

# The State of Health Information Exchange in 2010: Connecting the Nation to Achieve Meaningful Use



A Report Based on the Results of the eHealth Initiative's 2010  
Seventh Annual Survey of Health Information Exchange





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## About the eHealth Initiative

The eHealth Initiative and the Foundation for eHealth Initiative are independent, non-partisan, non-profit affiliated organizations whose missions are the same: to drive improvement in the quality, safety, and efficiency of healthcare through information and information technology.

Our vision is that consumers, health care providers, and those responsible for population health will have ready access to timely, relevant, reliable and secure information and services through an interconnected, electronic health information infrastructure to support better health and healthcare.



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To request reprint permission, please contact Genevieve Morris at [genevieve.morris@ehealthinitiative.org](mailto:genevieve.morris@ehealthinitiative.org).

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## KEY FINDINGS

Since 2004, the eHealth Initiative has tracked the progress of organizations across the country working on health information exchange. This report summarizes the results of eHealth Initiative's 2010 *Annual Survey of Health Information Exchange*. The survey data is self-reported and offers a non-scientific snapshot of the field.

The last year has seen many advances in health information exchanges. The eHealth Initiative has identified and collected information on 234 active health information exchange initiatives (HIEs) in the country. Of the 234 known initiatives, 199 groups responded to and qualified for inclusion in the *2010 Annual Survey on Health Information Exchange*. This year, there has been significant expansion in the field with the creation of 56 state designated entities (SDE). eHealth Initiative made a concerted effort to include these entities in the survey; it should be noted that 48 of the 56 SDEs completed the 2010 survey. To view a list of all the initiatives, please visit <http://www.ehealthinitiative.org>.

Highlights from the report are below:

- **There is continued growth in the number of health information exchange initiatives, and those which are operational. Operational initiatives are currently transmitting data that is being used by stakeholders.**
  - 73 operational initiatives up from 57 in 2009
- **Sustainability is an attainable goal for health information exchange organizations. There is a small but critical mass of sustainable organizations.**
  - 107 initiatives not dependent on federal funding, up from 71 in 2009.
  - 18 initiatives are operational, not dependent on federal funding, and have broken even through operational revenue alone.
- **Health information exchange initiatives do not have to have a financial relationship with or partially own the organizations involved in order to become sustainable.**
  - 44 of the 73 operational initiatives have no financial relationship with the entities involved in the initiative.
  - 7 of the 18 sustainable initiatives have no financial relationship with the organizations involved in the initiative.
- **More organizations are reporting a reduction in staff time and redundant testing through the use of health information exchange.**
  - Reduced staff time spent on clerical administration and filing (33)
  - Reduced staff time spent on handling lab and radiology results (30)
  - Decreased dollars spent on redundant tests (28)
- **New challenges are rapidly emerging related to federal policy and governance of health information exchanges.**
  - 131 initiatives cited addressing government policy mandates as a major challenge.

- **States and State Designated Entities (SDE) have varying perspectives of their purpose.**
  - 40 entities see their role as planning for health information exchange
  - 8 entities see their role as building or maintaining a technical infrastructure
  - 22 entities see their role as supporting a technical infrastructure
  - 2 entities are not directly involved in building an infrastructure, but in coordinating or creating policy
  
- **There have been increases in functionality amongst health information exchange initiatives with respect to the meaningful use rules.**
  - The top 3 functionalities being provided by the initiatives:
    - Connectivity to electronic health records (67)
    - Results Delivery (50)
    - Health Summaries for continuity of care (49)
  - The top 5 types of data exchanged by the initiatives:
    - Laboratory Results (68)
    - Medication Data (63)
    - Outpatient laboratory results (62)
    - Allergy Info (61)
    - Emergency Department episodes/discharge summaries (58)
  - The top 3 services offered by the state designated entities:
    - Electronic prescribing and refill requests (4)
    - Prescription fill status and/or medication fill history (3)
    - Electronic eligibility and claims transactions (3)
  
- **Patient engagement has increased dramatically. More organizations are providing services to patients and providing access to patient data through health information exchange.**
  - 44 initiatives allow patients to view their data, up from 3 in 2009
  - 31 initiatives allow patients to contribute information on their health status, up from 7 in 2009
  
- **Initiatives are creating methods to address the complexities of security and privacy. More organizations are creating systems which allow patients to control the level of access to their information.**
  - 61 initiatives have global opt-in/out policies
  - 36 initiatives have organizational opt-in/out policies
  - 34 initiatives have provider opt-in/out policies
  - 14 initiatives have emergency care opt-in/out policies
  - 13 initiatives have individual data element opt-in/out policies

## BACKGROUND

Health information exchanges are leading the way in improving the quality, safety, and efficiency of patient care. Faced with ever increasing healthcare costs, people are turning to health information technology (HIT) and health information exchange (HIE) initiatives to streamline the way healthcare is provided in the United States. It is important, to step back and take a look at how health information exchange initiatives are progressing and also examine the challenges that lie ahead.

Health information exchange initiatives operate in a rapidly changing environment. The last year saw major reform in the healthcare arena, starting with the Health Information Technology for Economic and Clinical Health Act (HITECH) that passed as part of the American Recovery and Reinvestment Act (ARRA). The HITECH Act provided the much needed funding to jump start health information exchange in the United States. The legislation created a number of new federally-funded initiatives directed at states. The State Health Information Exchange Cooperative Agreement Program awarded funds to 56 newly-named State Designated Entities (SDEs), the Health Information Technology Extension Program brought about the creation of 60 Regional Extension Centers (RECs), and 15 of the leading health information exchange initiatives were granted funding through the Beacon Communities Program. These three programs awarded over \$1.4 billion to state and local initiatives across the country and U.S. territories, and many of the health information exchanges. With the passage of The Patient Protection and Affordable Care Act, the need for advancement in health information exchange was reinforced. Many of the reforms included in the new law will require health information exchange capabilities and a robust health information technology infrastructure. The Centers for Medicare and Medicaid Services (CMS) and the Office of the National Coordinator for Health IT (ONC) have been working to implement rules and regulations around security, electronic health record (EHR) certification, meaningful use criteria, and many others. Implementation of these regulations will advance health information exchanges by incentivizing providers, hospitals, and consumers to adopt and embrace an increased standard of care.

Since 2004, the eHealth Initiative has tracked the efforts, successes, and failures of organizations across the country working on health information exchange. This report summarizes the results of eHealth Initiative's 2010 edition of the *Annual Survey of Health Information Exchange*. The survey data is self-reported and offers a non-scientific snapshot of the field.

A report of this breadth would not have been possible without the contributions of many individuals and organizations. Enormous thanks goes to Jennifer Covich, Diane Jones, Jennifer Knowles, Genevieve Morris, and Eric Orban for their contributions. These individuals played a considerable role in the development of the survey, collection of the results, data analysis, and the writing of this report.

Our sincere thanks also goes to Micky Tripathi, PhD, President and Chief Executive Officer, Massachusetts eHealth Collaborative, and J. Marc Overhage, MD, PhD, President and Chief Executive Officer, Indiana Health Information Exchange, and Rachel Block, Deputy Commissioner, Office of Health Information Technology Transformation, NYS Department of Health who contributed to the development of the final report.

## OVERVIEW OF THE FIELD

### **How many initiatives are there?**

Since 2004, the eHealth Initiative has tracked the progress of organizations across the country working on health information exchange. This report summarizes the results of eHealth Initiative's 2010 edition of the *Seventh Annual Survey of Health Information Exchange*.

The last year has seen many advances in health information exchanges. The eHealth Initiative has identified and collected information on 234 active health information exchange initiatives (HIEs) in the country. Of the 234 known initiatives, 199 groups responded to and qualified for inclusion in the *2010 Annual Survey on Health Information Exchange*. This year, there has been significant expansion in the field with the creation of 56 state designated entities (SDE). eHealth Initiative made a concerted effort to include these groups in the survey. It should be noted that 48 of the 56 SDEs completed the 2010 survey.

### **Where are the initiatives and what is their geographic reach?**

Health information exchanges span all 50 states, the District of Columbia, and the U.S. territories of the Virgin Islands, Puerto Rico, American Samoa, and the Northern Mariana Islands, and the island of Guam. Florida (22), New York (20), California (15), North Carolina (13), Washington (11), Michigan (10), and Virginia (10) have the highest concentration of initiatives.

Most non-SDE initiatives are operating at a multi-county coverage area. Fifty-five initiatives report covering a multi-county area, while 21 initiatives report covering an entire state. Other coverage areas include: 17 at a multi-state level, 11 at a county level, 7 at a metro level, 5 that do not cover a geographic area, and 6 initiatives that cover another area such as part of a city or county, or are working with a specific population group.

### What is the purpose of the initiatives?

The vast majority of initiatives (134) reported that they are “supporting a technical infrastructure that enables health information exchange between at least two different stakeholders, such as a hospital and physician practice, at the regional, state, or community level.” One hundred and twenty-two initiatives reported that they are planning for health information exchange at the regional, state, or community levels, and 107 are building or maintaining a technical infrastructure to support health information exchange. Twenty initiatives are not directly involved in building a technical infrastructure, but coordinating or creating policy to facilitate health information exchange. See figure 1 below.

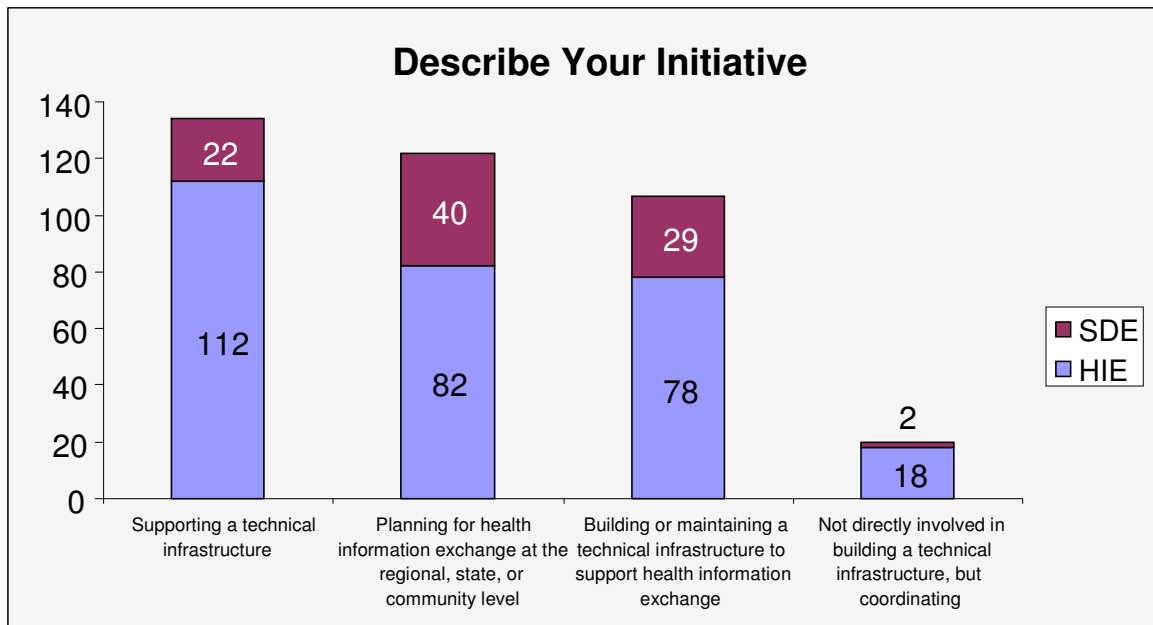


Figure 1: Describe Your Initiative

## How advanced are the initiatives?

In 2005, eHealth Initiative developed a framework for assessing and tracking health information exchange development. As a result of working with hundreds of leaders involved in the development and implementation of health information exchange-related activities, eHealth Initiative identified seven stages of development (see Figure below). Most initiatives focused on health information exchange will move through predictable stages of development, but at a varying pace. These stages help set a consistent standard by which initiatives can assess themselves, allowing for continuity when analyzing results from year-to-year.

<b>Stage 1</b>	Recognition of the need for health information exchange among multiple stakeholders in your state, region or community. (Public declaration by a coalition or political leader)
<b>Stage 2</b>	Getting organized; defining shared vision, goals, and objectives; identifying funding sources, setting up legal and governance structures. (Multiple, inclusive meetings to address needs and frameworks)
<b>Stage 3</b>	Transferring vision, goals and objectives to tactics and business plan; defining your needs and requirements; securing funding. (Funded organizational efforts under sponsorship)
<b>Stage 4</b>	Well under way with implementation –technical, financial and legal. (Pilot project or implementation with multiyear budget identified and tagged for a specific need)
<b>Stage 5</b>	Fully operational health information organization; transmitting data that is being used by healthcare stakeholders.
<b>Stage 6</b>	Fully operational health information organization; transmitting data that is being used by healthcare stakeholders and have a sustainable business model.
<b>Stage 7</b>	Demonstration of expansion of organization to encompass a broader coalition of stakeholders than present in the initial operational model.

} **OPERATIONAL HIEs**

Figure 2: eHI Stages of Development

This year even more organizations reported that they are in an advanced or operational stage of development (Stages 5, 6, and 7). **To be considered operational, initiatives must be transmitting data that is being used by healthcare stakeholders.** Over the last several years, operational health information exchanges have been closely reviewed as part of the annual survey report, as their experiences provide best practices for pursuing health information exchange. It is important to note that all operational initiatives are not yet sustainable. Many organizations have gained the capacity to transmit data, but do not yet have sustainable business models. A description of exchanges that are sustainable is presented later in this report.

**Key Finding:**  
There is continued growth in the number of health information exchange initiatives, and those which are operational.

In 2009, 57 health information exchange initiatives reported being operational. In 2010, the number of operational health information exchanges increased to 73, 5 of which report being SDEs. As figure 3 below shows, the number of operational initiatives has steadily increased since 2004 when eHealth Initiative began surveying.

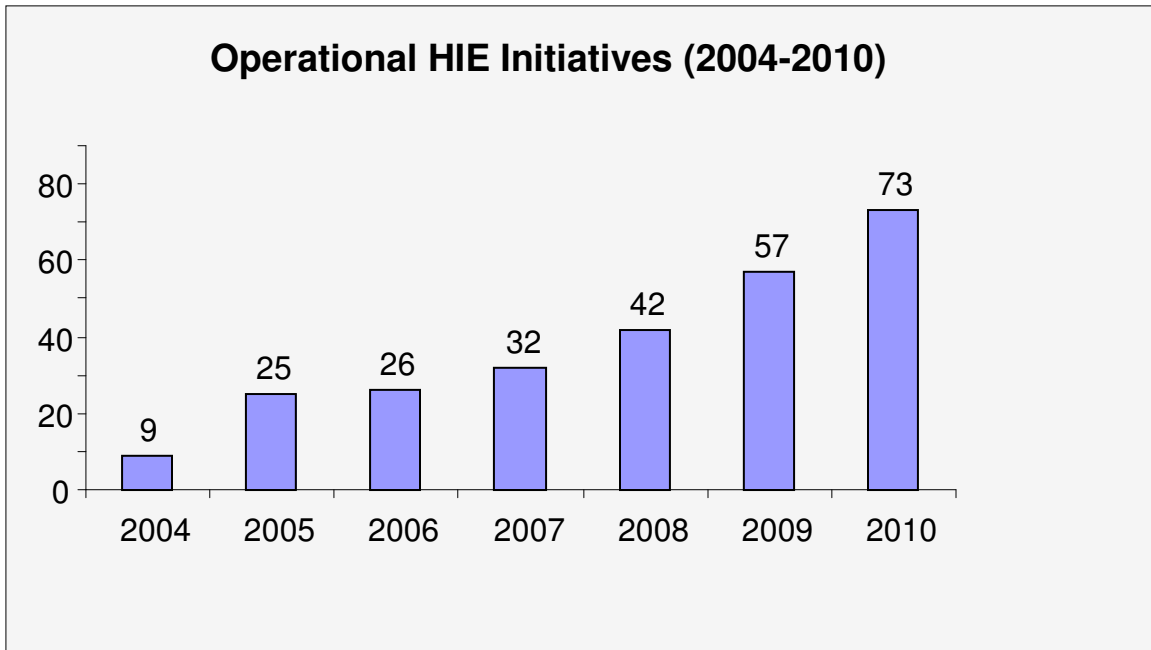


Figure 3: Operational Initiatives (2004-2010)

The majority of respondents, including most of the state designated entities, are in the intermediate stages of development, and are either defining needs and requirements and securing funding (43), or are underway with implementation (42). Some of the state designated entities were existing organizations, allowing them to be more advanced than others. See figure 4 below.

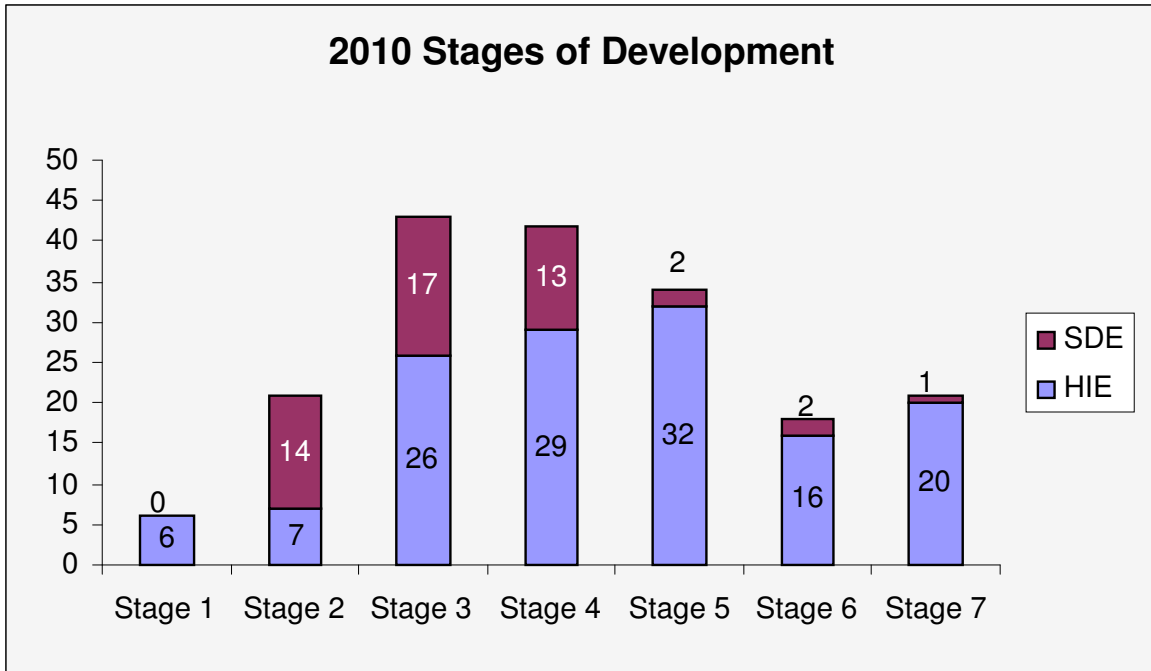


Figure 4: 2010 Initiatives by Stage of Development

In 2009, only 9 states had 2 or more operational health information exchange initiatives headquartered in their state. In 2010, 33 states have 2 or more operational health information exchange initiatives headquartered in their state. Figure 5 below illustrates the current geographic spread of operational health information exchange initiatives that participated in this year's survey.

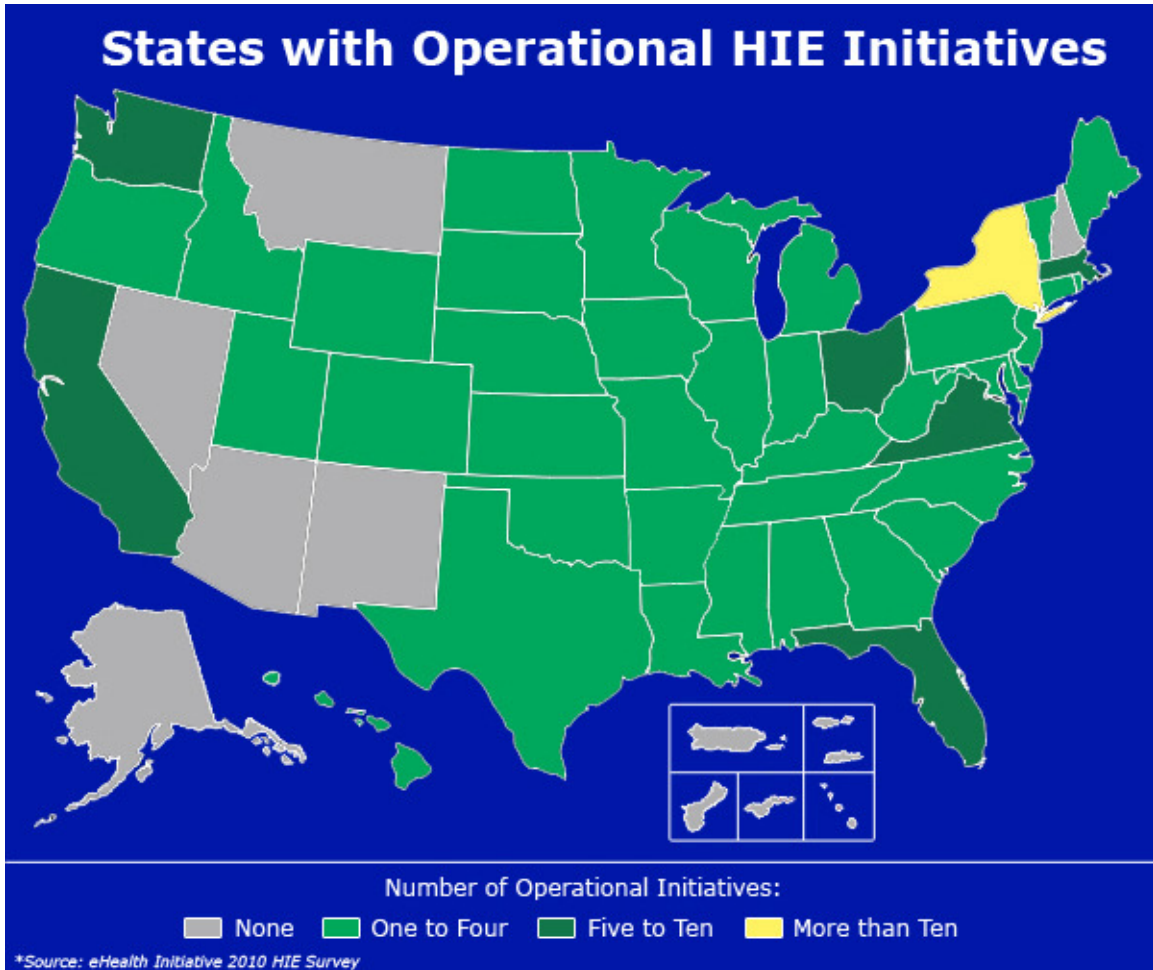


Figure 5: States with Operational HIE Initiatives

## SUSTAINABILITY OF EXCHANGES

### How sustainable are the exchanges?

Notwithstanding the recent infusion of federal funds, sustainability continues to be an issue for the initiatives. Sixty-two health information exchange initiatives, including state designated entities, were dependent on federal funds in the last fiscal year; 107 respondents reported they were not dependent on federal funds in the last fiscal year; and 7 were unsure.

Of the 107 initiatives that responded they were not dependent on federal funding in the last fiscal year, only 18 responded they broke even as a result of operational income alone. Of the 73 total operational initiatives, 48 reported that they were not dependent on federal funding in the last fiscal year, and again 18 said that they broke even as a result of operational income alone.

**Key Finding:**  
Sustainability is an attainable goal for health information exchange organizations. There is a small but critical mass of sustainable organizations.

### What are the sources of revenue?

Initiatives receive start-up funds from a variety of sources. Similar to 2009, hospitals and state grants are still the main source of funding for initiatives that are not state designated entities. Federal grants are a close third to state funds, but it is clear that providers in general, including hospitals and physician practices, have assumed a more significant role with respect to funding. See Figure 6 below for the top sources of start-up funds reported by all initiatives in 2010.

Sources of Start-up Funds for All Exchanges			
	2009	2010	Percent Change
Hospitals	42	63	50.0%
State government grants and contracts	43	57	32.6%
Other Federal government grants and contracts	39	50	28.2%
Payers - private	26	35	34.6%
Physician practices	15	33	120%
Philanthropic sources	19	25	31.6%
Payers - public (Medicare/Medicaid)	12	14	16.7%
Medical societies	11	11	0%
Public health	8	10	25%

Figure 6: Source of Start-up Funds for Initiatives

Sources of ongoing funding for the operational initiatives remained largely unchanged from 2009. The top four funding sources remained the same: hospitals, physician practices, payers-private, and laboratories. See figure 7 on the following page for the top sources of ongoing revenue.

<b>Ongoing Revenue Sources for Operational Initiatives</b>			
	<b>2009</b>	<b>2010</b>	<b>Percent Change</b>
Hospitals	26	43	65.4%
Physician practices	16	32	100%
Payers - private	14	25	78.6%
Laboratories	11	19	72.7%
Other Federal government grants and contracts	9	12	33.3%
State government grants and contracts	10	11	10%
Payers - public (Medicare/Medicaid)	5	10	100%
Public health	7	10	42.9%

Figure 7: Ongoing Revenue Sources for Operational Initiatives

Many of the operational initiatives have received funds from a customer. Forty-eight reported they had received funds, while 17 have not. Most initiatives are receiving funds via subscription fees or membership dues to data providers and users (62 initiatives). See figure 8 below for the top revenue sources for operational initiatives.

<b>Funding Sources for Operational Initiatives</b>	
	<b>2010</b>
Subscription fees or membership dues to data providers	32
Subscription fees or membership dues to data users	30
One-time financial contribution to the health information exchange (donation, etc.)	12
Transaction fees charged to data providers	11
Transaction fees charged to data users	9
Advertising or marketing	2
Utility Model- Fees Assessed through state for public service	1

Figure 8: Funding Source for the Operational Initiatives

**Do operational and sustainable initiatives have financial relationships or partially own organizations involved in the initiative?**

Of the 73 operational initiatives, 44 reported that all of the entities they exchange data with are independent entities, and only 5 reported that they have a financial relationship with all of the organizations they exchange data with. For the 18 sustainable initiatives, 7 report that all of the entities they exchange data with are independent entities, while only 2 say they have a financial relationship with all of the entities involved. See figure 9 on the following page for a comparison of the operational and sustainable initiatives and their financial relationships.

**Key Finding:**  
Initiatives do not have to have a financial relationship with or partially own the organizations involved in order to become sustainable.

Financial Relationship		
	2010 Operational	2010 Sustainable
Financial relationship with ALL of the organizations with whom we exchange data	5	2
Financial relationship with MOST of the organizations with whom we exchange data	6	3
Financial relationship with SOME of the organizations with whom we exchange data	18	6
All of the organizations we exchange data with are independent entities	44	7

Figure 9: Financial Relationship of Initiatives

### Are initiatives dependent on federal funding?

Overall, the initiatives reported they are not dependent on federal funding to survive. Of the 176 initiatives that responded to the question, 107 said they were not dependent on federal funding in the previous fiscal year, while 62 said they were dependent.

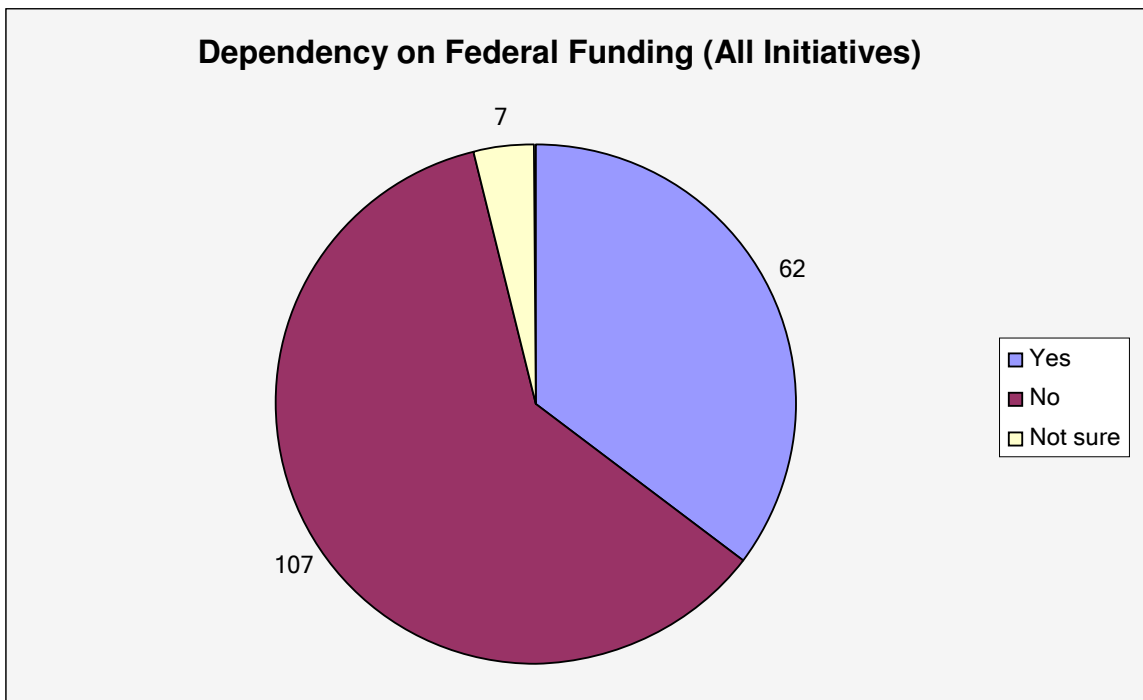


Figure 10: Dependency on Federal Funding (All Initiatives)

## POLICY AND GOVERNANCE CHALLENGES

### What major challenges are the initiatives facing?

With the passing of the HITECH Act, several new state laws governing health information technology, and implementation of the meaningful use rules looming, it is not surprising that the second biggest challenge health information exchanges reportedly face is addressing government policy mandates. The most significant challenges impacting health information exchange initiatives are in figure 11 below.

**Key Finding:**  
New challenges are emerging related to federal policy and governance of health information exchange initiatives.

Participants indicated that the below challenges were very difficult or moderately difficult. In 2009, the main challenges faced were privacy, defining value, developing a sustainable business model, addressing technical aspects, addressing organization and governance issues, and engaging health plans. The challenges have not changed since 2009 aside from the concern of addressing government policy mandates. It is clear that, at the time of the survey, initiatives were very concerned about implementing the impending meaningful use regulations.

Challenges Faced by All Initiatives	
	2010
Developing a sustainable business model for your initiative	137
Addressing government policy and mandates	131
Defining the value that accrues to the users of the health information exchange	129
Addressing privacy and confidentiality issues - HIPAA and other	127
Addressing technical aspects including architecture, applications and connectivity	118
Addressing organization and governance issues	117
Addressing other legal issues	110
Accurately linking patient data	105
Engaging health plans in your coverage area	105
Engaging practicing clinicians in your coverage area	101
Engaging purchasers in your coverage area	101
Systems integration	97
Engaging laboratories in your coverage area	95

Figure 11: Top Challenges Faced by Initiatives

Another new challenge being faced by health information exchange initiatives revolves around governance. Ninety-three health information exchanges responded to the question "What are your greatest governance challenges?" Of the 93, 37 cited lack of board knowledge about HIE as their greatest governance challenge. Conflicts of interest (29), micro management decisions (17), and difficulty recruiting board members (14) are also cited as governance challenges.

## PARTICIPATION AND ENGAGEMENT

### Who are the key stakeholders governing the initiatives?

Hospitals and primary care physicians are the main stakeholders involved in governance of health information exchange initiatives. While they are the largest stakeholders, many other groups are involved in governance. See figure 12 below for major organizations involved in governance.

Key Stakeholders Involved in Governance in all Initiatives			
	2009	2010	Percent Change
Hospitals	68	138	102.9%
Primary care physicians	50	123	146%
Community and/or public health clinics	42	99	135.7%
Health plans	32	86	168.8%
Specialty care physicians	29	82	182.8%
Local Public Health Department	30	79	163.3%
Consumers	22	71	222.7%
Employers or health care purchasers	26	68	161.5%
Patient or consumer groups	20	67	235%
State Public Health Department	21	64	204.8%
Behavioral or mental health providers	21	61	190.5%
Medicaid	18	61	238.9%
State - Governor's Office	16	61	281.3%
Quality Improvement Organizations	18	56	211.1%
Long-Term Care providers	N/A	43	N/A
Outpatient/Ambulatory surgery centers	11	41	272.7%

Figure 12: Key Stakeholders Involved in Governance

### Are physicians participating in the initiatives?

Seventy-five health information exchange initiatives said that physician engagement in the exchange is difficult, while 75 also said engagement was not difficult. Physician engagement is incredibly important to the success of health information exchange, which makes this an important finding. Respondents cited the following as the main reasons why physician engagement is difficult:

- Lack of understanding of benefits (64)
- Concern regarding implementation (34)
- Physicians have limited access to broadband (27)
- Costs too much to participate (26)
- Takes too much time to look up (24)

### Can physicians access or provide data?

Fifty-two of the 73 operational initiatives report that primary care physicians are allowed to provide data, while 58 of the 73 allow primary care physicians to access data. The numbers are slightly lower for specialty care physicians with 42 initiatives allowing them to provide data and 53 initiatives allowing access to the data. Only 10 initiatives allow behavioral/mental health providers to provide data and 27 initiatives allow them to view data.

Thirty-five of the operational initiatives said that they charge physicians to access information in the health information exchange, while 24 said they do not charge. Sixteen initiatives charge a monthly access fee, while 13 charge an annual subscription fee. None of the operational initiatives reported charging a transaction fee.

### Are initiatives working with the Regional Extension Centers and the state?

Cooperation among health information exchange initiatives, regional extension centers, and state designated entities is key to meeting the expedited timelines of implementation required to meet meaningful use rules. Ninety-four initiatives, 34 of which are state designated entities, report that they are currently working closely with a regional extension center, and 34 report they will be in the next 6 months. Twelve initiatives report that they have no immediate plans to work with a regional extension center, and 9 initiatives were unsure of who is acting as the regional extension center in their area.

State involvement has increased over the last year, with the addition of the state designated entities. Figure 13 below shows the level of state involvement the initiatives reported in 2010.

Level of State Involvement in HIE	
	2010
Little or No Activity	9
Awareness Stage	9
Regional Activity	8
Formal State Leadership	19
Statewide Planning Underway	50
Statewide Plan	22
Implementation of Statewide Plan	16

Figure 13: Level of State Involvement in HIE

## PATIENT ENGAGEMENT THROUGH HIE

### How are patients being engaged?

Most health information exchange initiatives are leaving it up to points of service to inform patients their health information is accessible through the initiative. Sixty-six respondents said that patients are notified through the Notice of Privacy Practices (NPP) of participating health care providers, with a number of initiatives (11) writing in a variation of this under Other. Only 18 initiatives notify patients themselves, and 8 said that patients are not notified.

**Key Finding:**  
Patient engagement has increased dramatically. More organizations are providing services and access to patients.

### What services and access do initiatives offer to patients?

Operational initiatives are offering more services to patients than last year. In 2009, only 3 operational initiatives allowed patients to view their health data; now 44 initiatives report that patients can review their health data. The number of initiatives that allow patients to add information on their health status is up from 7 to 31. Thirty-three initiatives now provide electronic communication between patients and care providers, and 30 initiatives provide patients with access to education information on health and health care. While many initiatives are still not providing services to patients, there has been a marked improvement in patient services over the last year. Thirteen operational initiatives currently allow patients to view and receive data. Eight initiatives allow patients to provide data, and 25 allow them to be involved in governance.

## SERVICES PROVIDED

### **What services are offered, and what data is exchanged?**

The goal of the meaningful use rule is to improve the quality and efficiency of patient care by providing incentives to eligible providers and hospitals to utilize certified EHR technology for the electronic exchange of health information and the reporting of clinical quality measures. Health information exchange initiatives can provide the technology and support providers and hospitals who want to qualify for meaningful use incentive payments.

Health information exchange initiatives are increasing functionalities and services that will allow providers and hospitals to qualify for meaningful use. Figure 14 on the following page demonstrates that initiatives are increasing the services that will be required under meaningful use.

#### **Key Finding:**

There have been increases in functionality amongst health information exchange initiatives with respect to the meaningful use rules.

<b>Current Functionalities for All Initiatives</b>			
	<b>2009</b>	<b>2010</b>	<b>Percent Change</b>
<b>Stage 1 Meaningful Use Core Items</b>			
Connectivity to electronic health records	38	67	76.3%
Health summaries for continuity of care	N/A	49	N/A
Electronic Prescribing	26	37	42.3%
Alerts to providers-Drug-to-Drug	N/A	35	N/A
Alerts to providers-Drug-to-Allergy	N/A	31	N/A
Clinical decision support	19	26	36.8%
<b>Stage 1 Meaningful Use Menu Items</b>			
Results delivery (e.g. laboratory or diagnostic study results)	44	50	13.6%
Disease or chronic care management	19	27	42.1%
Quality improvement reporting for clinicians	10	21	110.0%
Reminders	16	24	50.0%
Immunization Registry	N/A	20	N/A
Medication Reconciliation	N/A	19	N/A
Patient-provider clinical data exchange	6	11	83.3%
Public health: electronic laboratory reporting	6	11	83.3%
Public health: syndromatic surveillance reporting	13	8	-38.5%
<b>Non-Meaningful Use Items</b>			
Clinical documentation	34	40	17.6%
Alerts to providers	31	39	25.8%
Consultation/referral	20	38	90.0%
Electronic referral processing	21	34	61.9%
Alerts to providers-Drug-to-Food Allergy	N/A	25	N/A
Claims or eligibility checking	N/A	25	N/A
Ambulatory order entry	16	22	37.5%
Disease registries	16	13	-18.8%
Patient access to information through the exchange	10	13	30.0%
Public health alerts	N/A	13	N/A
Episodic Grouping of Patient Data	N/A	12	N/A
Quality performance reporting for purchasers or payers	12	11	-8.3%
Patient-provider communication - other	3	9	200.0%
Patient-provider email	4	8	100.0%
Public health: case management	13	6	-53.8%
Medical Device Interoperability	N/A	4	N/A
Home Monitoring	N/A	2	N/A

Figure 14: Current Functionalities for Data Exchange

There has been an increase in the data that will potentially meet meaningful use rules, such as emergency department episodes/discharge summaries, inpatient discharge summaries, and allergy information. See figure 15 below for the types of data currently exchanged through initiatives.

<b>Data Exchanged in Operational Initiatives</b>			
	<b>2009</b>	<b>2010</b>	<b>Percent Change</b>
<b>Core Items</b>			
Medication data (including outpatient prescriptions)	48	63	31.3%
Emergency Department episodes/discharge summaries	36	58	61.1%
Care Summaries	34	47	38.2%
<b>Menu Items</b>			
Laboratory Results*	49	68	38.8%
Inpatient discharge summaries	32	52	62.5%
Advance Directives	N/A	16	N/A
<b>Non-meaningful Use Items</b>			
Outpatient laboratory results	45	62	37.8%
Outpatient episodes	43	56	30.2%
Radiology results	39	54	38.5%
Inpatient diagnoses & procedures	35	51	45.7%
Pathology	32	42	31.3%
Cardiology	27	39	44.4%
Dictation/transcription	31	34	9.7%
Pulmonary	23	33	43.5%
Gastroenterology	22	32	45.5%
Claims: pharmacy, medical, and/or hospital	27	30	11.1%
Enrollment/eligibility	25	30	20.0%
Laboratory Ordering*	49	26	-46.9%
Retail pharmacy	20	24	20.0%
Radiology images	18	17	-5.6%
Patient-reported data	13	13	0.0%
*Note laboratory was not separated into results and ordering in the 2009 survey			

Figure 15: Data Currently Exchanged for Operational Initiatives

Health information exchange initiatives continue to offer healthcare operations, billing, and research services to customers as part of their revenue model, and to increase the value of participation to customers. See figure 16 below for the top non-clinical administrative services being provided to customers.

<b>Healthcare Operations, Billing, and Research Services for Operational Initiatives</b>	
	<b>2010</b>
Quality Reporting	49
Distribution services, such as distributing reports to physicians	48
Providing services that reduce interfaces for EHR vendors	48
Services to assist with data loads into electronic health records	42
Hosting Nationwide Health Information Network (NHIN) Gateway/Connecting EHRs to NHIN	40
Electronic medical record hosting	38
Routing services for personal health records	21
Billing Services	16
Charges for providing access to provider and provider related databases	16
Providing access to clinical trial database	11

Figure 16: Healthcare Operations, Billing, and Research Services for Operational Initiatives

In addition to the non-clinical administrative functions above, initiatives began to offer more support services that allow physicians and hospitals to implement EHRs, obtain financial incentives, and connect to the health information exchange initiatives. See figure 17 below for the top support services being provided to physicians and hospitals.

<b>Support Functions for Operational Initiatives</b>	
	<b>2010</b>
Technical assistance for implementation with clinicians	70
Liaison between public and private health IT efforts in service area	56
Providing implementation guides for health information exchange	53
Technical assistance for implementation in hospitals	52
Workflow modification guidance for clinicians	49
Vendor-neutral advice on purchasing decisions	46
Dissemination of best practices and research	42
Hosting a support hotline for providers	37
Recommendations for specific vendors	31
Workflow modification guidance for hospitals	30
Supporting quality improvement or performance reporting for purchasers and/or payers	29
Coordinating financial incentives within the market	26
Group purchasing	23

Figure 17: Support Functions for Operational Initiatives

## Who is exchanging data?

With more operational initiatives in 2010, the number of stakeholders exchanging data exceeds the number in 2009. Hospitals and primary care physicians are still the largest groups exchanging data.

Stakeholders Exchanging Data in Operational Initiatives			
	2009 Exchange Data	2010 Provide Data	2010 View or Receive Data
Hospitals	48	59	61
Primary care physicians	42	52	58
Specialty care physicians	30	42	53
Community and/or public health clinics	32	36	51
Outpatient/Ambulatory surgery centers	22	27	37
Long-Term Care providers	N/A	19	33
Local Public Health Department	19	16	28
Skilled nursing facilities	7	16	28
Behavioral or mental health providers	19	10	27
Health plans	19	25	24
Pharmacies	20	22	21
Independent radiology centers	18	24	20
Independent laboratories	26	37	18
State Public Health Department	15	8	17
Military and/or VA medical facilities	5	7	16
Consumers	10	8	13
Quality Improvement Organizations	6	4	13
School-based clinics	6	6	13
Indian or Tribal Health Centers	N/A	3	11
Employers or health care purchasers	9	10	10
Medicare	7	8	9
Medicaid	13	19	8
Healthcare IT suppliers	15	8	6
Patient or consumer groups	4	3	6
Pharmacy benefit management companies	18	17	4
State - Governor's Office	3	1	1

Figure 18: Stakeholders Exchanging Data in Operational Initiatives

## REDUCTION OF HEALTH CARE COSTS

### How does health information exchange help reduce health care costs?

Many exchanges strive to demonstrate that health information exchange can reduce costs for physicians, hospitals, payers and patients. Forty-six of the operational initiatives have quantified financial savings through surveys, electronic medical records, and other clinical IT systems. Operational initiatives are helping their customers realize financial savings through the following:

- Reduced staff time spent on clerical administration and filing (33)
- Reduced staff time spent on handling lab and radiology results (30)
- Decreased dollars spent on redundant tests (e.g., laboratory tests, radiology results) (28)
- Reduced medication errors (16)
- Decreased cost of care for chronic care patients (16)
- Reduced staff time spent on handling prescriptions (15)

#### Key Finding:

More organizations are reporting a reduction in staff time and redundant testing through the use of health information exchange.

Measures of Financial Success for All Initiatives			
	2009	2010	Percent Change
Reduced staff time spent on clerical administration and filing	22	33	50.0%
Reduced staff time spent on handling lab and radiology results	23	30	30.4%
Decreased dollars spent on redundant tests (e.g., laboratory tests, radiology results)	16	28	75.0%
Reduced medication errors	9	16	77.8%
Decreased cost of care for chronic care patients	10	16	60.0%
Reduced staff time spent on handling prescriptions	9	15	66.7%
Reduced write-offs, denials or accounts receivable for providers	3	7	133.3%
Decreased unreimbursed charges for ER	5	6	20.0%
Improved submission rates for payers	3	3	0.0%

Figure 19: Measures of Financial Success for Participants in Operational Initiatives

## PATIENT PRIVACY

There have been many developments on the subject of the privacy of personal health information since 2009. Issues have been identified, and health information exchanges have been developing policies and practices to ensure patients' privacy. Federal policy and guidance has evolved significantly in the last 12 months. Eighty-six initiatives, including state designated entities, allow patients to decide which providers can have access to their data, while 56 reported that they do not allow patients to choose.

### Key Finding:

More organizations are creating systems which allow patients to control the level of access to their information.

### What types of policies do initiatives use to protect patient privacy?

At a minimum, all initiatives are required to abide by HIPAA standards, but most organizations have policies that go beyond HIPAA. Only 36 respondents, 13 of which are state designated entities, said they have no policies in place or in development beyond HIPAA. There has been a significant increase from 2009 in privacy policies that address sharing aggregated data with third parties. Of those that have policies in place to protect patient privacy beyond HIPAA, the most common include:

- Patient consent required to share clinical data deemed to be sensitive (e.g., mental health, STD, AIDS) with another provider for treatment purposes (62)
- Patient consent required to share clinical information with another provider for treatment purposes (opt-in) (61)
- Patient consent required to share clinical information for healthcare operations purposes (31)
- Patient consent required to share aggregated or de-identified information for purposes other than treatment, payment, or healthcare operations (31)
- More stringent restrictions are in place for use and disclosure for research (31)
- Patient consent required to share information for payment purposes (30)

### Are initiatives allowing patients to opt-in or opt-out?

There continues to be a lot of discussion around opt-out/opt-in policies. Ninety-eight initiatives responded that their state allows them to choose either an opt-in or opt-out policy. However, 40 initiatives, 19 of which are state designated entities, responded that they are unaware of state legal requirements that do not allow an opt-out policy.

Only 36 initiatives have an opt-in policy where patients must give consent to have their data included. Eighty-one initiatives have an opt-out policy, where patients' data is automatically included but they can choose to withdraw. Twenty-seven initiatives were unsure of their policy, and 56 chose not to answer. Initiatives overwhelmingly use a global opt-out/opt-in policy with 61 responding this was their policy. The figure 20 below shows the breakdown of the level of opt-out/opt-in offered by initiatives.

<b>Level of Opt-in/Opt-out Security</b>	
	<b>2010</b>
Global	61
Organizational	36
Provider	34
Emergency Care	14
Individual Data Element	13

Figure 20: Level of Opt-in/Opt-out Security

Only 35 initiatives currently have an electronic means for obtaining and managing patient consent for disclosure of information sharing for treatment, but 82 initiatives plan to do so. Twenty-nine initiatives do not have an electronic method and do not plan to adopt one.

## CLOSE-UP OF THE SUSTAINABLE INITIATIVES

Through the survey, we were able to identify 18 initiatives that are sustainable. Sustainable initiatives reported that they were operational (Stage 5, 6, or 7), were not dependent on federal funding in the last fiscal year, and broke even through operational revenue alone. None of the organizations that met the criteria of sustainability reported that they were the state designated entity.

### Which stakeholders are paying fees?

The sustainable initiatives have multiple stakeholders that pay a fee to participate in the initiative. While hospitals are once again the main source of income, there are more sustainable initiatives receiving fees from health plans, and primary care physicians are a smaller source of revenue. In fact, 11 of the 18 initiatives do not require physicians to pay a fee to access the health information exchange.

Stakeholders Paying Participation Dues or Fees in Sustainable Exchanges	
	2010
Hospitals	11
Health plans	8
Community and/or public health clinics	7
Independent laboratories	6
Independent radiology centers	6
Primary care physicians	6
Behavioral or mental health providers	5
Long-Term Care providers	5
Outpatient/Ambulatory surgery centers	5
Specialty care physicians	5

Figure 21: Stakeholders Paying Participation Dues/Fees

### What are the sustainable initiatives' revenue sources?

The sustainable initiatives are utilizing the same revenue sources as the non-sustainable initiatives. Subscription fees are the top source. The payment model for physicians especially is a monthly (5) and/or an annual (4) fee, if they are charged at all. The sustainable initiatives are also seeking unconventional sources of future revenue such as fees from clinical trials and advertising.

Revenue Sources for Ongoing Operations for Sustainable Exchanges		
	Current revenue source	Future revenue source
Subscription fees or membership dues to data providers	11	10
Subscription fees or membership dues to data users	9	11
Transaction fees charged to data users	5	4
Transaction fees charged to data providers	5	5
One-time financial contribution to the health information exchange (donation, etc.)	3	4
Advertising or marketing	1	3
Fees generated from clinical trials	0	2

Figure 22: Revenue Sources for Ongoing Operations

### Do the sustainable initiatives have a financial relationship or partially own the organizations exchanging data?

As noted earlier, most of the sustainable initiatives have little or no financial relationship with the entities involved in their initiative.

Financial Relationship	
	2010
All of the organizations we exchange data with are independent entities	7
Financial relationship with SOME of the organizations with whom we exchange data	6
Financial relationship with MOST of the organizations with whom we exchange data	3
Financial relationship with ALL of the organizations with whom we exchange data	2

Figure 23: Financial Relationships

### What services are the sustainable initiatives providing?

It is important to note which functionalities the sustainable initiatives are offering. While many of the top 10 functions they provide will assist physicians and hospitals in obtaining meaningful use, many are value-add services. The following are their top 10 functions for data exchange:

- Connectivity to electronic health records (15)
- Alerts to providers (12)
- Consultation/referral (12)
- Results delivery (e.g. laboratory or diagnostic study results) (12)
- Alerts to providers-Drug-to-Drug (11)
- Health summaries for continuity of care (11)
- Clinical documentation (10)
- Electronic Prescribing (10)
- Alerts to providers-Drug-to-Allergy (9)

- Alerts to providers-Drug-to-Food Allergy (8)
- Electronic referral processing (8)

The sustainable initiatives are offering a number of non-clinical administrative services that add value to participants and are an important part of a sustainable business model.

<b>Healthcare Operations, Billing, and Research Services Offered by Sustainable Exchanges</b>	
	<b>2010</b>
Distribution services, such as distributing reports to physicians	6
Electronic medical record hosting	6
Services to assist with data loads into electronic health records	5
Quality Reporting	5
Providing services that reduce interfaces for EHR vendors	3

Figure 24: Healthcare Operations, Billing, and Research Services

### **What challenges are the sustainable initiatives facing?**

The greatest challenges facing sustainable initiatives are slightly different from those of other initiatives that have not yet achieved sustainability (notably their lower ranking of achieving a sustainable model as a challenge). The following are the top 10 challenges the sustainable initiatives face:

- Accurately linking patient data (14)
- Defining the value that accrues to the users of the health information exchange (14)
- Addressing government policy and mandates (13)
- Addressing privacy and confidentiality issues - HIPAA and other (13)
- Addressing technical aspects including architecture, applications and connectivity (12)
- Engaging health plans in your coverage area (12)
- Systems integration (12)
- Engaging purchasers in your coverage area (11)
- Managing growth (11)
- Addressing organization and governance issues (10)
- Addressing other legal issues (10)
- Engaging laboratories in your coverage area (10)

## CLOSE-UP LOOK AT STATE DESIGNATED ENTITIES

The State HIE Cooperative Agreement Program was enacted by the HITECH Act in ARRA, and provides federal support for state efforts to rapidly build capacity for exchanging health information across the health care system both within and across states. The goal is to increase connectivity and enable patient-centric information flow to improve the quality and efficiency of care. The states also are tasked with assisting providers and hospitals to achieve meaningful use. In 2010, a total of \$548 million was appropriated to 56 state designated entities. The State HIE cooperative agreements have a four-year performance period, and recipients will be required to match a portion of grant awards beginning in the second year of the award, 2011.

**Key Finding:**  
States and state designated entities have varying perspectives of their purpose.

### How do the state designated entities view their purpose?

The state designated entities see their role as multi-faceted. Forty entities describe their organization as planning for health information exchange at the regional, state, or community level. Roughly half (28) are building or maintaining a technical infrastructure to support health information exchange, and half (22) are supporting efforts to build a technical infrastructure to support health information exchange. Two entities reported they are not directly involved in building a technical infrastructure, but coordinating or creating policy to facilitate health information exchange.

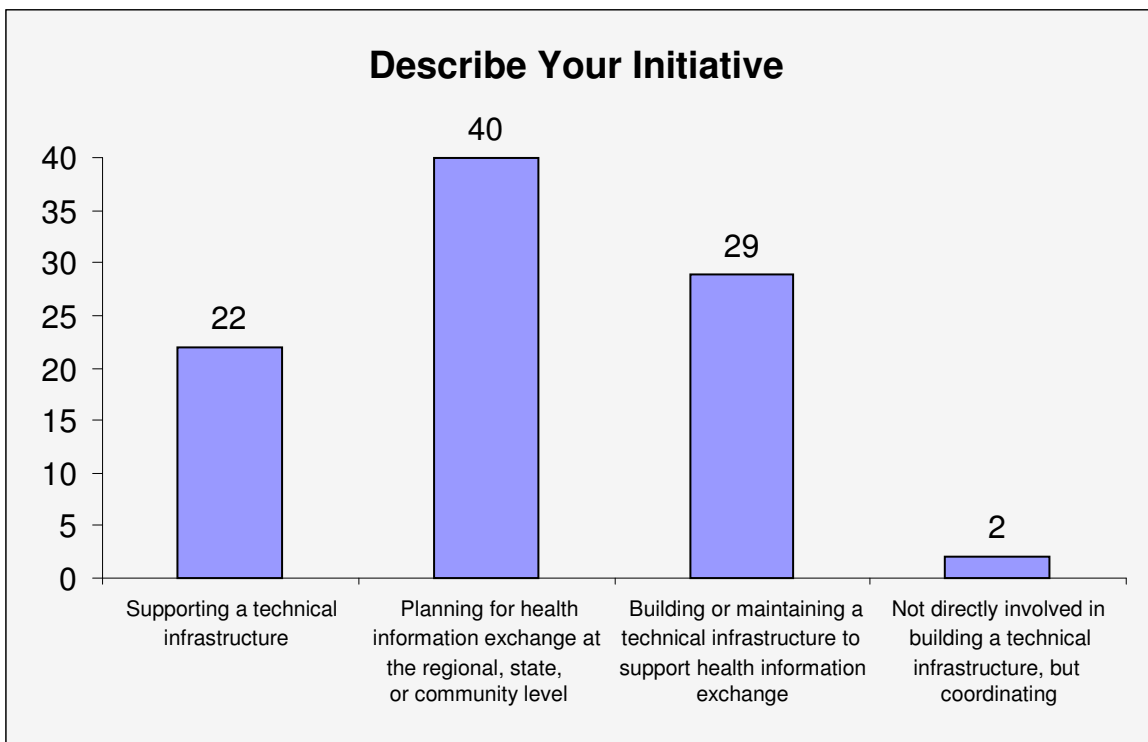


Figure 25: Describe Your Initiative (SDE)

### **What are the greatest challenges facing the state designated entities?**

Sustainability and funding are cited as the greatest challenge facing the state designated entities (35). Addressing privacy and confidentiality issues was the second greatest challenge to the entities (16). Meeting aggressive deadlines set by ARRA was also cited as a challenge to the entities (7). Specific to governance, the greatest challenge reported for the entities is lack of board knowledge in HIE (11), and conflicts of interest is a close second (10).

### **Are the state designated entities exchanging data across state lines?**

One of the goals of the state designated entities is interoperability of health information across state lines. However, only 3 state designated entities are currently exchanging data across state lines, and 8 plan to begin interstate exchange of data in the next year. A number of state designated entities intend to exchange data across state lines in the next 2 years (13), and 8 plan to exchange data in more than 24 months. At least 2 state designated entities do not have plans to exchange data across state lines.

### **Are the state designated entities preparing to work with the Nationwide Health Information Network (NHIN)?**

NHIN is intended to facilitate broad interoperability of health information exchange, and therefore may assist the state designated entities to promote health information exchange within, and across, state boundaries. If states intend to participate in NHIN, they will need to adopt NHIN standards and policies. Sixteen state designated entities reported that they are already following NHIN guidelines for data sharing and infrastructure development, while 10 entities plan to within the next year. Five entities plan to abide by these standards in the next two years, but at least 1 entity has no plans to use these standards. There are 3 entities that are still attempting to understand the NHIN guidelines, and are therefore unsure of whether they are following them.

### **Are the state designated entities preparing to be sustainable?**

The State HIE cooperative agreements have a four-year performance period, and recipients will be required to match a portion of grant awards beginning in the second year of the award, 2011. Federal funding continues to decrease over the next 3 years. See figure 26 for state matching requirements.

<b>Fiscal Year of Funding</b>	<b>Match Required</b>
2010	None
2011 (begins Oct. 1, 2010)	\$1 for each \$10 federal dollars
2012 (begins Oct 1, 2011)	\$1 for each \$7 federal dollars
2013 (begins Oct 1, 2012)	\$1 for each \$3 federal dollars

Figure 26: Federal Guidelines for State Matching Requirements

Due to the reduction in federal funds over the course of the contract period, and in the absence of additional federal funding authorizations, it is important that the state designated entities create business models that are sustainable. While 44 entities reported they received start-up funds through ARRA, only 6 reported that they viewed this as an ongoing funding source. Hospitals (9), Physicians (7), and payers – private (7) and public (8) are the main sources of ongoing funding. The majority of entities plan to generate revenue via subscription fees or membership dues to data users (21) and data providers (16). Thirteen entities plan to ask for one-time financial contributions

(donation, etc.) to generate revenue. In the most recent fiscal year, however, 31 entities reported they were dependent on federal funding, while 14 reported they were not. While, many of the entities are dependent on federal funding, others are currently collecting fees, and many more plan to collect fees in the coming years. See figure 27 for a list of revenue sources.

<b>SDE Revenue Sources</b>		
	<b>Current revenue source</b>	<b>Future revenue source</b>
Transaction fees charged to data users	0	10
Transaction fees charged to data providers	1	8
Subscription fees or membership dues to data users	4	20
Subscription fees or membership dues to data providers	3	15
Advertising or marketing	0	4
Fees generated from clinical trials	0	2
Utility Model- Fees Assessed through state for public service	1	9
One-time financial contribution to the health information exchange (donation, etc.)	3	13

Figure 27: SDE Revenue Sources

### **What services will the state designated entities provide?**

The majority of services currently being provided by state designated entities revolve around electronic prescriptions. Four entities are currently providing electronic prescribing and refill requests, and 3 are providing prescription fill status and/or a medication fill history. Over the next year, state designated entities plan to provide services that will assist providers and hospitals with meeting meaningful use: clinical summary exchange (14), electronic public health reporting (14), and electronic clinical lab ordering and results delivery (14).

The lack of current service offerings could be due to multiple reasons. Most of the entities are still in the planning stages, and do not yet have a pilot in operation. See figure 28 below for a full list of services currently being provided and those planned for the next year.

<b>Services Provided by the State Designated Entities</b>		
	<b>Currently</b>	<b>Within 12 months</b>
Electronic public health reporting (i.e., immunizations, notifiable laboratory results)	2	14
Clinical summary exchange for care coordination and patient engagement	2	14
Electronic clinical laboratory ordering and results delivery	1	14
Electronic prescribing and refill requests	4	12
Prescription fill status and/or medication fill history	3	11
Electronic eligibility and claims transactions	3	8
Quality reporting	0	6

Figure 28: Services Provided by the SDEs

Following the trend of providing services that will support meaningful use, 10 entities reported that providing clinical summary exchange is the service they will work on providing first. Five entities report that they will work on providing electronic clinical lab ordering and results delivery first, and five report they will work on electronic public health reporting first. See figure 29 below for the priority of services entities plan on providing.

Priority of Service Offerings Amongst SDEs		
	First	Second
Clinical summary exchange for care coordination and patient engagement	10	5
Electronic clinical laboratory ordering and results delivery	5	7
Electronic public health reporting (i.e., immunizations, notifiable laboratory results)	5	4
Electronic prescribing and refill requests	3	9
Electronic eligibility and claims transactions	3	0
Prescription fill status and/or medication fill history	1	1
Quality reporting	0	1

Figure 29: Priority of Service Offerings

### What functionalities and data will the state designated entities provide?

The functionalities currently provided by the state designated entities are limited. The top functionalities currently provided are connectivity to electronic health records (10). Electronic prescribing (6), results delivery of laboratory or diagnostic study results (6), and health care summaries for continuity of care (5) are the other main functionalities being provided. The entities are focusing on providing functionalities and data that will enable physicians and hospitals to qualify for meaningful use. The data that is currently being provided has a focus on lab results, eprescribing, and care summaries. The following data is currently being provided by the state designated entities:

- Laboratory results (8)
- Medication data (including outpatient prescriptions) (7)
- Outpatient laboratory results (6)
- Emergency Department episodes/discharge summaries (6)
- Radiology results (5)

## FINAL THOUGHTS

For seven years, the eHealth Initiative has tracked the progress of health information exchange. Steady progress has been made each year. In 2009 and 2010 major legislation was passed that altered the landscape of the field, and gave health information exchange a much-needed boost. While the survey results highlight the considerable growth of health information exchange efforts, the results also reveal that many challenges remain.

Three themes emerged from the survey results: rising concerns related to new policies, deciphering sustainable business models, and an increased focus on patients.

### **Rising Concerns Related to New Policies**

While ARRA brought significant funding and helped advance the field, it also brought new challenges. The recently released rule on meaningful use incentives will drive the attention of state designated entities to develop and implement plans for health data exchange that support the ability of eligible providers and hospitals to meet meaningful use requirements. Additional requirements will be announced in succeeding years, so the states will be required to plan to support expanding exchange requirements. The survey results reveal that even with the existing capabilities reported in the survey, achieving Stage 1 meaningful use targets and timelines will be challenging, given the limited infrastructure and current capacity of health information exchange initiatives.

### **Deciphering Sustainable Business Models**

For many years, experts have tried to find a formula for success and sustainability. Ownership and financial arrangements are often suggested to be a key factor. However, the survey results show ownership and financial arrangements may not be a key factor. Results show that operational and sustainable initiatives do not have to own or partially own any of the organizations involved in the exchange to be successful. Different business models and structures can become sustainable. More research is needed to determine the key characteristics of sustainable systems.

### **Increased Focus on Patients**

For years consumer groups and patient advocates have stressed the need for health information technology adoption and health information exchange initiatives to engage patients in governance and in the delivery of services. This year's survey shows that health information exchange initiatives have shifted their focus to include patients. Initiatives are providing greater access to patients to not only view, but update their health information, and communicate with their physicians electronically. While numbers remain relatively low in this area, significant increases in the last year demonstrate that health information exchange initiatives are focusing on quality and efficiency improvements expressed in terms of services valued by patients.

In the coming year, the eHealth Initiative will continue to convene national experts and "on-the-ground" implementers to help groups navigate the complexities of health information exchange. Insights gained from this survey, as well as ongoing research and eHealth Initiative working group activities will help us identify best practices and provide guidance to health information exchange initiatives across the country.

## METHODOLOGY

The 2010 *Seventh Annual Survey of Health Information Exchange* was launched on June 7, 2010. Announcement of the survey was communicated through newsletters, mailing lists, and meetings to a wide range of audiences in order to elicit responses from national, state, regional, and community-based initiatives working on health information exchange.

Each response was reviewed carefully, and significantly incomplete responses, duplicates, or responses from organizations not directly involved with health information exchange were excluded. Responses to the survey were self-reported by participants. While responses were reviewed by eHealth Initiative staff for reasonableness, in most cases they were not verified.

After review, a total of 199 initiatives were included in results. It should be noted that not all respondents answered each question, so a selection bias may exist. To view a list of initiatives, please visit <http://www.ehealthinitiative.org>.

Repeated attempts were made to contact all of the organizations who participated in the 2009 *Annual Surveys of Health Information Exchange*. Personal emails were sent to individuals listed as organizational contacts, and follow-up phone calls were made to organizations that did not respond prior to the survey completion deadline. eHealth Initiative staff was able to verify that at least 28 of the 2009 participants, who did not respond in 2010, continue to pursue health information exchange efforts.

Participants were offered a \$10 Starbucks Card as an incentive to take the time to participate in and complete the Survey in its entirety.

## **SPECIAL THANKS**

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