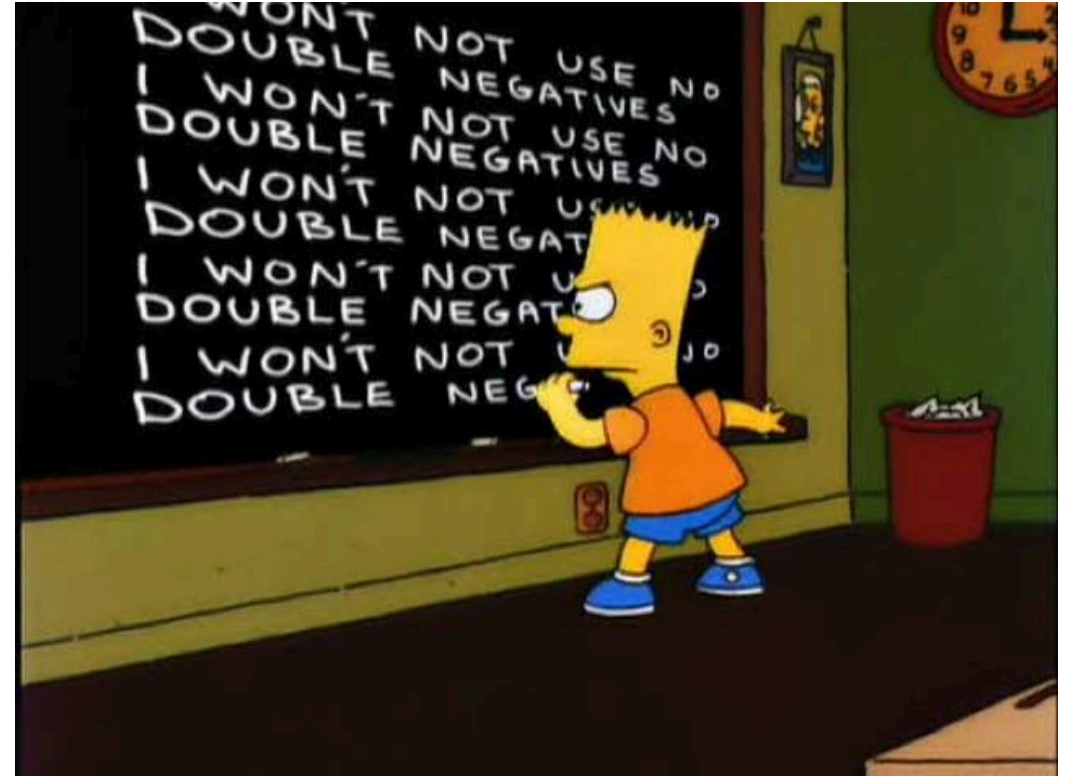


Grammar

- Rules for making sense:
 - Rules for construction
 - Needed for understanding
 - More pragmatic than logical
 - Somewhat arbitrary

No le dijo nada a nadie.

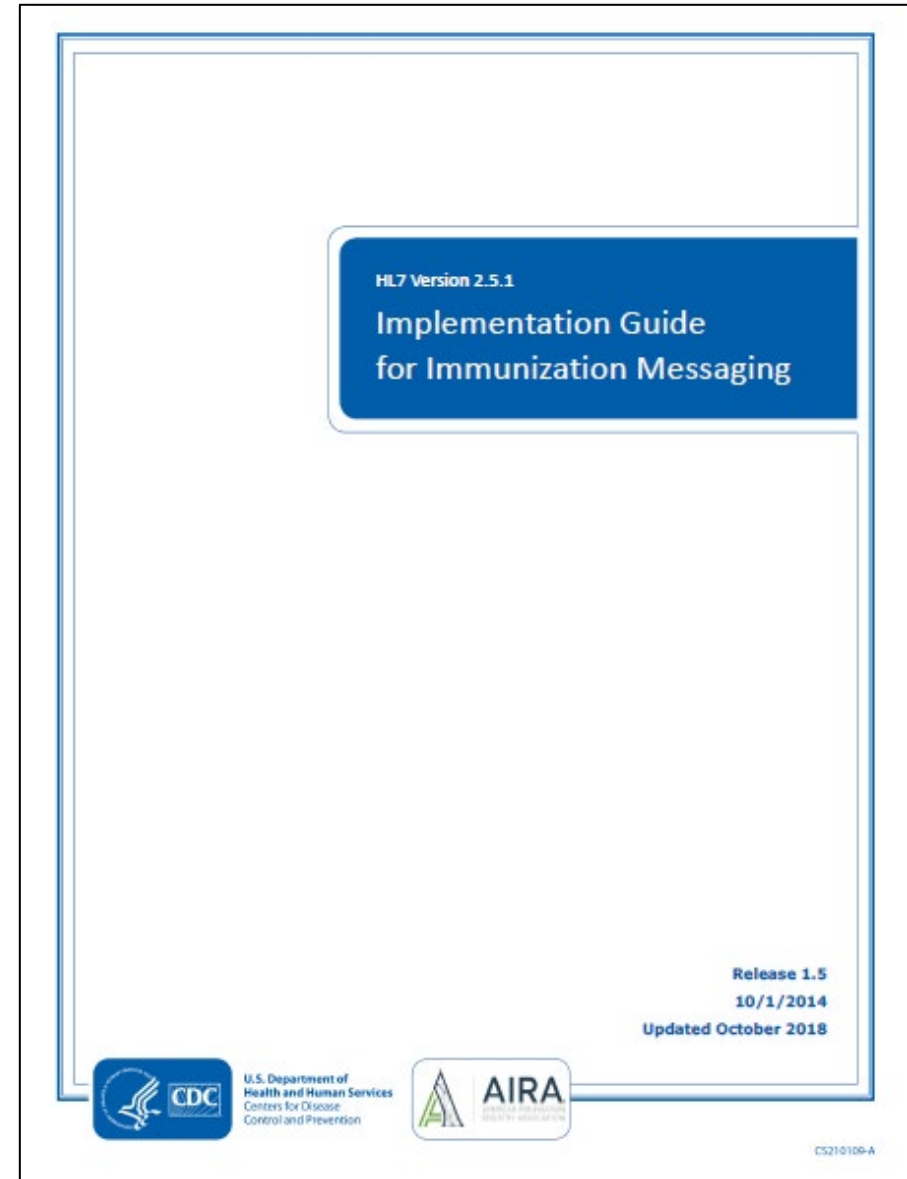
He didn't say anything to anybody.



The Simpsons – Matt Groening

Grammar

- Rules for making sense:
 - Rules for construction
 - Needed for understanding
 - More pragmatic than logical
 - Somewhat arbitrary
- Implementation Guide



Spelling

- Does correct spelling really matter?



Found in Rome <https://www.wantedinrome.com/news/prepare-to-sotp-sabaudia-road-sign-goes-viral.html>



Spelling

- Does correct spelling really matter?
 - Confusing
 - Distracting
 - Sign of sloppy work
 - Indicates poor data quality



Bored Panda - <https://www.boredpanda.com/funny-spelling-mistakes-errors-fails/>



Spelling

- Correct spelling is important
- Words need definitions

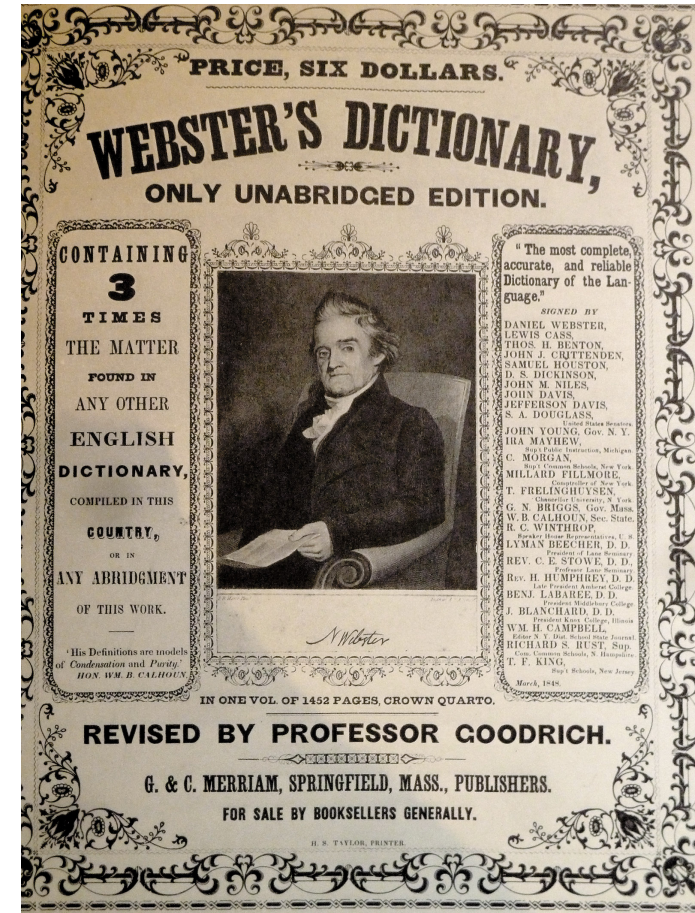


Corn or Maize?

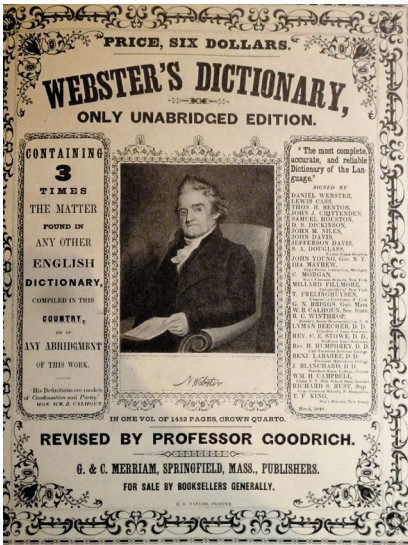


Spelling

- Correct spelling is important
- Words need definitions



We Need Common Definitions



- CDC maintains immunization vocabulary

<u>Short Description</u>	<u>Full Vaccine name</u>	<u>CVX Code</u>	<u>Vaccine Status</u>	<u>Last Updated Date</u>	<u>Notes</u>
Adenovirus types 4 and 7	Adenovirus, type 4 and type 7, live, oral	143	Active	3/20/2011	This vaccine is administered as 2 tablets.
adenovirus, type 4	adenovirus vaccine, type 4, live, oral	54	Inactive	5/28/2010	
adenovirus, type 7	adenovirus vaccine, type 7, live, oral	55	Inactive	5/28/2010	
adenovirus,	adenovirus vaccine,	82	Inactive	9/30/2010	This CVX code

<https://www2a.cdc.gov/vaccines/IIS/IISStandards/vaccines.asp?rpt=cvx>

Interoperability
is
Communication



Interoperability is Communication

- We have compared:
 - Human communication
 - Computer interoperability
- Conclusion
 - What you know about human communication often applies to interoperability.
 - The technical language often hides this reality.



Why IIS Need Standards

We used to work alone, now we work together.



IIS Need Standards

- In 2015...
 - EHRs sent data to IIS
 - Ignored IIS ack messages
- Standards
 - EHRs need to follow them
 - IIS need to follow them
- In 2019...
 - IIS are more consistent
 - EHRs are now starting to read ack messages



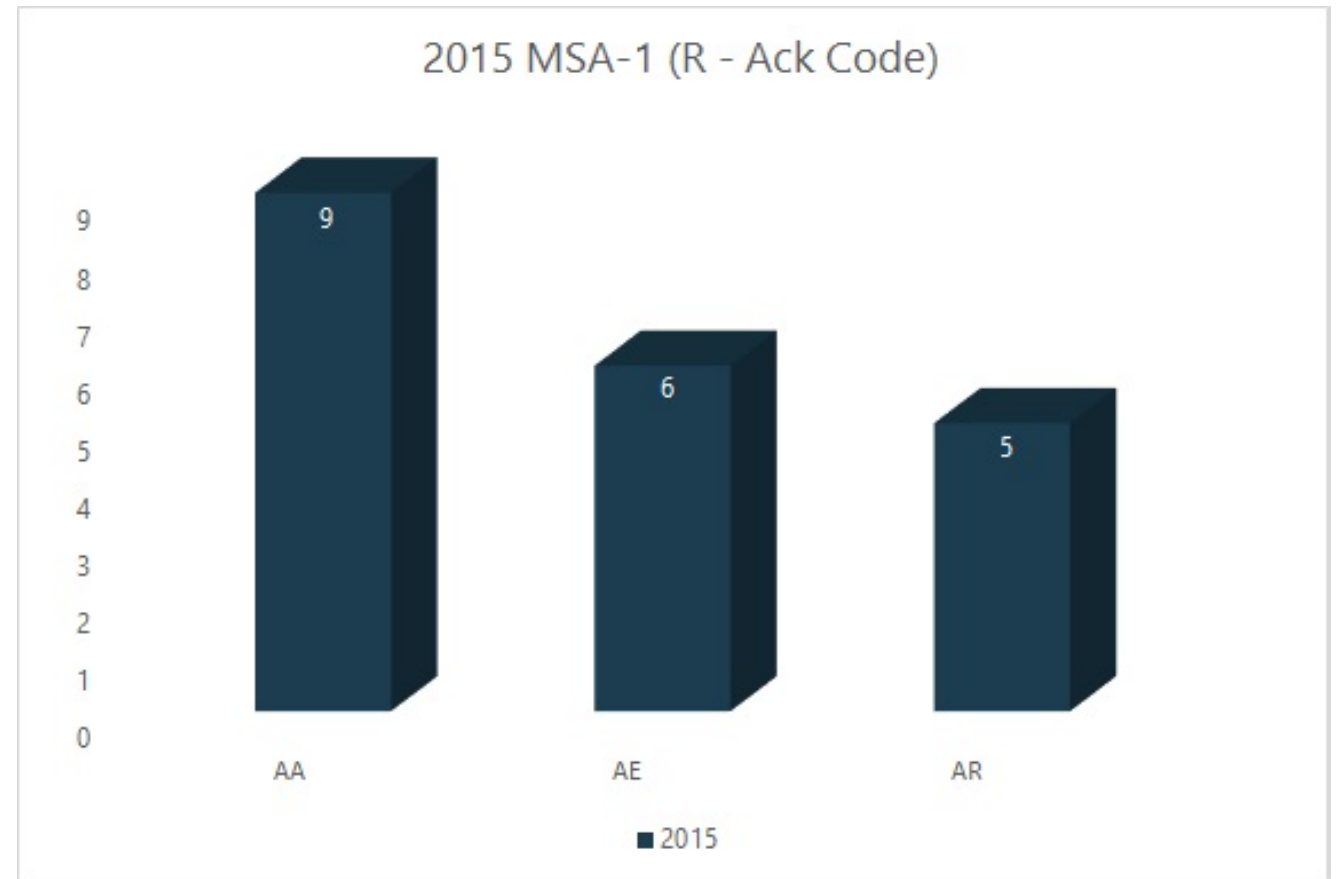
Measurement & Improvement

- Setup
 - Connected to IIS test systems
 - Submit a “bad message”
 - Missing vaccination date
 - No IIS would store the data
- Verify
 - IIS clearly indicates message is unacceptable



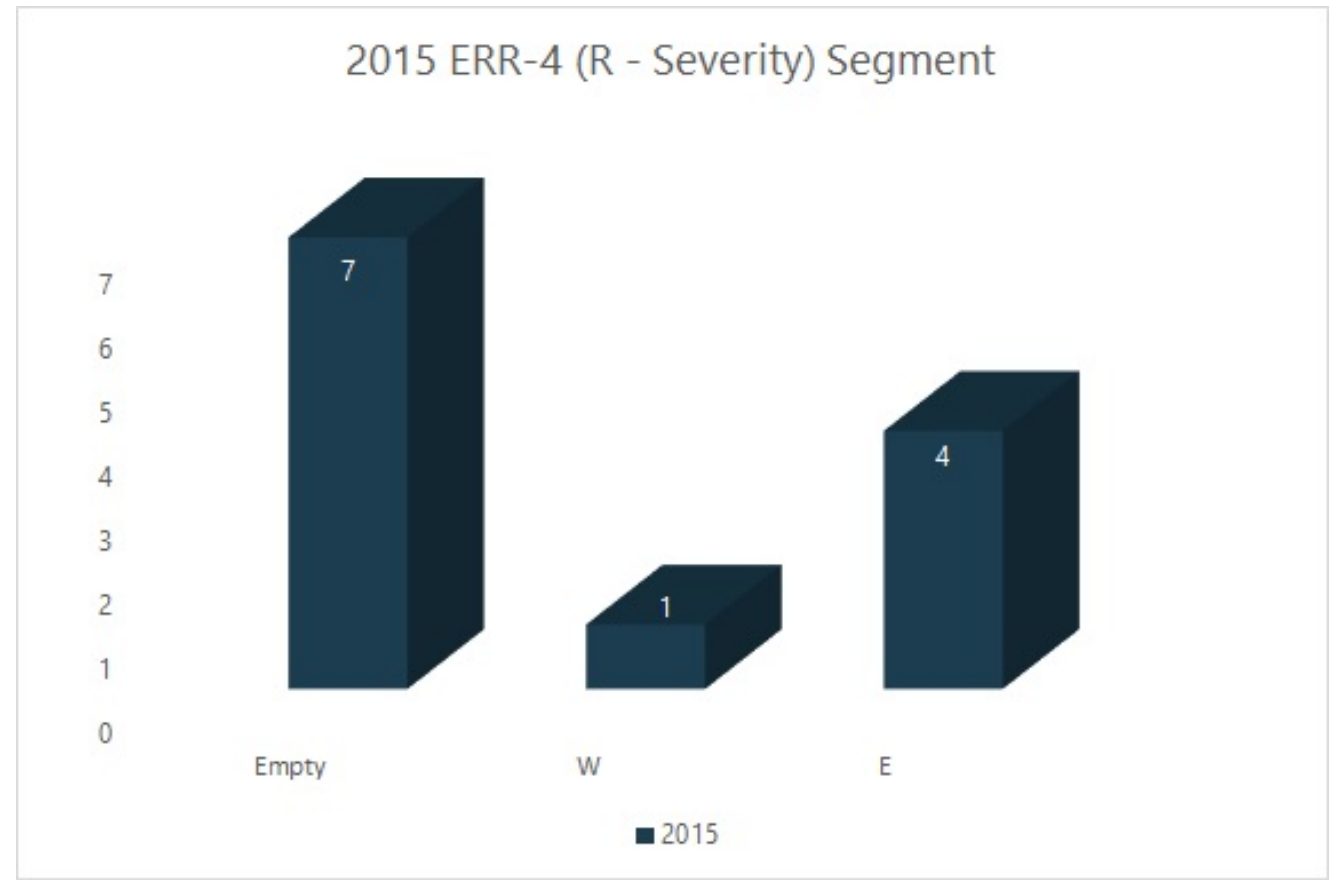
Ack Code

- Indicates if message was accepted or not.
- What would you think if this was all you saw?



Severity

- Indicates how critical this issue is.
- What would you think if this was all you saw?



Is it really that critical for IIS to follow standards?



The IIS
front door
is the HL7
interface





Do you really
need your
reservation
confirmed?



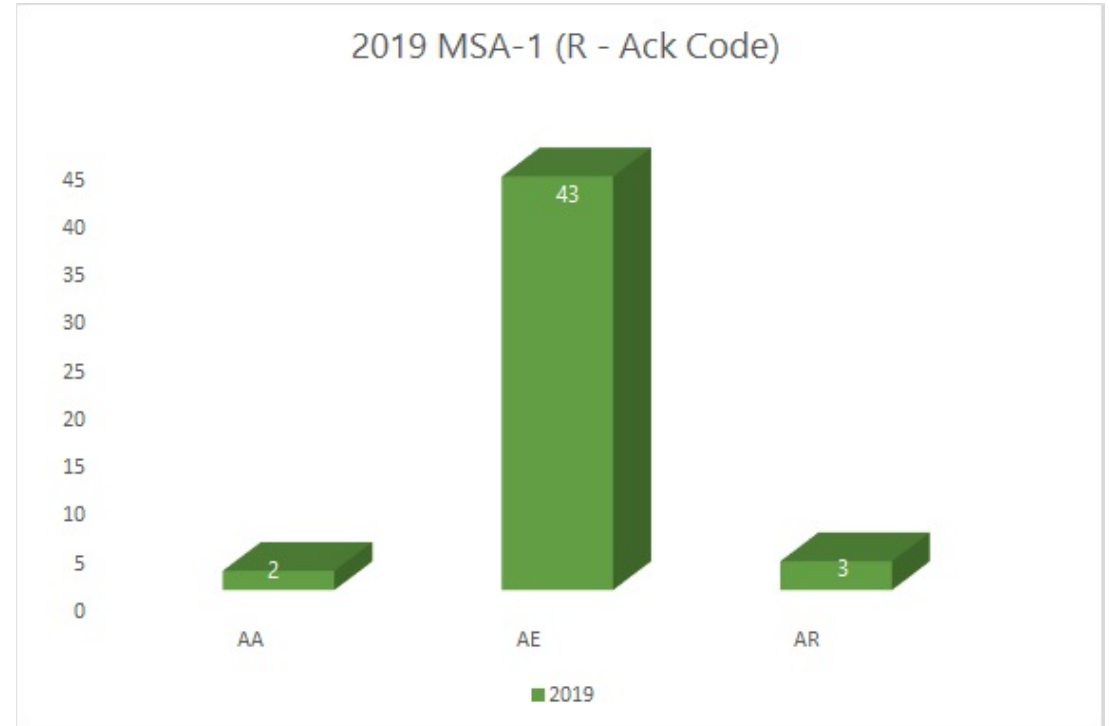
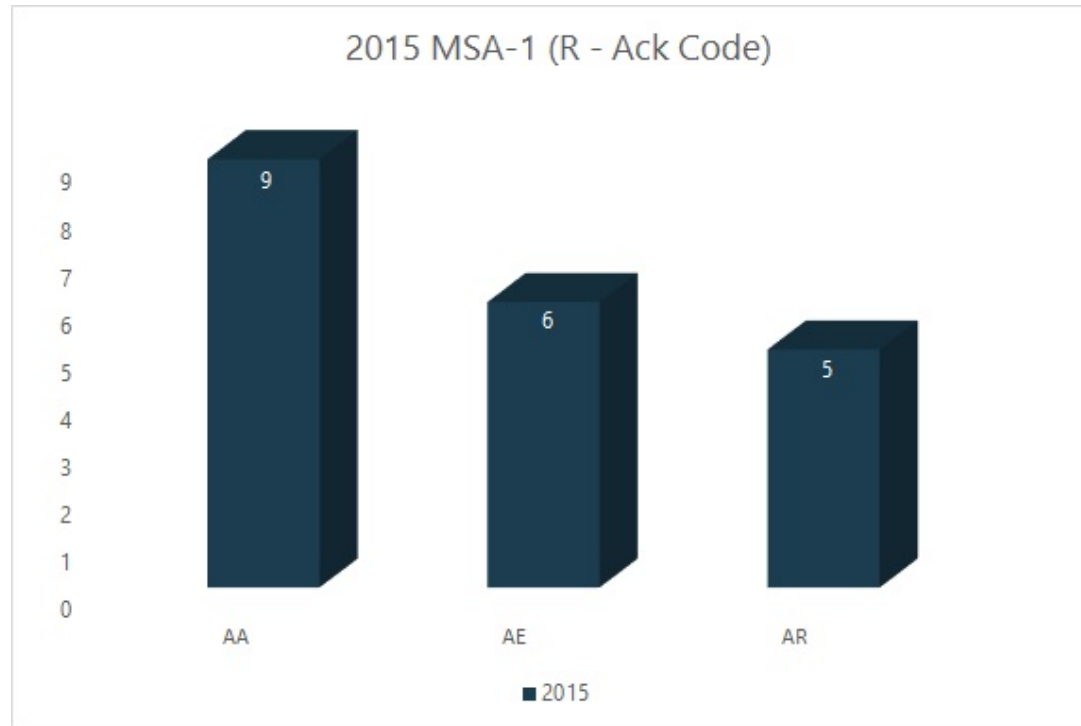


EHR systems
need to
understand
what IIS are
saying



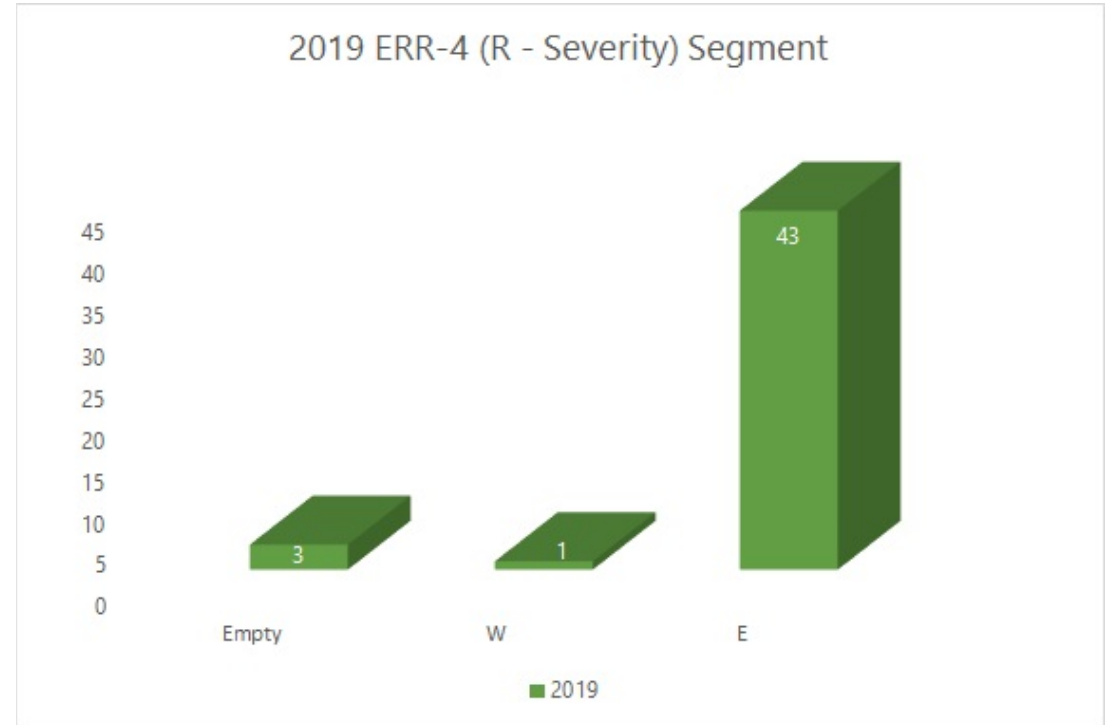
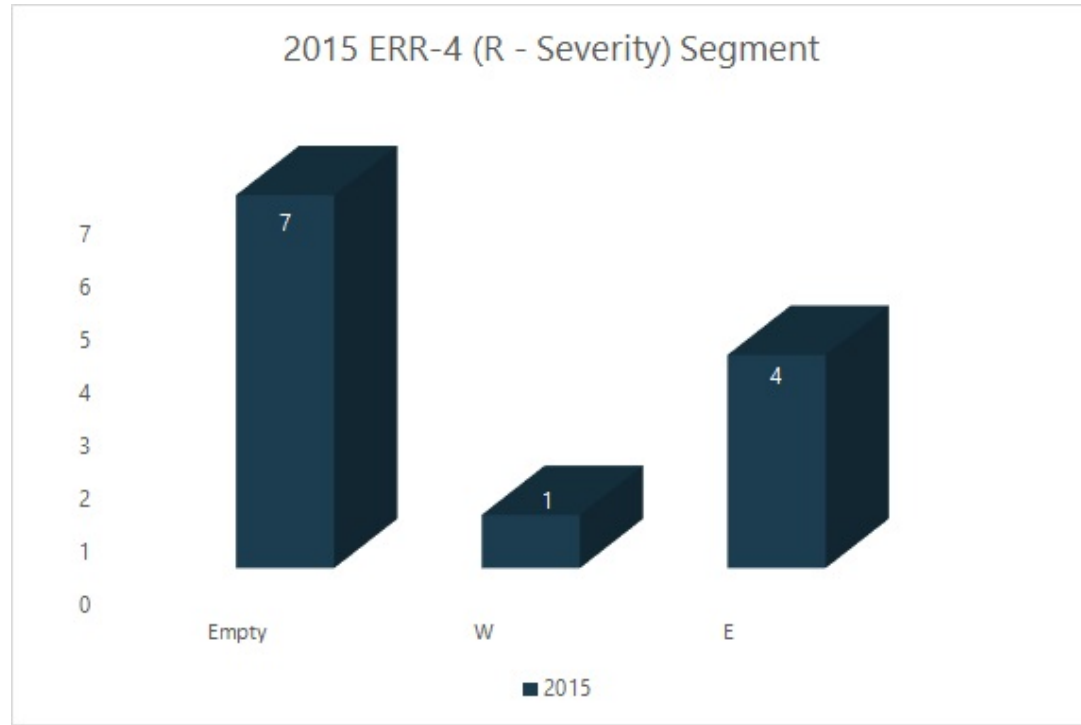
MSA-1 Acknowledgment Code

2015 vs. 2019



ERR-4 Severity

2015 vs. 2019



IIS Need Standards

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 - IIS need to follow them
- In 2020...
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