Universal Public Health Node (UPHN):
HIE and the Opportunities for Health Information Management

*Increasing internal and external value of health information through integration, interoperability, standardization, harmonization and governance.*

Ivan J. Gotham, PhD
*Director Bureau Healthcom Network Systems Management, NYSDOH*
*Assistant Professor School of Public Health, SUNY Albany*
*AMIA Scientific Advisory Committee Public Health Informatics*
*Co-Chair SHIN-NY Architecture Workgroup*
*Co-Chair UPHN Project*

Rachel Block
*Director Office of Health Information Technology Transformation, NYSDOH*
Accelerating State-Wide Public Health Situational Awareness in New York Through Health Information Exchange
Office of Health Information Technology Transformation (OHITTT)

- Coordinate health IT **programs** and **policies** across **public** and **private** health care sectors

- Since 2005 NYS has committed to invest nearly $1 billion from public and private sources to transform health care and public health through adoption and use of health Information Technology (IT)

- Public-private collaborative and governance structure: NY e-Health Collaborative (NYeC)

- **Statewide health information exchange (HIE) architecture (the Statewide Health Information Network for New York (SHIN-NY))**

- **Statewide strategic and operational plans and policy guidance for health IT and HIE**

- UPHN project
NY’s Transformative Model of Health Care:
• Patient Centric Community of Care
• Public Health is Part of the Continuum of Care within the community.
Universal Public Health Node Project

- A strategic organizational process, informatics approach and technical infrastructure to transform public health practice through health information exchange in NY.
  - Enable integration of practice public health within the health enterprise, as part of the business model for effective and economical health care delivery across the continuum.
  - Assuring sustainability and effectiveness of delivery of public health services within the continuum of health care.
  - Identification and implementation of strategic Public health activities/priorities within that environment should drive an organized governance process for public health infrastructure planning, investment, implementation, management and evaluation.
  - Public Health Infrastructure= three strategic assets: workforce, information (technology) architecture and information.
Internal Priorities Advanced by UPHN

- Improve the efficacy of public health practice through the multiplicative effects of Program access to integrated longitudinal information assets that are authoritative, interoperable, reusable, reliable and timely.
  - evidence-based interventions
  - evidence-based policy and decision making supportive of public health priorities and agenda
  - Increased organizational (workforce) capacity and efficiency
  - Accurate and effective measurement and evaluation of program intervention, policy and Public health infrastructure investments
  - Extension of public health practice within the care continuum through provision of externally facing information exchange services of high clinical and business value to our clinical health information trading partners

- Decreased IT and Program Cost of Ownership through:
  - Reducing the need for state and local health in maintaining multiple, duplicative, data systems and reporting venues.
  - Reducing duplicative data cleaning, linkage, QA/QC, translation, transformation, program processing of multiple disparate data systems.
  - Reduction in diversity, disparity and program-centric information access control.
  - Increase in reusable information and data
  - Uncoupling of information from technology
External Priorities Advanced by UPHN

- Passive (vs. active) bi-directional information exchange with DOH data systems and health care providers

- Reducing administrative burden on providers to report to multiple disparate state/local systems in addition to using clinical information systems (EHRs, LIS, etc...)

- Hierarchy of information exchange infrastructure that is transparent to clinical workflow and business.

- Improved clinical practice and health care cost efficiencies through access to DOH enabled external facing data/information services of high clinical/business value

- Integrating clinical, quality and population health guidelines into physician workflow

- Change the business model from regulator v regulated to strategic partnerships in health information trading
What is the Universal Public Health Node?

- Technical architecture and collection of services with supporting data standards, messaging specifications and operational policies

- Establishes a single interface for health information exchange between health care provider community and State (NYSDOH)

- Uses Regional Health Information Organizations (RHIOs) as the venue for consolidating and brokering exchange with health care providers within the regional health care communities.

- Based on a service-oriented architectural paradigm (SOA), implemented through web services operating through an enterprise service bus (ESB) as a subset of SHIN-NY Architecture

- Developed as part of a statewide collaboration process with active participation across public and private sectors under leadership from Office of Health Information Technology Transformation (OHITTT)
Overarching Architecture Principles

- Integration of Public Health Reporting Across Multiple HIEs
  - Exchange of data for public health in a standard manner
  - Collaborative Development of Consensus Implementation Guide

- Enabling Bidirectional Flow of Information and Intelligence
  - Public Health Participation in RHIO data exchange as equal partners, providing and receiving information as needed
  - Dynamic Querying Capabilities

- Ensuring Patient Privacy
  - Implement and Enforce of Privacy & Security Standards
  - Minimum Data Necessary - Filtering, Anonymizing, Aggregating

- Compliant with not only the SHIN-NY architecture, but also the national standards for healthcare interoperability
  - UPHN is a HITSP-compliant and HITSP-consistent architecture
  - UPHN also leverages the work of the NHIN effort in its architectural framework
Accelerating State-Wide Public Health Situational Awareness in New York Through Health Information Exchange
Universal Public Health Node Priority Services

- Version 1 Services supporting Syndromic Surveillance, Epidemiologic Surveillance, Case Investigation, Hospital Resource utilization
  - Patient Query
  - Line List Query
  - Anonymize/Re-identify
  - Analytic Query
  - Hospital Resources

- Immunization Bi-Directional Information Exchange (IBIE)
  - Bidirectional registry Exchange
  - Meaningful Use

- Master Provider Directory (Collaborative composite services)

- Admission Discharge Transfer (ADT) Message

- Health Alerting
Universal Public Health Node

Other Services Planned

- Vital event notification Services (births and deaths)
- Vital records information services
- Bidirectional disease registry reporting and information services
Universal Public Health Node Project Priority Integration Initiatives

- Child Health Information Integration (CHI\(^2\)) Systems
  - Newborn Bloodspot Screening System (Wadsworth Center)
  - New York State Immunization Information System (NYSIIS)
  - Neonatal Intensive-Care Unit (NICU) Module
  - Lead Screening Data- Lead Web
  - Statewide Perinatal Data System (SPDS) (Birth Events)
  - Newborn Hearing Screening Data (CCH-DFH)
  - Early Intervention Data- NYEIS (New York Early Intervention System)
Universal Public Health Node Project
Priority Integration Initiatives

- New York State Health Commerce System (NYSHCS)

- Office of Health Emergency Preparedness
  - Situational Awareness: HavBed
  - Event patient Tracking
  - Health Alerting and Notification

- Office of Health System Management (OHSM) data systems
  - National Instant Criminal Background Check System (NICS)
  - Physician Profile
  - Electronic Certificate of Need (eCON) systems
  - Bureau of Narcotic Enforcement (BNE) Data Systems
  - Office of Professional Medical Conduct – licensure adjudications

- Vital Records
  - Vital Events (Birth and Death)

- Medicaid data systems

- Office of Public Health
  - Cancer Registry
  - Other disease registry reporting
  - The Electronic Clinical Laboratory Reporting System (ECLRS)

- Office of Health Insurance Programs Data Systems
  - Physician ID
  - Quality Metrics
High-level Design (example)
Hierarchical Information Exchange
Leveraging Community of Clinical Care

CHI²
(Master Patient Index,
Child Health Information Services)

NYSIIS
NATUS
SPDS
ELCRS

UPHN

Statewide Health Information Network for New York
(ShIN-NY)

RHIO

Qualified Health IT Entity

Hospital
Hospital
Hospital
Physician Practice

Example: Immun. Reporting & Guid.
(Master Patient Index, Child Health Information Services)
**Shared UPHN Services Across Programmatic Use Cases**

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<th>ADT</th>
<th>Provider Directory</th>
<th>Bidirectional Communication</th>
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