

DHIN Program Information Notice Update – May 2012

Introduction

DHIN is pleased to provide an update to ONC on its progress since the inception of the project in February 2010. DHIN is the nation's first statewide HIE and is celebrating its fifth anniversary since it first went live in May 2007. DHIN employs a federated model that leverages Master Patient Index technology which displays information which is individually stored from each DHIN's data senders. More than 9,000,000 clinical results and reports are posted on DHIN each year – and the total patient records in the system now stand at 1,300,000, featuring patient records from all 50 states. DHIN continues to achieve significant penetration within the Delaware healthcare ecosystem, achieving the following stakeholder milestones:

- 100% of Delaware's acute care hospitals are engaged with the Community Health Record (first in the nation)
- 100% of Delaware's long term care and skilled nursing facilities use the DHIN to deliver advance care to their clients (first in the nation)
- 92% of Delaware's medical providers are enrolled in the DHIN for both directed and query based exchange.

DHIN would like to take this opportunity to thank ONC for its support of the DHIN through this grant. The following is DHIN's response to the Program Information Notice in issued in February 2012.

Section 1.3 SOP Update

Section 1 – Changes In HIE Strategy

Per the guidance issued in the PIN, DHIN has completed Appendix A, with accompanying Attachment 1, which provides an outline of changes in DHIN's HIE Strategy:

APPENDIX A - Changes to HIE Strategy

Domain/Sections	Short Description of Approved Portion of SOP that Grantee is Proposing to Change (include page numbers)	Proposed Changes	Reason for the Proposed Changes	Budget Implications of Proposed Changes
<i>Include in First and Subsequent SOP Updates</i>				
Overall HIE Strategy including Phasing	See Attachment A.			
Governance	Governance - (Page 19)	The General Assembly rewrote DHIN's enabling statute removing DHIN from its original parent state	Passage of Senate Bill 231 in 2010.	None

		agency, the Delaware Health Care Commission, and allowing it to operate as an independent public instrumentality of the State.		
Technology	DHIN added Direct, which was not a planned technology in DHIN's originally approved SOP.			
Financial				
Business Operations				
Legal/Policy				
Strategies for e-Prescribing				
Strategies for Structured Lab Results Exchange				
Strategies for Care Summary Exchange	DHIN now offers Direct to ensure that at least one tool was available in CY 2011 to support this requirement for any EP to attest for Meaningful Use.			
Evaluation Plan				
<i>The Core Documents Are Required As Part Of First SOP Update. Changes Should be Indicated in Subsequent SOP Update</i>				
Sustainability				
Privacy and Security Framework				
Evaluation Plan				

Attachment A - Changes to Overall HIE Strategy - DHIN

Short Description of Approved Portion of SOP that Grantee is Proposing to Change (include page numbers)	Proposed Changes	Reason for the Proposed Changes	Budget Implications of Proposed Changes
Electronic Eligibility and Claims Transactions - (Pages 5&6)	Removal of: - Eligibility verification – both batch and real-time transactions are supported - Benefit Inquiry – verification of coverage, limitations, out-of-pocket maximums and	Lack of market interest	\$233,369 federal funding - now available for other uses.

	requirements - Claims Submission – single or batch processes - Payer Claims Clearinghouse		
Electronic Prescribing and Refill Requests via EHR Primer (Page 6)	Removal of EMR Primer	Product not part of DHIN's core competency - DHIN does not wish to compete with EHR vendors. Delaware is already ranked #2 in the country in ePrescribing and has achieved that level without involvement from the DHIN.	\$137,409 federal funding - now available for other uses.
Electronic Clinical Laboratory Ordering and Results Delivery (Pages 8 and 9)	Removal of Web Lab Ordering Portal. EMR Lab Ordering will remain.	Receiving labs did not believe that the web tool would be an improvement over what is currently in use.	\$237,500 federal funding - now available for other uses.
Establish DIRECT Secure Messaging (New, not in original SOP)	Provide DIRECT messaging services to providers.	Requested by ONC.	\$32,638 of federal funding - funded from savings of removed projects and people vacancy savings.
DHIN Evaluation (New, not in original SOP)	Complete program evaluation - will use AHRQ evaluation completed in Sept 2011 as baseline.	Requested by ONC.	\$100,000 of federal funding - funded from savings of removed projects and people vacancy savings.
Medication History Trial (bottom of page 7)	Implement 5 Month Trial to determine provider interest in product. Initial usability pilot conducted in June 2010. (Usability pilot was included in the SOP, but was not funded by the Cooperative Agreement)	Determine market interest - develop pricing mechanisms based on observed use - sustainability revenue source.	\$262,500 of federal funding - funded from savings of removed projects and people vacancy savings.

Consumer Engagement Tools.(New, not in original SOP)	Includes electronic Patient engagement, Consumer Market Research, EHR Connectivity to pass info from EHR to DHIN to PHR.	Through market research and collaboration with our business partners - determine DHIN's approach to Consumer Engagement	\$84,375 of federal funding - funded from savings of removed projects and people vacancy savings.
Interface Connectivity for 2 existing DHIN participating hospitals. (New, not in original SOP)		Legacy hospital systems being upgraded. Replacement interfaces crucial for long term financial sustainability.	\$85,000 of federal funding - funded from savings of removed projects and people vacancy savings.
EHR Interface Connectivity - (Results, Orders, CCD Exchange, and/or Immunizations (New, not in original SOP)	Include connectivity costs for EHR's which are popular in the Delaware provider community.	Connecting these EHR's will increase the percentage of DHIN practices who receive results only from DHIN (thereby agreeing to turn off manual forms of communication), an important component of DHIN's sustainability model.	Funded from savings of removed projects and people vacancy savings.
Lab Orders via an EMR. (New, not in original SOP)	Create lab ordering ability routed through DHIN, originating from an EMR.	Market forces - participating DHIN data senders (labs and hospitals) who are funders of the DHIN.	\$184,188 of federal funding - funded from savings of removed projects and people vacancy savings.
Payer Connectivity - (New, not in original SOP)	Create ability to send hospital ADT information to Blue Cross Blue Shield of Delaware and 2 Medicaid MCO's (Delaware Physician's Care, United). Create ability for payers to query DHIN on their own members during the time that their members are covered by the respective payer. Scope may increase to include other payers.	Establishes services to Payers, improved case management capabilities for Payers - secures long term sustainability funding stream.	Funded from savings of removed projects and people vacancy savings.
Medication Reconciliation - (New, not in original SOP)	Include ability to reconcile Medication History information received from disparate sources to provide a holistic and	Complements Medication History product, sustainability revenue source.	Funded from savings of removed projects and people vacancy savings.

	accurate medication history profile.		
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Section 2 – Sustainability Plan

DHIN has been focused since its inception on creating the conditions which encourage global Health Information Exchange in Delaware. As Delaware’s State Designated Entity, DHIN’s belief has been that if it succeeds in encouraging health information exchange amongst its stakeholders, financial and operational sustainability will fall into place for the DHIN. The following two sections summarize DHIN’s efforts in creating the conditions for health information exchange and the resulting impact of financial sustainability for the DHIN.

Conditions for sustainability of health information exchange

a. Create demand for exchange through policy and purchasing levers.

Since its inception, DHIN has been funded from Federal, Private, and State sources. In addition to being named the State Designated Entity, DHIN has received \$12.1 million in appropriations from the State of Delaware. The State seeks to leverage its investment by directing information going into the state’s agencies through the DHIN. The Department of Public Health (DPH) has directed that all new interfaces be passed through the DHIN, and within the next year, all existing direct interfaces to DPH will be routed through the DHIN.

In 2010, Highmark, Inc., of Pittsburgh, submitted an application to purchase Blue Cross Blue Shield of Delaware, the state’s largest insurer. The state’s insurance commissioner laid out 49 conditions to be met in order for approval of the merger. Amongst the conditions was that BCBS provide \$1 million of annual funding to DHIN over a period of 5 years. This condition represents the State’s commitment to ongoing sustainability of Health Information Exchange and also recognizes the importance that information exchange will play in the future as payers and other stakeholders undertake transformation in healthcare reform.

The State’s Health Resource Board “promotes the cost effective and efficient use healthcare resources while striving to ensure the availability and access of to high quality and appropriate health care services”¹. Amongst its duties, the Board oversees the strategic allocation of investments and resources to ensure that proposed investments (e.g. hospital expansion, payer establishment, nursing home and assisted living care establishment and expansion, etc.) align with the needs of the State and its citizens. Two of DHIN’s board members sit on the State’s Health Resource Board. Several insurers, including

¹ Delaware Health Resource Board By Laws – Section 3.

United Healthcare, have approached the Board to expand their market footprint in Delaware. Analogous to the action taken by the Insurance commissioner during the Highmark/BCBSDE merger process, the Board steers those payers who wish to establish or expand their presence in Delaware to financially support the state's Health Information Exchange efforts.

b. Advance care transformation models and payment reform initiatives that increase demand for exchange, and deliberately incorporate health IT adoption and health information exchange requirements into these efforts.

The State of Delaware is engaged in a multi-tier strategy to address the transformation of the health care delivery system and payment reform, led by the Delaware Health Care Commission in collaboration with the Department of Health and Social Services. These efforts include:

- a coordinated approach to support and share best practices across numerous patient centered medical home initiatives;
- exploration of accountable care organization models;
- re-alignment of payment models to move toward outcomes based payment;
- support for health promotion, disease prevention ,chronic disease management and supporting individuals in managing their health and wellness;
- use of analytics to understand outcomes, quality, cost and utilization; and
- workforce development initiatives, including the role of telemedicine, and other initiatives focused on ensuring access to quality care.

Each of these components demands a robust health information exchange and widespread adoption of existing health IT. These initiatives also provide opportunity for new innovations based on and extending the underlying health IT and exchange foundation.

c. Foster systemic changes to support health information exchange...

i. Engage consumers to request their own electronic health information, demand HIT-enabled care and expect that providers will make their transitions safe and effective.

The Delaware Health Information Network is committed to building awareness and understanding among consumers in order to better engage Delawareans with their health care. By way of example, the successful launch of DIRECT in December of 2011 has provided a strong foundation for providers to communicate information directly in to Personal Health Records (PHR's) of their patients. In multiple venues where has been a featured DIRECT as a topic, we have sought to connect this tool with patient engagement and specifically PHR's:

- PHR's are free,
- PHR's are easy to set-up

- PHR's can be used to collect important health care information either from providers or DHIN, where a CCD summary of their compiled data can be transmitted to their PHR.

DHIN has taken advantage of several speaking and presentation opportunities where the audience included consumers and consumer advocate groups (e.g. monthly DHIN Town Halls, meetings with the Central Delaware Leadership Development Series, presentation to the Delaware Health Care Commission, and meetings with state legislators).

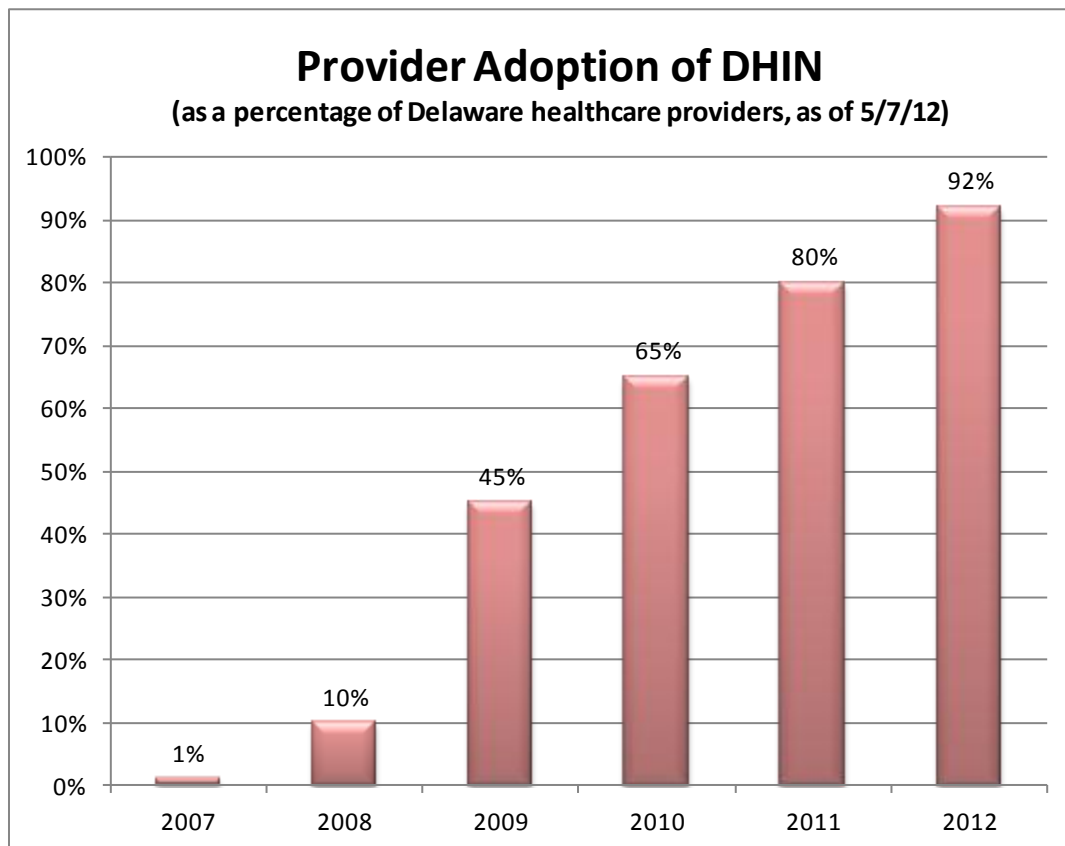
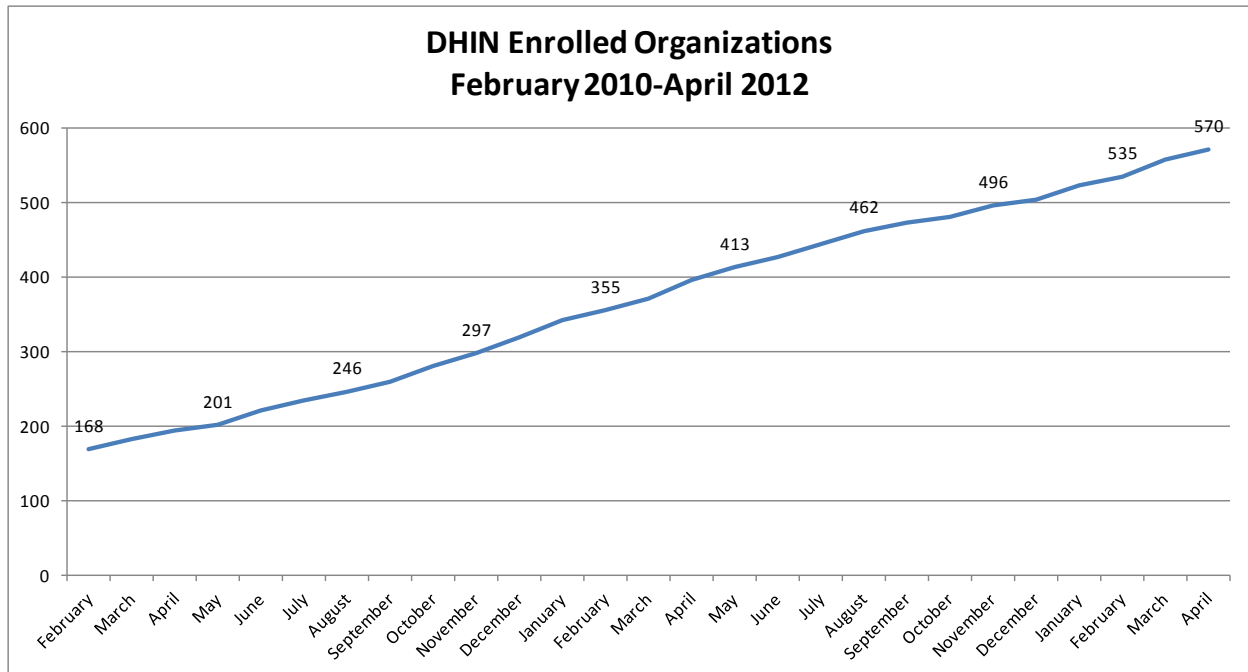
In April, DHIN launched its new website that includes a section exclusively for consumers featuring the following content:

- Practice search functionality listing practices enrolled in DHIN
- Provider search functionality listing providers enrolled in DHIN
- Advocacy information on PHR's and links for directions on how to set-up a PHR

In May 2012, DHIN will celebrate its 5th anniversary as a statewide health information exchange. A special celebratory event will serve as the launch for a broader, long-term consumer engagement campaign. This multi-channel campaign will feature consumer-facing messages emphasizing the value that DHIN has brought to the citizens of Delaware and their ability to request their own data.

Finally, DHIN is coordinating a consumer market research initiative to gain valuable insight as to consumer awareness of DHIN services and corresponding consumer preferences. The qualitative and quantitative phases of this study will be completed between April and July of 2012. The results of this study will establish a quantifiable baseline for consumer engagement with DHIN and its services. Subsequent surveys will help our team refine our strategies in the area of consumer engagement, maximizing the effectiveness of our efforts in this critical area.

ii. Increase Provider Engagement and Adoption



Per the above charts, DHIN continues to build on its outstanding track record of success for engaging Delaware's health care professionals and institutions. By way of background, the organizations enrolled in the DHIN include private practices, hospital departments, state and private long-term care facilities, short-term rehabilitation facilities, hospices, and skilled nursing facilities. It is important to note that the number of enrolled organizations has increased 218% since February 2010. Correspondingly, enrollment of providers has increased from 10% in 2008 to 80% at the end of fiscal year 2011. The penetration rate as of April 2012 was 92% and is expected to be at 95% by the end of FY 2012 (June 30, 2012).

This success is a direct result of several best practices, not the least of which is the intensive research and survey activities conducted prior to the network's launch in May 2007. This research made it abundantly clear that Delaware's health care professionals valued access to patient results more than any other service that a statewide health information exchange could offer. In 2009, about two years after the network launched, "Patient Query" functionality was added to the network which helped generate the most significant spike in provider enrollment. Delaware's state-wide health information network was designed with the needs and interests of the ultimate end users in mind and its on-going growth reflect this continued focus on Delaware providers. The DHIN is an information network that is easy to use and delivers a valued product to Delaware's health care professionals. Achieving current penetration levels would not be possible otherwise.

The actual mechanics of enrolling practices continues to be aided by a collaborative effort between the state, the University of Delaware and the Medical Society of Delaware. This collaborative effort has produced a list of Delaware providers and their practices that DHIN Provider Relationship Managers leverage for recruiting and engaging new health care professionals. Additionally, as DHIN has expanded its roster of results providers (100% acute care hospitals and 5 labs and radiology firms in 2012), these relationships provide additional channels for recruiting more enrollees. The DHIN also continues to leverage its relationship with Delaware's Regional Extension Center in coordinating with their efforts to support Delaware practices in meeting Meaningful Use criteria. The natural overlap of these two organizations serves the mutual needs of both organizations, including DHIN's priority to identify and enroll practices and providers not currently enrolled in DHIN.

DHIN also attends and has a presence at several large meetings and events throughout the year that feature Delaware medical professionals. DHIN staff members, who may be attending as featured speakers or as exhibitors, leverage these opportunities to promote awareness of DHIN and its services. Correspondingly, successes begets success and as medical professionals have incorporated the DHIN as a means for providing care for their patients, their formal and informal endorsements and recommendations across their professional networks continue to drive new enrollments and enhance our provider penetration rate. Finally and in the best traditions of the organization, DHIN stays close to understanding the ever evolving preferences and needs of providers with professionally designed market research campaigns and surveys. This feedback and the direct counsel from providers that serve on DHIN committees and the Board Directors provide essential information for maintaining the DHIN's status a valuable product, helping Delaware providers more effectively serve the needs of their patients.

Business sustainability of services directly offered or enabled

Pricing And Revenue Model

The sustainable revenue model is designed to generate revenue associated with the value that participants receive for DHIN services. For financial sustainability, revenue must at least cover the ongoing costs associated with providing those services. If there is a determination that a particular service will be offered at a loss, the DHIN will ensure that another service that is offered provides enough value to cover that loss.

The current revenue model for financial sustainability is based on the following pricing structure:

- Data Senders – Tiered value model
- Payers – Per Member Per Month
- State of Delaware – Same funding rates as other data senders and payers

Data Senders

Hospitals and reference laboratories that use DHIN to distribute reports and results gain value from reducing and eventually eliminating paper-based processes, faxing and the administrative costs associated with these manual processes. Furthermore, the ability to use DHIN to interface with physician practice EHR systems eliminates the work to build and maintain interfaces with each individual practice.

The benefit of DHIN as a clinical results/reports distribution method is enhanced by expanding the types of transactions and the volume of transactions that are delivered through DHIN. Additionally, hospital clinical personnel are users of DHIN information. Medications, clinical results and reports from other data senders are most valuable to hospital-based providers as they care for patients with whom they may not have a previous and/or long-term clinical relationship.

Facebook's revenue model is to allow the end users to use the product for free, and generate revenue from advertisers who advertise to the users. The more users Facebook enrolls, the greater the audience for Facebook's advertisers, and thus the greater potential for revenue for Facebook. Analogous to Facebook, DHIN does not charge the users of its system for its core services (results delivery and query). This was done in order to promote widespread adoption of the HIE. This strategy has increased the universe/customer base for data senders to send to results to (see the Increase in Provider Relations and Adoption graphs in the previous section), thus significantly increasing DHIN's revenue stream from data senders.

Pricing Model - Transaction Fees

In FY2011, the data senders agreed to move to a transaction-fee based model that is based on the value they derive from each transaction. The tiers are as follows:

- Tier 1: Results/reports sent to DHIN for which the recipient of the result is not a DHIN user. There is assumed value from sending the result to DHIN because it is available for query

which saves the data sender from having to send copies of the result to a provider who needs it in the future. The cost for such results/reports is \$0.02 per transaction sent to DHIN that is available for query.

- Tier 2: Results/reports that are sent to DHIN and were delivered to a DHIN user who has not yet “signed-off” to exclusively receive results/reports through DHIN. The cost for such results/reports transactions is \$0.10 per transaction sent to a DHIN user.
- Tier 3: Results/reports that are delivered by DHIN to a signed-off practice for which DHIN is the only way that practice receives results/reports from the participating data sender. The cost for such results/reports transactions is \$0.25 per transaction sent to a DHIN user who has “signed-off” on DHIN. This tier is priced highest and also has the most value to data senders because they can eliminate the costs of maintaining the paper-based option. One hospital has reported that it costs them \$1.80 to deliver a result outside of the DHIN environment, creating a clear benefit case.

Based on the current transaction volumes among current data senders, this model is forecast to generate \$2.4 million dollars in FY2015. DHIN has recently come to agreement with the last of the major non-participating hospitals, and continues to have discussions with the smaller radiology and laboratory facilities.

In the future hospitals may pay for a menu of value added services, such as medication history, electronic orders, and referrals and consultations. The fee structure would be based on the number of users from each hospital.

Note that the tiered approach assumes that 75% of transactions sent to DHIN are delivered to a signed-off DHIN user by 2015. The rate of deliveries to signed off practices increased from 30% in FY2010 to 48% in FY2011.

Regional data senders are a potential revenue stream using a similar or slightly modified pricing model. Revenue from this group has not been included in the pro forma financial projections.

Payers

Public and private insurers should pay on a fair share principle because they receive significant value from DHIN. The State of Delaware will not pay operating expenses for DHIN from the Bond Bill in the future; however, this revenue model includes the State of Delaware as a purchaser of DHIN services as a health care payer for Medicaid and for State employees, retirees and potentially other populations, such as the prison population.

Payers benefit from DHIN’s query/patient search functionality with regard to avoided costs associated with reduced duplication of tests being performed and prescriptions being filled. As stated previously, for the last several years the State and other payers have benefited from DHIN, and DHIN is now aligning the financial support structure with the value being received. Furthermore, the reduced complications

from duplicative therapies can also reduce emergency visits, readmissions and further testing and treatments resulting from those complications.

This revenue model is premised on health plans paying a fee to support the DHIN due to its significant potential for savings and improved patient care/quality, as evidenced by the above-referenced data. Health plans can also receive significant value resulting from access to DHIN's clinical data, providing more timely information than current claims data.

In the future, health plans could become users of DHIN with a limited ability to query their own members to support disease management, quality monitoring and clinical decision support. A plan for health plan access and very clear usage requirements must first be defined.

Pricing Model – Per Member Per Month

DHIN has proposed a per member per month fee structure to health plans to support the HIE. The projections in this plan forecast over \$5 million per year from the three major payers (Medicaid, Blue Cross Blue Shield, and Aetna).

Gaining commitment from all health plans is a challenge. Medicaid has obtained conditional CMS approval to fund DHIN, and private health plans are looking toward Medicaid to determine their commitment. DHIN is working with the State Employee Benefits Advisory Council to follow the Medicaid lead. DHIN is currently in conversation with private health plans, which are seeking to ensure that the value they receive is greater than the fees. The payers are already receiving significant savings through the elimination of duplicative and unnecessary tests, but they are not yet financially supporting DHIN. Establishment of payer fees consistent with the plan and DHIN's statutory authority is expected to be completed in FY2012².

Revenue Projections

The table below illustrates the change in funding structure described in this plan. To date, DHIN has achieved 88% of the revenue set forth in the plan and continues to work towards achieving 100% revenue achievement.

DHIN Revenue, FY2011 – 2015 Forecast, (\$000)					
	FY2011	FY2012	FY2013	FY2014	FY2015
Revenue					
Bond Bill	1,152	2,997	0	0	0
Data Senders	1,402	1,906	2,702	3,301	3,740
Payers	0	0	4,110	5,411	5,411

² SB231 gives DHIN authority ". . . to establish reasonable fees or charges for provision of its services to nonparticipant third parties."

Providers	0	0	0	0	0
Total Revenue	2,554	4,903	6,811	8,712	9,152

Assumptions and Risks:

- In FY2012 the State of Delaware is providing funding through the Bond Bill.
- For new large Data Senders FY2013-2015 the Data Sender revenue is based on average DHIN delivery/sign-off behavior.
- 6% of the revenue for FY2012 (increasing to 14% in FY2015) is based on signing up Nemours/A.I. DuPont Hospital for Children and Nanticoke. DHIN has signed up 100% of acute care hospitals in the state.
- For existing large data senders, funding is based on delivery metric drivers which vary with each data sender.
- New labs and radiology centers are based on assumed set up and operating costs.
- 1% of the revenue is based on signing up additional small labs and other data senders.
- 18% of the revenue for FY2013 (increasing to 28% in FY2015) is based on signing up Health Plans and Insurers.
- 39% of the revenue for FY2013 (decreasing to 30% in FY2015) is based on signing up the State of Delaware Medicaid and for Employees and Retirees.

Section 3 – Program Evaluation

Introduction and Overview

The Delaware Health Information Network (DHIN) was created by the Delaware General Assembly in 1997 as a public instrumentality of the State to advance the creation of a statewide health information and electronic data exchange network for public and private use. DHIN was initially funded through state and private monies and a demonstration project contract from the Agency for Healthcare Research and Quality (AHRQ). In March, 2010 DHIN was designated by Office of the National Coordinator for Health Information Technology (ONC) as Delaware’s entity for Health Information Exchange.

As a part of that designation, DHIN is required to evaluate the impact of Health Information Exchange across the State of Delaware and document quantitative results, qualitative results and lessons learned. The purpose of the evaluation is to assess the nature and extent to which Healthcare Information Exchange (HIE) has had an impact across the state of Delaware with an emphasis on the following ONC priority programs for all states:

- Laboratories delivering electronic structured lab results
- Pharmacies participating in e-Prescribing
- Providers exchanging patient summary of care records

Other important areas to address include submission of Public Health Data, improvements in cost and quality of care, and sustainability of health information exchange initiatives. In addition, the evaluation is expected to document the unique aspects and benefits experienced by the State of Delaware, so that successes can be shared across states.

DHIN is required to provide its evaluation plan to the ONC by May 8, 2012 as part of its progress report, with initial evaluation results submitted in May 2013. A final evaluation will be submitted after funding close, approximately October 2013. DHIN has contracted with Maestro Strategies to design and conduct the evaluation as an independent assessment of the progress made and value realized.

The evaluation approach for key measures identified will be conducted using multiple methods. This will include but not be limited to user and transaction data from the HIEs, comparison with publicly available data, interviews with users and DHIN staff, and analysis of survey results. A data collection plan has been defined to ensure data required to support the measurement is collected with appropriate frequency to support each measurement.

The remainder of this document outlines the project objectives, approach, and evaluation criteria planned by Maestro to assist DHIN with the evaluation and report requirements.

Evaluation Objectives and Approach

The evaluation approach is designed to incorporate the current DHIN Strategic and Operating Plan (SOP), the evaluation of DHIN done for AHRQ in September of 2011, and industry research regarding progress of health information exchanges/industry lessons learned from Maestro experience. This will help identify key accomplishments relative to ONC's PIN as well as additional results unique to DHIN.

The approach includes both a discovery and validation process. Discovery will incorporate ONC requirements as well as metrics identified from previous DHIN studies.

The evaluation aims include:

- Develop the methodology framework, utilizing data sources available from DHIN internal sources, publicly, or through agreement from members (including member surveys), to measure benefits, assess accomplishments, capture new knowledge, document challenges, and identify best practices as described above
- Communicate the value story of the DHIN related to cost, quality, efficiency and other outcome measures
- Report findings related to DHIN accomplishments and related measures for DHIN review into ONC progress report (May 2013) and final report (October 2013)

To achieve the evaluation objectives, the approach will include the following key steps:

Evaluation Definition and Design

The first step of the project is designed to understand DHIN current and planned accomplishments, and results. This includes reviewing DHIN Strategic and Operational Plan (SOP) and the findings of the

October, 2011 AHRQ evaluation report. Available data sources, including prior DHIN operating reports, HIE vendor system generated information, U. S. Census data, Center for Disease Control (CDC) data, and stakeholder provided data obtained during interviews and focus groups, have been reviewed. This has provided the basis from which the adoption rate, quality outcomes, efficiency improvement and other metrics that reflect the DHIN's accomplishments can be identified. , The measurements to be included for evaluation are detailed in the Evaluation Framework section.

In addition to measurement of specific quantitative and qualitative items, the report will document barriers to success and strategies for overcoming those barriers, as well as lessons learned by DHIN that can be leveraged by other HIEs. If during the actual measurement process, it is determined available data is not sufficient or adequate to support the planned measurements. If this occurs, appropriate adjustments in the measurement will be made to reflect the data.

Data Collection

This step will begin collection and analysis of data required to create each performance measure. Data from the baseline period will be gathered and initial metrics calculated for use in both the interim and final reports.

Key activities in this step include:

- Analyze information gathered from operational reports and publicly available statistics and map to DHIN specific values for the identified metrics
- Review and validate baseline measurements with DHIN Leadership and appropriate stakeholders
- Confirm data required for report development is available; modify evaluation plan as necessary
- Conduct qualitative review at appropriate time intervals
- Run required quantitative reports as required at appropriate intervals

Report Development and Finalization

This step will focus on developing the program evaluation report as laid forth in this document for both the interim period (May 2013) and the final period (October 2013) using information gathered in prior steps. Included will be the baseline statistics for comparative purposes

Evaluation Framework and Aims

In this section are listed the specific items to be evaluated in this plan. For each, a brief narrative describing the item and why it is important is included. Following the narrative for the items to be evaluated is a table that outlines the actual evaluation plan, and study design including:

- Category
- Program Priority Area
- Brief Description
- Study Population
- Numerator
- Denominator

- Baseline (“control group”)
- Qualitative Evaluation
- Data Sources

In general, quantitative analysis will be conducted using operational reports from the HIE vendor. These include but are not limited to transaction logs, audit logs, and provider counts. These will be supplemented with ONC-developed tools such as the Lab Survey, as well as vendor supplied reports from Surescripts around e-Prescribing. Finally, publicly available data (e.g. Census data to determine number of Delaware residents) will be used to provide meaningful denominators.

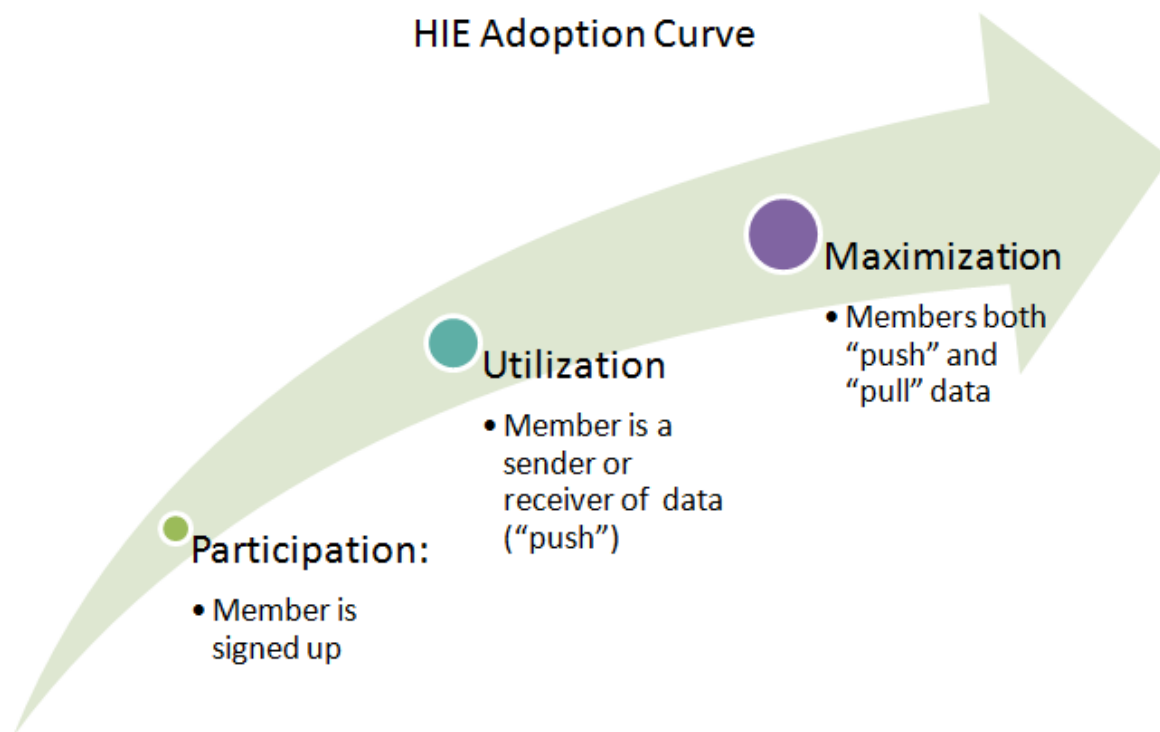
Qualitative evaluations will be accomplished through use of surveys conducted by DHIN to key stakeholders (labs, pharmacies, providers, hospitals, payers and others). In addition to specific quantitative and qualitative items identified in the evaluation plan, lessons learned related to each of the program priority areas will be related in the actual evaluation.

In general, the measures identified will encompass the performance characteristics required for any HIE to be successful. These include participation by both patients and providers (adoption), and value delivered to stakeholders including patients, providers and payers. Only when value is perceived will organizations and individuals agree to fund the effort. Lastly, the way in which HIE is funded will be studied over time to understand how adoption and value have driven the shift in the financial model for HIEs.

ADOPTION RATE

Foundational to sustainability for any Health Information Exchange is the level of participation by providers (labs, pharmacies, hospitals, physician practices and others). An HIE with poor participation is not sustainable. Measuring over time how adoption has grown and how it has impacted key care delivery factors for the Delaware population will point towards the viability of HIE. As exchange technology and capabilities have grown, it will be important to measure and understand how adoption has changed over time.

Multiple types of adoption drive value, so a single factor cannot be studied in isolation. Arraying level of adoption along a curve helps stakeholders understand the success of the initiative as well as the value they are receiving. As shown in the HIE Adoption Curve below, we propose to measure adoption at three different levels:



Adoption – Participation

The number of participants (those who are "signed up" with an HIE) is the first level of adoption – measuring growth in number of participants over time as well as the percent of the market participating for each cadre (such as labs, pharmacies, physician practices, etc.) will describe this phase. In addition, understanding the total patient population in the HIE's "medical trading area" that is participating (i.e. the number of patients who have some data in an HIE) will describe consumer adoption.

Adoption – Utilization

Utilization is the next tier of measurement for adoption. A provider may be "signed up", but how often do they receive results electronically, and how often do they send information electronically? Understanding the total number of transactions per time period studied as well as the number of transactions sent or received per entity (for each cadre) will indicate the degree of reliance on the HIE.

Adoption – Maximization

True realization of the value of HIE occurs when there is bi-directional exchange of information. Instead of a laboratory just "pushing" results to a provider, or one provider "pushing" summary care documents to another provider, all members of the HIE both "push" and "pull" data (i.e. query the HIE) for all relevant information about a particular patient. Understanding the number of times end users query the HIE will help determine to what degree the capabilities of HIEs are maximized. In addition, there are situations where a provider sees patients for the first time, and may not have access to the patient's medical history and other critical information (lab results, medication list, etc.) at the time of the visit.

That information would be available only if results were sent to the provider. Typically, providers must either telephone other providers or ask the patient about relevant medical information. However, providers that are members of an HIE can search for the patient and access any information available through the HIE by specifying their identity and reason for need to access the information. Additional information provided by the HIE that is not available immediately from other sources provides better care and can potentially avoid contraindicated care and unneeded tests/hospitalizations. When providers adopt HIE as their means for information sharing, there is greater value delivered to the community. We propose to measure maximization through evaluation of initial requests for data and increases in average queries per user.

REDUCTION IN HEALTHCARE DELIVERY COSTS

To drive adoption and sustainability, HIEs must provide value to the participants. Research supports the premise that the current lack of information exchange between providers, does result in unnecessary inpatient hospitalizations, possible adverse events (especially around medication allergies), and duplication of high-cost services.

Reduction in Duplicate High-Cost Tests

One area of focus around cost reduction involves duplicate high-cost tests being ordered for a patient during encounters in physician offices, in emergency departments and during inpatient stays in acute care facilities. Many of these tests, such as CT scans, MRIs and complicated lab panels, have very high associated costs. A provider's ability to see results from such tests as opposed to having to (re) order tests will result in reduced resource consumption providing overall value to the state through reduction in healthcare costs. Using DHIN data and experience, we will test the hypothesis that access to information will result in reduction in the number of high cost tests for the population included.

SUSTAINABILITY

ONC has stated ongoing sustainability of HIEs as a key priority. Understanding both costs of operating an HIE as well as sources of funding will be key to ensuring future sustainability. An analysis of sources of funding versus costs (both stand-up and operating) over time will be conducted to document the shift from governmental and grant funding to funding by those who receive value from HIE. Understanding and documenting lessons learned around developing a sustainable HIE model will be critical so that successful models can be developed for future HIEs.

Category	Program Priority Area	Description	Population Included	Numerator	Denominator	Baseline	Qualitative	Data Source(s)
Adoption Participation	Laboratories Participating in delivering electronic structured lab results. Excludes labs that do not share results. Includes State Health Department labs*	The level of participation (total number of HIE users compared to the number of providers) is a key measure of the value of an HIE. Adoption levels are stratified by key groups. Including Laboratory, Pharmacies, Providers, hospitals, Public Health and Consumers	All laboratories licensed in the State of Delaware	Number of laboratories delivering structured lab results	Number of laboratories licensed in the State of Delaware	Number of laboratories delivering structured lab results as a % of labs in state as of April 2012	Results from DHIN administered surveys, as appropriate	Lab Survey; user survey data
	Pharmacies participating in e-Prescribing*		All pharmacies licensed in the State of Delaware. Excludes pharmacies that are not dispensing drugs.	Number of Pharmacies receiving and processing ePrescriptions	Number of pharmacies licensed in the State of Delaware	Number of Pharmacies receiving and processing ePrescriptions as of March 2010	Results from DHIN administered surveys, as appropriate	Surescripts report; user survey data
	Providers exchanging patient summary of care records*		All licensed providers (per EP definition) in the State of Delaware	Number of providers exchanging summary of care records – stratified by method used (Direct, other technologies), and care record type (CCD, etc.)	Number of licensed providers (per EP definition)	Number of providers exchanging summary of care records as of March 2010	Results from DHIN administered surveys, as appropriate	HIE vendor operating reports: number of unique user IDs; user survey data
	Hospitals participating in sending or retrieving data including structured lab results, summary of care records and radiologic interpretations		All acute care facilities in the State of Delaware	Number of acute care hospitals participating in an HIE	Number of acute care hospitals in Delaware	Number of acute care hospitals participating in an HIE as of March 2010	Results from DHIN administered surveys, as appropriate	SDE Subscription Data; user survey data

Category	Program Priority Area	Description	Population Included	Numerator	Denominator	Baseline	Qualitative	Data Source(s)
	Number of Unique Patients in the HIE		All residents of the State of Delaware	Number of unique patients in the DHIN data repository and other HIEs who are Delaware residents	Number of Residents of the State of Delaware	Number of unique patients in the DHIN data repository as of March 2010		HIE vendor operating reports; US Census Projections
	Number of Providers enrolled in DHIN; signoffs per month		All licensed providers (per EP definition) in the State of Delaware	The number of providers who are signed up and who have acknowledged they will use electronic transmission only to receive results	Number of licensed providers (per EP definition)	The number of providers who are signed up and who have acknowledged they will use electronic transmission only to receive results as of March 2010		
Adoption - Utilization	Number of lab results delivered (pushed)	The number of results either sent (pushed) indicates the degree to which the HIE is being utilized	All lab transactions sent through HIE	Number of lab transactions (monthly)	None	Number of lab transactions March 2010	Results from DHIN administered surveys, as appropriate	HIE vendor operating reports; user survey data
	Number of prescriptions written electronically		All prescriptions sent electronically to a pharmacy	Number of prescriptions sent electronically (monthly)	None	Number of prescriptions sent electronically March 2010	Results from DHIN administered surveys, as appropriate	HIE vendor operating reports; user survey data
	Number of summary of care documents exchanged		All summary of care transactions	Number of summary of care documents exchanged	None	Number of summary of care documents exchanged as of March 2010	Results from DHIN administered surveys, as appropriate	HIE vendor operating reports; user survey data

Category	Program Priority Area	Description	Population Included	Numerator	Denominator	Baseline	Qualitative	Data Source(s)
	Number of immunizations reported to State Public Health Agency*		Number of providers who administer immunizations	Number of providers submitting immunization data electronically	Number of providers who administer immunizations per the DelVacc System	Number of providers submitting immunization data electronically in March 2010		Public Health Data
Adoption - Maximization	Requests for information outside of provider's normal access	Rate at which providers access information about new patients in order to provide treatment	All transactions through the DHIN	Number of providers requesting information for patients where results had not been previously received;	None	Number of providers requesting information for patients where results had not been previously received as of March 2010; - Utilize AHRQ report	Results from DHIN administered surveys, as appropriate	HIE vendor operating reports and audit logs
				Number of patients whose information was shared	None	Number of patients whose information was shared – as of March 2010		HIE vendor operating reports using de-identified data
Reduction in Healthcare Delivery Costs	Reduction in Duplicate High-Cost Tests	Identify high cost lab and radiologic tests, and look at number of results sent per unique patient in the DHIN to determine if reductions are occurring due to ability to access results	Top 100 high cost lab tests; top 100 high cost imaging studies	Total number of High Cost tests resulted – July 2012, 2013	Number of Unique patients in the DHIN	Number of high cost tests/unique patient as of March 2010	Results from DHIN administered surveys, as appropriate	HIE vendor operating reports (transaction logs); user survey data

Category	Program Priority Area	Description	Population Included	Numerator	Denominator	Baseline	Qualitative	Data Source(s)
Sustainability	Sources of Revenue	Analysis of funding sources over time based on timing of new service offerings and perceived value. provided	All revenues received for study period and baseline period	Revenues by source by time period	All Revenues for stated time periods	Breakdown of revenues by source for 12 month period ending March 2010	Results from DHIN administered surveys, as appropriate; mapping of revenue sources to timing of introduction of new functionality (e.g. lab results, ePrescribing, summary care records, etc.	DHIN Audited Financial Statements; user survey data
	Return-On-Investment	<p>Identify benefits to the spectrum of stakeholders including: Hospitals, Providers Health Plans and patients.</p> <p><i>Due to the sophisticated nature of this analysis, many variables are yet undefined and would be based on other data to be collected. As this analysis develops, DHIN will be able to replace the TBDs located in the columns to the right.</i></p>	TBD	TBD	TBD	TBD	TBD	TBD

Section 4 – Privacy and Security Framework

Correspondent to the Privacy and Security Program Information Notice issued on 3/22/2012, DHIN has reviewed the recommendations from ONC. In December 2011, DHIN began point to point exchange via the launch of the DIRECT platform to DHIN's user base. DHIN has been using an aggregated model for patient data since its launch in May 2007. Since DHIN employs both point to point and an aggregated model, it has completed both Template 1 and Template 2, as guided by the Privacy and Security PIN.

Template 1

HIE Architectural Model: Point-to-Point Directed Exchange

Domain	Description of approach and where domain is addressed in policies and practices	Description of how stakeholders and the public are made aware of the approach, policies, and practices	Description of gap area and process and timeline for addressing (if needed, use additional documents to describe and insert reference here)
Required to address			
Openness and Transparency	<p>The HIE does not have access to content of the point to point exchange and thus does not have the ability to monitor, audit, and provide controls over what data are exchanged.</p> <p>This inability to access the content of point to point exchange places the onus on the provider to discuss all information which is communicated point to point.</p> <p>In the State of Delaware, the DHIN Regulation on Participation and the Data Use Agreement are the governing documents which apply to both directed exchange and query-based exchange.</p> <p>The Regulation on Participation (Section 3.0: Privacy and security of personal health care information and obligations of participants) states that DHIN Direct address holders</p>	<p>DHIN posts on its website's Consumer page (www.dhin.org/consumer) the Data Use Agreement and Regulation on Participation.</p> <p>Users wishing to obtain a DHIN Direct address agree at the time of registration to be bound by DHIN's Regulation on Participation https://dhindirect.org/signup/. DHIN's Regulation on Participation can be found both on the DHIN Direct enrollment web page and in the Regulation on Participation (Title 1 of the Delaware Administrative Code, Section Mark 102) (http://regulations.delaware.gov/AdminCode/title1/100/102.shtml#TopOfPage).</p> <p>DHIN Direct address holders, who are also members of DHIN, already received at the time of their DHIN membership enrollment a <i>User Toolkit</i> with material to assist them in talking with patients about DHIN.</p>	N/A

	are responsible for complying with Federal and State laws regarding the communication of, plus the collection and disclosure of, protected health information.		
Collection, Use and Disclosure Limitation	<p>The HIE does not have access to the content of the point to point exchange and thus does not have the ability to provide this information to the consumer.</p> <p>In point to point communication, the individual initiating the communication is responsible for meeting all HIPAA requirements.</p> <p>The Regulation on Participation (Section 3.2.2) states that DHIN Direct address holders are responsible for complying with Federal and State laws regarding the communication of, plus the collection and disclosure of, protected health information.</p>	<p>Providers who sign up for a DHIN Direct address are required to be bound by DHIN's Regulation on Participation prior to receiving a Direct address https://dhindirect.org/signup/.</p> <p>DHIN posts on its website (www.dhin.org/consumer) its Data Use Agreement, Regulation on Participation and Access to Individually Identifiable Health Information policy.</p>	N/A
Safeguards	<p>DHIN has white-listed its own domain. Additionally, each user can establish a trust relationship directly with any providers from another HISP domain if they wish to communicate using DHIN Direct.</p> <p>Direct Security: POP3 and SMTP over SSL/TLS X.509 Certificates Digital Certificates, Public and Private key Unique Direct Username & Password</p>	<p>DHIN's website (www.dhin.org/consumer) outlines the security features DHIN users must adhere to in order to safeguard health data.</p> <p>Providers who sign up for a DHIN Direct address are required to be bound by DHIN's Regulation on Participation prior to receiving a Direct address https://dhindirect.org/signup/.</p>	N/A

	DHIN's Regulation on Participation includes a section regarding safeguards (3.2.3). Additionally, the Regulation on Participation also includes a provision (6.2) stating that users must comply with DHIN's data use agreement.		
Accountability	<p>Direct's technical specifications prohibit the ability to monitor the contents of Direct messages. Without this access, the HIE cannot validate through monitoring that the communications adhere to HIPAA or state privacy laws.</p> <p>The Regulation on Participation (Section 3.2.2) states that DHIN Direct address holders are responsible for complying with Federal and State laws.</p> <p>Additionally, both DHIN's Regulation on Participation (Section 3.2.11) and DHIN's Data Use Agreement describe reasons to terminate access as well as legal consequences for inappropriate use and access.</p>	<p>DHIN's Regulation on Participation, Data Use Agreement and Individually Identifiable Health Information policies (www.dhin.org/consumer) are posted on DHIN's website.</p> <p>Providers who enroll for a DHIN Direct address are required to be bound by DHIN's Regulation on Participation prior to receiving a Direct address https://dhindirect.org/signup/.</p>	
Optional To Address			
Individual Access			
Correction			
Individual Choice			
Data Quality and Integrity			

Template 2

HIE Architectural Model: Data Aggregation (HIE entities that store, assemble or aggregate individually identifiable health information, whether centrally or in a federated model)

Domain	Description of approach and where domain is addressed in policies and practices	Description of how stakeholders and the public are made aware of the approach, policies, and practices	Description of gap area and process and timeline for addressing (if needed, use additional documents to describe and insert reference here)
Required to address			
Individual Access	Policy – Access to IIHI – Section E.1.3. DHIN currently supports consumer requests for their information. Regulation for Participation 4.1.2. -	Ability to contact DHIN is communicated via collateral provided through providers and through web site. DHIN’s individual access policy and procedures are available at DHIN’s web site along with instructions for requesting access to see one’s own information on the network as well as to see who has viewed that information on the network www.dhin.org/consumer	N/A
Correction	Policy – Access to IIHI – Section E.4.1. Requests to amend or challenge data should be made to the data sending organization.	Ability to challenge/correct information via the data provider is communicated via collateral provided through providers and through web site. Instructions for corrections are available on DHIN’s web site www.dhin.org/consumer	N/A
Openness and Transparency	Policy – Access to IIHI – Section E.2.4. DHIN offers patients/consumers the means and opportunity to obtain an audit report that identifies which DHIN users accessed individually identifiable health information. Audits do not contain personal health information. Procedures in place to implement policy.	In the interest of transparency and openness, all participating DHIN organizations are required to identify themselves as a DHIN enrolled practices. Correspondingly, all practices are provided with talking points so that a clear and consistent message of what DHIN is and the corresponding role DHIN plays in healthcare can be	N/A

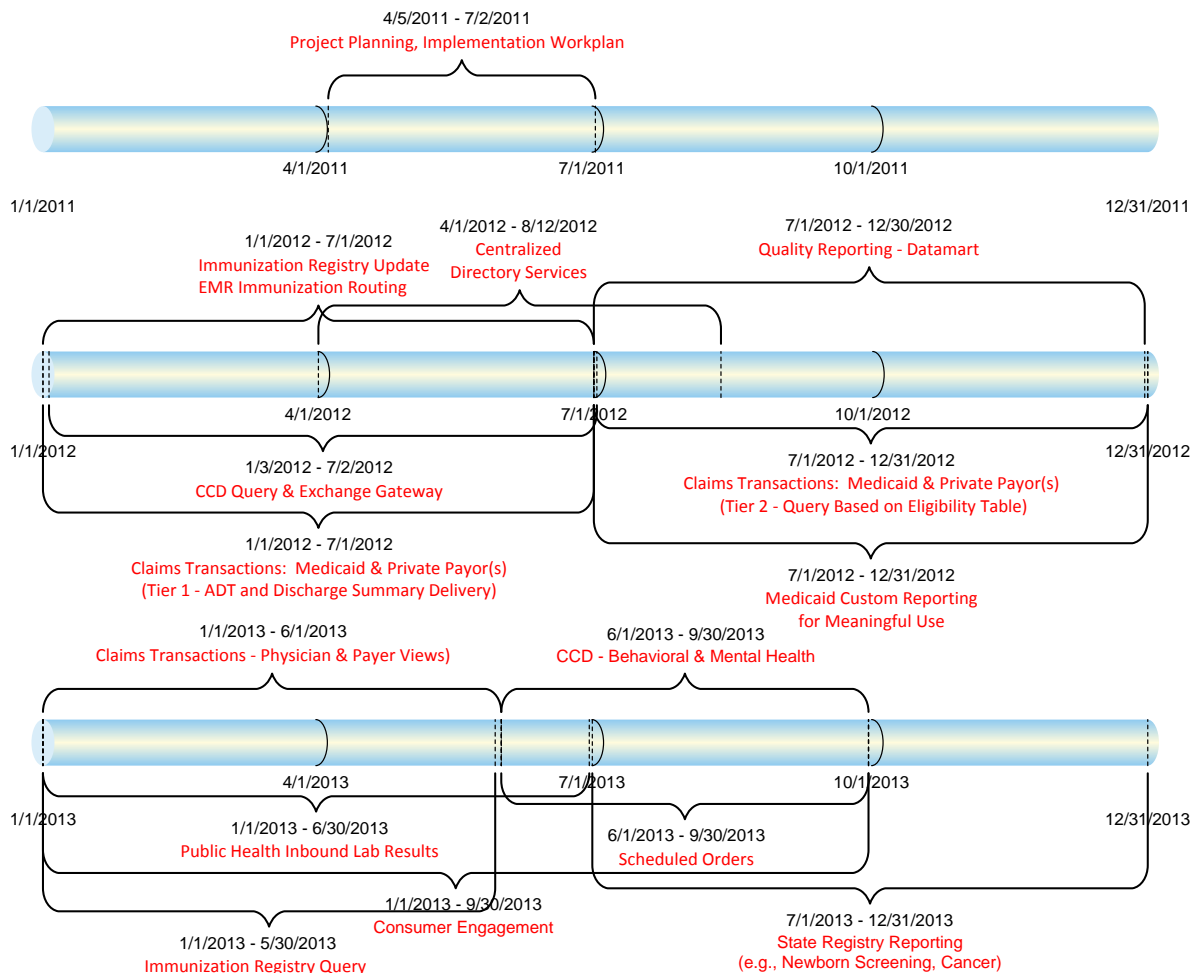
	State Law – State Freedom of Information Act law and process applies to DHIN’s operations, meetings, policies and procedures. Individual protected health information is exempt.	effectively shared with patients. Practices are also provided with opt-out forms and opt-out cancellation forms for patients who wish to not have their information viewable by search requests, or wish to rescind their opt-out requests. The consumer portion of DHIN’s web site also contains instruction on how to opt-out or to cancel opt-out.	
Individual Choice	Notice of Privacy Procedures outlines patients’ abilities to opt-out.	Information is posted on DHIN’s website as to how patients can opt out of query based exchange. Additionally, the DHIN Provider Relations team gives providers written material and training about the process to empower providers in cases where patients have questions.	N/A
Collection, Use and Disclosure Limitation	<p>Policy – Access to IIHI – Sec E.2. Outlines who should have access to e-PHI and user access levels.</p> <p>Policy – Access to IIHI – Sec D.1.2. DHIN users shall implement appropriate procedures to (1) inform patients that they use DHIN, and (2) inform patients of their right to non-participation in DHIN.</p>	Provider Relations team members train DHIN users and gives written material to DHIN enrollees describing access levels, uses and auditing process. Results are sent via directed exchange from the data sender to the ordering provider and those copied on the report. For those users engaged in query-based exchange, a pop-up notice advising users appears in certain areas upon user access attempts. Those users must provide justification for the reason of the query. Query based transactions are auditable and are audited regularly.	N/A

Data Quality and Integrity	Data Quality and Integrity is coordinated through the DHIN, HIM workgroup, and Project Management Advisory Committee. This includes representation from each data sending organization. When a new data sender is added to the exchange, the committee and workgroup members conduct a thorough process review to ensure patient identity matching and patient integrity is preserved.	As new data senders, features/functionalities are incorporated or added, DHIN, HIM, and PM will review as necessary to determine Level Testing of Effort for CMPI and Interfaces.	N/A
Safeguards	<p>Policy –Access to IIHI – Sec. 5 explains that DHIN monitors all system activities and performs regular audits.</p> <p>Policy – Included in DHIN’s personnel policy is a requirement that DHIN employees sign a confidentiality & non-disclosure agreement which also explains the consequences of unauthorized use of Protected Health Information.</p>	<p>Provider Relations team members include in their training sessions with providers a section on safeguards and give the providers collateral material describing these efforts.</p> <p>During a new employee’s orientation, DHIN’s Dir. Of Operations explains non-disclosure & confidentiality agreement and its purpose. A signed copy is kept in the employee’s personnel file</p> <p>There are up to 3 checks made to authenticate medical providers when enrolling in DHIN: -The 10 digit National provider Identifier number (NPI) is required when new providers enroll in DHIN. The number on the enrollment form is checked against the number from the national NPI registry.</p> <p>-Secondly, when the provider is associated with a hospital their provider code and information is checked against the provider code on-record with the corresponding hospital system. This information is</p>	N/A

		<p>available through the ProAccess system (the state HIE network)</p> <p>-Third, our provider enrollment forms request enrollees Delaware provider license number. The DE Provider License number is validated against the online registry source at this web address: https://dpronline.delaware.gov/mylicense%20weblookup/Search.aspx</p>	
Accountability	Regulation on Participation - Policy –Access to IIHI and DHIN Data Use Agreement	<p>Provider Relationship Managers train DHIN users and provide written material to DHIN enrollees describing access levels, uses and auditing process. Medical results are sent via directed exchange from the data sender to the ordering provider as well as those copied on the report. Users engaged in query-based exchange must attest as to an appropriate justification for viewing the query based results for a patient that is not currently associated with that physician.</p> <p>Correspondingly, these users are served a pop-up warning that re-enforces the protected nature of personal health information, how inappropriate use of this information is subject to Delaware law, constituting a Class D felony and punishable for up to 8 years in prison. Those users then submit their justification for the query which is recorded and subject to review in the regular auditing process.</p>	N/A

Section 5 – Project Management Plan

With regard to the functionality required in the State HIE Cooperative Agreement, the following timeline provides a description of the DHIN's implementation strategy for the use cases and the requirements set forth in the Cooperative Agreement.



Section 6 – Tracking Program Progress

APPENDIX B

Measure Definitions and Sources to be used in completing *Tracking Program Progress* (Appendix C)

PIN Priority	Numerator	Denominator	Source
1. % of pharmacies participating	Metric is 95% 184	194	Surescripts/NCPDP data Number of pharmacies that

PIN Priority	Numerator	Denominator	Source
in e-prescribing			<p>sent or received any electronic new prescription, refill request, or refill response messages in December of the former year via Surescripts network</p> <p>DHIN's analysis of the Surescripts/NCPDP data provided by ONC, DHIN identified seven fewer real pharmacies. Actual number of pharmacies (denominator) for Delaware should be 187.</p> <p>If using 187 as the denominator for Delaware, the percentage increases to 98%.</p>
2. % of labs sending electronic lab results to providers in a structured format ³	<p>65%</p> <p>15</p>	23	Note: CLIA OSCAR database listed at total of 36 hospital and independent labs. During the survey process, DHIN only identified 29 real labs.
3. % of labs sending electronic lab results to providers using LOINC	0	23	Lab survey
4. % of hospitals sharing electronic care summaries with (a) unaffiliated hospitals and (b) unaffiliated	<p>19.69%</p> <p>a. Hospitals outside their system – 19.69%</p> <p>b. Ambulatory care providers outside their system – 19.69%</p>		ONC provided data.

³ **Structured format:** Documentation of discrete data using controlled vocabulary, creating fixed fields within a record or file, or another method that provides clear structure to information (is not completely free text).

PIN Priority	Numerator	Denominator	Source
providers			
5. % of ambulatory providers electronically sharing care summaries with other providers	32.81%		ONC provided data
6. Public Health agencies receiving ELR data produced by EHRs or other electronic sources in HL7 2.5.1 format with LOINC and SNOMED.	0 - no		Working with EHR vendors to define technical specifications.
7. Immunization registries receiving electronic immunization data produced by EHRs in HL7 2.3.1 or 2.5.1 formats using CVX codes.	1 - yes		Division of Public Health. Note: Tested connectivity successfully.
8. Public Health agencies receiving electronic syndromic surveillance data from hospitals produced by	1 - yes		Division of Public Health

PIN Priority	Numerator	Denominator	Source
EHRs in HL7 2.3.1 or 2.5.1 formats (using CDC reference guide)			
9. Public Health agencies receiving electronic syndromic surveillance ambulatory data produced by EHRs in HL7 2.3.1 or 2.5.1 formats.	0		<p>Division of Public Health</p> <p>Note: Figure currently at zero, awaiting technical specifications from EHR vendors in order to begin work.</p>

APPENDIX C

See Appendix B for measure definitions and sources

Tracking Program Progress

	Report in first SOP update		Report January, 2013		Report January, 2014	
Program Priority	Status as of December, 2011	Target for December, 2012	Status as of December, 2012	Target for December, 2013	Status as of December, 2013	Target for end of grant period
1. % of pharmacies participating in e-prescribing	<p>95% (based on ONC metrics provided to DHIN)</p> <p>98% (if use the actual number of real</p>	99%		100%		

	Report in first SOP update		Report January, 2013		Report January, 2014	
Program Priority	Status as of December, 2011	Target for December, 2012	Status as of December, 2012	Target for December, 2013	Status as of December, 2013	Target for end of grant period
	pharmacies in Delaware)					
2. % of labs sending electronic lab results to providers in a structured format ⁴	65%	70%		75%		
3. % of labs sending electronic lab results to providers using LOINC	0%	10%		20%		
4. % of hospitals sharing electronic care summaries with unaffiliated hospitals and providers	19.69%	45%		55%		
5. % of ambulatory providers electronically sharing care summaries with other providers	32.81%	40%		50%		
6. Public Health agencies receiving ELR data produced by	No	No		Yes		Yes

⁴ **Structured format:** Documentation of discrete data using controlled vocabulary, creating fixed fields within a record or file, or another method that provides clear structure to information (is not completely free text).

	Report in first SOP update		Report January, 2013		Report January, 2014	
Program Priority	Status as of December, 2011	Target for December, 2012	Status as of December, 2012	Target for December, 2013	Status as of December, 2013	Target for end of grant period
EHRs or other electronic sources. Data are received using HL7 2.5.1 LOINC and SNOMED. Yes/no or %						
7. Immunization registries receiving electronic immunization data produced by EHRs. Data are received in HL7 2.3.1 or 2.5.1 formats using CVX code. Yes/no or %	Yes	Yes		Yes		Yes
8. Public Health agencies receiving electronic syndromic surveillance hospital data produced by EHRs in HL7 2.3.1 or 2.5.1. Yes/no or %	Yes	Yes		Yes		Yes

	Report in first SOP update		Report January, 2013		Report January, 2014	
Program Priority	Status as of December, 2011	Target for December, 2012	Status as of December, 2012	Target for December, 2013	Status as of December, 2013	Target for end of grant period
9. Public Health agencies receiving electronic syndromic surveillance ambulatory data produced by EHRs in HL7 2.3.1 or 2.5.1. Yes/no or %	0%	0% Note: Anticipating receiving technical specifications from EHR vendors in the fall.		10%		10%

Section 1.4 Phasing

DHIN first went live in sending in delivering results in May 2007. As part of the grant submission, DHIN included an operational plan that was approved in June 2010. Because DHIN was an operational HIE prior to the issuance of the grant, the phased approach was not part of DHIN's operational plan.

Conclusion

DHIN and its stakeholder community are proud of the results reported in this update and are pleased to provide an update on those results to ONC. This grant has also allowed DHIN to share its best practices and lessons learned amongst the key HIE disciplines in order to facilitate rapid HIE implementation in other states. We look forward to working with ONC and the project team throughout the remainder of the grant to further identify issues and opportunities so that ONC can communicate solutions to those issues as other states encounter them in the future.

Attachment 1

DHIN Information Request Policy and Procedures for Consumers

In the interest of better engaging Delawareans with their health care, DHIN will provide a copy of a requesting patient's medical result(s)/health record within 10 business days of receiving the request. Requests may be made by mail or in-person at DHIN's office of operation.

Requests made by mail must include a fully completed and signed "My DHIN Health Records" form:

- Stipulating the request for DHIN patient information (e.g. specific dates, results, all result information, etc.) ;

- Listing the Full Name, Current Residential Address, Date of Birth and Social Security Number of the requestor;

- The form must be notarized, featuring a raised seal, verifying the identity of the person making the request;

- The form must indicate the medium in which the results should be provided (for example, paper copy, compact disc/CD or external memory drive/jump drive);

- If the request is for DHIN to provide the material on a CD or jump drive and the requestor does not provide their own CD or jump drive, the requestor will need to cover the material costs of the medium. The charge for a DHIN provided CD is \$5 whereas the charge for a DHIN provided jump drive is \$10. Requestors will need to provide a personal check made payable to the Delaware Health Information Network in the appropriate amount. Requests will not be fulfilled until any appropriate payments are received by DHIN and will not be fulfilled via e-mail in deference to information security concerns;

- The form must indicate how the material will be fulfilled – by mail or will they be picked-up in person at DHIN offices during normal business hours;

- In addition to the fully executed form, the requestor must provide two forms of ID including a front and back copy of at least one official government issued ID (driver's license, Passport, military ID, Visa/Immigration documents, etc.). The other ID may be an employee ID, membership card, etc. A front and back copy must be provided for this ID, as well;

- The official state ID will be checked for a signature to make sure that signature matches the signature on the request form;

- If the request is for the response to be mailed, the fulfillment material will be sent via certified mail to the address on the official state ID;

Requests that are made in person at DHIN's office will be notarized on site by appropriate DHIN staff provided the requestor completes and signs the request form and can provide the corresponding forms of identification.

DHIN will not complete requests for patient information made by a 3rd party unless:

- The 3rd party is a parent or guardian of the patient and can provide appropriate documentation proving that relationship;

- The 3rd party requestor has Power of Attorney corresponding to the care of the patient and can provide appropriate documentation proving said relationship.

DHIN will consult with State Attorney General's office to confirm appropriate documentation of relationship for 3rd party requests has been received by DHIN. In the case of an approved 3rd party, the fulfillment of the materials will be provided within 10-15 business days, allowing for appropriate time for review of documentation by State Attorney General's office.

DHIN will not provide any patient information to a 3rd party that is subject to restriction by law (e.g. reproductive health information for minors 12 and older or employers).

Attachment 2

Policy: Access to Individually Identifiable Health Information

Policy Number: 0901

Original Effective Date: 03-17-2009

Current Revision Effective Date: 03-17-2011 Current Review Date: n/a

A. Background

A.1. The Delaware Health Information Network, (DHIN) is a public/private partnership created to facilitate the electronic exchange of health information between health care entities. DHIN provides fast, secure and reliable exchange of health information among health care facilities and clinicians across the state. DHIN is not a medical database or an electronic medical record. It is a mechanism to facilitate the movement and delivery of patient health information among those with a need to know. The design and implementation of DHIN include state-of-the-art security precautions to safeguard personal health information.

B. Purpose

B.1. The purpose of this policy is to:

B.1.1. Provide information about patients'/consumers' rights regarding the use and disclosure of their personal health information.

B.1.2. Maintain an appropriate level of security to protect patient data from unauthorized access and disclosure. This policy defines the access controls and parameters necessary to achieve this protection and to ensure the secure and reliable operation of DHIN.

C. Scope

C.1. This policy is applicable to all users and member organizations of DHIN. All users of DHIN, senders and receivers of data, have signed and agreed to the DHIN Data Use Agreement and Business Associate Agreement. This policy does not supersede or replace any Health Insurance Portability and Accountability Act (HIPAA) privacy and security policies in use by individual DHIN users and member organizations.

C.2. All participating DHIN hospitals' privacy policies have been reviewed and are inclusive of electronic exchange of health information. This applies to delivery and query of information through DHIN for the purposes of treatment, payment or operations/administrative actions.

D. Definitions

D.1. Access Controls – system level security that grants authorization to view personal health information in DHIN.

D.2. Auditing – the logging and monitoring of all system activity, including: user log-in identification, user name, user organization, date and time, patient account that was accessed, and type of records viewed by user.

D.3. Health Care Provider—health professionals licensed in Delaware with the authority to order or prescribe clinical tests and diagnostics, including physicians as defined by Title 18, Section 1861(r) of the Social Security Act, and clinical medical professionals who are licensed to diagnose and treat patients under the supervision of such physicians.

D.4. Data Contributing Organizations – those health care facilities that send clinical data (e.g. lab results) to health care providers/clinicians through DHIN.

D.5. Users – those who enroll in DHIN to receive clinical results and reports. DHIN users are clinicians and their designated staff, who must agree to maintain the privacy and security of the information they obtain from DHIN. DHIN users receive clinical results and reports free of charge and, when available, may also query DHIN for clinical history.

D.6. Member Organizations – those who are sending data into the health information exchange as well as those who benefit from the system, such as health plans and employers. Member Organizations have a responsibility to DHIN both financially as well as to ensure accurate delivery of data into the system for consumption by DHIN users for the delivery of clinical care.

D.7. User Roles – rules defined by DHIN and assigned to users, determining an individuals’ level of access to personal health information through DHIN.

D.8. User Authentication – requirements for users to gain authorized access to the DHIN application.

D.9. Query – allows an authorized user who has an established relationship with a patient to search for clinical information for that patient available through DHIN on a need to know basis.

D.10. Expanded Query Access – allows a user to temporarily extend their access rights under defined parameters to view clinical information available through DHIN on a need to know basis.

D.11. Need to Know – in order to safeguard patient/consumer privacy, DHIN users shall receive access only to the minimum functions and privileges required for performing their jobs.

D.12. Individually Identifiable Health Information –a subset of health information, including demographic data and past, present, or future health condition information collected from an individual that is created or received by a health care provider participating in DHIN.

D.13. HIPAA – the Health Insurance Portability and Accountability Act (HIPAA) designed to help protect privacy of a patient/consumer’s protected health information

E. Patient/Consumer Privacy

E.1. Notice to Patient/Consumers Regarding DHIN

E.1.1. Patient/consumer privacy is of critical importance. DHIN complies with state and federal laws, including HIPAA, as applicable. With the assistance of Delaware’s privacy officers, hospitals, legal counsel and the DHIN consumer advisory committee, DHIN has established a policy that considers the patients’ rights and expectations while balancing the need for health care providers to have information that enables them to make informed decisions and ultimately provide better quality health care services.

E.1.2. DHIN users shall implement appropriate procedures to (1) inform patients that they use DHIN, and (2) inform patients of their right to non-participation in DHIN.

E.1.3. DHIN shall make available to users tools necessary to respond to patient inquiries about DHIN.

E.2. Uses and Disclosures of Individually Identifiable Health Information

E.2.1. Disclosure of Individually Identifiable Health Information. DHIN patient/consumer information is not sold or disclosed for any activity that may support marketing to the individual nor is individual information provided and/or used for mailing lists.

E.2.2. Query Access. Only users enrolled in DHIN who have an established relationship with a patient will have access to that patient’s information available through DHIN. Emergency care personnel will have access to DHIN whereby they can access patient records in emergency care situations on a need to know basis.

E.2.3. Expanded Query Access. Users may expand their access to patient information by requesting to establish a relationship with a patient in DHIN. Users are required to log a reason for the relationship and set a defined time period for access, not to exceed six (6) months. Refer to the Expanded Query Access (Section F.6) for specific details related to this function.

E.2.4. Audit Reporting. Patients/consumers are provided the means and opportunity to request an audit report that identifies which DHIN user(s) has accessed their individually identifiable health information through DHIN. Audit reports will not contain any personal health information. Specific procedures shall be established to respond to requests for audit reports.

E.2.5. Compliance with Law. All disclosures of individually identifiable health information through DHIN and the use of such information obtained from users of DHIN shall be consistent with all applicable federal and state laws and regulations and shall not be used for any unlawful discriminatory purpose. Violations of privacy are subject to immediate termination of access to DHIN up to and including legal action in accordance with DHIN's privacy policy and with all applicable federal and state laws and regulations. Pursuant to the DHIN Statute, inappropriate access is a criminal offense that could be a Class D felony punishable by eight (8) years imprisonment, fines and penalties for each offense.

E.3. Patient/Consumer Non-Participation

E.3.1. Patients/consumers may decide not to participate in DHIN.

E.3.2. Non-participation will result in personally identifiable health information not being available to users (including emergency personnel) upon a query or expanded query.

E.3.3. Patients/consumers may choose to participate in the system again at any time.

E.3.4. DHIN will develop specific procedures to process non-participation requests, as well as requests to begin participating again.

E.3.5. Users should adopt procedures for notifying DHIN of requests from patients/consumers not to participate. DHIN shall respond in a timely manner and according to the procedures that are established.

E.4. Amendment of Data

E.4.1. In accordance with HIPAA, patients/consumers are provided the means to challenge and amend their individually identifiable health information. Requests to amend data shall be made to the data contributing organizations; DHIN does not have the authority or access to amend individually identifiable health information.

F. Information Security

F.1. Access Controls

F.1.1. Only authorized users are granted access to DHIN, and users are limited to specifically defined, documented and approved levels of access rights.

F.1.2. Access control to DHIN is achieved via identifiers that are unique to each user and provide individual accountability and enable tracking.

F.1.3. Access rights are based on user roles and job responsibilities. The health care provider enrolled in DHIN is responsible for creating staff accounts and assigning user roles to those who work for them. Users should be granted access to information on a need to know basis. That is, users should only receive access to the minimum functions and privileges required for performing their jobs.

F.1.4. Users will be required to acknowledge and accept the Terms and Conditions of Use statement prior to logging into the application.

F.1.5. Users will be held responsible for all actions conducted under their sign-on.

F.1.6. Any user accessing the DHIN application must be authenticated. The level of authentication will correspond appropriately to the designated access rights.

F.1.7. When a user is inactive for a period of time, defined by DHIN and consistent with HIPAA, the application will automatically time-out. Users will then be required to log on again to continue usage. This minimizes the opportunity for unauthorized users to assume the privileges of the intended user during the authorized user's absence.

F.2. User Authentication

F.2.1. To obtain access to the DHIN application, an authorized user must enter his/her unique user identification and supply an individual user password.

F.2.2. To obtain a new password from DHIN, users must be able to provide the answers to unique questions selected and answered by the user at the time of set-up.

F.2.3. All users will be required and prompted to change their passwords at a time interval defined by DHIN and consistent with HIPAA.

F.2.4. Passwords must be promptly changed if it is suspected of being disclosed to unauthorized parties.

F.2.5. At the time a user is no longer associated with or employed by a member organization, the member organization is required to terminate the user's access to DHIN.

F.3. User Roles

F.3.1. DHIN will define, document and maintain user roles created in the application and establish a process for periodic review.

F.4. Access Rights

F.4.1. Users will be defaulted to have access only to their organization's data. Only pre-defined and approved users will be allowed to obtain expanded access to individually identifiable health information through DHIN.

F.4.2. Expanded Query Access is an access level that enables a user to temporarily expand their standard security rights to view patient information available through DHIN on a need to know basis. Refer to Section F.6 —Expanded Query Access for information specific to this function.

F.5. Audit Controls

F.5.1. DHIN logs and monitors all system activity, including: user log-in identification, user name, user organization, date and time, patient account that was accessed, and type of records viewed by user. Audit reports do not contain personal health information.

F.5.2. DHIN shall audit access to individually identifiable health information on a regular and scheduled basis to ensure appropriate use of the system. Procedures shall be established to define this process.

F.5.3. Patients/consumers are provided the means and opportunity to request an audit report of who has accessed their health information through DHIN. DHIN shall establish specific procedures to respond to patient requests for audit reports in a timely manner.

F.6. Expanded Query Access

F.6.1. User Requirements

F6.1.1. The right of a user to obtain expanded query access is established by the DHIN user roles.

F6.1.2. If expanded query is utilized, the user must indicate a reason, from a pre-populated list of options, as to why they have expanded their access rights.

F6.1.3. Each time expanded query is utilized, the user must also indicate the period of time in which they need to have access to the patient's data, from one time to a period of time not to exceed six (6) months.

F.6.2. Auditing

F6.2.1. DHIN logs and monitors all expanded query access activity, including: user log-in identification, user name, user organization, date and time, patient account that was accessed, the reason the user utilized expanded query, time period for which access was established, and the type of records viewed by user.

F6.2.2. Patients/consumers are provided the means and opportunity to request an audit report of who has accessed their health information through DHIN, including utilization of expanded query. Audit reports do not contain personal health information. DHIN shall establish specific procedures to respond to patient requests for audit reports in a timely manner.

Attachment 3

DHIN Regulation On Participation

1.0 Statutory Authority: This regulation is authorized by Title 16 Chapter 103.

1.1 The Delaware Health Information Network [“DHIN”] was created by statute, 16 *Del.C.* Ch. 99, Subchapter IV, to be a public instrumentality of the State of Delaware to promote the design, implementation, operation and maintenance of facilities for public and private use of health care information. The DHIN is operated through a Board of Directors. In keeping with the purpose, it is now more convenient to promulgate a regulation that will provide the requirements of participation in the DHIN and replace the numerous written documents among the participants and the DHIN. The regulation also seeks to clarify the obligations, requirements, permitted use and privacy of data for the participants.

1.2 As use in this regulation, the term “DHIN” refers to the entity unless the context refers to the electronic interchange system operated and maintained by the entity. Unless otherwise required any action by the entity shall be by majority vote of the quorum of the present members of the Board of Directors [“Board”]. Meetings of the Board may include members that are participating electronically or telephonically, as long as the public can hear or observe the participation of such members.

2.0 Participation and withdrawal.

2.1 Participation in the DHIN is voluntary and is commenced by filing with the Executive Director [“Director”] of the DHIN a document that is known as an application for participation agreement [“Application”]. The Application shall: identify the individual or entity in detail, provide its healthcare activity and purpose, identify the individual or individuals that have the authority to bind the entity and conduct its business affairs, and include such other information as may be required by the Board. The Participation agreement shall also contain a statement that the entity agrees to be bound without reservation by this and other regulations, policies and/or procedures that involve the DHIN.

2.2 The participation agreement along with other information that may be reasonable as determined by the Director and the Executive Committee [“Committee”] of the Board shall be reviewed by the Director and the Committee to their satisfaction. The Executive Committee may request additional information or may grant initial participation to the applying entity subject to certain conditions. The initial participation determination is subject to a subsequent ratification by the Board. If no action is taken by the Board during its next two regular meetings with a quorum present, the Board is deemed to have ratified the initial participation of the applying entity. If the Committee denies initial participation to an applying entity, it will provide the reason or reasons for denial. After such denial, the applying entity may request the Board reconsider the Committee’s denial. If the Board denies reconsideration, the applying entity may then seek legal review in accordance with 29 *Del.C.* Ch. 101, Subchapter V.

2.3 Withdrawal from participation is commenced by filing with the Director and the Committee a document that is known as notice of withdrawal. The Board will determine the specific information and other requirements that will be contained in the notice of withdrawal. The Director, the Committee and the withdrawing entity shall seek agreement as to the effective date of withdrawal and any other reservations or conditions. If the parties cannot agree, the Committee with the subsequent ratification of the Board shall determine the effective date of withdrawal and any other conditions or reservations of the withdrawal.

2.4 Participation may be involuntarily terminated due to security or privacy breaches or failure or refusal to perform obligations of participation. Involuntary termination shall be subject to the procedures for dispute resolution contained below.

3.0 Privacy and security of personal health care information and obligations of participants:

3.1 The participants of the DHIN may have roles that functionally vary from transaction to transaction. A participant may be a "Covered Entity" or a "Business Associate", as those terms are defined in the HIPAA Regulations, in regards to different transactions with different participants. It is desirable to import the obligations of the participants under Health Insurance Portability and Accountability Act of 1996, and regulations promulgated there under ("HIPAA Regulations"), including the Standards for Privacy of Individually Identifiable Health Information and Security Regulations, 45 Code of Federal Regulations Parts 160, 162 and 164 ("Regulations"). The importation of the participants' obligations under HIPAA is more efficient than requiring numerous written documents with the possibility of omitting such a required document. Accordingly, each participant agrees to be bound as follows:

3.1.1 DEFINITIONS. As used in this section the following terms are defined as follows:

"Disclose" and "Disclosure" mean, with respect to Health Information, the release, transfer, provision of, access to, or divulging in any other manner of Health Information outside Business Associate's internal operations or to other than its employees.

"Health Information" means information that (i) relates to the past, present or future physical or mental health or condition of an individual; the provision of health care to an individual, or the past, present or future payment for the provision of health care to an individual; (ii) identifies the individual (or for which there is a reasonable basis for believing that the information can be used to identify the individual); and (iii) is received by Business Associate from or on behalf of Covered Entity, or is created by Business Associate, or is made accessible to Business Associate by Covered Entity.

"Security Incident" means the attempted or successful unauthorized access, use, disclosure, modification, or destruction of information or interference with system operations in an information system.

"Use" or "Uses" mean, with respect to Health Information, the sharing, employment, application, utilization, examination or analysis of such Health Information within Business Associate's internal operations.

3.2 OBLIGATIONS OF BUSINESS ASSOCIATE

3.2.1 Initial Effective Date of Performance. The obligations created under this section are effective upon initial participation in the DHIN.

3.2.2 Permitted Uses and Disclosures of Health Information. Business Associate shall Use and Disclose Health Information as necessary to perform services for Covered Entity, provided that such Use or Disclosure would not violate the Privacy Regulations if done by Covered Entity. Business Associate may Use and Disclose Health Information for the proper management and administration of Business Associate, or to carry out the legal responsibilities of the Business Associate, provided that the disclosure is required by law, or the Business Associate obtains reasonable assurances in writing from the person to whom the information is disclosed that: (i) that it will be held confidentially and used or further disclosed only for the purpose for which it was disclosed; and (ii) the person is obligated to notify Business Associate (who will notify Covered Entity) of any instances of which it is aware in which the confidentiality of the information has been breached.

3.2.3 Adequate Safeguards for Health Information. Business Associate warrants that it shall implement and maintain appropriate administrative, physical and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of any Health Information that it creates, receives, maintains, or transmits on behalf of Covered Entity and to prevent the Use or Disclosure of Health Information in any manner other than as permitted by this Agreement.

3.2.4 Mitigation. Business Associate agrees to mitigate, to the extent practicable, any harmful effect that is known to Business Associate of a Use or Disclosure of Health Information by Business Associate in violation of the requirements of this Agreement.

3.2.5 Reporting Non-Permitted Use or Disclosure. Business Associate shall report to Covered Entity each Use or Disclosure that is made by Business Associate, its employees, representatives, agents or subcontractors that is not specifically permitted by this Agreement. The initial report shall be made by telephone call to Covered Entity's Privacy Officer within forty-eight (48) hours from the time the Business Associate becomes aware of the non-permitted Use or Disclosure, followed by a written report to the Privacy Officer no later than five (5) days from the date the Business Associate becomes aware of the non-permitted Use or Disclosure. Business Associate shall report to Covered Entity any security incident of which it becomes aware.

3.2.6 Availability of Internal Practices, Books and Records to Government Agencies. Business Associate agrees to make its internal practices, books and records relating to the Use and Disclosure of Health Information available to the Covered Entity, or at the request of Covered Entity, to the Secretary of the U.S. Department of Health and Human Services ("Secretary"), in a time and manner designated by the Covered Entity or the Secretary, for purposes of determining Covered Entity's compliance with the Privacy Regulations.

3.2.7 Access to and Amendment of Health Information. Business Associate shall, to the extent Covered Entity determines that any Health Information constitutes a “designated record set” under the Privacy Regulations, (a) make the Health Information specified by Covered Entity available to the individual(s) identified by Covered Entity as being entitled to access and copy that Health Information, and (b) make any amendments to Health Information that are requested by Covered Entity. Business Associate shall provide such access and make such amendments within the time and in the manner specified by Covered Entity.

3.2.8 Accounting of Disclosures. Upon Covered Entity’s request, Business Associate shall provide to Covered Entity an accounting of each Disclosure of Health Information made by Business Associate or its employees, agents, representatives or subcontractors as required by the Privacy Regulations. Any accounting provided by Business Associate under this Section 3.2.8 shall include: (a) the date of the Disclosure; (b) the name, and address if known, of the entity or person who received the Health Information; (c) a brief description of the Health Information disclosed; and (d) a brief statement of the purpose of the Disclosure. For each Disclosure that requires an accounting under this Section 3.2.8, Business Associate shall track the information specified in (a) through (d), above, and shall securely maintain the information for six (6) years from the date of the Disclosure.

3.2.9 Restrictions: Requests for Confidential Communications. Business Associate will comply with any agreements for confidential communications of which it is aware and to which Covered Entity agrees pursuant to 45 C.F.R. §164.522 (b) by communicating with individuals using agreed upon alternative means or alternative locations.

3.2.10 Disposition of Health Information Upon Termination or Expiration. Upon termination or expiration of this Agreement, Business Associate shall either return or destroy, in Covered Entity’s sole discretion and in accordance with any instructions by Covered Entity, all Health Information in the possession or control of Business Associate and its agents and subcontractors. However, if Covered Entity determines that neither return nor destruction of Health Information is feasible, Business Associate may retain Health Information provided that Business Associate (a) continues to comply with the provisions of this Agreement for as long as it retains Health Information, and (b) further limits Uses and Disclosures of Health Information to those purposes that make the return or destruction of Health Information infeasible.

3.2.11 Term and Termination. Unless sooner terminated, this Agreement shall continue in effect so long as Business Associate continues to provide services or perform functions on behalf of Covered Entity. A material breach by Business Associate of any provision of this Agreement, as determined by Covered Entity, shall constitute a material breach of the Agreement providing grounds for immediate termination of this Agreement. Upon Covered Entity's knowledge of a material breach by Business Associate, Covered Entity may provide an opportunity for Business Associate to cure the breach or end the violation and may terminate this Agreement if Business Associate does not cure the breach or end the violation within the time specified by Covered Entity, or immediately terminate this Agreement if Business Associate has breached a material term of this Agreement and cure is not possible. Notwithstanding the above, any breach related to the sale, transfer, or use or disclosure of Health Information for commercial advantage, personal gain, or malicious harm shall be considered non-curable. Business Associate's obligations under Article II shall survive the termination or expiration of this Agreement. Nevertheless, DHIN may continue to hold data in the terminated participant's data stage for historical and other purposes.

3.2.12 No Third Party Beneficiaries. There are no third party beneficiaries to the obligations of the participants of DHIN under this section.

3.2.13 Use of Subcontractors and Agents. Business Associate shall require each of its agents and subcontractors that receive Health Information from Business Associate to execute a written agreement obligating the agent or subcontractor to comply with all the terms of this Agreement.

3.2.14 Amendment to Comply with Law. The parties acknowledge that state and federal laws relating to electronic data security and privacy are rapidly evolving and that amendment of this Agreement may be required to provide for procedures to ensure compliance with such developments. The parties specifically agree to take such action as is necessary to implement the standards and requirements of HIPAA, the HIPAA Regulations and other applicable laws relating to the security or confidentiality of Health Information. The parties understand and agree that Covered Entity must receive satisfactory written assurance from Business Associate that Business Associate will adequately safeguard all Health Information that it receives or creates pursuant to this Agreement. Upon Covered Entity's request, Business Associate agrees to promptly enter into negotiations with Covered Entity concerning the terms of any amendment to this Agreement embodying written assurances consistent with the standards and requirements of HIPAA, the HIPAA Regulations or other applicable laws. Covered Entity may terminate this Agreement upon thirty (30) days written notice in the event (i) Business Associate does not promptly enter into negotiations to amend this Agreement when requested by Covered Entity pursuant to this Section or (ii) Business Associate does not enter into an amendment to this Agreement providing assurances regarding the safeguarding of Health Information that Covered Entity, in its sole discretion, deems sufficient to satisfy the standards and requirements of HIPAA and HIPAA Regulations.

4.0 Other obligations of participation.

4.1 Application for and participation in DHIN requires each participating entity and its agents and employees to the following provisions of this section as well as the obligations imposed elsewhere.

4.1.1 The participating entities, their agents and employees shall conduct their affairs with all other participants as well as the agents and employees of DHIN with the highest level of candor, complete honesty-in-fact, civility and professionalism.

4.1.2 The participants must respond to requests for information and complaints in a reasonable period. Participants must respond to requests for information and complaints that involve security and privacy within twenty-four hours unless the Director or his or her designee extends the time.

4.1.3 The participants must provide financial support by prompt payment in accordance with their prior agreement or as may be promulgated by rule by the Board in the future.

4.1.4 The participants must promptly report Security Incidents as defined in the prior section promptly to the Director and any other affected participant.

5.0 Dispute resolution and inquiries

5.1 Any dispute that involves the DHIN or its interchange shall be subject to dispute resolution under this section. Such disputes may involve participants, the DHIN or members of the public where there is a claim that this or other regulations or statutes were violated by any of the forgoing. A dispute may also be an inquiry or request for information that is not responded to in a reasonable manner.

5.2 The Chair of the Board may appoint a number of individuals subject to approval by the Committee to serve on the Dispute Resolution Committee ["DRC"]. The DRC shall be comprised of panels of no less than three or more than five members. No member may serve on a case before the DRC where that member has a conflict of interest as set forth in 29 Del.C. Chapter 58. The presiding member of the panel must be a member of the Board. The Board may promulgate rules for procedures for matters to be determined by the DRC. The DRC and the Board are authorized to grant relief to include financial penalties, suspension and termination of an entity or individual's participation or use of the DHIN.

5.3 Any party aggrieved by the decision of the Panel may seek review by filing written exceptions to the Panel's decision within ten days of the decision as would be computed in the Delaware Superior Court. The review shall be presented to the Board who may overturn the Panel's decision by a majority vote of a quorum of the Board.

5.4 A aggrieved party may seek legal review on the record only in accordance with 29 *Del.C.* Ch. 101, Subchapter V.

6.0 Permitted uses by participants

6.1 In an effort to maximize the health care benefits of the DHIN, participants are authorized to utilize the system to its maximum extent possible while maintaining the required high level of security and privacy for the information. Participants are authorized to use the DHIN without regard to whether the ordering entity is a participant of the DHIN. This includes participants that are subject to the Clinical Laboratory Improvement Act [“CLIA”] and regulations promulgated thereunder.

6.2 Participants shall comply with the data use agreements they entered into with the DHIN. The terms, conditions and requirements of the existing and future data use agreements may be determined and amended by the Board.

7.0 Patient access

7.1 Individuals may be provided access to the information about them that is in the interchange in a manner and under terms and conditions that the Board shall set out by rule or procedure.

7.2 Individuals shall be informed of and may choose to preclude a search of their individual health information (as defined in above Section 3.1.1) in the DHIN Interchange after consultation with their health care provider and in accordance with the rules or procedures promulgated by Board.

8.0 Technical Standards

8.1 The Board by rule or procedure shall establish the technical requirements for participation in the DHIN. These standards shall conform to or incorporate national standards to the extent such is feasible.

Attachment 4

DHIN Data Use Agreement

Important Notices

This is a Delaware Health Information Network (DHIN) computer system. This system, including all related hardware and software, peripheral equipment, network devices, and network services (including Internet access) are provided only for the use of authorized DHIN participants and members as defined by the DHIN, pursuant to 16 *Del. C. § 9920*, et seq. Activities performed on a DHIN computer system may be monitored at any time to facilitate protection against unauthorized access and to verify security procedures, survivability, and operational security. Monitoring includes activities by authorized DHIN entities under the cognizance of the Information Security Officer to test or verify the security of the system.

Individuals using this system without authority, or in excess of their authority, are subject to having all of their activities on this system monitored and recorded by system personnel. In the course of monitoring individuals improperly using this system, or in the course of system maintenance, the activities of authorized users may also be monitored. During monitoring, information may be examined, recorded, copied and used for authorized purposes. All information, including personal information, placed or sent over this system may be monitored.

Use of this DHIN computer system constitutes consent to monitoring and each user is advised that if such monitoring reveals possible evidence of criminal activity, system personnel may provide that evidence to law enforcement officials and may subject the user to criminal prosecution. Evidence of unauthorized activities may also be used for administrative action. Anyone using this system expressly consents to such monitoring.

Privacy Act Warning

Information contained in this system is subject to the Privacy Act of 1974, 5 USC 552a, as amended. Personal information contained in this system may be used only by authorized persons in the conduct of official business. Any individual responsible for unauthorized disclosure or misuse of personal information may be subject to a fine of up to \$5,000 plus civil penalties.

DHIN Utility Terms and Conditions of Use

These Terms govern your use of the DHIN Utility ("Utility"). Please read the following Terms and Conditions of Use ("Terms") carefully before using the Utility.

Your Permission to use the DHIN Utility:

DHIN hereby gives you permission to use the Utility, subject to the conditions and limitations set forth in these Terms. You may only use or download patient information contained on the Utility

for the following purposes and only to the extent permissible under all applicable laws regarding the privacy of patient information: (i) for treatment of those patients under your care; (ii) to collect payment for the services you provide to your patients; (iii) to conduct your business operations; and (iv) to comply with the laws that govern health care. All patient information viewed through the Utility is strictly confidential and is subject to the protections of the Health Insurance Portability and Accountability Act of 1996 ("HIPAA") and the privacy and security regulations promulgated pursuant to HIPAA, including, but not limited to, 45 C.F.R. Parts 160 and 164 Subparts C and E, as may be amended from time to time. You may not:

- Use, reproduce or copy all or part of the content of the Utility except as expressly permitted by these terms or applicable law
- Change or delete any proprietary notices from materials downloaded or printed out from the Utility
- Use the content of the Utility for the benefit of a third party, except as contemplated by these Terms
- Transmit or provide any data or other content from the Utility to a third party, except as specifically provided by these Terms
- Incorporate any data or other content from the Utility in a product designed, developed, marketed, sold or licensed by you or on your behalf
- Use the Utility in a manner contrary to any applicable law

The DHIN may terminate your access to the Utility at any time, with or without cause, upon ten (10) days prior notice. The DHIN may terminate your access to the Utility immediately if you breach these Terms. In addition, the DHIN may terminate your access to the Utility if you have not used the Utility at all for a period of six (6) months.

The DHIN is the owner or licensee of all rights in the Utility, its content, software, and services. You have no rights to such content, software or services except as expressly granted in these Terms. "DHIN" and the logos or other proprietary marks of DHIN's licensors and partners are trademarks of the DHIN or its licensors and partners. No right, title or interest in those trademarks is granted to you in these Terms.

Release of Liability, Indemnification

You agree to be solely responsible for your use of this Utility and for maintaining the confidentiality of your unique username and password. You agree that any use of the Utility by your employees or agents is subject to the Terms, and that you will inform your employees and agents of such Terms and their obligations to abide them. You agree to be responsible for the use of the Utility by your employees and agents. The Utility provides access to general educational information; you

understand and agree that such information is not to be used as a substitute for the medical judgment of a qualified health care professional.

In consideration for the DHIN permitting you to use the Utility, you expressly release and hold harmless the DHIN, its trustees, officers, directors, employees, agents and affiliates from any and all claims, liabilities, demands, causes of action, costs, expenses, and damages of every kind and nature, in law, equity, or otherwise, arising out of or in any way related to your use of the Utility, whether arising from any acts or omissions by the DHIN.

In addition, you will indemnify and hold harmless the DHIN, its officers, directors, agents, affiliates, and employees, against all actual and direct losses, liabilities, damages, claims, costs or expenses (including reasonable attorney's fees) they may suffer as the result of third party claims, demands, actions, investigations, settlements or judgments against them arising from or in connection with any breach of these Terms, or from any claim of any nature or any wrongful acts or omissions, by you or your employees, officers or agents.

The provisions of this section entitled "Release of Liability, Indemnification" shall survive termination of this agreement.

The DHIN is not responsible for any links to or from other sites.

This Utility may contain links to other Web sites, and other Web sites may provide links to this Utility. These links are provided for your convenience only. The DHIN does not control these other sites and assumes no liability or responsibility for them, including any content or services provided to you by such sites. You should not consider any link to or from another site as an endorsement of that site by the DHIN.

You Agree that the DHIN May Use and Disclose Certain Information About You.

You agree that, should you elect to supply it, the Delaware Health Information Network may use your name, email address, physical address, or other data to communicate with you. You may request to have this information modified or deleted from our records. The DHIN may use this information as necessary to enforce these Terms.

You further agree that the DHIN may use the information for its internal business purposes and disclose the information to third parties who are performing services on its behalf. The DHIN will not otherwise share this information with any other party.

This Agreement is governed by Delaware Law. Accordingly, these Terms shall be governed by and construed in accordance with the laws of the State of Delaware, without regard to conflict of law principles.

Any action against the DHIN must be commenced in the State of Delaware.

You agree that the courts located in or serving the State of Delaware shall have exclusive jurisdiction and venue over any action arising out of or relating to these Terms or your use of the Utility. You waive any defense that a court located in or serving Wilmington, Delaware, lacks personal jurisdiction over you, is an improper venue, or is an inconvenient forum.

Other Miscellaneous Provisions

These Terms constitute the entire and only understanding between you and the DHIN regarding your use of this Utility. No modification or attempted modification of these Terms by you shall be binding on the DHIN unless made in writing and physically signed by an authorized officer of the DHIN. The DHIN may modify these Terms at any time.

Notices sent to you by the DHIN in connection with these Terms or your use of the Utility may be delivered to you by electronic mail, a general notice on the Utility, or by written communication delivered by first class U.S. mail. You may give notice to the DHIN at any time by letter delivered by first class postage prepaid U. S. mail or overnight courier to the following address:

Delaware Health Information Network
107 Wolf Creek Blvd., Ste. 2
Dover, DE 19901

These Terms are severable to the extent any term is deemed invalid, illegal or unenforceable.

The DHIN's failure to enforce any provision of these Terms shall not be deemed a waiver of that or any other provision of these Terms.

The parties to this agreement are independent contractors of one another; nothing herein shall be deemed to create any relationship of agency, partnership or joint venture between the parties.

You may not assign any of your rights and obligations arising under these Terms without the prior written consent of the DHIN; any attempted assignment not in compliance with this sentence shall be void.

Legal Disclaimer

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