CT Forum on DNA Testing and Genomic Medicine
Role of Health Information Exchange

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What is Health Information Exchange (HIE)?

- **HIE’s provide the capability to electronically move clinical information among disparate healthcare information systems, and maintain the meaning of the information being exchanged.**
  - The goal of health information exchange is to facilitate access to and retrieval of clinical data to provide safe, more timely, efficient, effective, equitable, patient-centered care.
  - HIE’s are also used by public health authorities to assist in the analysis of the health of populations.

- **Health Information Alliance, Inc. (HIA, Inc.) has been established as a nonprofit, nongovernment entity to build and deliver health data exchange services in a “neutral and trusted” manner.**
Key HIE objective: facilitating reliable, efficient and secure exchange of health data among health care givers
Simple HIE Use Case: Situational Awareness and Query

1. Doctor orders patient’s genes mapped. Genomic data is stored where mapping occurred. Doctor receives report.
2. Gene bank notifies HIE that it has genomic data for patient
4. Doctor queries gene bank for detailed information.
5. Patient checks into a hospital.
6. Similar to new doctor, hospital is able to query gene bank if necessary
Another HIE Use Case: Conditional Alerting

1. Patient is referred to a specialist. An electronic clinical summary is sent to the HIE.
2. Specialist diagnoses patient with a condition. Another electronic clinical summary is sent to the HIE.
3. HIE detects the dual condition of a) patient has genomic data in a gene bank and b) has a diagnosis that’s responsive to precision medical techniques.
4. HIE sends an alert to the primary care doctor.
5. HIE sends an alert to the specialist.
A Payer HIE Use Case: Prior Authorization

1. Patient is seen by the primary doctor and a specialist. Labs and diagnostic images are ordered. An electronic clinical summary is sent to the HIE for each of these four events.
2. Primary doctor (or specialist) make a diagnosis for a disease responsive to precision medicine.
3. Primary doctor (or specialist) make a request of payer for genetic testing.
4. Payer queries HIE for patient clinical summary for prior authorization.
5. Payer sends decision to ordering doctor.
HIE and Precision Medicine: A CT Opportunity

- **OHS sponsored a genomics workshop that identified additional valuable uses of an HIE for precision medicine:**
  - Clinical decision support
  - Data standardization
  - Social determinants of health data enrichment
  - Others...

- **Connecticut is in a unique position to advance the interaction of precision medicine and HIE:**
  - Deep genomic resources in CT:
    - Yale, Sema4, Jackson Labs, UConn and more...
  - HIE architecture in CT designed to adapt to emerging standards and capabilities in genomic data sharing

An opportunity exists to harness CT stakeholder interest, the emergence of the HIE in CT, and federal funding to create value-added precision medicine use cases

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