Conceptual Framework for e-Health Data Repositories to Support Population Health

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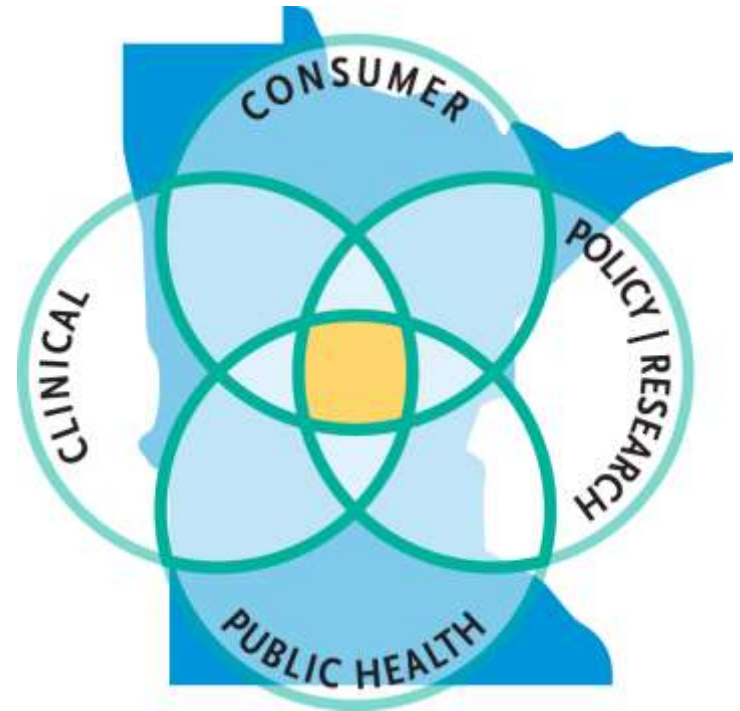
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MDH Minnesota Department *of* Health

Office of Health Information Technology

Minnesota e-Health

Minnesota e-Health Initiative

A public-private collaboration established in 2004

- Legislatively chartered

- Coordinates and recommends statewide policy on e-health

- Develops and acts on statewide e-health priorities

- Reflects the health community's strong commitment to act in a coordinated, systematic and focused way

"**Vision**: … accelerate the adoption and effective use of **Health Information Technology** to improve healthcare quality, increase patient safety, reduce healthcare costs, and enable individuals and communities to make the best possible health decisions."

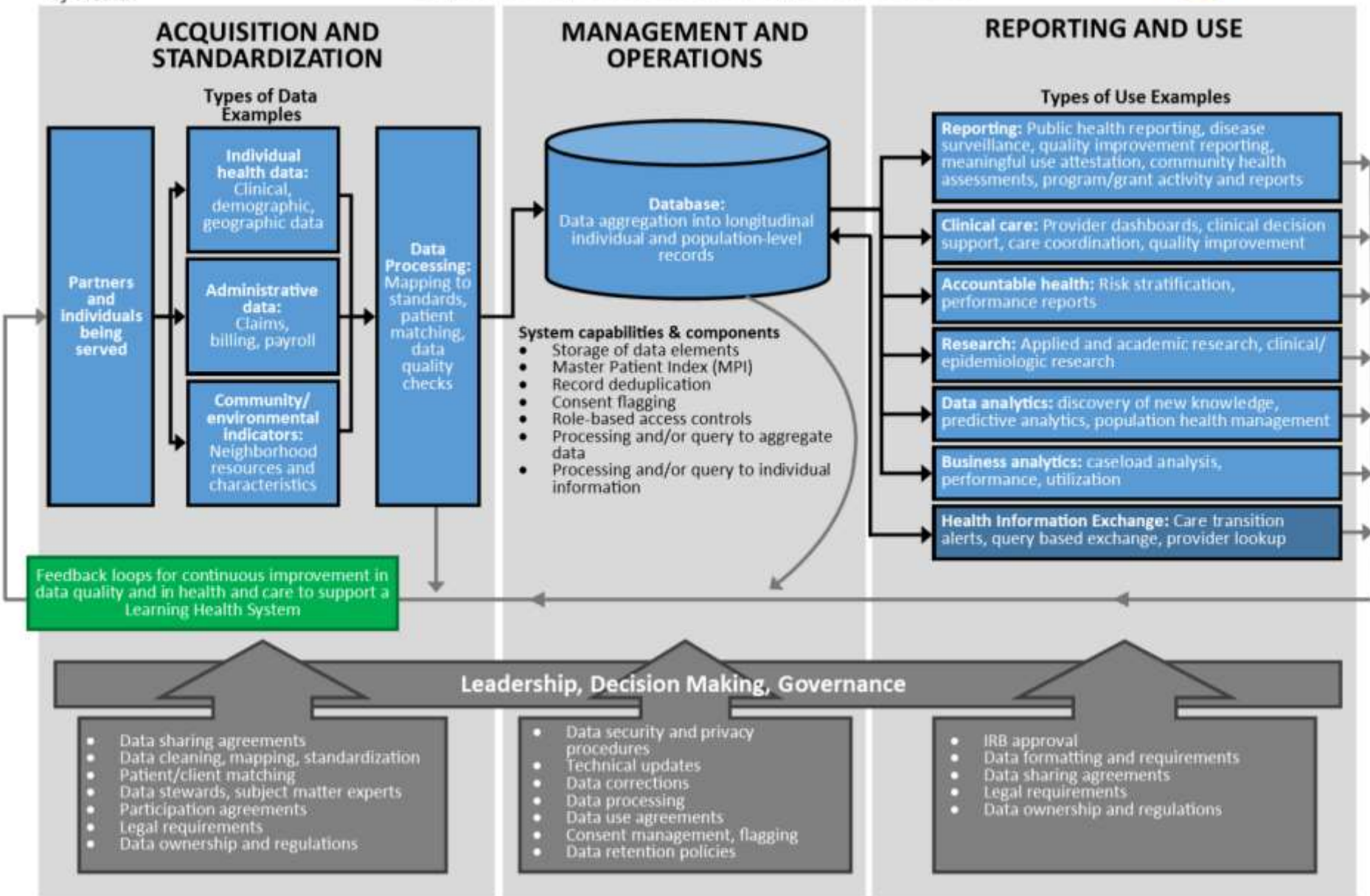# Framework Components

- Acquisition and Standardization
  - Individual-level clinical/health data
  - Administrative data
  - Community/environmental data

- Management and Operations

- Reporting and Use

- Feedback Loops

- Leadership, Decision Making, and Governance

DISCLAIMER: This is NOT a repository project that MN is implementing. It is a framework for any health organization to use.

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Figure 1. Framework for e-Health Data Repository Services to Support Population Health in Minnesota
Components and processes for a health organization to consider

ACQUISITION AND STANDARDIZATION

Types of Data Examples

Partners and individuals being served

Individual health data: Clinical, demographic, geographic data

Administrative data: Claims, billing, payroll

Community/ environmental indicators: Neighborhood resources and characteristics

Data Processing: Mapping to standards, patient matching, data quality checks

MANAGEMENT AND OPERATIONS

Database: Data aggregation into longitudinal individual and population-level records

System capabilities & components
- Storage of data elements
- Master Patient Index (MPI)
- Record deduplication
- Consent flagging
- Role-based access controls
- Processing and/or query to aggregate data
- Processing and/or query to individual information

REPORTING AND USE

Types of Use Examples

Reporting: Public health reporting, disease surveillance, quality improvement reporting, meaningful use attestation, community health assessments, program/grant activity and reports

Clinical care: Provider dashboards, clinical decision support, care coordination, quality improvement

Accountable health: Risk stratification, performance reports

Research: Applied and academic research, clinical/ epidemiologic research

Data analytics: discovery of new knowledge, predictive analytics, population health management

Business analytics: caseload analysis, performance, utilization

Health Information Exchange: Care transition alerts, query based exchange, provider lookup

Feedback loops for continuous improvement in data quality and in health and care to support a Learning Health System

Leadership, Decision Making, Governance

- Data sharing agreements
- Data cleaning, mapping, standardization
- Patient/client matching
- Data stewards, subject matter experts
- Participation agreements
- Legal requirements
- Data ownership and regulations

- Data security and privacy procedures
- Technical updates
- Data corrections
- Data processing
- Data use agreements
- Consent management, flagging
- Data retention policies

- IRB approval
- Data formatting and requirements
- Data sharing agreements
- Legal requirements
- Data ownership and regulations

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  http://www.health.state.mn.us/e-health/

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