

A decorative graphic on the left side of the slide, consisting of a network of light blue lines and circles that resemble a circuit board or data network. The lines are vertical and horizontal, with some diagonal connections, and the circles are small and spaced out along the lines.

STATE OF THE ART OF HEALTH INFORMATION EXCHANGE

10-11-2023

TASK FORCE OF BORDER HEALTH OFFICIALS

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ART OF HEALTH INFORMATION EXCHANGE

My Personal Goal & Perspective:

“For health data to flow like water and breath like air.

To have health data at our fingertips to be able to provide the most efficient care, with the right resources at the right place and the right time.”

HEALTH INFORMATION EXCHANGE (HIE)

Health Information Exchange (HIE) refers to the secure and timely sharing of electronic health data across the boundaries of health care institutions

ONC: Office of the National Coordinator for Health Information Technology (ONC)

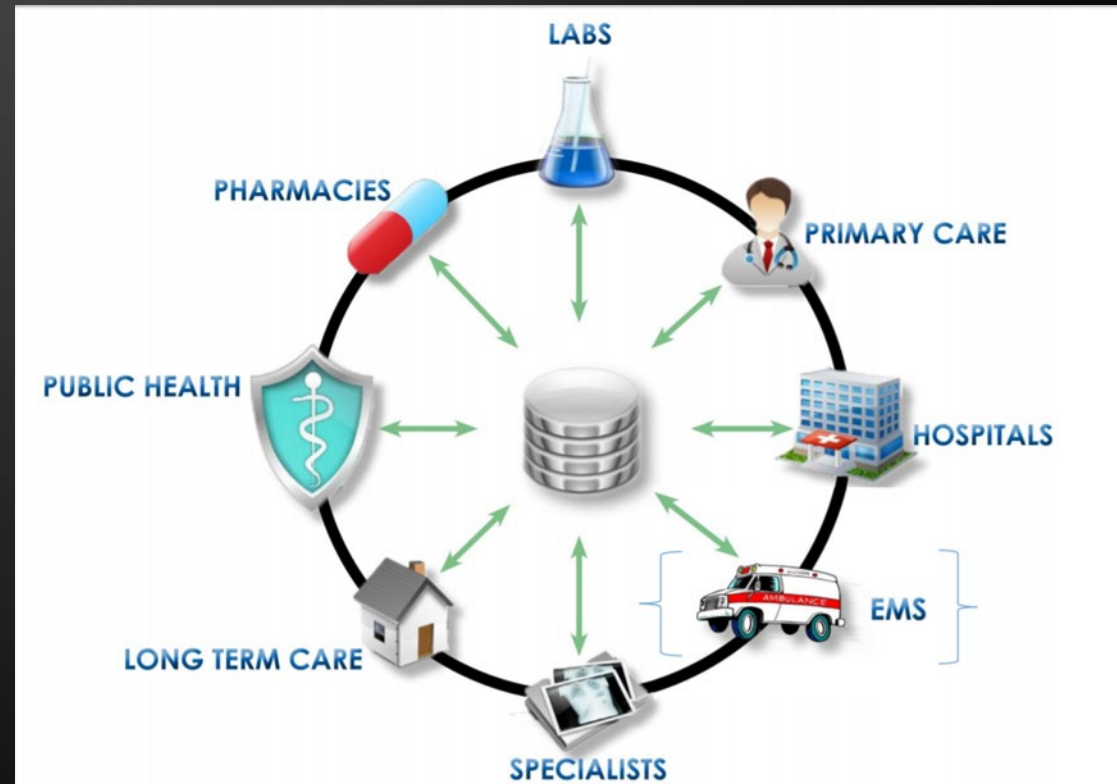
TEFCA: Trusted Exchange Framework and Common Agreement

FHIR: Fast Healthcare Interoperable Resource

API: Application Program interface

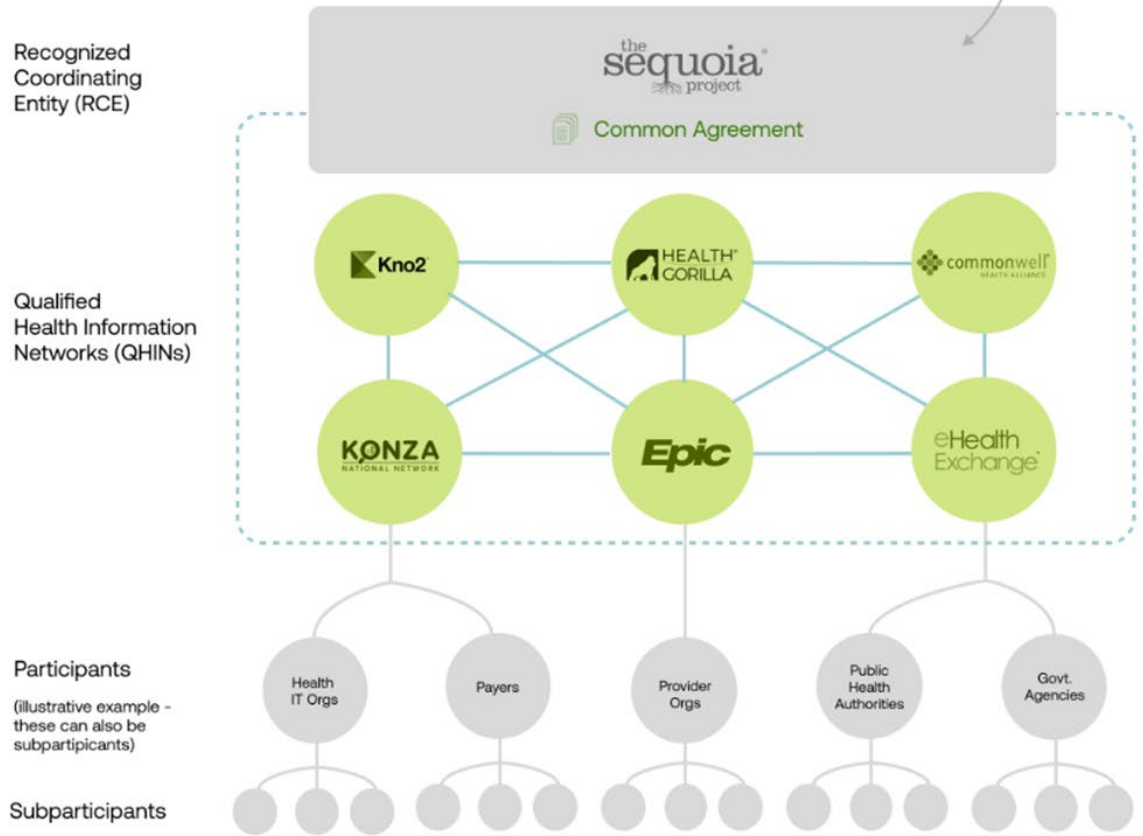
CCD: Continuity of Care Document

ADT: Admit/Discharge/Transfer



CENTERS OF MEDICARE & MEDICAID (CMS)

- HHS released CMS' final rule, The Interoperability and Patient Access (CMS-9115-F), which states payers and health systems can no longer block health information. As well as mandates the use of FHIR-based APIs in the healthcare industry.
- FHIR stands for Fast Healthcare Interoperability Resources and is a standard for health care data exchange developed by Health Level 7 (HL7)
- HL7 is a leading standards development organization for medical data.
- APIs is an Application Programming Interface or protocols that connect IT systems such as electronic health records with third-party apps.



TEFCA & QHINs 101

- TEFCA is composed of two parts:
 - **Technical Exchange Framework** establishes the foundational principles for data sharing across health information networks (HINs)
 - **Common Agreement** is the legal agreement between RCE and the participating HINs that governs how data is to be exchanged
- **ONC** defines overall policy and certain governance requirements
- **RCE (The Sequoia Project)** provides oversight and governing approach for QHINs
- **QHINs** connect directly to each other to facilitate nationwide interoperability
- Each QHIN connects **participants**, which connect **sub-participants**

Adapted from: RCE Monthly Informational Call, July 19th, 2022

Visual Overview of the TEFCA & QHIN Ecosystem

DATA STANDARDIZATION

Standardization and normalization of data is essential for interoperability and patient matching

United States Core Data for Interoperability

- Sets standards for data classes and elements
- Creates common / standard formatting

US@ Standards

- Adoptions of the United States Postal Address standards assists with improving data matching

AHIMA Naming Policy Framework 2023

- Sets standards for documentation of how names are entered in all electronic data sets

<https://www.healthit.gov/sites/isa/files/2023-07/Final-USCDI-Version-4-July-2023-Final.pdf>

https://ahima.org/media/tzigwxt1/naming-policy_final.pdf

USCDI v4 Summary of Data Classes and Data Elements

Allergies and Intolerances

- Substance (Medication)
- Substance (Drug Class)
- Substance (Non-Medication)
- Reaction

Care Team Member(s)

- Care Team Member Name
- Care Team Member Identifier
- Care Team Member Role
- Care Team Member Location
- Care Team Member Telecom

Clinical Notes

- Consultation Note
- Discharge Summary Note
- History & Physical
- Procedure Note
- Progress Note

Clinical Tests

- Clinical Test
- Clinical Test Result/Report

Diagnostic Imaging

- Diagnostic Imaging Test
- Diagnostic Imaging Report

Health Status Assessment

- Health Concerns
- Functional Status
- Disability Status
- Mental/Cognitive Status
- Pregnancy Status
- Alcohol Use
- Substance Use
- Physical Activity
- SDOH Assessment
- Smoking Status

Immunizations

- Immunizations

Laboratory

- Tests
- Values/Results
- Specimen Type
- Result Status
- Result Unit of Measure
- Result Reference Range
- Result Interpretation
- Specimen Source Site
- Specimen Identifier
- Specimen Condition Acceptability

Patient Demographics/ Information (cont.)

- Sex
- Sexual Orientation
- Gender Identity
- Preferred Language
- Current Address
- Previous Address
- Phone Number
- Phone Number Type
- Email Address
- Related Person's Name
- Relationship Type
- Occupation
- Occupation Industry

Patient Summary and Plan

- Assessment and Plan of Treatment

Problems

- Problems
- SDOH Problems/Health Concerns
- Date of Diagnosis
- Date of Resolution

Procedures

- Procedures

INTRODUCTION - ONGOING PATIENT MATCHING CHALLENGES

Capturing essential, standardized demographic data elements to identify and match person(s) to their health record is the starting point of trusted and reliable data and foundational to the success of data sharing through electronic health information (EHI) exchange. Patient identification techniques implemented worldwide have resulted in no single solution with a 100 percent match rate.¹

One way that patient matching could be improved is through the development and widespread adoption of standards for the demographic data elements that are relied on every day for matching patient records.²

Please note there is a change from previous terminology in this version with a move from "patient index" to "person(s) index" to capture additional persons (in addition to the patient) such as parents, guardians, guarantors, and caregivers.

AHIMA has created this person(s) demographic data element framework to assist in identifying and matching person(s) in health information technology (IT) systems.

Patient matching and record linking continues to be a major challenge for healthcare.³ Inaccurate patient matching can lead to fragmented or duplicate patient records, which can lead to:

HEALTH INFORMATION EXCHANGE REGIONALLY

Service Providers for the Southern Border of Texas

- Connected Care Exchange (formally RGVHIE)
- C3 Health Information Exchange (formally HASA)
- PHIX

Name	Covered			Payers	
	Lives	Hospitals	Providers	Ancillary	Connected
CCE	1.4 million	9	120	32	5
C3 HIE	16 million	86	2000+	0	6
PHIX	1.4 million	11	2351	150	3

PHIX: CASE STUDY: COVID19 RESPONSE – PUBLIC HEALTH AID

March 2020	Public Health Laboratory operated on paper and was the only lab that could do COVID19 testing.
April 2020	PHIX developed and implemented an electronic ordering and results system for COVID19 in less than 3 weeks. The electronic system sent positive results to Epidemiologists to begin case investigations.
April 2020 - Today	Infrastructure expanded to serve <ul style="list-style-type: none">• Drive-thru testing sites across the region (both local and national labs).• Notification system developed to send patient results via secure email.• Setup and currently host El Paso's case investigation and contact tracing system.• Created an immunization system to report COVID-19 vaccines to ImmTrac (Texas).• Provided real time data to support 300 transfers to El Paso's emergency alternative care site which expanded community hospital bed availability.• Developed a roster of patients eligible for transfer to our local Army Hospital (WBAMC) which expanded community hospital bed availability.• Supported the CDC on understanding COVID-19 vaccine efficacy (VISION Network).• Work with Public Health to survey and find trends in diseases (Acute and Chronic) to aid strategy and policy development.

GRANT & PUBLIC HEALTH PROJECTS

Sample of the work

- PHIX
 - ARPA Funding through the County of El Paso Non-Profit Funding Opportunity to develop and implement a syndromic surveillance system for our region.
 - National Alliance for Hispanic Health to provide alerts to primary care physicians when their patients have elevated HbA1c levels and to enhance the closed-loop referral system to support referrals to diabetes education services.
 - Paso del Norte Health Foundation to develop and implement a Diabetes Data Workgroup to support using data to enhance diabetes-related programs and policy in El Paso and to enhance the implementation of a closed-loop referral system to support diabetes management.
 - City of El Paso to collect and analyze housing data through a community-level dashboard.
 - PHIX Social Factors of Health Committee is developing strategy for how to approach integration of health and social services data in our region.
 - Currently working with the City of El Paso to aggregate housing data and provide performance dashboards
 - Currently supporting closed-loop referral system so that providers and health plans can refer patients to the Food Farmacy at El Pasoans Fighting Hunger Food Bank.
- CCE
 - **SDOH Work:** pilot project for implementing a closed loop referral system and Consumer/Patient app. The system allows for PRAPARE survey to be electronically sent to patient via the app. The survey can submit completed survey to system for staff to take action/referral.
 - Community Database for COVID19 research: Clinical Data Warehouse in support of clinical and population health efforts related to COVID-19 by leveraging data available in HIE
 - Notifiable Conditions web form: Implement web accessible form to submit an Electronic Case reporting for Notifiable conditions for Cameron county

CCE HIE – PUBLIC HEALTH

- Notifiable Conditions Dashboards
- Available to providers in Cameron County TX
- No faxing or scanning of documents
- Legible & aids in accuracy of data submitted

RGVHIE
In Service Today from Cameron County

RGVHIE Notifiable Conditions Dashboard is available to the community

- ✓ No printing
- ✓ No scanning
- ✓ No faxing
- ✓ No handwriting

Electronic Dashboard

CAMERON COUNTY PUBLIC HEALTH
Notifiable Conditions Report Form
Cameron County Epi-1 Form (CCCPH-1)

This form may be used to report suspected or confirmed cases of those notifiable conditions in Cameron County Public Health. Individuals, medical professionals, or animal service professionals of disease that may be of public health concern should also be reported to the appropriate health authority. Health events of a health department grade. Report information may contact you for additional information. (Check date the one (1) Report Form for each individual case identified. ADD: Please attach confirmatory LAB results to this report.

Submitting (Reporting) Facility: _____ Date Submitted: _____
Name of Person Submitting Report: _____ Title/Department: _____ Telephone Number: _____
City: _____ State: _____

Notifiable Condition - Reason:
Please check one:
 Acute Chronic Seroology Culture/PCR Respiratory Screen Other

Name of Reporting Practitioner: _____ Physician Address: _____ Clinic: _____
City/State/Zip: _____ Office Telephone Number: _____

Patient's Last Name: _____ Sex: _____ Patient's First Name: _____ DOB: _____
Patient's Physical Address of Residence: _____ City/State/Zip Code: _____ Patient: _____
City/State/Zip Code: _____

Travel: Yes No N/A Foreign Return
If yes, where: _____
Reason for Travel: _____

Additional Information such as pregnancy status, occupation, school, etc. (optional): _____

FAX to: 1-(866)-326-3316 or (956) 361-8296
Attention: CCEH PHCP Programs - Fax/Successful
To speed to get staff or report immediately Reportable Conditions,
call (956) 361-8296 or (956) 361-8296.

This fax transmission contains confidential information. The information is intended only for the individual named. If you are not the named individual, please do not disseminate, distribute, or otherwise use the transmitted information in any way.

Modularity System/Date: _____

1 Practitioner Details 2 Facility Details 3 Patient Details 4 Condition

Reporter Details
Name of Person Reporting _____ Title _____
Email _____
Phone _____

Partitioner Details
Name _____
Phone _____
Area Code _____ Telephone Prefix _____ Line Number _____

Contact RGVHIE: 956.622.5801
support@rgvhie.org
rgvhie.org/contact

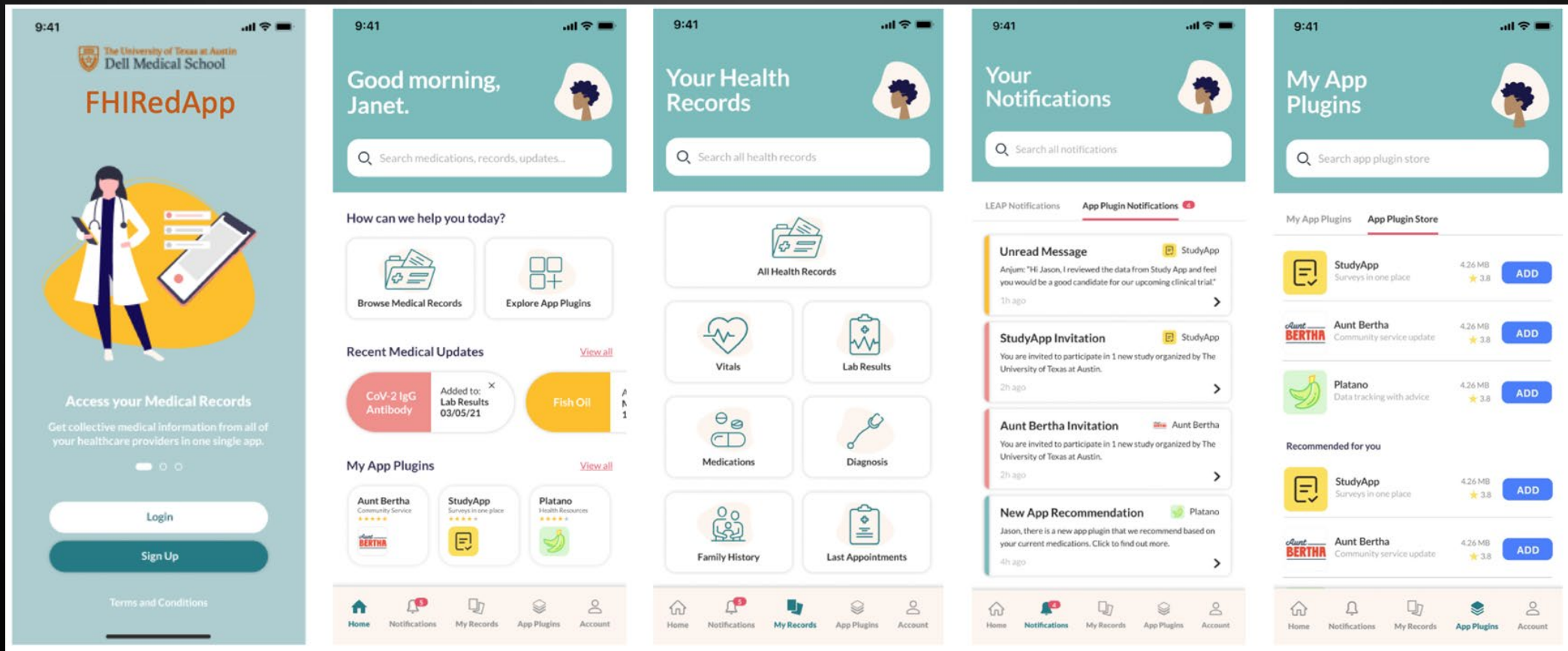
Complete the User Access Request Form for users who will be submitting Notifiable Conditions Reports within your organization

You will receive an email to create your account and begin using the dashboard

```
graph LR; A[Contact RGVHIE] --> B[Complete the User Access Request Form]; B --> C[You will receive an email to create your account and begin using the dashboard];
```

APPLICATION FOR PATIENT ACCESS

Implemented in the HIE to provide patients access to their health record
Additionally, the application can be connected to community based organizations to assist patients



Khurshid A, Oliveira E, Nordquist E, Lakshminarayanan V, Abrol V. FHIRedApp: a LEAP in health information technology for promoting patient access to their medical information. JAMIA Open. 2021 Dec 28;4(4):ooab109. doi: 10.1093/jamiaopen/ooab109. PMID: 35155997; PMCID: PMC8826978.

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My Personal Goal & Perspective:

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HIE – PERSPECTIVE

- Data Lakes
- Information Highways
- Communication Platforms
- Conveners
- Translators of Data
- Health Data Utility
- Research
- Connect multiple platforms
- Point of Care Enhancement
- Screening
- Connect public and provide health care entities / providers / agencies

SOCIAL DETERMINATES OF HEALTH / NON-MEDICAL DRIVERS

- Data collection and submission are all possible through HIEs
- Examples:
 - Intermountain Health – established a system to screen all patients that enter their health system
 - CRISP Shared Services – an HIE based in Maryland is working to build systems to include social determinate screening tools and to connect to community based organizations

- [How HIE Tools Can Bridge the SDOH Data Interoperability Gap \(ehrintelligence.com\)](https://ehrintelligence.com)

- [How Health Information Professionals Can Boost SDOH Data Collection \(ahima.org\)](https://ahima.org)

DATA COMMUNICATION – FHIR

(FAST HEALTH INFORMATION RESOURCE)



- FHIR – API Data

- Data Pulls
- Data Pushes
- Surveillance - Push and Pull

- Below: sample FHIR generated – read only screen for providers – located in their EMR
- Additional potentials for further development and potential communications

A screenshot of a patient summary screen in an EMR system. The screen is titled "Summary" and shows patient information for "Cynthia Test". The patient's DOB is 1/14/1974, and their gender is Female. The screen is updated as of May 24, 2023, at 8:02:24 PM. The patient's phone number is listed as "Home", their preferred language is English, and their address is "US (home)". The screen is divided into several sections: "Problem List" with entries for homelessness, anxiety, anemia, osteoarthritis, and breast cancer; "Medications" with a list of drugs including atenolol, amitriptyline, amLODIPine, metFORMIN, and a fluticasone/salmeterol inhaler; and "Last Hospital Visits" which shows "No last hospital visits". A "DETAILS" button is visible below the medications list. The footer of the screen reads "Patient Centric Solutions, Inc ©2019-2023".

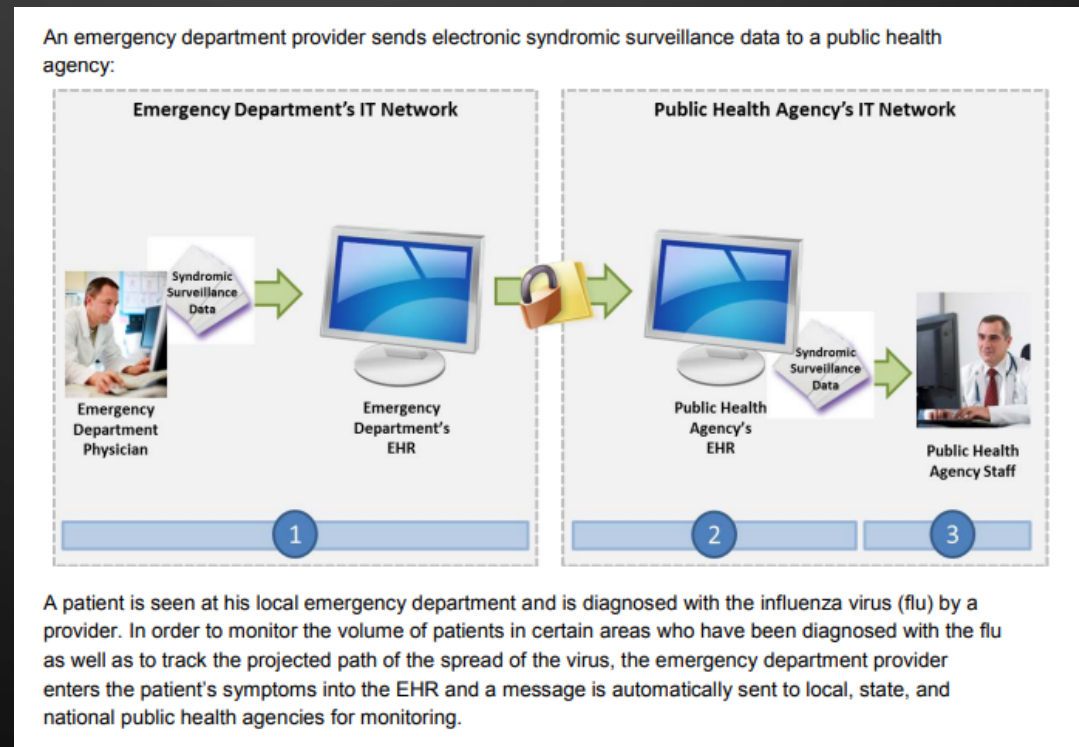
HIE – SYNDROMIC SURVEILLANCE

Federal Push since approximately 2012 to digitize healthcare information

2012 Infographic describes using HIE and HL7 / FHIR to transmit necessary data for syndromic surveillance

2023 – we now have the infrastructure to implement the scenario described

As an HIE representative, we seek the partners and the funding to make this a reality for all public health departments



OPPORTUNITIES - REINFORCE DATA HIGHWAY

- **Health Care is Local – Data is both local and national**
- **Need to incentivize all health providers to connect to the data highway (need last mile assistance)**
- **Need consistent / normalized data / unified formatting**
- **Connect to your local/regional HIEs**
 - **This will support the local health care needs**
- **Need to connect HIEs across the state to form a true bidirectional exchange**
 - **Hub and Spoke model – is a viable option**
 - **Connect the hub to the national HIEs**
 - **this will improve the efficiency of interfaces**
- **Connect public and private health care partners and community based organizations to local HIEs for a robust communication system for health care delivery and addressing the health equity needs of our communities**



THANK YOU

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