Learning from the **Florida** Experience

Paving a HealthEHighway

DIRECT “*The Swiss Army Knife of HIE*”

August 2017
What Should Have Been....

Still Can Be!
Discussion Topics

1. 2016 Florida Ambulatory Health Information Exchange (HIE) Study

2. How to Move Forward? Revisit the Past! The Florida-HIE DIRECT Story

3. Paving a HealthEHighway DIRECT Building Blocks for Nationwide Interoperability

4. Summary Conclusions and Acknowledgments

VIDEO Introduction and Discussion available at:
www.ConnectingHealthcare.com/HIESuccess.shtml or
2016 Florida Ambulatory HIE Study

• From May – December 2016, Connecting Healthcare® studied three major geographic markets in Florida to determine the extent to which ambulatory healthcare providers were
  1. Leveraging an Electronic Health Record (EHR)
  2. Participating in Meaningful Use (MU)
  3. Engaging in any electronic health transactions
  4. Leveraging DIRECT messaging
  5. Engaging community relationships to “connect” electronically

• Methodology was to “interview” and “document” referral and transition of care relationships of volunteer “anchor” providers in the following communities based on reported DIRECT message usage and adoption data from the Florida-HIE
  1 http://www.fhin.net/kms/graphs/dmcoverage.shtml
260 Florida Physicians Documented

Provider Types

- Cardiologists
- Gynecologists
- Pediatrician
- Glaucoma
- Dermatologists
- Rheumatology
- Surgeon, Vascular
- Neurologist
- Optometrists
- Pulmonologist
- Internal Medicine
- Cataract Surgery
- Ophthalmologist
- Gastroenterology
- Podiatry
- Urology
- Cardiologists
- Gynecologists
- Pediatrician
- Glaucoma
- Dermatologists
- Rheumatology
- Surgeon, Vascular
- Neurologist
- Optometrists
- Pulmonologist
- Internal Medicine
- Cataract Surgery
- Ophthalmologist
- Gastroenterology
- Podiatry
- Urology
HiESuccess Interview Methodology
Relationship Management

1. Step 1 - Capture Anchor Physician Connection Information
   a) Obtain organization information and MU HIE reporting measures
   b) Complete a provider technology environmental scan/questionnaire
   c) Establish Anchor Physician Roadmap Relationships list

2. Step 2 – Research Roadmap Relationships
   a) Verify EHR in CH EHR List and ONC CHPL
   b) Validate Anchor and Referral providers in HiESuccess Florida Provider Database
   c) Research Providers on Roadmap - gather supplemental information, Internet research & provider resources

3. Step 3 - Outreach to Providers on Anchor Roadmap of Relationships
   a) Execute Provider Outreach Checklist for engagement and communications (emails, faxes and phone calls)
   b) Contact EHR/MU Lead on referral roadmap and determine HIE ability
   c) Document capability and DIRECT address information if existing & coordinate test

4. Step 4 – HIE Roadmap Report and Documentation
   a) HIE Roadmap results and analysis of connections
   b) Establish Anchor Roadmap of Connections Summary Report
   c) Finalize outreach results and Connectivity Roadmap detail - templates and worksheets used

All HiESuccess source document templates used in the study are available for download at: http://www.connectinghealthcare.com/hie_success.shtml
### Dr. Roberta Gonzales
**Dashboard - May 15, 2016**

#### Roadmap of Relationship Connections

<table>
<thead>
<tr>
<th>Physician or Facility</th>
<th>Phone</th>
<th>Found</th>
<th>Contact</th>
<th>IM</th>
<th>MI</th>
<th>Direct</th>
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<td>Jerry Martin</td>
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<td>...</td>
<td>...</td>
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</tr>
</tbody>
</table>

#### Regular Email

- Angel Veloso: cguzman@ski.com
- Carlos Ramirez: ramirezcalderonmd@hotmail.com
- Giovanna Clocco: cloccadez@hotmail.com
- Jose B. Esquenazi: mydoc@directaddress.net
- Joseph Selem: josephselem@directaddress-direct-cl.com
- Luis Diaz Rangel: luis.diazrangel@directaddress-direct-cl.com
- Manuel Smith: mansmith@directaddress-direct-cl.com
- ... (continued)

#### Non-connected Transition of Care relationships as of May 15, 2016

<table>
<thead>
<tr>
<th>Referral and Transition of Care Organization Name</th>
<th>Email Address</th>
<th>Contact Phone</th>
<th>City</th>
<th>State</th>
<th>Zip code</th>
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<tr>
<td>Cristina Marín</td>
<td><a href="mailto:christian@hotmail.com">christian@hotmail.com</a></td>
<td>904-270-0402</td>
<td>Jacksonville</td>
<td>FL</td>
<td>32259</td>
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<tr>
<td>Javier Sobrado</td>
<td><a href="mailto:sobrado@hotmail.com">sobrado@hotmail.com</a></td>
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<tr>
<td>Nasar Jorge</td>
<td><a href="mailto:nascar@hotmail.com">nascar@hotmail.com</a></td>
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<tr>
<td>Olavo Kafé</td>
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<td>904-820-9650</td>
<td>Jacksonville</td>
<td>FL</td>
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</tr>
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Study Challenges and Obstacles

- Even though all outreaches and communications were on behalf of the anchor participant physicians – it still **proved difficult to engage** referral practices even when outreaching as one of **their referral partners**
- Attempts to leverage email and fax communications for the initial referral practice outreaches were not successful
  - **Email** yielded < 4% response (still resulted in many follow-up calls)
  - **Fax** yielded < 1% response
- **Phone calls** were ultimately successful but time and labor intensive
  - **Outreaches** averaged **4.5 calls** a practice and varied greatly in length
  - Difficulty in identifying and reaching knowledgeable staff led to extra calls
  - **Low levels** of staff **understanding** of **health information exchange** even among practices participating in Meaningful Use (MU)
    - Often resulted in “on-the-fly” and “mini-education” sessions to accomplish study objectives
  - **Systematic apathy** regarding the HIE opportunity and engaging community and referral relationships to exchange clinical information electronically
Study Key Metrics

**Physician Statistics**

- **Interview Topics**
  - Total Providers
  - Using EHRs
  - MU Participants
  - Direct and MU
  - Other Direct
  - Total Direct

**Florida Geographic Area**

- Northeast: 20%
- West: 25%
- Southeast: 55%

**Practice Size**

- Small <3 EPs: 34%
- Others: 66%
Physician Adoption Dashboard

Adopted EHR
- Yes: 88%
- No: 12%

Certified EHR
- Yes: 83%
- No: 17%

Have DIRECT
- Yes: 40%
- No: 60%

DirectTrust HISP
- Yes: 24%
- No: 76%

MU Participant
- Yes: 50%
- No: 50%

MU and DIRECT
- Yes: 58%
- No: 42%
Metrics Not Reported - Other HIE

- Interviewers inquired about other forms of health information exchange (HIE) and clinical data access
  - No practices reported use of query-based exchange for clinical information (as best as that could be explained and comprehended)
  - One (1) practice reported using the Florida-HIE
    - Direct Messaging Service (DMS) Impriva Portal
  - Other forms of HIE identified included
    - Electronic Prescribing
    - Immunizations
    - Lab results
  - Other forms of clinical data access that were noted
    - Hospital or delivery system remote access (limited use)
    - The Florida SHOTS™ - Immunization Online portal (limited use)
    - E-FORCSE – Florida Prescription Drug Monitoring Program portal (limited use)
DIRECT Testing

- An initial objective for interviewed referral relationship providers with DIRECT, was to initiate a TEST message with the anchor physician
  - Within the first few months of the study this effort had to be abandoned because it was proving more time consuming than the study itself
- Many providers were not able to successfully test outside their Vendor
  - Even when the anchor provider and the relationship provider were using DirectTrust HISPs – few positive tests were achieved
  - Providers had NO knowledge or understanding of Message Disposition Notifications (MDNs) and had great difficulty trying to determine how to resolve and inspect messages that were not successfully transmitted
- Vendors in general provided poor support and problem resolution
  - Much frustration with time required to “figure-out” DIRECT to initiate and coordinate testing with other practices
  - Most often providers simply abandoned testing effort after several weeks
Insights and Observations - Limited Solutions

- While 40% of all physicians interviewed had DIRECT messaging or at least access to it – FEW were leveraging DIRECT
- Almost all ambulatory provider DIRECT use was in the context of Meaningful Use (MU) and Transitions of Care (ToC) – pressing the magic MU button
  - Most Vendor DIRECT implementations appeared to be designed for the opportunity of narrowly focusing on recording the HIE metric for MU
  - Many systems provided limited flexibility in the timing of when transitions of care were sent and some assumed only one same day interaction
    - Circumstances often require attaching more than CCDAs and different referral providers downstream with multiple transition of care settings
    - CCDAs vary greatly across EHR implementations and have yet to be widely implemented, used or valued as supporting clinical documentation
    - Providers continue to expect current referral and transition of care clinical information and documentation (mostly non-structured reports and data)
      - Limited flexibility, capability and support for DIRECT use outside of ToC
- Few providers seemed concerned about DIRECT message delivery success and almost all continued to fax information simultaneously
Insights and Observations - Limited Use

- Only **42% of the MU** participating eligible professionals (EPs) **had a DIRECT address** and very limited knowledge about it – even for ToC
- One of the biggest challenges and consistent complaints for those trying to use DIRECT was the **lack of training** and the **ability to find** other **providers** with which to exchange DIRECT clinical information
  - One of Florida’s largest ambulatory EHRs is not a member of DirectTrust
- Vendor DIRECT Directories and connections to other HISPs seemed limited and included primarily only providers on same HISP or EHR
  - **Limited** flexibility and **opportunity** for discovering and **connecting** with other **providers** who have DIRECT implementations
- The **majority** of **Non-MU** providers that **had DIRECT** received capability from affiliated health systems
  - Most had never used the account
  - This was a factor in the difficulty of testing

<table>
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<th>All DIRECT Users</th>
<th>MU EP</th>
<th>Non-MU</th>
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<tr>
<td></td>
<td>49%</td>
<td>51%</td>
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C. Christopher Pittman, M.D.

Dr. Pittman is Medical Director and CEO of Vein911®. He practices minimally invasive vein care in the Tampa Bay area and has been active in medical politics for over 25 years. Sought-after speaker, consultant, and thought leader with HIT public policy expertise and broad experience with EMR, Health Information Exchange (HIE), Telemedicine, and Medical Imaging Informatics. He is a promoter of telemedicine and HIE adoption, growth and control by physicians while seeking optimal collaboration among telemedicine and HIE stakeholders including patients, physicians, hospitals, insurers and vendors.

- Past President, Florida Medical Association Political Action Committee
- Past Chair, Florida Medical Association Advisory Committee on Health Care Information Technology
- Member and Past Vice-Chair, Florida Medical Association Council on Medical Economics and Health Care Delivery Innovation
- Member, Florida Medical Association Board of Governors
- Past President, Hillsborough County Medical Association

“Walt, thanks. I don’t even know how I would send a message!

This really speaks to how EMRs have no interest in information exchange. Silos seem to rule.

If I am struggling like this and I am very motivated to do this, a rank and file physician does not have a chance...”

– Chris Pittman, M.D., Vein911® Medical Director & CEO
Janet A. Betchkal, M.D.

Dr. Betchkal practices in Jacksonville Florida. After completing her Fellowship in 1989, she spent eight years at UF Health and has worked in private practice for over twenty years based out of St. Vincent’s Hospital, focusing exclusively on Glaucoma. Unlike many of her medical colleagues, Dr. Betchkal was anxious and excited about the transition to a fully integrated EHR system. Over the course of many months, Dr. Betchkal researched the various systems available, hired staff with the end goal in sight, embraced the technology and eventually made the successful transition on July 30, 2012. There was a necessarily learning curve, however, Dr. Betchkal and her staff have never regretted the decision to abandon the old paper charts in favor of the new technology.

- Board of Directors for the Florida Society of Ophthalmology
- Past-President of the Florida Society of Ophthalmology
- Secretariat for State Affairs (SSA) Committee and the OPHTHPAC Committee for the American Academy of Ophthalmology
- Past-Chairman for the Department of Ophthalmology at the University of Florida Health, Shands Hospital
- Winner of the 2015 ‘John R. Brayton, Jr., MD, Annual Leadership Award’ recognizing a Florida-based ophthalmologist who exemplifies leadership and dedication to the profession

“Since successfully adopting an EHR throughout my practice, one of our most profound challenges continues to be securely sharing information with my colleagues electronically. Many of us are Meaningful Use participants with Direct messaging, yet we cannot seem to successfully exchange secure email.”

– Janet A. Betchkal, M.D., P.A.
Salient Study Points

• **Providers continue** to rely almost completely **on fax** communications
• Ambulatory provider **query-based** exchange in Florida is almost **nonexistent** and few local community efforts appear to be ongoing
• **Florida** has **lost significant ground** since the early days of the Florida-HIE (2011 – 2013) with **DIRECT** adoption and **use**
• Most vendors have not enabled DIRECT’s full capabilities and have narrowly focused their implementations on Meaningful Use (MU) with limited training
• Early efforts among those who have attempted HIE with much investment and little results – has disheartened many within the healthcare community
• HOWEVER, **DIRECT** has been more **widely deployed** (40%) than originally expected even among non-EHR and MU providers
• **OPPORTUNITY** exists to **refocus** **DIRECT solutions** for success
  – Remarket **DIRECT “The Swiss Army Knife of HIE”** good for MIPS & more
  – Help connect providers that MU missed and get those on MIPS using it
  – **GET-OFF-THE-FAX** with DIRECT campaign
How to Move Forward?

Revisit the Past!

The Florida-HIE DIRECT Story
Florida was an Early Adopter of DIRECT

- The Florida Agency for Healthcare Administration (AHCA) executed a contract with Harris Corporation on February 2, 2011 to build and operate the Florida Health Information Exchange³
  - Initially funded from a state cooperative agreement with ONC
- The first service completed and made available to the Florida community was Direct Secure Messaging (DSM) in July 2011⁴
- The Florida-HIE strategy was to pave a Florida health-e-highway by freely providing DSM to ALL qualified healthcare providers
  - Health plans and other HIE service fees expected to cover the costs

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<td>Nurse Practitioners/Skilled Nursing Facilities</td>
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³ [https://www.healthit.gov/sites/default/files/plan-summary-fl.pdf](https://www.healthit.gov/sites/default/files/plan-summary-fl.pdf)
⁴
Florida-HIE Self Developed its DIRECT HISP

- In early 2011 the Florida-HIE pioneered one of the first generation of HISPs leveraging the DIRECT specification\(^4\) created by The Office of the National Coordinator for Health Information Technology (ONC)

- Objective was a **highly efficient** and **scalable** application and operation supporting **large volumes** of users **cost effectively**
- Goal was to quickly **achieve a critical mass** of DIRECT use

Collaboration and Engagement Model

- **Outreach** and rollout strategy **focused** on targeting organizations within specific communities and regions starting with **education**
- Organizations and areas identified as ready and highly interested in using DIRECT were on-boarded first
- **Clustered Geographic Implementations** in phased approach making adoption relevant building towards a tipping point
  - Encourage those connecting to connect their relationships
  - Engage local hospital systems
- Close **collaboration** with Florida’s four (4) **Regional Extension Centers**

**Florida-HIE DSM Targeted Alliances**
- Florida Department of Health
- Florida Hospital Association
- Florida Medical Association
- Florida Academy of Family Physicians
- Florida Osteopathic Medical Association
- Florida Chiropractic Association
- Florida Nurse Practitioner Network
- Florida Dental Association
- Florida Podiatric Medical Association
- Florida Association of Homes and Services for the Aging
- Florida Coalition of Professional Laboratory Organizations
- Florida Pharmacy Association
- Florida Health Plan Association
- Regional Extension Centers
Regional State Collaboration SERCH Model

- **Florida** actively participated in the **ONC** State Health Policy Consortium Southeast Regional HIT-HIE **Collaboration (SERCH)**\(^5\)
- The goal of SERCH was to consider common regional solutions for health IT and HIE and how the Southeast region might solve interstate issues and pool resources and solutions to stretch dollars
- In **2010**, a subset of the SERCH group, including Alabama, Arkansas, Georgia, Florida, Louisiana, and Texas were funded through ONC to examine the legal, governance and technical issues of **HIE during disaster** situations and to develop a **framework**\(^5\) for States to review and assess legal and technical infrastructures
- The **Florida-HIE extensively executed** the SERCH blueprint and judiciously engaged regional provider, vendor and HIE relationships to leverage and connect with **DIRECT**

Florida Collaboration and Engagement Lead the Nation in 2013

- Working with SERCH, an **aggressive schedule** was established to expedite **FL connections** with other ONC State Cooperative Agreement Program HIEs\(^6\)
  - Established model agreements
  - Orchestrated meetings and agenda
  - Managed testing and trust anchors
  - Trust Bundle and Directory Projects
- **Three-phase engagement** plan
  1. Initial outreach emphasized urgency of disaster preparedness and coastal and “snow-bird” state opportunities
  2. Connect, promote and gain utilization
  3. Continually expand DIRECT Use Cases

\(^6\) [http://www.fhin.net/committeesAndCouncils/docs/hiecc/Mar714/tabF/QuarterlySlides.pdf](http://www.fhin.net/committeesAndCouncils/docs/hiecc/Mar714/tabF/QuarterlySlides.pdf)

**Snapshot of Florida-HIE Connections as of December 2013\(^6\)**
Vendor Engagement and Collaboration

- The Florida-HIE **actively promoted services** and solicited input from HIE and EHR vendors
- Viewed partnerships as **win-win** opportunity given lack of HIE
  - Limited EHR vendor DIRECT capability and few HISPs existed
- Florida pursued the early interpretation that MU Stage 2 ToC messages could be launched from a DIRECT portal
- Given vendor interest, Florida-HIE proposed to **build an API** to automate HISP services and **establish a DIRECT Directory or “phone book” of addresses**
Critical Use Case Engagement Beyond ToC

- In addition to connecting with other State HIEs and negotiating with vendors, the Florida-HIE determined to further accelerate adoption and achieve a tipping point by **promoting** other “critical mass” Use Cases beyond Meaningful Use and Transitions of Care (ToC)
  - Secure email for ANY healthcare purpose (**Get-Off-The-Fax** Campaign)
    - Structured (HL7/CCDA) and unstructured text (PDFs, reports, images)
    - Target Non-MU providers to “catch” DIRECT messages from EPs
    - Health Plan engagement - clinical & administrative data (e.g. X12N)
  - Consult requests, notes and reports between physicians and dentists
  - Clinical Reference Laboratory results delivery
  - Pharmacy (MTM, Medication Reconciliation, adjunct eRx messaging)
  - Federal and State Public Health Reporting
    - Department of Health (e.g. Reportable Labs & Newborn Screenings)
  - Disaster “Preparedness and Response” and emergency team capability
  - **Focus on connecting** rural and metropolitan **Florida communities**
Disaster Preparedness Use Case

- Organized State-to-State efforts with SERCH to identify key data sources and engage critical healthcare stakeholders
- Organized “call to action” to connect
- Implement DIRECT for health care disaster planning, response, recovery and post-disaster evaluation working within the National Response Framework
- Early focus on “response” Use Case
  - Dislocated or injured patient presents to triage or neighboring state emergency department
  - Rendering EMT, provider or facility sends DIRECT message to command, provider, pharmacy or health plan
  - Any clinical information obtained is returned via DIRECT message in structured or unstructured format

7 https://www.youtube.com/watch?v=zzm7KobJSpQ&t=8s
Labs Over DIRECT Use Case

- **Parallel tracks of Lab outreach and engagement**
  - Hospital, Independent, National
  - Active leadership in ONC Lab CoP

- **Early focus on the National Labs**
  - LabCorp and Quest Diagnostics

- **Obtain a mailbox on Florida-HIE DSM or connect HISP to HISP**
  - Enable Lab’s to allow providers to request copies of Lab Result Reports to be sent via DIRECT
  - Both PDF report and structured HL7

- **First in the nation to partner with Quest Diagnostics in August 2012**
  - Connected 11,000 Quest Care360® providers throughout Florida

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8 [http://www.connectinghealthcare.com/Presentations/LabCoPFullMeeting7232012.pdf](http://www.connectinghealthcare.com/Presentations/LabCoPFullMeeting7232012.pdf)

Pharmacy Over DIRECT Use Case

- **Leveraged** insights and relationships gained from the successful ePrescribe Florida\(^1\) public/private collaborative experience (Nov 2006 – Mar 2010)\(^2\)
  - Focus on national and rural pharmacies

- **Recognition** that e-prescribing solutions have limited capability for **bi-directional** provider to pharmacy communications, MTM and Rx reconciliation
  - Pharmacists still reporting many day-to-day errors with electronic prescribing that results in more phone calls, faxes, delays and costs

- **October 2012, Winn-Dixie** became the first major retail pharmacy chain to onboard to the DSM Portal
  - Florida-HIE modified agreements and registration
  - Established Jacksonville as the pilot area

- **June 2013, Surescripts\(^\circ\)** connected with the Florida-HIE DSM service HISP-to-HISP


ADTs Over DIRECT Use Case

- The Florida-HIE Event Notification Service (ENS) enables hospitals to share their admissions, discharges, transfers (ER visits) with health plans and ACOs
  - Starting to target other Florida providers and facilities
- Florida-HIE DIRECT service is used to deliver ADT HL7 messages and batches
  - ENS ADTs account for the majority of DSM messages
  - ENS is the most successful Florida-HIE Service to-date
Health Plans Over DIRECT Use Case

• Actively **engaged** Florida’s **payer** community with **DIRECT** opportunity
  – Florida-HIE and DIRECT education and Use Case exploration and research
  – Promoted **DIRECT** use in **paper** and **fax** Payer-to-Provider **communications**
  – Promoted **DIRECT** for **EDI** transactions such as X12N and claims attachments
• Proposed starting with **Acute Care** and **Emergency Response** Use Cases

**Acute Care to Health Plans over DIRECT Use Case**

- ER Patient registers at facility
- Provide Care (Labs, Rad..)
- Create Labs, Rad Reports..
- Review Patient Summary
- Provide Care
- Patient Discharged Or Admitted
- Patient Summary Document

**Acute Care Facility**
- **DIRECT Message Exchange**
- **Patient’s Health Plan**
- Confirm Payer and Clinical Status of Emergency Patient
- Process & Update Patient Summary Recordx & Reports (ADT, Labs, Rad, etc.)
- Access FL-HIE PLU CCDA FL SHOTS
- HL7 Admit (ADT)
- Clinical Status Documents
- HL7 Reports (ORU)
Hybrid DIRECT to CONNECT Use Case

- **Hybrid solution** allowed providers who were not connected to the Florida-HIE Patient Look-Up (PLU) **CONNECT** (query/pull) service to **obtain patient information** from any participating Florida-HIE PLU node.

- Direct Secure Messaging (DSM) was used to transport a completed query request (email template) and receive PDF attachment of results.
2011-2013 Florida-HIE DIRECT Results

- Florida led the nation in connecting with other state HISPs with **11 production** connections, **1 in testing** and **10 more** states in various stages of Onboarding
- End of 2013, the Florida-HIE DSM service had **8,056 registered Florida users**
  - Rolling-out DSM to County Health Departments & Children’s Medical Services to partner with hospital staff (referral centers, newborn screening, specialists)
  - Dental, Home Health and Skilled Nursing Facility Use Case outreach underway
- Production DIRECT HISP connections with Quest Diagnostics, SureScripts, IOS Health (EHR vendor), HMA and Wellogic-Alere/Accountable Care Solutions
  - **Quest Diagnostics HISP** connection added an additional **11,000** providers
  - **SureScripts HISP** Connection added an additional **700** provider connections
  - Health Management Associates (HMA), IOS and Wellogic in early stages
- The **Winn-Dixie pilot** program in Jacksonville was proceeding **on-track**
  - Implementing work-arounds to enable all pharmacists/staff at retail locations to address the same physician DIRECT message from shift-to-shift
  - Working to onboard the rest of the Winn-Dixie pharmacies in Jacksonville in early 2014 and then start a regionally based state-wide rollout mid-2014
Success, Adoption and Momentum... **BUT**

Just as the Florida-HIE DSM service was approaching **20,000** user connections in Florida alone - it all came to a sudden end.

**Despite the extensive efforts** of the Florida-HIE and Florida healthcare community and the loss of great federal and state investment and support.
So What Happened?

- **Shifting Meaningful Use Objectives for HIE**
  - Prior to August 2012, the state HIE DIRECT implementation strategy was largely based on the Final Meaningful Use (MU) Stage 1 Rule and the Stage 2 Proposed Rule (NPRM)\(^\text{12}\)
  - Attestation periods of 90 days watered down 10% HIE objective
  - Many providers able to take the hardship exemption or exclusion

Initial interpretation within the “ONC EHR Adoption Community of Practice - Interoperability Workgroup” was that State HIE DIRECT portal capability could be used by EPs to meet the objectives for Stage 2 MU

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What Happened?

- **Shifting Meaningful Use Objectives for HIE**
  - September 2012, the Final MU Stage 2 Rule\(^1\) clarified “electronically” to mean transmitted “directly” from the CEHRT
  - Effectively disqualified DIRECT portals from being used for MU

Impacted ONC state designated HIEs unsuccessfully appealed based on provision (b) given their active engagement with CMS and ONC, and state HIE efforts to participate in the NwHIN and national DIRECT efforts

Complicating factor - ONC did not ultimately establish a governance mechanism

What Happened?

• The perfect got in the way of the good
  – Evolution of private industry governance led to costly new requirements
  – State HIEs pioneered DIRECT, yet were now judged non-compliant with after-the-fact and shifting requirements
  – Without additional funding and unable to meet or moderate the new mandates, State-developed HISPs started to fail as HIE vendors stopped or slowed connecting to them
What Happened? Back to the Wild West

• Last Straw Shift in Meaningful Use Objectives for HIE
  – In April 2015 CMS Issued the Modifications to Meaningful Use in 2015 Through 2017 Rule
  – CEHRT no longer required to “electronically transmit” care summary
  – The return to “all-over-the-map” methods of transmission with no ubiquitous standard for sending or receiving messages - had a chilling effect on DIRECT and interoperability

Going Backwards! The irony of the 2015-2017 Rule is that it reverted the industry back to where it was before 2012, but worse. While the Florida-HIE DIRECT portal could once again be used for MU, so could any HIPAA compliant method at the expense of interoperability.
Where is Florida Today?

• When the Florida-HIE self-developed DSM service was discontinued in July 2014, only .02% (<200) registered users migrated to the new fee-based Direct Message Service (DMS)
  – Service provided by Inpriva\textsuperscript{15}
  – $186 per mail box first year, then $129\textsuperscript{15}

• As of May 2017, the Florida-HIE had 269 users\textsuperscript{1}
  – Most DIRECT message volume* is related to use with ENS to deliver ADTs to subscribers

• As observed in the Connecting Healthcare\textsuperscript{®} 2016 Florida Ambulatory HIE Study
  – While 40% of those documented had access to DIRECT, it is not being effectively utilized

• Even among adopters of EHRs and those participating in Meaningful Use

\textsuperscript{1} http://www.fhin.net/kms/\textsuperscript{graphs/dmcoverage.shtml}
\textsuperscript{15} https://www.florida-hie.net/Files/dmbrochure.pdf
Paving a Health EHighway

DIRECT Building Blocks for Nationwide Interoperability
Refocus “The Swiss Army Knife of HIE”

- Care/Appt Reminders & Alerts
- Administrative Transactions X12N & Claims Attachments
- Reportable Lab Results
- State and Public Health
- Immunization Reporting
- Behavioral Health
- Transitions of Care
- Consult Requests and Documentation
- ADT Notifications
- Patient & Caregiver Communications
- Secure Email for any Healthcare Purpose
- Payer Quality, Audit and Administrative Reporting
- Telemedicine & Emergency Response Encounters
- Lab Results Delivery
- Medication Reconciliation
- Pharmacy and Rx Management
- Medication Therapy Management (MTM)
Advancing Health Information Exchange

• **Most healthcare** encounters are **planned** and transitioned care
  – Meaningful Use Transitions of Care (ToC) HIE objective recognized this
  – However, limited implementations focused on just ToC and CCDA summary
    of care documents were **not enough of a HIE tipping point**
    • In most ambulatory healthcare settings, CCDAs have yet to achieve
      meaningful adoption and use in augmenting clinical documentation
  – **Did not establish enough value** from required workflow changes and
    investment in DIRECT to incent a willingness to migrate from faxing
    • **Limited** and narrowly focused DIRECT **implementations** and the lack of
      availability of connections compounded this challenge

• **Must recognize** the HIE adoption **challenge “du jour”**
  – **Chicken or the Egg** HIE syndrome - Not enough are adopting HIE because
    not enough have adopted HIE to incent the adoption and use of HIE
    • Must recognize **need** for **incremental foundations** that **help transition**
      **healthcare** from where we are (unstructured diverse paper information)
    • Must **engage** staff and the entire **team** in HIE **not just physicians**
Why the Fax Still Lives?

- **Fax** is simple, cheap and widely available
- Healthcare work and dataflow has evolved around **paper/faxing** over many **decades**
- **Misconceptions** regarding **HIPAA** and the perceived safe-harbor that faxing provides
- Even given the “push” to adopt **EHRs**, **most healthcare data** still exists in **unstructured** formats and communicated on **paper**

Focus is on the Big Bang Theory of HIE

• Achieving **semantic interoperability** is a continuing national **HIE focus**
• New HIE foundations and standards are rightfully slow to evolve given potential impacts and diverse stakeholder requirements and input
  – The Fast Healthcare Interoperable Resource (FHIR) for example is still developing and evolving four years after first being heralded in 2013
• While the **capture** and **exchange** of **discreet** patient **data** should be a highly prioritized, funded and developed national effort, we must **also understand** and **recognize** the **current** environment and **starting point**
  – HIE highly disruptive in the context of decades of paper-based processes
  – Communicating, capturing and using structured data at the point of care given existing technology and user interfaces remains difficult
  – Even with standards (e.g. CCDA, HL7, X12N) content harmonization of codes and vocabulary continues to challenge semantic data exchange
  – Continued resistance to breaking down healthcare data barriers and silos
Revisit Lessons of e-Prescribing Adoption

• Part of the formula for that success was the ePrescribe Florida campaign on HIT utilization and advancement up the “technology staircase” of adoption.

Why DIRECT? Flexibility and Extensibility

- DIRECT specifies a **simple**, secure, scalable, **standards-based** way to exchange encrypted health information with known/trusted recipients.
- DIRECT could fundamentally **transform HIE** if more widely deployed by all healthcare stakeholders across the spectrum of care and Use Cases.
- Best capability **available** to help **bridge** the HIE interoperability divide.

DIRECT Communication

- Between People
- Between People and Computers
- Between Computers

DIRECT Content

- **Readable by People**
  - I’ve attached the x-ray and study of Mr. Culbertson. Thanks for seeing him.

- **Readable by People and Computers**
  - I’ve attached an electronic record and x-ray for Mr. Culbertson

- **Readable by Computers**
  - EVN|A28|20060501140008|||000338475^Culbertson^Walt^RegionalMPI&2.16.840.1.113883.19.201&ISO^L|20060501140008<

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*17 [http://www.connectinghealthcare.com/Presentations/Pharmacy_HIE_Opportunities.pdf](http://www.connectinghealthcare.com/Presentations/Pharmacy_HIE_Opportunities.pdf)*
Why DIRECT? Security and Non-Repudiation

- The healthcare industry is under attack
  - Patient data highly valued on black-market
  - Breaches and blackmail are commonplace
  - Unsecure email is often a culprit vehicle
- DIRECT enables secure trusted exchange
  - Implementations must be HIPAA compliant
  - All users must be vetted and data encrypted
- DIRECT safeguards in place to ensure that a message arrives at its destination
  - Message Deposition Notifications (MDNs)
    - Enables confirmation health transactions were successfully delivered
    - Capability for read receipt notifications
    - Chain of trust maintained and documented

By CARTER EVANS  CBS NEWS  February 17, 2016, 7:13 PM

California hospital computer system taken "hostage"

29 Comments / f Share / Tweet / @ Stumble / E Email

Last Updated Feb 18, 2016 3:14 AM EST

LOS ANGELES -- The FBI is leading the investigation of a hostage situation at a California hospital -- but it's not people who were being held, it was the hospital's computer system.

Inside Hollywood Presbyterian Hospital, computer screens were dark since hackers took over the data network almost two weeks ago.

The attack used what's known as "ransom-ware" -- malicious software that encrypts files which can only be unlocked with a software "key" after a ransom is paid.

In this case, hackers demanded, and the hospital paid an estimated $17,000 in the digital currency bitcoin -- which is nearly impossible to trace.

The hospital released a statement Wednesday evening saying, "The amount of ransom requested was 40 Bitcoins, equivalent to approximately $17,000. The malware locks systems by encrypting files and demanding ransom to obtain the decryption key. The quickest and most efficient way to restore our systems and administrative functions was to pay the ransom and obtain the decryption key. In the best interest of restoring normal operations, we did this."

Since the attack, the medical center staff had resorted to pen and paper and even fax machines for communications.

Why DIRECT? Security and Integrity

• **Security advantages** using DIRECT as a message-queue framework and **audit trail**
  – Ability to “**firewall**” and **inspect** messages
  • Ability to establish a physical and logical network perimeter and barrier (DMZ)
  • **Discern** message **content**, purpose and authority **before** message is **acted upon**
    – Message transmission routing information
• **Security and availability** advantages of DIRECT electronic data interchange (EDI)
  – **Scalability**, load balancing, **reliability**, reduced coupling, message and event driven processing, **message priority** and **recovery**
  – Messages backed up, stored or forwarded based on message disposition and status

http://www.wphealthcarenews.com/rising-ransomware-email-attacks-healthcare-avoid/
CMS Must Lead Paving the HealthEHighway

- As with the national “push” to encourage and incent the use of Electronic Health Records, the HIE opportunity is CMS organizing and leading public/private collaborative efforts leveraging the Office of the National Coordinator for Health Information Technology (ONC)
  - Only organization that can effectively and meaningfully convene the industry
    - Diverse stakeholders, often with competing interests in HIE outcomes
  - CMS adoption would lead to broader commercial adoption and innovation
- Establish a National DIRECT Community of Practice (CoP)
  - Commissioned to analyze, recommend and promote DIRECT Use Cases
  - Remarketing DIRECT to help transition healthcare off of FAX technology
  - Reengaging critical Use Case stakeholders and reorganizing focused state to state DIRECT Use Cases and connections (Florida-HIE/SERCH Model)
  - Analyze and recommend solutions for DIRECT interoperability and trust
- CMS adoption and use of DIRECT in its own health information exchange
  - Medicare administrative operations and clinical Quality Payment Programs
CMS Enabling Get-off-the-Fax Campaign

While FAX may be a cheap technology, costs are not

• Excessive costs of paper and faxed medical records
• Fragmentation caused by paper and faxed records
• Lost and misplaced paper and faxed records
• Accessibility of paper and faxed medical records
• Quality of paper and faxed medical records
• Lost productivity from manual and faxed records
• Difficulty in providing records to other providers of care, health plans, patients and caregivers
• Inability to exchange and use discrete data

“Any doctor can tell you they are buried in faxes. The worst part is that faxes don’t go through often, or they get dropped or lost. This is a technology that should have disappeared along with beepers.”¹⁸

- Dr. P.J. Parmar, Ardas Family Medicine, October 2, 2014

CMS Enabling DIRECT esMD Program

- Allowing providers to leverage DIRECT for submission of CMS electronic documentation (esMD) would significantly advance DIRECT opportunities while reducing HIE costs and complexity for all.

Infographic: CMS esMD Presentation to HITSC, July 17, 2013 (with EDI modification*)

[Link to presentation](https://www.healthit.gov/sites/default/files/hitsc_presentation_on_digital_signatures_v1_2.pptx)
CMS Enabling DIRECT Steps

• Following the successful Florida-HIE adoption model, CMS should consider establishing its own DIRECT HISP to help enable a required usage and transition to DIRECT messaging for CMS communications
  – CMS adoption would significantly help address the HIE “Chicken or Egg” adoption challenge given the critical mass Medicare providers represent
  – Would better enable first-step up the “Technology Staircase” of Adoption
  – Require MU and MIPS Medicare providers (and Medicaid as allowable) who received EHR Incentive funding to use their CEHRT DIRECT capability
• CMS could approach the Florida-HIE regarding leveraging it’s last production (highly functional) DIRECT implementation called Direct Secure Messaging (DSM) developed leveraging ONC HIE Funding
  – DSM was designed to scale to large volumes of users cost effectively
  – CMS could leverage existing Medicare and Medicaid Provider vetting and credentials to establish DIRECT where needed (engage first-step providers)
• Expand to serve as a national framework for provider identity vetting
CMS Enabling DIRECT Capability

- Many DIRECT implementations appear not to be fully functional yet
  - Limited Use Case development and deployment across stakeholders
  - DIRECT message participants cannot yet easily discover each other
  - No focus on staff utilization of DIRECT as a secure communications tool
- CMS acquisition and use of DIRECT would help stabilize connections
  - Modify the CEHRT “Test Instructions for Cross Vendor Exchange” for Meaningful Use (MU) and Merit-Based Incentive Payment System (MIPS)
    - Include connecting and testing with a CMS Medicare Provider HISP
    - CMS established Trust Bundle for CEHRT vendor DIRECT HISPs
- CMS promoting public/private DIRECT capability development
  - Supporting large file attachments (e.g. cloud storage with secure link)
  - HIPAA compliant multi-user mail-box management (e.g. departments, retail locations, patients and care-givers) and other workflow solutions
  - DIRECT to CONNECT (and other DIRECT Hybrid HIE Solutions)
CMS Enabling DIRECT Discovery

- In May 2012 the Florida-HIE suggested to ONC leadership that the CMS National Plan and Provider Enumeration System (NPPES) be leveraged as a starting point for a national DIRECT address directory
  - Concerns at the time about the lack of provider use of NPPES and lack of capability (API) to automate NPPES access beyond portal/batch processes
  - Ongoing standards and development for Health Provider Directory (HPD)
- Today providers still cannot easily find DIRECT addresses of colleagues
  - HPD efforts have yet to enable widespread DIRECT address discovery
- CMS recently developed an API to search NPPES in real-time
  - In 2012 Florida-HIE tested DIRECT address in other identifiers fields
  - Existing NPPES data fields could contain DIRECT address with NO modifications (80 chars)

CMS Enabling DIRECT Patient Engagement

• Efforts to engage patients are still evolving and in their infancy
  – “The typical Medicare patient in one year sees seven different doctors, including five different specialists, working in four different practices”  
  – Patient Portal fatigue trying to access and maintain health records
    • Difficult for patient populations (especially elderly) and caregivers trying to maintain access to so many standalone patient portals
• DIRECT can better enable the opportunities envisioned by the establishment of patient portals and the CMS Blue Button Program
  – When patients view or download Summary of Care records, they are still greatly challenged aggregating and sharing their own health information
  – Use of DIRECT to untethered personal health records (PHRs) such as HealthVault that are DIRECT capable would enable patients and doctors
    • Enable secure patient and provider communications and more!

22 https://docs.microsoft.com/en-us/healthvault/concepts/connectivity/direct-messaging
Paving a HealthEHighway

Conclusions and Acknowledgements
Summary Conclusions

• DIRECT represents a highly flexible and extensible HIE capability with the potential to foundationally connect healthcare stakeholders
  – While widely deployed, DIRECT implementations are not yet effective
• Requires a refocused education and marketing of DIRECT to include a broader array of clinical, emergency and administrative Use Cases *(Florida-HIE education and adoption model)*
• Requires CMS adoption and utilization of DIRECT communications
• Requires enhanced CMS leadership to better enable DIRECT
  – National Get-off-the-Fax with DIRECT Educational Campaign
  – CMS Medicare DIRECT Provider Portal and DIRECT directory (e.g. NPPES)
• Requires a wider stakeholder engagement of DIRECT (Ancillary Providers, Hospitals, Pharmacies, Labs, Payers, Public Health, etc.)
• Requires collaborative state-to-state, community and regional efforts and outreach *(Florida-HIE stakeholder engagement model)*
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- Host and Producer Medical Update Show
- Served as the Technical and Operations Lead and HIE Project Manager for the Florida Health Information Exchange
- Served as the Regional Center Program Director for AHIT, Florida’s largest ONC Regional Extension Center (REC)
- Consultant and Subject Matter Expert for HIT, HIPAA, e-Prescribing, and HIE initiatives in FL, GA, KY, TN, OH, MI and VA
- Founding Executive Director of ePrescribe Florida and President, ePrescribe America
- Served as Business Lead for BCBS-FL X12N 4010 to 5010/ICD10 Migration Project
- Served as State of Florida Technical SME for ONC SERCH Cross-border HIE Disaster Preparedness & Response Project
- Founding Chief Technology, Security and Privacy Officer for Availity Clearinghouse and Webify Solutions (IBM Subsidiary)
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- Founding Security and Privacy Co-Chair for the WEDI Strategic National Implementation Process (SNIP)

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Chief Operating and Privacy Officer
- Nationally recognized Attorney and health care expert and strategist whose legal practice specializes in HIPAA, healthcare and the HITECH Act
- Focused on covered entities, business associates, technology companies, and federal agencies
- Engagements have included CMS, OCR, NIST, RECs, ACOs, Medicaid Agencies and National and State Trade Associations
- Developed NIST HIPAA Security risk analysis and audit tool used across the healthcare industry
- Developed HIPAA privacy and security tools for risk analysis/assessment, audit, breach notification and HIPAA policies and procedures
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- Past Administrator of the Office of Health Information Exchange, Florida Agency for Health Care Administration
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