

**eHealth Initiative's  
Fifth Annual Survey of Health Information Exchange  
At the State and Local Levels**

**Overview of 2008 Findings**

**September 2008**

## OVERVIEW OF 2008 FINDINGS

The exchange of health information electronically between physicians, hospitals, health plans, and patients is decreasing the cost of care and improving outcomes, according to a new survey released by the non-profit eHealth Initiative today. The 2008 Fifth Annual Survey of Health Information Exchange at the State and Local Levels, which included responses from 130 community-based initiatives in 48 states, shows the significant impact fully operational initiatives are having on improving health care delivery and efficiency.

### Summary of Key Findings

#### STATE OF THE FIELD: SURVEY RESULTS INDICATE CONTINUED PROGRESS

1. The number of operational health information exchange initiatives has increased considerably. The 2008 survey results indicate 42 operational health information exchange initiatives—up from the 32 reporting in 2007—indicating a 31% increase. All 32 operational health information exchange initiatives who responded in 2007 continue to be in operation in 2008.
2. The 2008 survey counts 18 new health information exchange initiatives. Eighteen new health information exchange initiatives not included in the 2007 survey reported findings in 2008, demonstrating increased interest in and momentum for the use of health information exchange to improve the quality, safety and efficiency of health care in the U.S.
3. The number of health information exchange initiatives in each phase of development are evenly dispersed. Thirty-nine of the initiatives included in the 2008 survey are just getting started with health information exchange, 36 are in the process of implementation, and 42 are operational.
4. State and local health information exchange efforts continue to view the engagement of multiple stakeholders as a priority. 2008 survey results indicate continued strong participation by providers, payers, patients and public health.
5. The most important drivers for operational initiatives include those related to improving quality, improving patient safety, rising health care costs and addressing inefficiencies experienced by providers.
6. The most significant challenge for all efforts continues to be the development of a sustainable business model. Eighty-two percent of all 130 respondents cited this as a very difficult or moderately difficult challenge. Seventy-two percent of the 42 operational initiatives also cited this as a very difficult or moderately difficult challenge.

#### IMPACT ON HEALTH CARE: 2008 RESULTS INDICATE GROWING IMPACT ON LOWERING COSTS AND IMPROVING CARE

7. A majority of the fully operational exchange efforts (29/42) report reductions in health care costs. Sixty-nine percent of 2008 respondents say health information exchange allows them to either decrease dollars spent on redundant tests; reduce the number of patient admissions to hospitals for medication errors, allergies or interactions; decrease the cost of care for chronically ill patients; or reduce staff time spent on administration.

8. About half of fully operational exchange efforts (22/42) report positive impacts on health care delivery. Fifty-two percent of 2008 respondents report one or more of the following positive impacts: a decrease in prescribing errors; improved access to test results; improved compliance with chronic care and prevention guidelines; better care outcomes for patients; increased recognition of disease outbreaks; or improved quality of practice life.
9. For the first time, a majority (69%) of operational exchange efforts (29/42) report a positive financial return on their investment (ROI) for their participating stakeholders. Thirteen operational initiatives reported they were able to quantify an ROI for hospitals, nine reported an ROI for physicians practices, six reported an ROI for health plans, and five for independent laboratories.

#### PRIMARY FOCUS ON CARE DELIVERY, BUT INCREASING FOCUS ON IMPROVING POPULATION HEALTH

10. As in previous years, health information exchange initiatives are continuing to focus their efforts on supporting direct care delivery. 2008 survey results show that 26 of the 42 operational initiatives are offering clinical messaging, results delivery, or clinical documentation as one of their services. Sixteen are providing either alerts to providers, consultation/referral services or enrollment or eligibility checking.
11. In addition to improving care delivery, tackling population health challenges continues to be a goal of many operational health information exchange efforts. Ten of the 42 operational initiatives are offering disease or chronic care management services, eight are offering quality improvement reporting for clinicians, six are offering public health reporting, and five are offering quality improvement reporting for purchasers or payers.
12. The variety and volume of data being exchanged increased significantly from 2007 to 2008. In 2008, a total of 26 operational initiatives reported that they are exchanging laboratory results, up from 19 in 2007 and 23 are exchanging outpatient episodes up, from 21 in 2007. In addition the number of operational initiatives exchanging radiology results (23), inpatient episodes (22), dictation/transcription data (20) and emergency department episodes (20) all increased from 2007.
13. Operational health information exchange initiatives are increasingly adding support functions to augment data services, with 31 initiatives offering a help desk function; 24 providing implementation guides; and 22 initiatives both supporting practicing clinicians with work-flow analyses and adoption of electronic health records. Six initiatives are coordinating financial incentives.

#### FINANCING CONTINUES TO BE A CHALLENGE

14. The most significant challenge for all efforts continues to be the development of a sustainable business model. Fifty percent of all 130 included in the 2008 survey cited this as a very difficult challenge and an additional 32% citing this as a moderately difficult challenge.
15. In addition to developing a sustainable business model, securing upfront funding is a significant challenge for all health information exchange efforts. Seventy-nine percent of the 130 efforts reporting in the 2008 survey cite that securing upfront funding with 79% citing this as a very difficult or moderately difficult challenge.
16. Hospitals and the federal government top the list as the most prevalent upfront funding source for operational health information exchange efforts. Forty-eight percent of operational efforts received upfront funding from hospitals and a similar percentage received funding from the federal government, followed by 33% from state government, 26% from private payers, and 24% from philanthropic sources.

17. Operational health information exchange initiatives are no longer dependent on federal funds. Seventy-one percent of the 42 operational health information exchange initiatives who responded to the 2008 survey communicated that they were no longer reliant on federal funds to support their sustainability. This is up from the 56% in 2007.
18. Hospitals also topped the list for providing financial support for ongoing operations. Sixty-two percent of operational health information exchange initiatives are receiving funds from hospitals to support ongoing operations, followed by physician practices (38%), the federal government (36%), private payers (29%), state government (26%), and public payers (24%).
19. Most operational health information exchange initiatives utilize subscription fees or membership fees as their mechanism for payment to support ongoing operations. According to the 2008 survey results, 18 operational health information exchange initiatives are utilizing subscription fees or membership fees from data users or data providers (16 initiatives) to support ongoing operations. Eight organizations are charging transaction fees to data providers, while seven operational initiatives charge transaction fees to data users.
20. There was a notable increase in the number of operational HIE revenue models that include non-clinical/administrative services. Specifically, models that are providing services that reduce interfaces for electronic medical record vendors increased to 16 from six in 2007; distribution services, such as distributing reports to physicians increased to 13 up from four in 2007; and services to assist with data loads into electronic medical records increased to ten up from five in 2007.

## STATE OF THE FIELD: SURVEY RESULTS INDICATE CONTINUED PROGRESS

In 2005, eHI 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, eHI identified seven stages of development (see chart below). Most initiatives focused on health information exchange will move through these predictable stages of development, but at a varying pace.

In 2008, 130 initiatives participated in the 2008 eHealth Initiative Annual Survey of Health Information Exchange at the National, State and Local Levels. There is a growing group of organizations who report that they are in an advanced stage or operational stage of development (Stages 5, 6, and 7). These "operational" health information exchange initiatives are closely reviewed as part of the 2008 survey report, as their experiences lend particularly helpful insight into factors for success.

<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"  
HEALTH INFORMATION  
EXCHANGE  
EFFORTS**

**1. The number of operational health information exchange initiatives has increased considerably.**

The 2008 survey results indicate 42 operational health information exchange initiatives—up from the 32 reporting in 2007—indicating a 31% increase. All 32 operational health information exchange initiatives who responded in 2007 continue to be in operation in 2008.

**2. The 2008 survey counts 18 new health information exchange initiatives.**

Eighteen new health information exchange initiatives not included in the 2007 survey reported findings in 2008, demonstrating increased interest in and momentum for the use of health information exchange to improve the quality, safety and efficiency of health care in the U.S.

**3. The number of health information exchange initiatives in each phase of development are evenly dispersed.**

Thirty-nine of the initiatives included in the 2008 survey are just getting started with health information exchange, 36 are in the process of implementation, and 42 are operational.

**4. State and local health information exchange efforts continue to view the engagement of multiple stakeholders as a priority.**

Stakeholders participating in the governance of health information exchange efforts include:

- Hospitals (51%)
- Primary care physicians (39%)
- Health plans (32%)
- Community health clinics (28%)
- Employers (26%)
- Patient or consumer groups (24%)
- Local public health departments (23%)
- Specialty care physicians (23%), and
- Quality improvement organizations (17%).

**5. The most important drivers for operational initiatives include those related to improving quality, improving patient safety, rising health care costs and addressing inefficiencies experienced by providers.**

As in 2007, the most significant drivers for health information exchange were “improving quality” (97%) and “improving patient safety” (90%). In addition, “rising health care costs” (68%) and “inefficiencies experienced by providers” (64%) were cited as significant drivers.

**6. The most significant challenge for all efforts continues to be the development of a sustainable business model.**

Fifty percent of all 130 included in the 2008 survey cited this as a very difficult challenge and an additional 32% citing this as a moderately difficult challenge. At the same time, 36% of operational initiatives cite the development of a sustainable model as a very difficult challenge, with an additional 36% citing this as a moderately difficult challenge.

**HEALTH CARE IMPACT:  
SURVEY RESULTS SHOW GROWING IMPACT ON  
LOWERING COSTS AND IMPROVING CARE**

**7. A majority (69%) of the fully operational exchange efforts (29/42) report reductions in health care costs.**

In 2008, nineteen operational initiatives reported that their efforts had resulted in reduced staff time, eleven reported there were decreased dollars spent on redundant tests, five documented a reduction in patient admissions, and five initiatives decreased cost of care for chronic care patients.

**8. About half (52%) of fully operational exchange efforts (22/42) report positive impacts on health care delivery.**

In 2008, 16 reported improved access to test results; 13 reported improved quality of practice life; nine reported decreased support staff; eight reported improved compliance with chronic care and prevention guidelines; six reported better care outcomes for patients; four reported a decrease in prescribing errors; and four reported increased recognition of disease outbreaks.

**9. For the first time, a majority (69%) of operational exchange efforts (29/42) report a positive financial return on their investment (ROI) for their participating stakeholders.**

Thirteen operational initiatives reported they were able to quantify an ROI for hospitals, nine reported an ROI for physicians practices, six reported an ROI for health plans, and five for independent laboratories.

**PRIMARY FOCUS CONTINUES TO BE ON CARE DELIVERY, BUT FOCUS ON IMPROVING POPULATION HEALTH CONTINUES TO INCREASE**

**10. As in previous years, health information exchange initiatives are continuing to focus their efforts on supporting direct care delivery.**

2008 survey results show that 26 of the 42 operational initiatives are offering clinical messaging, results delivery, or clinical documentation as one of their services. Sixteen are providing either alerts to providers, consultation/referral services or enrollment or eligibility checking.

**11. In addition to improving care delivery, tackling population health challenges continues to be a goal of many operational health information exchange efforts.**

Ten of the 42 operational initiatives are offering disease or chronic care management services, eight are offering quality improvement reporting for clinicians, six are offering public health reporting, and five are offering quality improvement reporting for purchasers or payers.

<b>Functionalities Provided By Operational HIEs</b>	<b>2008</b>	<b>2007</b>
Results Delivery	26	18
Clinical Documentation	26	17
Enrollment or Eligibility Checking	16	15
Consultation/Referral	16	14
Alerts to Providers	16	12
Electronic Referral Processing	15	9
Disease or Chronic Care Management	10	8
Reminders	8	8
QI Reporting for Clinicians	8	7
Disease Registries	7	6
Public Health: Surveillance	6	6
Quality Performance Reporting for Purchasers or Payers	5	6
Public Health: Electronic Lab Reporting	5	7
Patient Access to Info	5	3
Patient Provider Clinical Exchange	4	3
Public Health: Case Mgt	3	5
Patient-Provider Email	2	2
Patient-Provider Other Communication	1	3



**12. Across the board, a larger number of operational health information exchange initiatives are exchanging data.**

In 2008, a total of 26 operational initiatives reported that they are exchanging laboratory results, up from 19 in 2007 and 23 are exchanging outpatient episodes up, from 21 in 2007. In addition the number of operational initiatives exchanging radiology results (23), inpatient episodes (22), dictation/transcription data (20) and emergency department episodes (20) all increased from 2007.

<b>Data Currently Exchanged</b>	<b>2008</b>	<b>2007</b>
Labs	26	19
Outpatient Lab Results	25	19
Outpatient Episodes	23	21
Radiology Results	23	15
Inpatient Episodes	22	16
Dictation/Transcription	20	14
ED Episodes	20	15
Outpatient Prescriptions	19	15
Claims	18	13
Pathology	18	14
Enrollment/Eligibility	17	16
Cardiology	15	13
GI	14	12
Pulmonary	13	13
Retail Pharmacy	12	11
Radiology Images	7	7
Patient Reported Data	4	6

**13. Operational health information exchange initiatives are increasingly adding support functions to augment data services.**

There has been a significant increase in the number of operational health information exchange initiatives offering additional support services, with 31 initiatives offering a help desk function; 24 providing implementation guides; and 22 initiatives both supporting practicing clinicians with work-flow analyses and adoption of electronic health records. Six initiatives are coordinating financial incentives.

## FINANCING CONTINUES TO BE A CHALLENGE

**14. The most significant challenge for all efforts continues to be the development of a sustainable business model.**

Fifty percent of all 130 included in the 2008 survey cited this as a very difficult challenge and an additional 32% citing this as a moderately difficult challenge. At the same time, 36% of operational initiatives cite the development of a sustainable model as a very difficult challenge, with an additional 36% citing this as a moderately difficult challenge.

**15. In addition to developing a sustainable business model, securing upfront funding is a significant challenge for all health information exchange efforts.**

Seventy-nine percent of the 130 efforts reporting in the 2008 survey cite that securing upfront funding with 79% citing this as a very difficult or moderately difficult challenge.

**16. Hospitals and the federal government top the list as the most prevalent upfront funding source for operational health information exchange efforts.**

Forty-eight percent of operational efforts received upfront funding from hospitals and a similar percentage received funding from the federal government, followed by 33% from state government, 26% from private payers, and 24% from philanthropic sources.

**17. Operational health information exchange initiatives are no longer dependent on federal funds.**

Seventy-one percent of the 42 operational health information exchange initiatives who responded to the 2008 survey communicated that they were no longer reliant on federal funds to support their sustainability. This is up from the 56% in 2007.

**18. Hospitals also topped the list for providing financial support for ongoing operations.**

Sixty-two percent of operational health information exchange initiatives are receiving funds from hospitals to support ongoing operations, followed by physician practices (38%), the federal government (36%), private payers (29%), state government (26%), and public payers (24%).

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According to the 2008 survey results, 18 operational health information exchange initiatives are utilizing subscription fees or membership fees from data users or data providers (16 initiatives) to support ongoing operations. Eight organizations are charging transaction fees to data providers, while seven operational initiatives charge transaction fees to data users.

**20. There was a notable increase in the number of operational HIE revenue models that include non-clinical/administrative services.**

Specifically, models that are providing services that reduce interfaces for electronic medical record vendors increased to 16 from six in 2007; distribution services, such as distributing reports to physicians increased to 13 up from four in 2007; and services to assist with data loads into electronic medical records increased to ten up from five in 2007.

## **METHODOLOGY - DETAILS RELATED TO THE COMPILATION OF SURVEY RESULTS**

The 2008 Fifth Annual Survey of Health Information Exchange at the National, State, and Local Levels was launched and opened for participation on May 30, 2008. Announcement of the survey was communicated through email, listservs, and meetings to a wide range of audiences to elicit responses from national, state, regional, and community-based initiatives focused on health information exchange as possible.

130 initiatives responded to the survey. Each response was carefully reviewed. Respondents who were not specifically associated or directly involved with one health information exchange initiative were excluded. Incomplete and duplicate responses were excluded. It should be noted that responses to the survey were self-reported. While responses were reviewed for reasonableness, they were not verified or certified.

Repeated attempts were made to contact all of the organizations who responded to the 2007 Fourth Annual Survey of Health Information Exchange. Personal emails were sent to individuals who were listed as organizational contacts. If an organization did not respond, eHI sent a follow-email to the last known email address. Phone calls were made to organizations who did not respond to email.

This year's survey collected detailed information from 130 respondents across a geographically diverse landscape which includes 48 of the 50 states, the District of Columbia, and Puerto Rico.

## 2008 SURVEY PARTICIPANTS

130 initiatives participated in the 2008 eHealth Initiative Annual Survey of Health Information Exchange at the State, Regional and Community Levels. The list below is not a complete list of survey participants. Some respondents have requested that we not release the name of their organization.

### **Alaska**

Alaska ChartLink (Alaska RHIO), Fairbanks, AK  
Alaska Tribal Health System Multi-Facility Integration (MFI), Anchorage, AK

### **Alabama**

Montgomery Area Wellness Coalition (formerly Mid-Alabama Information Network (MAIN)), Montgomery, AL

### **Arkansas**

Arkansas Foundation for Medical Care, Little Rock, AR

### **Arizona**

AHCCCS HIE-EHR Project, Phoenix, AZ  
Arizona Health-e Connection, Phoenix, AZ  
Arizona Rural Hospital Flexibility Program, Tucson, AZ

### **California**

California Regional Health Information Organization – CalRHIO, San Francisco, CA  
Fresno Healthy Communities Access Partners, Fresno, CA  
Health-e-LA, City of Industry, CA  
Northern Sierra Rural Health Network, Nevada City, CA  
Redwood MedNet, Ukiah, CA  
San Diego Medical Information Network Exchange (SDMine), San Diego, CA  
Santa Cruz County Health Information Exchange, Santa Cruz, CA

### **Colorado**

Colorado Regional Health Information Organization (CORHIO), Denver, CO  
Community Health Partnership, Colorado Springs, CO  
Quality Health Network, Grand Junction, CO

### **Connecticut**

eHealth Connecticut, Inc., Hartford, CT  
Delaware  
Delaware Health Information Network (DHIN), Lewes, DE  
District of Columbia  
DC Primary Care Association, Washington, DC

### **Florida**

Big Bend RHIO, Tallahassee, FL  
Central Florida Regional Health Information Organization, Inc. (CFRHIO), Orlando, FL  
Duval County Health Department, Jacksonville, FL  
Florida Health Information Network, Agency for Health Care Administration, Tallahassee, FL  
Greater Ocala Health Information Trust, Ocala, FL  
Northwest Florida Regional Health Information Organization (NWFL-RHIO), Pensacola, FL  
South Florida Health Information Initiative, Miami, FL

Health First, Inc (Space Coast HIN), Rockledge, FL

### **Georgia**

Georgia Health Information Technology and Transparency, Atlanta, GA

### **Hawaii**

Hawaii Business Health Council, Honolulu, HI

### **Iowa**

Iowa Department of Public Health, Bureau of Health Care Access, Iowa Medicare, Des Moines, IA

Iowa Foundation for Medical Care, West Des Moines, IA

### **Idaho**

North Idaho Rural Health Consortium, Coeur d'Alene, ID

Illinois

Association of Community Mental Health Authorities of Illinois Local Funds Initiative, Urbana, IL

Illinois Department of Public Health (Department of Healthcare & Family Services), Springfield/Chicago, IL

### **Indiana**

HealthLINC (formerly Bloomington eHealth Collaborative), Bloomington, IN

Indiana Health Information Exchange Indianapolis, IN

Michiana Health Information Network South Bend, IN

### **Kansas**

Kansas Health Policy Authority, Topeka, KS

Manhattan Community Network (formerly Kansas State University (Pioneer Health Network, Wichita safety net clinics, etc.)), Manhattan, KS

### **Kentucky**

Louisville Health Information Exchange (LouHIE), Louisville, KY

### **Louisiana**

Blue Cross Blue Shield Louisiana, Baton Rouge, LA

### **Massachusetts**

MA-SHARE, LLC, Waltham, MA

Masspro - DOQ-IT pilot, Waltham, MA

New England Healthcare EDI Network (NEHEN), Waltham, MA

SAFEHealth, Worcester, MA

### **Maryland**

Metro DC Health Information eXchange (MeDHIX), Silver Spring, MD

Universata, Inc., Germantown, MD

### **Maine**

HealthInfoNet, Manchester, ME

### **Michigan**

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Ann Arbor Area Health Information Exchange, LLC Ypsilanti, MI  
Greater Flint Health Coalition Regional Health Information Exchange Planning Project, Flint, MI  
Michigan Health Information Network (Michigan Department of Community Health and Michigan Department of Information Technology), Lansing, MI

### **Minnesota**

Community Health Information Collaborative (CHIC- RHIO), Duluth, MN  
Minnesota e-Health Initiative, St. Paul, MN  
Minnesota Health Care Connection (MnCCC), Elk River, MN  
Minnesota Health Information Exchange (formerly MN eHealth Collaborative) St. Paul, MN  
University of Minnesota, MN

### **Missouri**

CareEntrust (formerly Healthe Mid-America), Kansas City, MO  
KC CareLink Kansas City, MO  
Missouri Department of Health and Senior Services, Jefferson City, MO

### **Mississippi**

Pegasus Subnetwork Organization, Jackson, MS

### **Montana**

HealthShare, Helena, MT  
Montana Frontier Healthcare Network & Northwest EHR Collaborative, Inc., Anaconda, MT

### **North Carolina**

NCHICA (North Carolina Healthcare Information and Communications Alliance, Inc.), Research Triangle Park, NC  
Southern Piedmont Health Information Exchange North Carolina Health Information Exchange, Kannapolis, NC  
WNC Data Link, Asheville, NC

### **North Dakota**

North Dakota HIT Steering Committee, Grand Forks, ND  
Nebraska  
Western Nebraska Regional Health Information Exchange, Lincoln, NE

### **New Hampshire**

New Hampshire Connects for Health: The NH Citizen's Health Initiative, Durham, NH

### **New Mexico**

New Mexico Health Information Collaborative, Albuquerque, NM  
New Mexico Medical Review Association, Albuquerque, NM

### **New York**

ARCHIE (Adirondack Regional Community Health Information Exchange), Gansevoort, NY  
Brooklyn Health Information Exchange Brooklyn, NY  
GRIPA Connect Clinical Integration, Rochester, NY  
New York Clinical Information Exchange (NYCLIX), New York, NY  
New York eHealth Collaborative, New York, NY  
The Bronx RHIO, Bronx, NY

eHealth Network of Long Island (formerly The Center for Public Health and Health Policy Research), East Setauket, NY  
The Psychiatric Clinical Knowledge Enhancement System (PSYCKES), New York, NY  
The Greater Rochester RHIO, Rochester, NY

### **Ohio**

Alcohol & Drug Addiction Services Board of Cuyahoga County, Cleveland, OH  
HealthBridge Cincinnati, OH  
HealthLink RHIO Wright State University Center for Healthy Communities, Dayton, OH  
Isthmus, Ltd. (Health Policy Institute of Ohio), Columbus, OH  
Northeast Ohio Regional Health Information Organization (NEO RHIO), Munroe Falls, OH

### **Oklahoma**

SMRTNET - AHRQ grant Transforming Healthcare Quality through Information Technology, Tahlequah, OK

### **Oregon**

Oregon & SW Washington Healthcare, Privacy & Security Forum, Portland, OR

### **Pennsylvania**

Central Penn Health Information Collaborative (KeyHIE), Danville, PA  
Pennsylvania eHealth Initiative, Harrisburg, PA

### **Puerto Rico**

Puerto Rico Health Information Network (PRHIN), San Juan, PR

### **Rhode Island**

Blue Cross Blue Shield Rhode Island, Providence, RI  
Rhode Island Quality Institute, Providence, RI

### **South Carolina**

Foothills Health Information Network Seneca, SC  
Electronic Health Network, LLC, Charleston, SC

### **South Dakota**

South Dakota eHealth Collaborative, Pierre, SD

### **Tennessee**

CareSpark, Kingsport, TN  
MidSouth eHealth Alliance, Nashville, TN  
Shared Health, Inc., Chattanooga, TN  
State of Tennessee Governor's eHealth Council, Nashville, TN

### **Texas**

CriticalConnection, Inc., Austin, TX  
Indigent Care Collaboration, Austin, TX  
Texas Dept. of State Health Services, Austin, TX

### **Virginia**

MedVirginia, Richmond, VA  
Northern Virginia Health Information Organization (NVRHIO), McLean, VA

**Vermont**

Vermont Information Technology Leaders, Montpelier, VT

**Washington**

eHI Works, Bellevue, WA

Inland Northwest Health Services, Spokane, WA

Whatcom Health Information Network, LLC, Bellingham, WA

Washington State Health Care Authority (Health Record Banks project), Olympia, WA

**Wisconsin**

Marshfield Clinic TeleHealth, Marshfield, WI

Wisconsin eHealth Initiative, Madison, WI

Wisconsin Health Information Exchange, Mequon, WI

**West Virginia**

West Virginia Health Information Network, Charleston, WV

**Wyoming**

Wyoming Health Information Organization, Cheyenne, WY



## **CASE EXAMPLES**

## **HealthBridge: Delivering Results, Showing How an Advanced HIE Can Improve Quality, Cut the Cost of Care, and Be Self Sustaining**

Founded in 1997, HealthBridge is one of the nation's largest and most successful community health information exchanges, delivering more than 2.4 million clinical results each month to thousands of health care professionals in the greater Cincinnati tri-state area.

HealthBridge's infrastructure, which interconnects 24 different hospitals and health systems, dozens of laboratories, diagnostic and imaging facilities, physician offices and clinics, local health departments, nursing homes and community health Centers, has made it one of the most advanced regions in the country for using electronic health information to improve the quality and efficiency of health care. A mature HIE which has grown every year and been profitable for the last five, HealthBridge has excellent market penetration, covering 95% of the area's hospitals, 4600 of the area's 5000 physicians, 17 local health departments, and 2.2 million of the area's patients. It also provides business and technical support to other HIEs, helping speed the growth of new exchanges in Springfield, Ohio and Bloomington, Indiana.

HealthBridge has been able to deliver clinical test results to physicians at a price of \$0.12/result—less than one sixth of what it would cost without its exchange network in place. Contributing to the savings are avoided redundant tests and elimination of paperwork and related clerical and handling costs. The impact is not just improved quality, but a substantial \$16.4 million in annual savings for area providers.

HealthBridge has also made it much easier and less costly for area hospitals to connect with the multiple electronic medical record (EMR) systems employed by local physician practices. It offers a single interface for hospitals to make this connection, obviating the need for each hospital to build its own separate interface with each EMR system. According to Trudi Matthews, HealthBridge's Director of Policy and Public Relations, hospitals would have to spend \$20,000 to \$40,000 to build interfaces for each EMR it interacts with; connecting through HealthBridge represents a fraction of this cost, not to mention eliminating the expense and hassle factor of constructing these multiple interfaces, and the staff IT support to maintain them.

The good news is that this single interface model could be transferred to other HIEs, a best practice HealthBridge would be glad to share.

Under a grant from the Robert Wood Johnson Foundation, HealthBridge is now developing a cutting edge model for extracting data directly from EMRs for quality reporting and improvement purposes. Pulling such data manually from electronic records is extremely labor intensive and costly—a major barrier to wider provider participation in quality measurement and incentive programs. Having this data flow automatically and seamlessly from EMRs represents a major breakthrough—"something only possible when you have the network in place," according to Matthews.

Matthews reminds us that HIE success is not an overnight proposition; it takes time to build a network and become profitable and self-sustaining. "It's about reaching that critical mass of participating people (providers and patients) before an HIE can start making its mark on quality and cost." A tipping point HealthBridge has reached, with even bigger plans for the future.

## **Michiana Health Information Network: Replacing Paper Electronically for Greater Efficiency and Higher Quality Care**

Serving Northern Indiana and Southern Michigan, MHIN is a community health information exchange dedicated to providing secure, single source access to patient clinical information. MHIN connects healthcare providers with a clinical data repository, results delivery, clinical messaging, interfaces and a fully integrated electronic health record. MHIN's applications provide an efficient way for clinicians and institutions to appropriately exchange information to ensure high-quality, coordinated care.

Michiana's goal is to work with the area providers of health information to turn off their outgoing paper and be the sole delivery mechanism of results delivery to all healthcare providers regardless of the level of HIT adoption at the practice level.

MHIN offers a multi-tiered set of services for physicians and all healthcare entities in the community. MHIN clinical access provides a community repository view of disparate health data sources throughout the community. Groups from Emergency Departments to Hospice providers are beneficiaries. MHIN messenger offers clinical messaging and result distribution for medical results from over 75 data sources. MHIN interface is a robust set of interoperable connections through one pipe to the provider practice. MHIN-EHR. Is the most integrated health record in the community. It presents physicians with a unified, historical patient chart from multiple independent sources. MHIN-EHR organizes clinical information about patients according to physician-designated criteria and avoids separate sign-ons and technology from disparate vendors. Physicians and their staff save time and frustration because results are available through the MHIN system for the physician or designated staff member as soon as they are generated.

With MHIN, hospitals, radiology service providers, laboratories, and other organizations can provide electronic access to test results, transcribed reports, and other clinical information to physicians who order services or perform procedures in their facilities. They can also provide an organized, patient-focused view of longitudinal clinical information to physicians and staff members who are caring for these patients.

Demonstrating Michiana's impact, it performed a return on investment analysis of adopting its secure web-based messaging and electronic health record systems in any practice they server. In each case they do a cost return on paper efficiency, scanning resources and charting impact throughout the community. A typical physician can save between \$7,000 to \$20,000 per year.

## **The Ann Arbor Health Information Exchange: Higher Quality Care for Patients Referred to Specialists**

The Ann Arbor Area Health Information Exchange (A3HIE), serving the greater Ann Arbor area, is comprised of 220 physicians and 50 nurse practitioners caring for over 800,000 active patients. Patient information is securely shared through a single community health portal accessed from the Web.

A3HIE provides a seamless flow of pertinent referral information to improve the quality of care offered to patients, increasing patient safety by providing pertinent medication records and allergy histories. In addition to positive impacts on provider efficiency and costs, this data increases provider satisfaction by providing them with the supportive practice tools to deliver better care. It also increases patient satisfaction by reducing the number of times they must complete medical history questionnaires when moving from one provider to another.

With fewer patients covered by managed care plans, and often able to self-refer themselves to a specialist, there is no guarantee that a specialist will have adequate information to properly evaluate the patient's condition or needs. This information and quality gap also occurs even when a primary care physician makes the referral to a specialist—specialists only received adequate patient information 6% of the time for referred patients, according to a survey conducted by A3HIE in conjunction with the University of Michigan School of Public Health.

That's when they set about to reverse this situation, transmitting existing patient data electronically to specialists in advance of the referral visits. This includes critical data on patient medications, allergies, and any radiological findings—information which can be automatically imported into the patient's electronic medical record. In seconds, the provider has information at his fingertips that may prove vital to patient care – without asking staff to invest time and effort tracking down patient information which may exist in paper charts or at other providers.

This new program has had a major impact: the post survey showed “high quality” consults, those for which the specialist had sufficient patient data, tests results, medication lists, and insurance authorizations—jumped by a factor of over 12, from 6% to 75%, after specialists in the program started receiving referred patient data from the A3HIE patient data portal prior to the patient consults. According to Carlotta Gabard, MBA, DrPH, Executive Vice President and Director of the A3HIE, the increase in high quality referrals has reduced medication errors and significantly improved the quality of practice life and operational efficiency.

For 2008, a major focus for the A3HIE will be to expand its network to allow instant access to its patient data portal by the area's hospital emergency rooms. This is a vital step forward, as emergency patients are often unable to provide complete or accurate information about their medications, allergies, etc. By arming emergency rooms with this vital point-of-care information, the result should be better care and outcomes for patients, and fewer treatment errors attributable to lack of adequate patient information.

## **The Community Health Information Collaborative: Making Electronic Information Work for Children, Nursing Home, and ER Patients; A Key Player at the Frontline of Emergency Preparedness**

Now in its 11th year of operation, the Community Health Information Collaborative (CHIC) is the lead for Northeastern Minnesota's RHIO project, providing secure access to electronic health records within and between healthcare organizations throughout the region. CHIC's network includes nearly 200 provider organizations, higher education institutions, and public health departments covering 18 counties in northeast and north central Minnesota. The area is home to 650,000 residents and 2500 practicing physicians.

One major accomplishment of CHIC is its establishment the Minnesota Immunization Information Connection (MIIC), a confidential, computerized network of shared immunization records. It provides clinics, schools and parents with accurate, complete and up-to-date immunization records. According to CHIC Executive Director Cheryl Stephens, MIIC has had a discernible impact on improving immunization rates for the community, and won widespread praise from the area's pediatricians—both for the better care they can provide to their patients, and the diminished administrative burden on their staffs, freed from tracking down past immunization histories.

Another achievement is CHIC's impact on the quality of care for patients being discharged from hospitals to nursing homes. In the past, the information carried over with patients has been spotty and unreliable; in its place, CHIC has established a secure e-mail discharge notification, which transmits critical patient information, such as medication history and special needs, to the nursing home immediately upon discharge. This makes it much easier for the receiving facility and physicians to initiate timely and appropriate treatment for new arrivals.

Speedy location of medical records for emergency room patients is another vital service offered by CHIC, particularly for rural hospitals. While Minnesota law precludes electronic transmission of patient records without patient consent, the CHIC Record Locator Service instantly identifies all locations where a patient's records reside, allowing ER personnel to quickly track down needed patient clinical data.

CHIC is now piloting use of HealthBio™, an online personal health record designed for adults with developmental disabilities and others interested in sharing key health histories with their personal physicians and other healthcare providers. While the pilot project was designed for vulnerable or special needs populations that might have difficulty communicating their health histories, HealthBio™, may offer significant benefits to a wider population, including those with chronic conditions, seniors and children in foster care.

As the administrative coordinator for the Emergency Preparedness planning in the Northeast region of Minnesota, Stephens is very excited about a new CHIC project: exploring how HealthBio™ could be used to deliver coordinated and effective care to victims of terrorism and other public health emergencies. One of CHIC's first focuses for this initiative is the evacuation of patients from nursing homes, a direct response to lessons learned from Hurricane Katrina. With instant access to HealthBio™, patients could be directed to facilities best suited and ready to address their needs, able to quickly initiate appropriate treatment upon their arrival.

## **Integrated Care Collaborative: Improving Access to HealthCare in Central Texas**

Based in Austin, Texas, ICC is a three county regional alliance of health care safety net providers that work together to improve access to healthcare in Central Texas for uninsured and underinsured individuals. Since its inception in 1997, ICC's vision has been to "operate as a regional, well coordinated system of care that maximizes and leverages resources – and is based on performance, outcomes and validated patient information which drives evidence-based programs/care evaluated on metrics." ICC provides the infrastructure for electronic sharing of patient health information to assure its clientele receive the best care possible.

ICC has developed ICare, a Master Patient Index/Clinical Data Repository through which safety net providers build shared patient-specific longitudinal electronic health records for uninsured and underinsured patients to improve care continuity and delivery. The ICare database currently includes over 700,000 patients with data collected from over 60 locations, including hospital inpatient, outpatient, clinic, MHMR, call center, and pharmacy. Access to this data has had some very measurable positive impacts, according to ICC Executive Director Ann Kitchen.

For example, a cutting edge ICC pilot demonstrated how its HIE patient database could be queried to identify patients most likely to benefit from enrollment in an asthma disease management program. From the pool of patients identified based on ER, inpatient and clinic visit history, a total of 172 patients participated in the pilot, each receiving home-based services from a respiratory therapist. The ICare database was also used to evaluate results, using HIE utilization data for these patients pre and post enrollment in the program, as well as comparing results to a control group of patients not enrolled in the program. The results were dramatic according to Executive Director Kitchen: A return on investment of \$5.50 for every \$1 spent. The program has been so successful it is now being expanded to cover 600 individuals, again demonstrating how strong a tool the HIE database can be in ensuring those patients most able to benefit get the care they need.

Another noteworthy program for ICC has been one of its hospital member's "High Alert" program for use in emergency rooms. The goal is to use HIE data to identify individuals who chronically and frequently mis-utilize ERs, for example, those who exhibit habitual controlled substance seeking behavior—persons who would be better served by participation in a substance abuse program. The ICare data is also used to help develop a care plan for these individuals and coordinate care with community physicians they may have seen. "High Alert" has been very successful as a deterrent, reducing return ER visits by this population by 75%. It has also significantly reduced the time spent in the ER on return visits from other types of frequent inappropriate utilizers.

In summary, ICC member providers have been a major change agent in their community with the assistance of the ICare data, demonstrating just how powerful an ally electronic health information can be, bringing greater efficiency, quality, and access and affordability to the care of the uninsured and chronically ill.

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