Role of HL7 and FHIR in Public Health

Chesley Richards, MD, MPH, FACP
Deputy Director, Public Health Science and Surveillance
Centers for Disease Control and Prevention
Thank you up front

- HL7—Chuck Jaffe
- HL7 Public health workgroup
- CDC staff
  - Laura Conn, Nedra Garrett, Maria Michaels, Paula Braun
- All of you are interested and helping to connect healthcare, public health, and HL7
7 decades of firsts at CDC

1940s: Malaria Control in War Areas transitions into the Communicable Disease Center (CDC)

1950s: CDC establishes the Polio Surveillance Program

1960s: Smallpox Eradication Program is established; Global Smallpox eradication effort launched

1970s: CDC documents first nationwide outbreak of Reye syndrome; Legionnaire’s disease discovery and response

1980s: First AIDS cases reported in MMWR (1981); 100,000th AIDS case reported in 1989

1990s: Vaccines for Children (VFC) Program established

2000s: Responses to anthrax attacks, SARS, Hurricanes Katrina and Rita, H1N1 flu pandemic

2010 and beyond: “Tips from Former Smokers” launched; Fungal meningitis, MERS, Ebola, Zika responses
New Threats to Public Health Arise Every Day
Public health...

- CDC
- +50 states and territories
- 3000 local (county, city, district) health departments
- Tribal health agencies
- Federal agencies involved in public health activities
  - HRSA, SAMHSA, CMS, ASPR, NIH, FDA, others
  - VA, DOD, BOP, IHS
- Healthcare facilities, systems, providers, payors
- Public, consumers
<table>
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<th>Foundational Questions</th>
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<td>Moving from Historic Analysis to Predictive Analytics</td>
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<table>
<thead>
<tr>
<th>What is it?</th>
<th>What causes it?</th>
<th>Where will it likely spread next?</th>
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<tr>
<td>Who has it?</td>
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<tr>
<td>When did they get it?</td>
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<tr>
<td>Where did they get it?</td>
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<td>Where are they now?</td>
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<td>What can we do to protect people?</td>
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CDC is developing world-class data and analytics capabilities to transform today’s reality and meet new opportunities for lifesaving prevention and response.
We cannot solve our problems with the same thinking we used when we created them.

Albert Einstein
Roles of Public Health in the Data Ecosystem

Opportunities: Less Burden, Lower Latency, More Value

Generate

Aggregate (or Access)

Distribute
As public health leaders, we must be prepared to handle the challenges of today and, at the same time, to make real the potential of the new innovation of tomorrow.

Robert R. Redfield, MD
Director, CDC, and Administrator, ATSDR
Aspiration: We save American lives by ending epidemics, eliminating disease, ensuring domestic preparedness, and securing global health.

Strategic Priorities: Our priorities reaffirm our leadership and commitment to confront and respond to health threats wherever they occur. We will focus our scientific expertise on bringing an end to the devastation of epidemics, finally eliminating certain diseases, and providing a new level of domestic health preparedness and global health security against current and emerging threats.

Priority Accelerators: Protecting America’s health requires continuous improvement in our most vital assets: our data, laboratories, and people.

Enabling Capabilities: Our strategic priorities are enabled by unique expertise and interdependent capabilities.
CDC Public Health Data Initiative

- **Why?** Data are the foundation of our nation’s public health network. We must have the capacity to generate and use timely, accurate, and accessible data to meet the health challenges of today and tomorrow.

- **Why now?** Data is moving slower than disease. We are too slow –
  - Getting data
  - Analyzing data
  - Sharing data

- **Moving data modernization forward requires**
  - Leadership
  - Data Sharing
  - Funding and Resources
  - Capability to use Evolving Technologies
Implementation Priorities

Moving from Data Collection to Predictive Data

**Governance**
enterprise approach

**Modern Technologies**
cloud, common portal, analytical tools

**Data**
sharing, interoperability

**Partnership**
support state and local
Goal

To transform CDC and our partners from a culture of primarily historical data analytics to predictive data science supported by modern IT platforms and enterprise services that facilitate CDC’s public health mission.

Seven Imperatives for 2024

By 2024, CDC will be operating to a new normal, working across programs and agency initiatives & through emerging priorities.

- **Cloud**
  - CDC data will be in a cloud

- **Common Portal**
  - Data reporting to CDC will be through a common portal

- **Interoperability**
  - CDC data will be interoperable within and external to CDC

- **Data Sharing**
  - CDC data will be shared and public, while protecting privacy and confidentiality

- **Enterprise Level**
  - At the enterprise level, CDC data will be catalogued, have metadata and be labelled with appropriate access and privacy controls

- **Analytical Tools**
  - CDC scientists will have efficient access to relevant data science tools and the capability and expectation to perform both historic and predictive analyses

- **State & Local Support**
  - State and local health departments will be supported to accomplish complementary goals
FHIR Accelerator for Public Health

Multi-State EHR-Based Network for Disease Surveillance:
- Expand the ability of Million Hearts® Program to use clinical data to guide current and future activities
- HL7 FHIR helps facilitate continued movement towards standardization across platforms and methodologies
- Develop open-API based tools to help sites extract clinical data with less burden
- Help find those at risk for heart disease and stroke, optimize care, and improve outcomes

Provide Clinically Detailed, Efficient, and Timely Information on Large, Diverse Populations
Congressional Interest
Authorizing Legislation

- **Leading Infrastructure for Tomorrow’s America Act (LIFT America Act) (House)**
  - $100,000,000 for each fiscal year 2020-2024
  - Under consideration by the House Energy & Commerce Committee

- **Saving Lives Through Better Data Act (House)**
  - $100,000,000 for each fiscal year 2020-2024
  - Under consideration by the House Energy & Commerce Committee

- **Lower Health Care Costs Act (Senate)**
  - “there are authorize to be appropriated such sums as may be necessary for fiscal years 2020 through 2024”
  - Reported out of Health, Education, Labor, and Pensions (HELP) on 6/26/19
Thank You

For more information, contact CDC
1-800-CDC-INFO (232-4636)

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.