Electronic Health Records (EHR) to Advance Chronic Disease Surveillance

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Overview

- Evolving Landscape of HIT for Chronic Disease Surveillance
- Role of EHR Data
- Data Exchange Models
- Review approaches
- Synthesizing what we learned
- What to look for in the future?

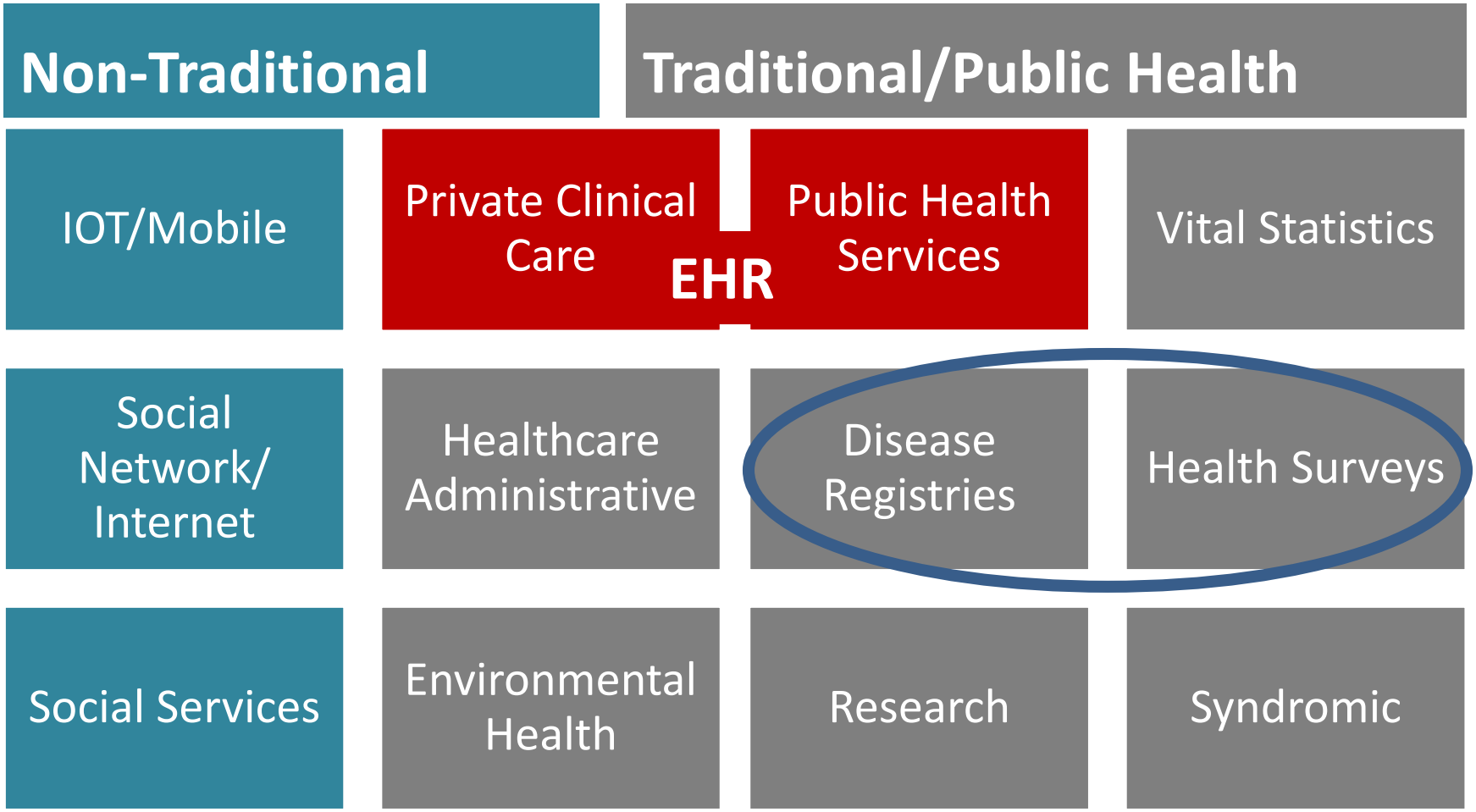
Evolving Landscape of HIT for Chronic Disease Surveillance

- Adoption of EHRs is reaching saturation*
- Increasing number of “patient data” aggregators/networks
- A new breed of HIT systems e.g. “population health management” systems **
- National HIT policies like MU3, MACRA, and 21st Century Cures Act offer new possibilities
- Increasingly diverse data sources surfacing for public health monitoring
- Jurisdictions have begun to experiment with different infrastructure and analytic models

* http://dashboard.healthit.gov/index.php

** Glaser, John, “All Roads Lead to Population Health Management, ” Hospitals & Health Networks, June 13, 2016. Cerner’s Glaser defines the needs for these non-EHR clinical systems and capabilities: registries and scorecards, data warehouses and analytics, care management, longitudinal record, longitudinal care plan, patient engagement tools

Cross Sector Chronic Disease Data



EHR vs Traditional Data Sources

EHR

- Timely clinical data to enhance analyses
- Improves accuracy, addresses self-report bias
- Granular data for sub-population and geographic analyses to address health disparities
- Variety of data elements to improve analyses

Traditional

- Survey self-report bias
- Registry provider burden
- Small sample sizes and sparse population data
- Inconsistent data elements across surveys
- Limited survey data require augmentation

Potential Value from EHR Data Use

- **Integration of EHR and cross sector data** can enhance population-based chronic disease interventions and research
  - Community agencies
  - Government agencies
  - Health plans
  - Health systems
  - Physicians

- Develop EHR-based tools and decision support technologies to manage chronic disease populations

Potential Value from EHR Data Use

- Develop and implement chronic disease population algorithms
  - Cohort identification (e.g., high risk populations)
- Assist in developing chronic disease quality measures
- Link provider EHR systems with consumer internet and mobile e-health

Challenges Facilitating Data Exchange

- EHR vendors capture and manage data differently
- Aggregation requires the use of interoperability standards (e.g., CDA, FHIR) and complex processing, normalization, and modeling
- Access requires data sharing agreements, refined authorizations, permissions, and approval processes
- No state and local regulations requiring the reporting of chronic disease data to public health, thus there are multiple models for public health to access the data

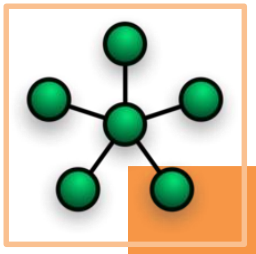
Data Aggregators

- Health Information Exchanges (HIE)
- Accountable Care Organization (ACO)
- Research Networks
  - PCORI
  - DARTNet etc.
- Private Data Reservoirs
  - OPTUM LABS etc.

Data Access Methods

Distributed Data Network

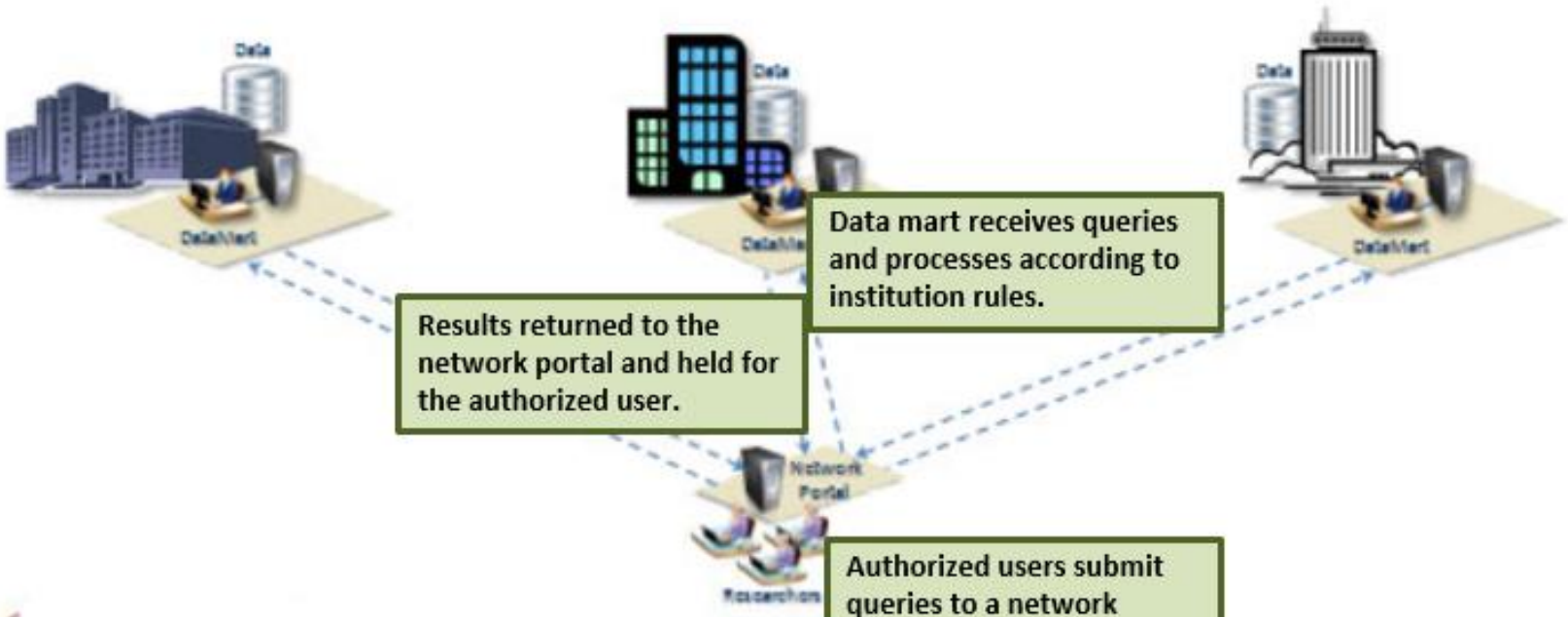
- Data access thru common query model
- Data reside in data partners environment
- Query executed against a common data model
- Approved summary results are returned to requesting partner



Centralized Data Network

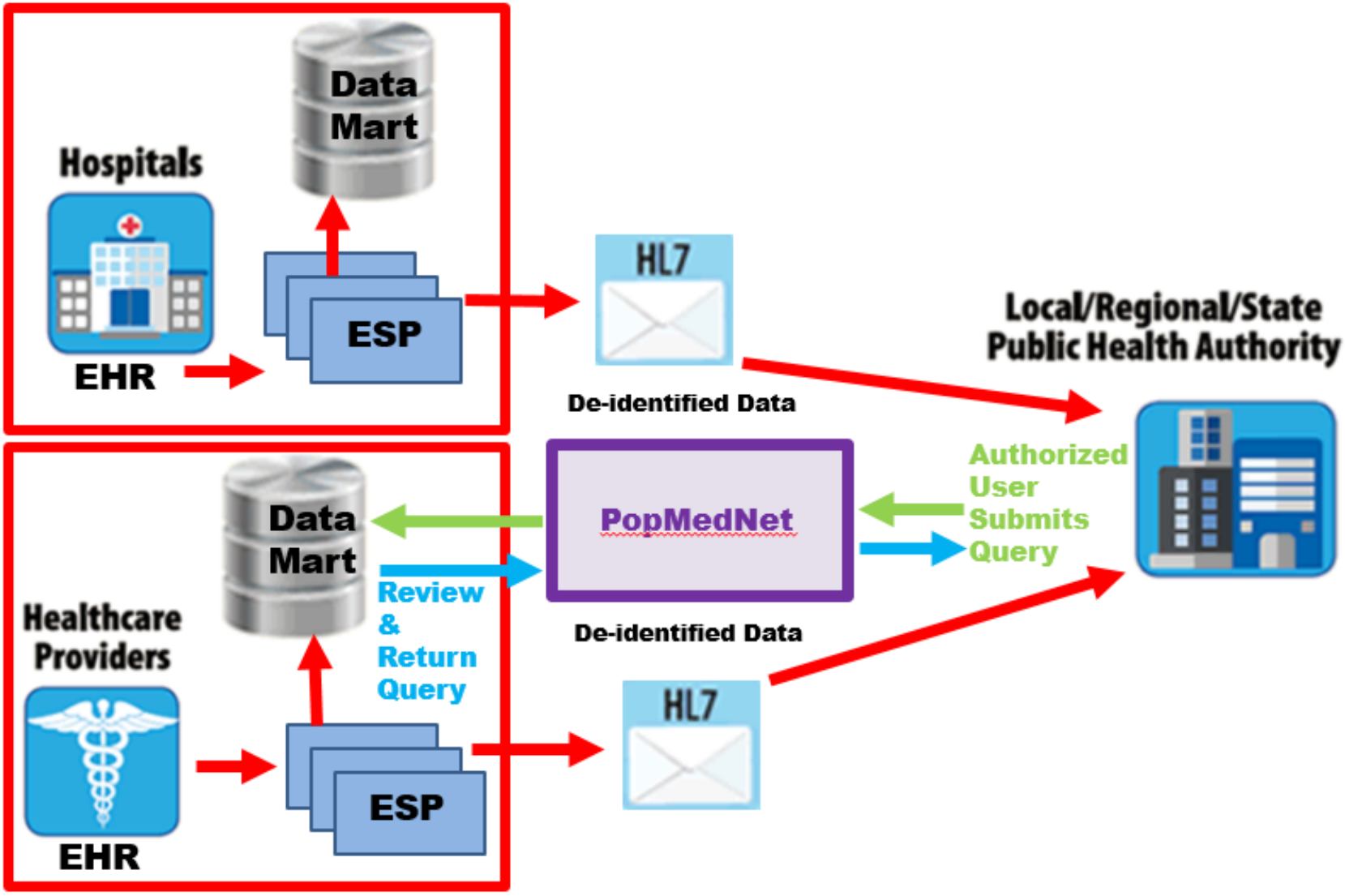
- Data partners submit data to an aggregator
- Data is centrally collected, linked and standardized
- Data requests are managed centrally
- Individual and summary records are available to the requestor

Distributed Data Network Model



- Data remain at the institution
- Only institutionally approved queries return to authorized users

MDPHnet Reference Architecture



Centralized Data Network Model

Lab Companies

Health Plans

Home Health

Hospitals

Nursing Homes

EMS

Physician Practices

Public Health Agencies

Pharmacies

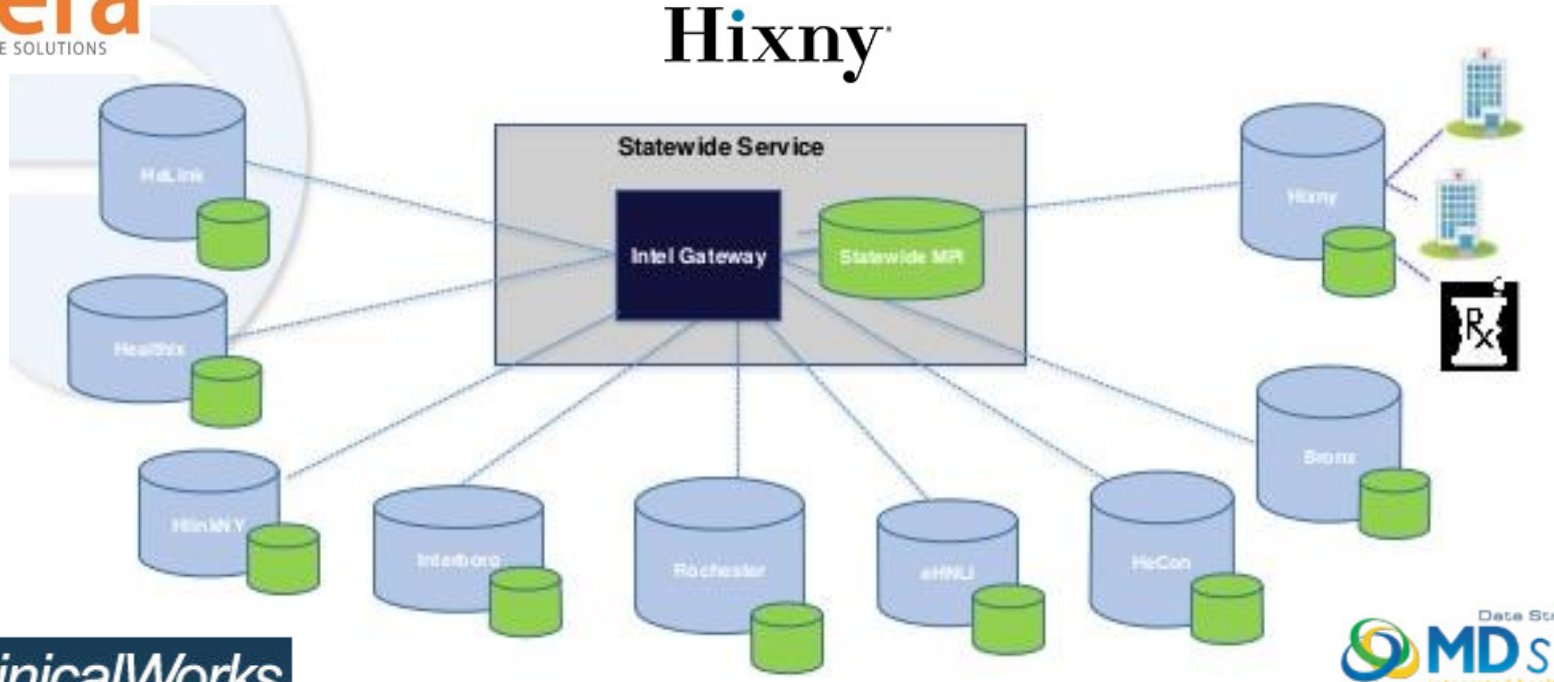
Behavioral Health Providers

Schools

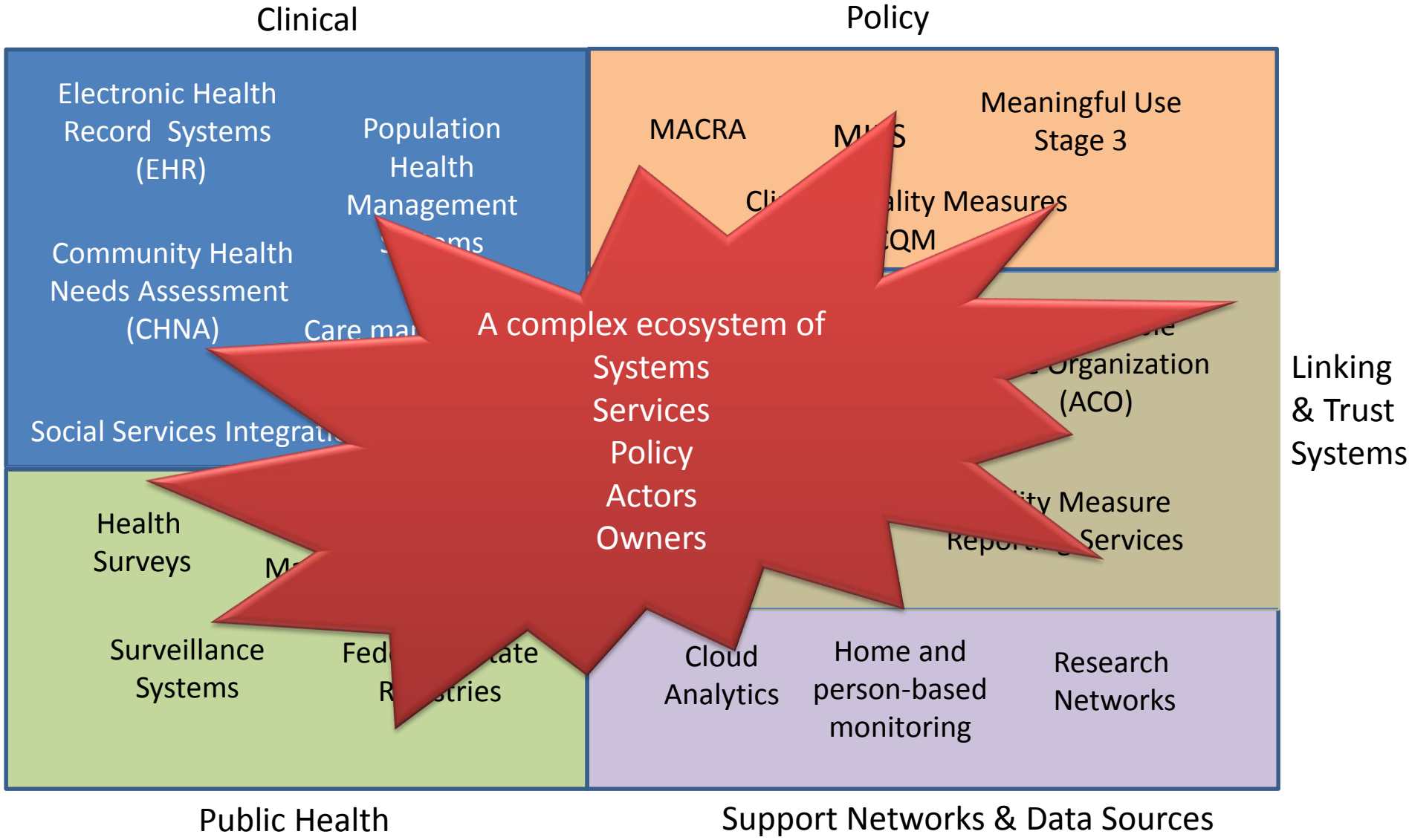
Community Health Centers

Patients and Caregivers

Hixny New York Health Information Exchange



Synthesizing What We Learned



Population Health Informatics Framework

- Need to Integrate clinical and public health data for Chronic Disease Surveillance and Management
- Need for granular local level data
- To support both population health management and public health
- Address chronic disease prevention efforts in clinical care that are varied and irregularly implemented
- Recognize non-EHR population health HIT needs that are fast evolving

What to look for in Spring 2017?

Population Health Informatics Framework: "Chronic Disease Prevention Needs"

Interested in participating and be a contributor?

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QUESTIONS?

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