

# **IIS Interoperability Roundup**

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# **Immunization Information Systems**

- "Confidential, population-based, computerized databases that record all immunization doses administered by participating providers to persons residing within a given geopolitical area."
- Exist in every US state and territory
- Governed by STLT law and policy
- Largely funded (at least now) by CDC
- Various vendor and jurisdiction-developed products in use, most at the end of their lifecycle
- American Immunization Registry Association (AIRA) works very closely with CDC, jurisdictions, industry partners and other associations to further IIS objectives
- Reporting IZs to an IIS is required in some, but not all, jurisdictions and is a part of CMS Meaningful Use/PI



### **Background: From Paper to Electronic Reporting**







### **IIS Data Submission: HL7 v2 VXU**



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Consulting



Consulting

### **COVID Data Architecture**





## **Examples: Intra-agency Interoperability**

- Vital records systems
- Disease surveillance systems (e.g., Maven)
- Data warehouses/data lakes
- Consumer access solutions
- Other programs: (e.g., lead screening, newborn screening)

Often these interfaces are not standards-based, may be "push" or "pull"

### **Immunization Gateway Uses**

IIS  $\rightarrow$  Patient App

or Patient Portal



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A message router for immunization messages deployed on the APHL AIMS platform. Currently no message transformation, but a new service is being developed.



## **Helios: Immunization FHIR Bulk Query**



## **TEFCA: Background**



ONC TEFCA RECOGNIZED COORDINATING ENTITY

- Two separate but related things
  - TEF: <u>Trusted Exchange Framework</u>
  - CA: <u>Common Agreement</u>
- Outgrowth of <u>HITECH Act</u> and <u>21st Century Cures Act</u>
- Developed and launched by <u>ONC</u>; managed by Recognized Coordinating Entity (<u>RCE</u>), The Sequoia Project (Sept 2019)
- Initially released for comment in January 2018 (see <u>post</u>) and again in April 2019 (see <u>post</u>)
- "Version 1" release in January 2022, "Version 2" released April 2024 (see <u>post</u>)

# "Network of Networks"

- Interconnection between local, regional, and national networks (HIEs)
- Limited number of nodes, or Qualified Health Information Networks (QHINs): currently 7
- Technical framework centers around existing Integrating the Healthcare Enterprise (<u>IHE</u>) adopted standards and profiles
- Standard Operating Procedures for each "Exchange Purpose" (including public health)
- Widely deployed by existing national networks (<u>eHealth Exchange</u>, <u>Carequality</u>, and the <u>Commonwell</u> <u>Health Alliance</u>)
- Plan for integrating HL7 Fast Health Information Resources (FHIR) for later implementation



Diagram c/o The Sequoia Project

# **Current TEFCA Reality**

- Big push by both ONC and CDC
- Many public health agencies will participate indirectly through HIEs and other "participants"
- Public health exchange purpose "SOP" in draft form
- Current technical framework not well suited for IZ (but *is* being leverages for electronic case reporting – low hanging fruit)
- Emerging FHIR technical architecture *may* be more interesting: consider focusing on Helios use cases as primary public health drivers for TEFCA



### **Preliminary SWOT Analysis: IZ Interoperability**

<ul> <li>Strengths</li> <li>Use case well understood and widely accepted</li> <li>Mature implementation: &gt;20 years</li> <li>Standards-based (HL7 v2)</li> <li>Collaborative community</li> <li>Structured "testing" of IIS interoperability (NIST, AIRA AART)</li> <li>Consistent use of terminology and vocabulary</li> </ul>	<ul> <li>Weaknesses</li> <li>50+ IIS make a complex, distributed environment</li> <li>Differences in data sharing/consent policies inhibit sharing across jurisdictional lines</li> <li>Limited involvement of HIEs, especially national networks</li> <li>IIS aging technically with limited paths for replacement</li> </ul>
<ul> <li>Opportunities</li> <li>IZ Gateway leverages centralized resources</li> <li>Increased CDC interest in national data set may promote additional Federal investment</li> <li>Working on making interfaces more uniform and documenting them more consistently</li> <li>TEFCA may bolster emerging FHIR bulk query</li> </ul>	<ul> <li>Threats</li> <li>IIS and data exchange partners may resist migrating to new standards like FHIR</li> <li>Victim of its own success: Throughput issues</li> <li>Current standards "stuck" in ONC CEHRT</li> <li>Targeted IIS funding losses, including COVID funding "cliff"</li> </ul>

### **Questions? Comments?**



