Population Health Informatics Framework: "Chronic Disease Prevention Needs"

Office of Informatics and
Information Resource Management

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Agenda

1. Role of the population health informatics framework
2. Design considerations
3. Role of standards
4. Activities and candidate design elements
5. Next steps

The Health and HIT Milieu

Right time for a population health informatics framework

- Clinical care: "we need to do **private public health"**
  - Need to **integrate "public health" data** (social determinants, environmental data, and denominators…) for accountable care and prevention
- Public health: "we need **clinical care help with public health priorities"**
  - Chronic disease prevention and care coordination efforts require a working partnership
- Grappling with the **limits and challenges of EHRs** *per* se and push back from HITECH and Meaningful Use
- New recognition of non-EHR **population health HIT** needs*

*e.g. 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

Role of the Framework

- **Identify and advance chronic disease prevention health IT needs**
  - Identify considerations for policies, systems, standards, FOAs
  - Enable others to provide needs as well
- **Meet the maturity of the environment**
  - Health systems, data aggregation points, and approaches are highly variable
  - Strategically guide what can stay variable and where guardrails are needed
  - Push the market to regularize, address needs, and build structure
  - Critical to making functionality and outcomes affordable for all
- **Use to engage involved communities**
  - Clinical, HIT, policy, and standards communities
  - A communicating and listening tool

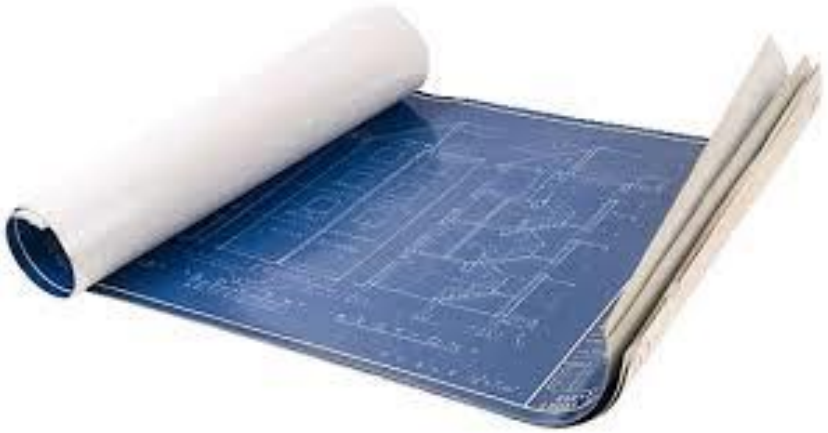
Alignment with Health Promotion Domains

Strong alignment with at least 3 of 4 Health Promotion Domains.

- ✓ Epidemiology and Surveillance
- • Environmental approaches that promote health and reinforce healthful behaviors (partial)
- ✓ Health system interventions to improve the effective delivery and use of clinical and other preventive services in order to prevent disease, detect diseases early, and reduce or eliminate risk factors and mitigate or manage complications
- ✓ Strategies to improve community-clinical linkages ensuring that communities support and clinics refer patients to programs that improve management of chronic conditions. Such interventions ensure those with or at high risk for chronic diseases have access to quality community resources to best manage their conditions or disease risk.

Health IT enables and promotes or constrains – it is a question of how it is done.

Design Considerations

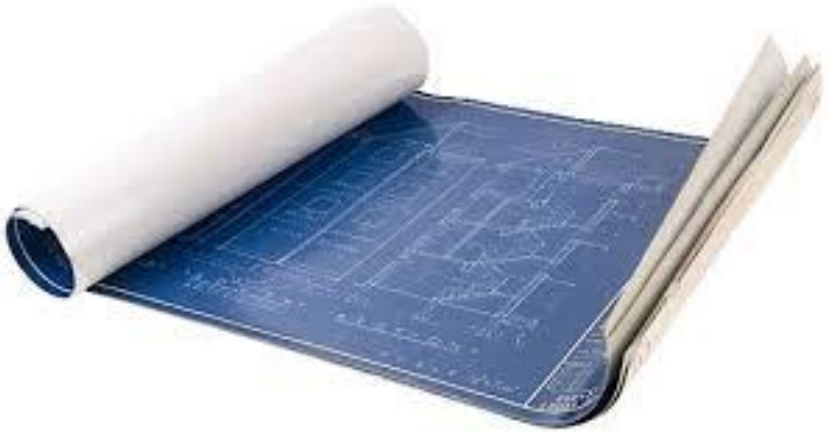


1. More granular data needed
   - Public health has expressed needs for block by block environmental and social determinant data
   - Large cohorts being developed for the Precision Medicine Initiative and for the Million Veterans Program as well as patient engagement data offer potential mechanisms for granular data acquisition
   - New public health resources sufficient to get to block by block granularity are unlikely

Design Considerations

2. Take advantage of multi-use elements
   - Chronic disease management activities are at the intersection of clinical care and public health organizational models
   - Information technology infrastructure and investment can support a variety of program outcomes
   - Moving from data on downward, the different IT infrastructure elements are increasingly agnostic to program specificity: data -> technical -> security -> operations

Design Considerations



3. Support both population health management and public health
   - Irregular organization of both activities demands cooperation
4. Promote national data and technical standards
   - Both are critical national - level tools

Importance of National Standards

Standards developed through a nationally recognized Standards Development Organization (SDO):

- Without them **everything is a one-off** with costs that make outcomes non-transferable and results less impactful
- Central to **getting data out of EHRs** and other systems
- **Essential for incentives** (like the Meaningful Use, MACRA, MIPS, etc.) to drive clinical care and EHR vendors
- Critical for **comparing and integrating** data
- Process gives **stakeholders a seat** at the table
- Some Chronic programs have made great progress in this area and have **expertise to share**

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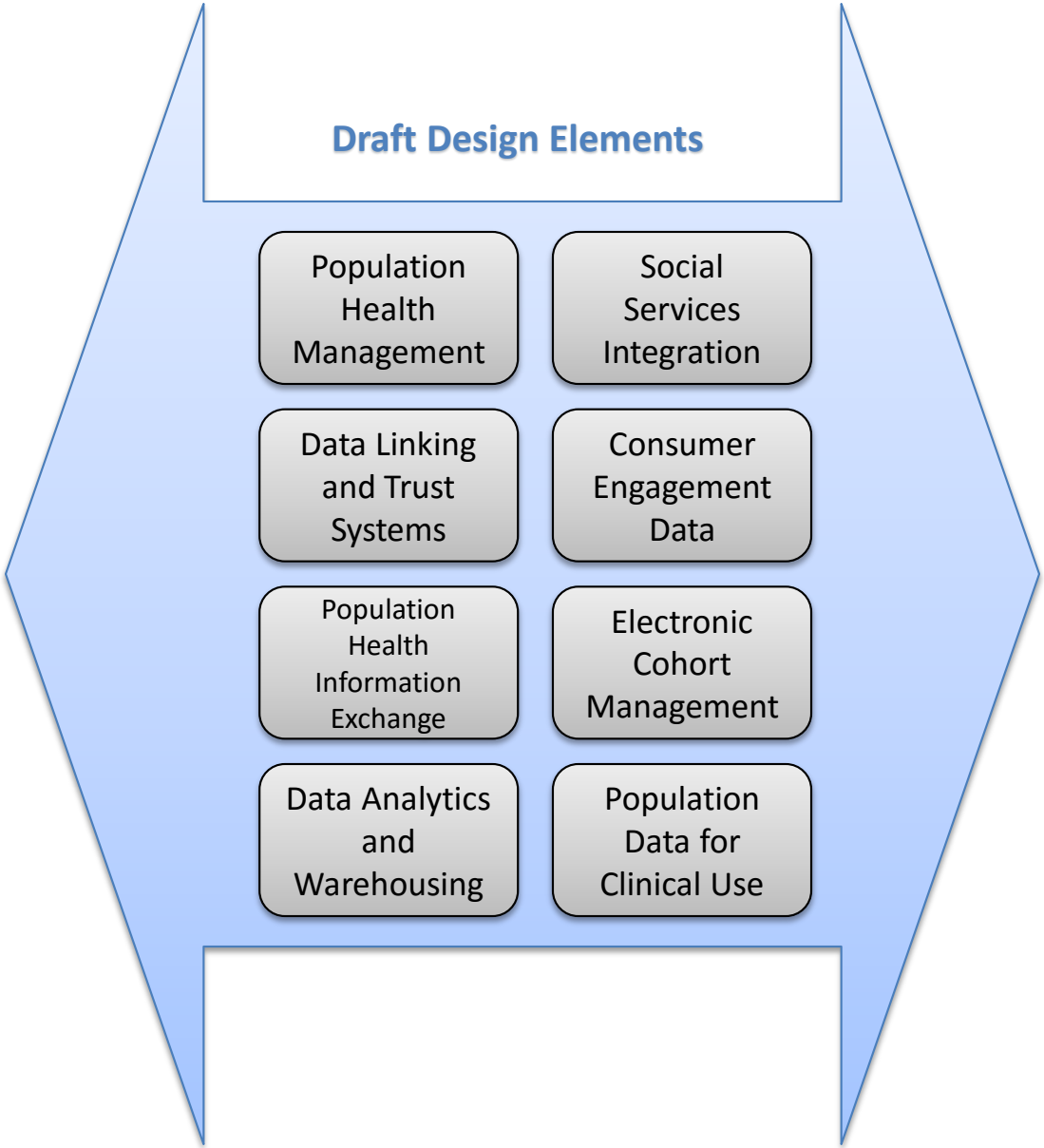
IHE Integrating the Healthcare Enterprise

Activities, Design Elements, and Tools

Activities

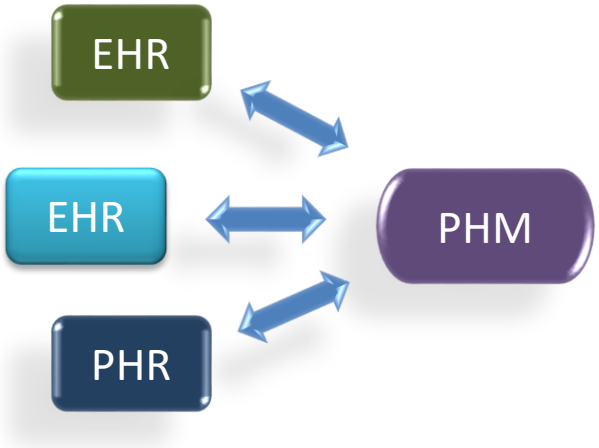
- Surveillance
- Quality reporting
- Performance measurement
- Care coordination
- Prevention
- Accountable care



Tools

- Incentives
- Guidance
- Standards
- Certification
- Testing
- Technical assistance

Element: Population Health Management



Description

Software that accumulates, manages, and guides action on populations of individuals. May collect data by jurisdiction, condition, status, or other criteria. May be a software system, a function inside of a broader system, or an app. Not directly concerned with the recording of medical care provided (not a basic EHR).

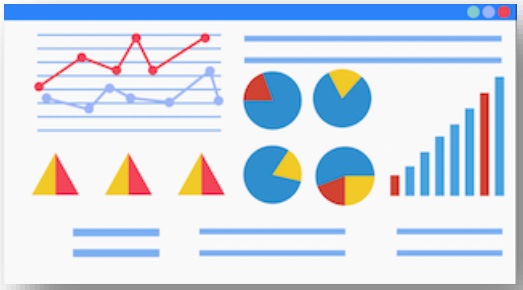
Examples

- Population health management systems, care management systems, some registries, some EHR add-ons, some surveillance systems

Needs

- EHRs have been the focus of requirements gathering, standards development, and health information exchange considerations – population management systems need to be a focus now as well

Element: Data Analytics and Warehousing



Population quality measurements, Population decision support

Description

Data analysis and aggregate reporting of largely de-identified data. Does not involve managing individual cases, but at times may be built off of systems that do. Focus may be at the hospital, health system, region, or jurisdiction level and may include reporting for quality measurement, condition monitoring, and decision support.

Examples

- Hospital data warehouses, quality measurement systems, accountable care and community health analytic systems, many registries, some all claims databases, community health assessment applications, some State and Federal reporting

Needs

- Standards for granular and comparable provider, consumer, and environmental data need to be further advanced. Data security, de-duplication, and connection to population health management require more sophisticated approaches to identity management.

Element: Data Linking and Trust Systems

Description

Data linking and deduplication plays a critical role in connecting different population data sources. The flip side of data linking are related, protective confidentiality and security tools and approaches. Identified and de-identified data are no longer adequate differential privacy categories. Trusted third parties, trust agreements, specific pseudonymizaion methods, selective data release, and data perturbation need to be integrated as confidentiality tools and services.

Examples

- Health information exchange organizations, private health information exchanges, all payer claims databases and other trusted third parties are playing increasingly important roles here

Needs

- Documentation and communication of requirements and best practices can raise awareness. Prototypes, standards and open source tools will also be helpful.

Element: Population Health Information Exchange

Description

Health information exchange needs to support both health care and population health transactions. Population health transactions include, among other things, condition of interest triggering, enrollment, supplemental data access, data updates, bi-directional communications and more.

Examples

- Some immunization information system transactions, triggers for case identification, registry enrollment transactions, forecasting and communications

Needs

- Standards efforts like the HL7 FHIR / Argonaut project need to work on population health use cases now as well as provider and patient ones

Element: Consumer Engagement Data

Description

Engaged consumers support outcomes and can provide useful and detailed data. Patient and consumer monitoring, consumer provided social determinant data, granular individual patient data and even genetic data are increasingly available, but in irregular formats and stores.

Examples

- Consumer home and person-based monitoring equipment and patient surveys

Needs

- Consumer and patient provided data are not all desired by providers nor all appropriate for EHRs. Data stewardship models for non-EHR storage of data that enable appropriate provider and consumer connections are needed.

Element: Electronic Cohort Management

Description

Smartphones and other personal electronic devices offer opportunities to support electronically managed consumer and patient cohorts for health surveys, State and National health status reporting, population health research, and jurisdictional denominator data. Patients and consumers can be recruited from clinical care and though social media, the general public. Personal electronic devices offer connection to monitoring equipment and functions to automatically initiate data exchange.

Examples

- The Precision Medicine Initiative, the Million Veterans Program

Needs

- Standards for cohort consent, management, and data would enable sharing of cohorts for multiple purposes

Element: Public Health Data for Clinical Use

Description

Accountable care is driving clinical care organizations to seek data on social determinants of health, environmental influences, and other classically public health data. Clinical care seeks these data in consumable formats, but can also help populate more granular data in some circumstances.

Examples

- "Hot spotting" and accountable care management systems

Needs

- Standards to make "public health data" usable in population health management systems

Element: Social Services Integration

Essentials
Family
Crisis
Legal

Description

Accountable care also makes social services an increasingly important clinical tool. Integration of social services will now take place on electronic infrastructure through inter-organizational, non-clinical transactions. Management and reporting of consumer engagement and progress is also desirable.

Examples

- Referrals to smoking cessation groups, diabetes management classes, Public Health Agency services

Needs

- Transaction and necessary data standards to support a multitude of non-clinical referrals and for reporting back as appropriate

Next Steps

- Refine design element list
- Hone the “fit” of program priorities / activities with design elements
- Identify potential target tools (e.g. incentives, policies, standards)
- Promote broadly through multiple channels / audiences