

2018 Health Information Organization (HIO) Survey

The nationwide survey of HIOs is being led by Dr. Julia Adler-Milstein at the University of California, San Francisco and is sponsored by the Office of the National Coordinator for Health IT (ONC). Over the past eight years our research team has conducted five nationwide surveys of organizations working to promote Health Information Exchange (HIE) to determine the state of current efforts, scope of activities, and financing. Our most recent findings were published in the March 2016 issue of Health Affairs and offered an independent, comprehensive evaluation of HIE progress.

As you know, the field continues to change rapidly, and this survey will enable us to focus on new achievements and identify challenges to create a current and accurate picture of HIE efforts.

We request a brief amount of your time to complete our survey. Participation is completely voluntary and will contribute to a research study. We realize that you receive many such requests and thank you in advance for your time.

The survey includes questions in three broad areas:

- (1) Organizational Demographics
- (2) Information Blocking
- (3) Implementation/Use of Standards

We will not make ANY responses to questions publicly available or attribute responses to any specific organization. These data will only be presented in aggregate and will be published in a peer-reviewed journal (which we will be happy to send to you) and other publicly available publications and presentations. We will create a de-identified dataset to share with ONC.

To thank you for your time, upon completion of the survey you will be offered a \$50 amazon.com gift certificate. If you are not eligible for our survey, you will be offered a \$10 amazon.com gift certificate.

If you have any questions, please contact the project investigator, Dr. Julia Adler-Milstein (Julia.Adler-Milstein@ucsf.edu or 415-476-9562).

If you are involved with multiple efforts, please let us know so that we can send you another link to the survey. This will ensure that you fill out only one response per effort. We also ask that you respond to survey questions only from the perspective of your organization. Please do not attempt to summarize multiple efforts that may be affiliated with your organization (For example, if you are a state-level HIO, please do not respond on behalf of local HIOs with whom you work.)

We would first like to ask you about the type of organization for which you are responding:

Screening Questions

1. As of January 1, 2019 was your organization (select one):

- Building (or planning for) the infrastructure or services to support*, or pilot testing, electronic health information exchange across your network (End of survey)
- Supporting* "live" electronic health information exchange across your network
- No longer pursuing or supporting* electronic health information exchange (End of survey.)
- Never pursued or supported* electronic health information exchange (End of survey.)

2. Does electronic health information exchange take place between independent entities (i.e., between or among those that are not affiliated with one another)**?

- Yes
- No (End of survey)

* Supporting is defined as offering a technical infrastructure that enables electronic health information exchange to take place.

Independent entities are defined as institutions with no financial relationship or shared, central governance; HIE between independent entities requires that **at least one entity is independent of the other(s).

From this point forward, **required** questions are marked with an asterisk.

Organizational Demographics

1. Please indicate if your organization is (select all that apply):

- State HIE or State-designated Entity (SDE)
- Regional or Local HIE
- Private, Enterprise HIE
- Network-of-Networks (i.e., facilitating exchange between networks)
- Public Health Department or Public Health Agency
- State Medicaid agency
- State Government (other than state Medicaid or Public Health)
- Healthcare Delivery Organization (e.g., hospital, IDN, IPA, ambulatory practice)
- Health Information Service Provider (HISP)
- Technology Vendor (**End of survey if only this option is selected**)
- Other (please list):

2. *Please report whether **each type of stakeholder is involved** in your HIE in the following ways:

Answer Options	Provides Data	Views or Receives Data	Pays to Participate in HIE
INPATIENT SETTINGS			
Veterans Affairs (VA) Hospital	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Publicly-Owned Hospital (e.g., state, county)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Private Medical/Surgical Acute Care Hospital	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Private Psychiatric, Rehabilitation, or Long-Term Acute Care Hospital	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Long-Term Care Provider (e.g., nursing home, skilled nursing facility)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AMBULATORY SETTINGS			
Community Health Center or Federally Qualified Health Center	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Independent Physician Practice or Practice Groups (e.g., IPAs)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hospital-Owned or Health System-Owned Physician Practice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Behavioral Health Provider (e.g., community mental health, SUD/OD)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
OTHER SETTINGS			
Independent Laboratory	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Independent Radiology/Imaging Center	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmacy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public Health Department	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Emergency Medical Service	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Private Payer (e.g., Blue Cross)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public Payer (e.g., Medicare, Medicaid)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Federal Agency (e.g., SSA, VA/DOD)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Social Service Agency (e.g., housing, transportation, food, financial services)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
FEMA or Other Disaster Relief Organization	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(If in #2 one or more hospital types selected as providing or receiving data):

3. *Within the past year, please estimate the **number of acute care hospitals** (individual institutions, not systems; including VA, public, and private) that are directly connected to your HIE and:

- Provide data Do not know
 Receive or view data Do not know

4. Please ESTIMATE the number of licensed healthcare professionals with prescribing privileges (e.g., MD, DO, NP) who are:

- Eligible to participate (e.g., have an "account") Do not know
 Participate (i.e., are active users) Do not know

5. If you have a **Master Patient Index (MPI)**, please ESTIMATE how many patients are in your MPI and, if known, ESTIMATE what percent have at least one CCDA associated with them?

Estimated Number of Patients in MPI	Estimated Percent of Patients in MPI with CCDA(s)
<input type="checkbox"/> Do not know	<input type="checkbox"/> Do not know

6a. Please ESTIMATE the **number of EHR vendors** to which you have built interfaces:
 Do not know

6b. Please list **the top 5 EHR vendors** to which you have built interfaces that **represent the largest volume of participants in your HIE**:
 Do not know

7. *In which state(s) does your HIE facilitate health information exchange?

- | | | | |
|---|---|---------------------------------------|--------------------------------------|
| <input type="checkbox"/> All | <input type="checkbox"/> Alaska | <input type="checkbox"/> Arizona | <input type="checkbox"/> Arkansas |
| <input type="checkbox"/> Alabama | <input type="checkbox"/> Colorado | <input type="checkbox"/> Connecticut | <input type="checkbox"/> Delaware |
| <input type="checkbox"/> California | <input type="checkbox"/> Florida | <input type="checkbox"/> Georgia | <input type="checkbox"/> Hawaii |
| <input type="checkbox"/> Distr. of Columbia | <input type="checkbox"/> Illinois | <input type="checkbox"/> Indiana | <input type="checkbox"/> Iowa |
| <input type="checkbox"/> Idaho | <input type="checkbox"/> Kentucky | <input type="checkbox"/> Louisiana | <input type="checkbox"/> Maine |
| <input type="checkbox"/> Kansas | <input type="checkbox"/> Massachusetts | <input type="checkbox"/> Michigan | <input type="checkbox"/> Minnesota |
| <input type="checkbox"/> Maryland | <input type="checkbox"/> Missouri | <input type="checkbox"/> Montana | <input type="checkbox"/> Nebraska |
| <input type="checkbox"/> Mississippi | <input type="checkbox"/> New Hampshire | <input type="checkbox"/> New Jersey | <input type="checkbox"/> New Mexico |
| <input type="checkbox"/> Nevada | <input type="checkbox"/> North Carolina | <input type="checkbox"/> North Dakota | <input type="checkbox"/> Ohio |
| <input type="checkbox"/> New York | <input type="checkbox"/> Oregon | <input type="checkbox"/> Pennsylvania | <input type="checkbox"/> Puerto Rico |
| <input type="checkbox"/> Oklahoma | <input type="checkbox"/> South Carolina | <input type="checkbox"/> South Dakota | <input type="checkbox"/> Tennessee |
| <input type="checkbox"/> Rhode Island | <input type="checkbox"/> Utah | <input type="checkbox"/> Vermont | <input type="checkbox"/> Virginia |
| <input type="checkbox"/> Texas | <input type="checkbox"/> West Virginia | <input type="checkbox"/> Wisconsin | <input type="checkbox"/> Wyoming |
| <input type="checkbox"/> Washington | | | |

8. *For the state(s) selected in the prior question, please select the specific hospital service area(s) † in which your HIE facilitates exchange.

† Hospital Service Areas are geographic areas defined by the Dartmouth Atlas.

[Populate list of HSAs for each State reported in prior question and have check all option for HSAs in a given state]

9. Which of the following services do you offer that are used by participants in your HIE? Select all that apply:

GENERAL SERVICES	
Provider Directory	<input type="checkbox"/>
Consent Management	<input type="checkbox"/>
Community Health Record: Aggregation of health information from across the community served by the HIE	<input type="checkbox"/>
Record Locator Service	<input type="checkbox"/>
Messaging using the Direct Protocol	<input type="checkbox"/>
Receive CCDAs	<input type="checkbox"/>
Parse and store data elements from a CCDA	<input type="checkbox"/>
Transform other document types or repositories into CCDAs (e.g., MDS, OASIS, Community Health Record)	<input type="checkbox"/>
Alerting services (e.g., gaps in care) and/or event notification (e.g., Admit-Discharge-Transfer)	<input type="checkbox"/>
Connection to prescription drug monitoring program (PDMP)	<input type="checkbox"/>
Prescription fill status and/or medication fill history	<input type="checkbox"/>
Provide data to third party disease registries (e.g., Wellcentive, Crimson)	<input type="checkbox"/>
Advanced care planning (i.e., POLST/MOLST)	<input type="checkbox"/>
Integrating claims data	<input type="checkbox"/>
Other (please list):	<input type="checkbox"/>

Services related to VALUE-BASED PAYMENT MODELS	
Providing data to allow analysis by networks/providers	<input type="checkbox"/>
Generating quality measures	<input type="checkbox"/>
Validating quality measures	<input type="checkbox"/>
Reporting quality measures to payers/programs on behalf of participants	<input type="checkbox"/>
Operating as a clinical registry including a qualified clinical data registry (QCDR)	<input type="checkbox"/>
Analytics (e.g., risk stratification)	<input type="checkbox"/>
Other (please list):	<input type="checkbox"/>

10. Does your HIE: (check all that apply)

Sell/provide your infrastructure to other HIEs	<input type="checkbox"/>
Buy/use infrastructure from another HIE	<input type="checkbox"/>
Connect to other HIEs in SAME state	<input type="checkbox"/>
Connect to other HIEs in DIFFERENT state(s)	<input type="checkbox"/>

11. *Is your HIE currently using the following national networks to exchange data?

	Operational (i.e., using to exchange data)
CareinAlliance	<input type="checkbox"/>

CommonWell	<input type="checkbox"/>
Digital Bridge	<input type="checkbox"/>
DirectTrust	<input type="checkbox"/>
Surescripts	<input type="checkbox"/>
Strategic Health Information Exchange Collaborative (SHIEC)/Patient Centered Data Home (PCDH)	<input type="checkbox"/>
e-Health Exchange	<input type="checkbox"/>
Carequality	<input type="checkbox"/>
Other (please list):	<input type="checkbox"/>

12. (If none selected in prior question) Please select reason(s) why your HIE is not operational with any of the national networks listed above? Select all that apply:

- Do not see value in what they provide (i.e., services not useful)
- Perceive them as competitors
- Participation costs too high
- Not a priority
- Other (please list):

13. Is your HIE planning to participate in the Trusted Exchange Framework and Common Agreement?

- Yes No Don't know

14. How is your HIE planning to respond to the proposed Trusted Exchange Framework and Common Agreement:

	Increase	No change	Decrease	Not Applicable
Types of services offered	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Selling/providing your infrastructure to other HIEs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Buying/using infrastructure from another HIE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Partnering with HIEs in SAME region/state	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Partnering with HIEs in DIFFERENT regions/states	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please list):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

15. How long has your HIE been operational (i.e., from completion of initial pilot to present):

- Less than one year
- 1-2 years
- 3-5 years
- 6-10 years
- 11 or more years

16. Do you receive funding from a state innovation model (SIM) grant?

- Yes
- No

17. *Do **entities participating in your HIE cover** 100% of your operating expenses?

- Yes
- No

17a. (If no) Do you expect to earn sufficient revenue **from participating entities** to cover 100% of your operating expenses in the future?

- Definitely not
- Probably not
- Maybe
- Probably will; how long do you expect that it will take? Years
- Definitely will; how long do you expect that it will take? Years
- Don't know

18. To what extent does each of the following factors pose a **moderate or substantial challenge** to your development? Select all that apply:

Answer Options	Moderate or Substantial
Competition from other health information exchange efforts	<input type="checkbox"/>
Competition from health IT system vendors offering HIE solutions (e.g., EPIC's CareEverywhere)	<input type="checkbox"/>
Stakeholder concerns about their competitive position in the market	<input type="checkbox"/>
Addressing federal government regulations	<input type="checkbox"/>
Addressing state government regulations	<input type="checkbox"/>
Addressing governance issues	<input type="checkbox"/>
Stakeholder concerns about privacy and confidentiality issues (e.g., HIPAA, consent)	<input type="checkbox"/>
Stakeholder concerns about cybersecurity issues (e.g., breaches)	<input type="checkbox"/>
Managing complexity of consent models	<input type="checkbox"/>
Developing a sustainable business model	<input type="checkbox"/>
Addressing technical barriers (e.g., procurement architecture, applications)	<input type="checkbox"/>
Limitations of current interface standards	<input type="checkbox"/>
Lack of resources to implement interface standards	<input type="checkbox"/>
Accurately linking patient data/patient matching	<input type="checkbox"/>
Ability to hire/retain staff	<input type="checkbox"/>
Integration of HIE into provider workflow	<input type="checkbox"/>
Other (please list):	<input type="checkbox"/>

Information Blocking

Section 3022(a) of the Public Health Service Act (PHSA) defines information blocking as a practice that

- is likely to interfere with, prevent, or materially discourage access, exchange, or use of electronic health information;
- is not required by law and is not otherwise reasonable and necessary; and
- is committed by
 - o a **health information technology developer, exchange, or network** who knows, or should know that the practice is likely to interfere with, prevent, or materially discourage access, exchange, or use of electronic health information;
 - or
 - o a **health care provider** who knows that the practice is unreasonable and likely to interfere with prevent, or materially discourage access, exchange, or use of electronic health information

19. In what form(s) have you experienced information blocking by **EHR vendor(s)**?

	Never/ Rarely	Sometimes	Often/ Routinely	Don't Know
<p align="center">PRICE</p> <p>e.g., using high fees to avoid granting third-parties access to data stored in the vendor's EHR system</p> <p>charging unreasonable fees to export data at a provider's request (such as when switching vendors)</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p align="center">CONTRACT LANGUAGE</p> <p>e.g., using contract terms, warranty terms, or intellectual property rights to discourage exchange or connectivity with third-party</p> <p>changing material contract terms related to health information exchange after customer has licensed and installed the vendor's technology</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p align="center">ARTIFICIAL TECHNICAL, PROCESS, OR RESOURCE BARRIERS</p> <p>e.g., using artificial technical barriers to to avoid granting third-parties access to data stored in the vendor's EHR system</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p align="center">REFUSAL</p> <p>e.g., refusing to exchange information or establish connectivity with certain vendors or HIOs</p> <p>refusing to export data at a provider's request (such as when switching vendors)</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please list):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

20. Overall, to what extent have you encountered **EHR vendors** engaging in information blocking?

What proportion of vendors?	Among vendors that engage in information blocking, how often do they do it?
<input type="checkbox"/> All	<input type="checkbox"/> Often/Routinely
<input type="checkbox"/> Most	<input type="checkbox"/> Sometimes

<input type="checkbox"/> Some <input type="checkbox"/> Few <input type="checkbox"/> Don't know or N/A (Don't interact with EHR vendors)	<input type="checkbox"/> Rarely/Never <input type="checkbox"/> Varies by vendor <input type="checkbox"/> Don't know
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21. When information blocking by **EHR vendors** occurs, does it vary by vendor marketshare?

- Yes – predominantly by vendors with **large marketshare**
- Yes – predominantly by vendors with **moderate marketshare**
- Yes – predominantly by vendors with **small marketshare**
- No - does not vary by marketshare
- Don't know

22. In what form(s) have you experienced information blocking by **hospitals and health delivery systems**?

	Never/Rarely	Sometimes	Often/Routinely	Don't Know
ARTIFICIAL TECHNICAL, PROCESS, OR RESOURCE BARRIERS e.g., requiring a written authorization when neither state nor federal law requires it requiring a patient to repeatedly opt in to exchange for TPO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
REFUSAL e.g., refusing to exchange sharing of information with competing providers, hospitals, or health systems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please list):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

23. To what extent have you encountered **hospitals and health delivery systems** engaging in information blocking?

What proportion of hospitals and health systems?	Among hospitals and health systems that engage in information blocking, how often do they do it?
<input type="checkbox"/> All <input type="checkbox"/> Most <input type="checkbox"/> Some <input type="checkbox"/> Few <input type="checkbox"/> Don't know or N/A (Don't interact with hospitals and health systems)	<input type="checkbox"/> Often/Routinely <input type="checkbox"/> Sometimes <input type="checkbox"/> Rarely/Never <input type="checkbox"/> Varies by hospital/health system <input type="checkbox"/> Don't know

Implementation and Use of Standards

24. Which of the following technical standard(s) does your organization regularly use to access and/or exchange **provider data associated with a provider directory**? Select all that apply:

- Exchange standards based on IHE IT Infrastructure Technical Framework Supplement, Healthcare Provider Directory (HPD) Trial Implementation
- HL7 v2 MFN interface
- Exchange standards based on HL7 Fast Healthcare Interoperability Resources (FHIR)
- Exchange based on ASC X12 274
- Other (please list):
- Don't know

25a. To what extent does your HIE electronically exchange care summaries among providers in a structured format (e.g., CDA, CCR, C32)?

- To a great extent (go to 25b)
- To a moderate extent (go to 25b)
- To a small extent or not at all (skip to 26)

25b. To what extent do EHR installations you integrate with use the following templates for C-CDA?

C-CDA Template	All or most EHR installations	Some EHR installations	Few or no EHR installations	Don't know
Continuity of Care Document (CCD)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discharge Summary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Referral Note	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Care Plan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other C-CDA templates (please list):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

26. Which types of clinical and other health-related information are made available by/through your HIE (as part of a clinical document or as a discrete field)? Select all that apply:

NOTE: CCDA and CCDS (2015) data types included for reference

	Included in your HIE	Included in CCDA	Included in CCDS (2015)
Smoking Status	<input type="checkbox"/>	✓	✓
Problems	<input type="checkbox"/>	✓	✓
Medications	<input type="checkbox"/>	✓	✓
Filled Medications	<input type="checkbox"/>	✓	
Medication Allergies	<input type="checkbox"/>	✓	✓
Laboratory Test(s)	<input type="checkbox"/>	✓	✓
Laboratory Value(s)/Result(s)	<input type="checkbox"/>	✓	✓
Vital Signs	<input type="checkbox"/>	✓	✓
Care Plan Field(s), including Goals and	<input type="checkbox"/>	✓	

Instructions			
Procedures	<input type="checkbox"/>	✓	✓
Care Team Member(s)	<input type="checkbox"/>	✓	✓
Immunizations	<input type="checkbox"/>	✓	✓
Unique Device Identifier(s) (UDIs) for a Patient's Implantable Device(s)	<input type="checkbox"/>	✓	✓
Assessment and Plan of Treatment	<input type="checkbox"/>	✓	✓
Goals	<input type="checkbox"/>	✓	✓
Health Concerns	<input type="checkbox"/>	✓	✓
Radiology Result(s)	<input type="checkbox"/>	✓ (Diagnostic Image Reports)	
Clinical Notes	<input type="checkbox"/>	✓ (Note Section/Note Activity – C-CDA 2.1 Companion Guide)	
Discharge Disposition	<input type="checkbox"/>	✓	
Substance Use Disorder (as defined in 42 CFR Part 2)	<input type="checkbox"/>		
Social Determinants of Health (e.g., housing, food insecurity)	<input type="checkbox"/>	✓ (Veteran's Status/Military History not included)	
Admission and Discharge Dates and Locations	<input type="checkbox"/>	✓	
Encounters	<input type="checkbox"/>	✓	
Referrals	<input type="checkbox"/>	✓	
Discharge Instructions	<input type="checkbox"/>	✓	
Family Health History	<input type="checkbox"/>	✓	
Functional Status	<input type="checkbox"/>	✓	
Cognitive Status	<input type="checkbox"/>	✓	
Gender Identity	<input type="checkbox"/>		
Pediatric Vital Signs	<input type="checkbox"/>	✓	
Pregnancy Status	<input type="checkbox"/>	✓	
Reason for Hospitalization	<input type="checkbox"/>	✓	
Provenance	<input type="checkbox"/>	✓	
Other (please list):	<input type="checkbox"/>		

27a. Does your HIE **engage in delivery of results or other information (“push”) to share data with your participants**? Note: delivery of results of other information refers to a one-directional transmission, e.g. through an interface into an EHR or clinical registry.

- Yes (go to 27b/c) No (skip to 28) Don't Know (skip to 28)

27b. Please ESTIMATE your monthly average volume of outgoing transactions (with or without attachments):

- Don't Know

27c. To what extent do EHR installations you integrate with receive what you send using each of the following standards?

	All or most EHR installations	Some EHR installations	Few or no EHR installations	Don't know
HL7 v2 messages	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HL7 CCDAs documents	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HL7 Fast Healthcare Interoperability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Resources (FHIR) messages DSTU2 or later)				
Some other open standard managed by HL7 or some other standards development organization	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Some other proprietary standard published by the EHR vendor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

28a. Does your HIE **make data available via participant query to your HIE?** Note: query refers to a query-and-response exchange, e.g. a request from one participant through an interface that results in a response delivered into an EHR.

- Yes (go to 28b/c/d/e) No (skip to 29) Don't Know (skip to 29)

28b. Please ESTIMATE your **monthly average volume of queries** placed (regardless of whether data available):

- Don't Know

28c. Please ESTIMATE the **average percent of queries with data returned:**

- Don't Know

28d. To what extent do EHR installations you integrate with use the following standards to query your HIE?

	Some or most EHR installations	Few or no EHR installations	Don't know
IHE XDS (Cross-Enterprise Document Sharing)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
IHE MHD (Mobile Access to Health Documents)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
IHE XCA (Cross-Community Access)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NwHIN Specifications for Query for Documents and Retrieve Documents	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HL7 Fast Healthcare Interoperability Specifications (FHIR) DSTU2 or later for data element query	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HL7 Fast Healthcare Interoperability Specifications (FHIR) DSTU2 or later for document query	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

28e. What type(s) of responses do you return when you receive queries from your participants? Select all that apply:

- Existing documents:** respond with documents created by other systems such as EHRs and stored or accessible by the HIE
- Dynamic documents:** respond with a document produced upon demand from a community health record or other repository of clinical data
- Other** (please list):
- Don't know**

29a. Does your HIE **exchange health information with other HIEs or private enterprise networks (e.g. integrated delivery systems) that are NOT part of your HIE** (e.g., your HIE queries them or they query your HIE)?

- Yes (go to 29b/c/d) No (end of survey) Don't Know (end of survey)

29b. Which of the following standards do you use to exchange health information with these external entities? Check all that apply

IHE XDS (Cross-Enterprise Document Sharing)	<input type="checkbox"/>
IHE MHD (Mobile Access to Health Documents)	<input type="checkbox"/>
IHE XCA (Cross-Community Access)	<input type="checkbox"/>
NwHIN Specifications for Query for Documents and Retrieve Documents	<input type="checkbox"/>
HL7 Fast Healthcare Interoperability Specifications (FHIR) DSTU2 or later for data element query	<input type="checkbox"/>
HL7 Fast Healthcare Interoperability Specifications (FHIR) DSTU2 or later for document query	<input type="checkbox"/>
Other (please list):	<input type="checkbox"/>
Don't know	<input type="checkbox"/>

29c. What **type(s) of query do you place** to HIEs or private enterprise networks outside your HIE? Select all that apply:

- Directed to one entity:** a query to a single system known or believed to be the source of the information
- Directed to many entities:** a single query to multiple, named systems that may have information that is returned as multiple documents or single, consolidated document
- Broadcast:** a query to all or a geographic subset of systems where the source of information is unknown, returning multiple documents or single, consolidated document
- Other** (please list):
- Don't know**
- NA—do not place queries**

29d. What **type(s) of responses do you return** when you receive external queries from HIEs or private enterprise networks outside your HIE? Select all that apply:

- Existing documents:** respond with documents created by other systems such as EHRs and stored or accessible by the HIE
- Dynamic documents:** respond with a document produced upon demand from a community health record or other repository of clinical data
- Other** (please list):
- NA—do not return queries**
- Don't know**