

PUBLIC HEALTH DATA MODERNIZATION

Listening Session on Real-World
Testing of 21st Century Cures
Act Requirements

EXECUTIVE SUMMARY

Session Held on July 16, 2020



U.S. Department of
Health and Human Services
Centers for Disease
Control and Prevention

Understanding Populations through Data Modernization

Graham Briggs, MS

State Epidemiologist

Illinois Department of Public Health

Graham.briggs@illinois.gov





Available Now



USCDI v3 and Standards Bulletin



FHIR

The ultimate goal of CDC's Data Modernization Initiative (DMI) is to get better, faster, actionable insights for decision-making at all levels of public health

– from CDC's DMI website

TIMELY. ACCURATE. ACCESSIBLE.

THE NEW WORLD OF PUBLIC HEALTH DATA

CDC is building a digital public health superhighway to accelerate lifesaving prevention and response.

THE REALITY	THE OPPORTUNITY
REACTING Always behind when epidemics occur	PREDICTING Getting ahead of epidemics to stop them quickly
COUNTING Collecting data without the ability to rapidly analyze it	UNDERSTANDING Rapid data analysis to gain real-time insights
STORING SEPARATELY Siloed systems that restrict data sharing	SHARING EFFECTIVELY Interoperable, accessible data for action
MOVING SLOWLY Outdated, paper-based systems with multiple points of data transfer	MOVING FAST A true digital highway to automate transfer of critical data in real time
USING RESOURCES INEFFICIENTLY New resources always required to do new data collection	CONNECTING RESOURCES Leveraging existing resources and making common investments for the future

Accessible version: <https://www.cdc.gov/surveillance/pdfs/New-World-of-Public-Health-Data.pdf>

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CS10334-A



**Build the right
foundation.**



**Accelerate data
into action.**



**Develop state-of-
the-art workforce.**



**Support and
extend external
partnerships.**



**Manage change
and governance.**

Known Issues to Prioritize in Illinois

- We collect data from multiple sources that is stored separately in multiple places
- This data is not linked or easily available for those that need it in state and local agencies or in healthcare settings
- Significant capacity differences to utilize data to drive strategy and measure impact across local public health agencies
- Local public health agencies need access to multi-sourced, blended and useable data in real time
- The public lacks easy access to current information to make more informed decisions
- Modernization should improve strategies related to health equity and outcomes

The Vision

- Illinois has received about \$15 million in federal funding related to infrastructure and workforce modernization so far, nearly \$4 billion budgeted nationally to this point
- Planned Activities include
 - Create a Modernization Advisory Committee comprised of health professionals across Illinois
 - Build Master person index (MPI) and sustainable health information exchange
 - Blend data from multiple sources including syndromic surveillance, hospital admission and discharge data, immunization registry, Medicaid claims, medical examiner, environmental data
 - Update I-NEDSS with direct access and bi-directional data flow for local health departments
 - Provide better data visualization using automated dashboards, with set up assistance available through IDPH

More Projects

- Increase access to data and strategies related to SDOH, climate, substance use, health disparities and other emerging public health issues
- Invest in combination of workforce training and automation to make data easier to access and use for both state and local public health agencies
- CDC Center for Forecasting and Outbreak Analytics
 - Move from responding to preventing
- Partnering with Illinois Healthcare and Family Services (HFS) to create a master race/ethnicity field across agencies



What if...

- ED physician sees 44 yr old Elgin resident presenting with 2 day history of fever, HA, eye pain, and maculopapular rash on chest
- Physician's chatbot assistant notes patient's master record has no MMR in system, suggests that measles testing is indicated
- Chatbot also notes that WNV positive mosquitoes recently found in patient's neighborhood, symptoms might suggest WNV infection
- Physician asks, is told patient thinks she got all her shots when she was a kid, was also "mauled" by mosquitoes about a week ago while walking dog
- Measles and WNV testing ordered



What if...

- Measles test request triggers push notification to Infection Prevention with a list of all staff that were in contact with patient
- EHR generates suspect measles report and sends demographics, symptoms, other measles specific info to I-NEDSS
- System determines residence is in Suburban Cook County Public Health (CCDPH) jurisdiction and immediately shares report with local agency
- Query to birth state immunizations system replies with one dose of MMR in system
- Reporting prompts phone call to coordinate between hospital IP, local and state public health officials to discuss possible case and response
- Then, we wait for results...

WNV positive

Measles negative

- Positive WNV result generates report from EHR to I-NEDSS containing labs, demos, etc available to IDPH and CCDPH in real time
- Measles report auto-updated to ruled out
- As additional cases, mosquito pools, weather data analyzed with embedded machine learning, risk maps updated weekly, posted on state/local websites
- Different patient from same neighborhood has routine physical a few days later, along with a reminder from family doctor to wear mosquito spray for the next few weeks since WNV is active in the area



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The best way to predict the
future is to create it.

Graham Briggs, MS
State Epidemiologist
Illinois Department of Public Health
Graham.briggs@illinois.gov

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