

# Beyond Query and Exchange – Innovations in Health Information Exchange Services

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**Himss**

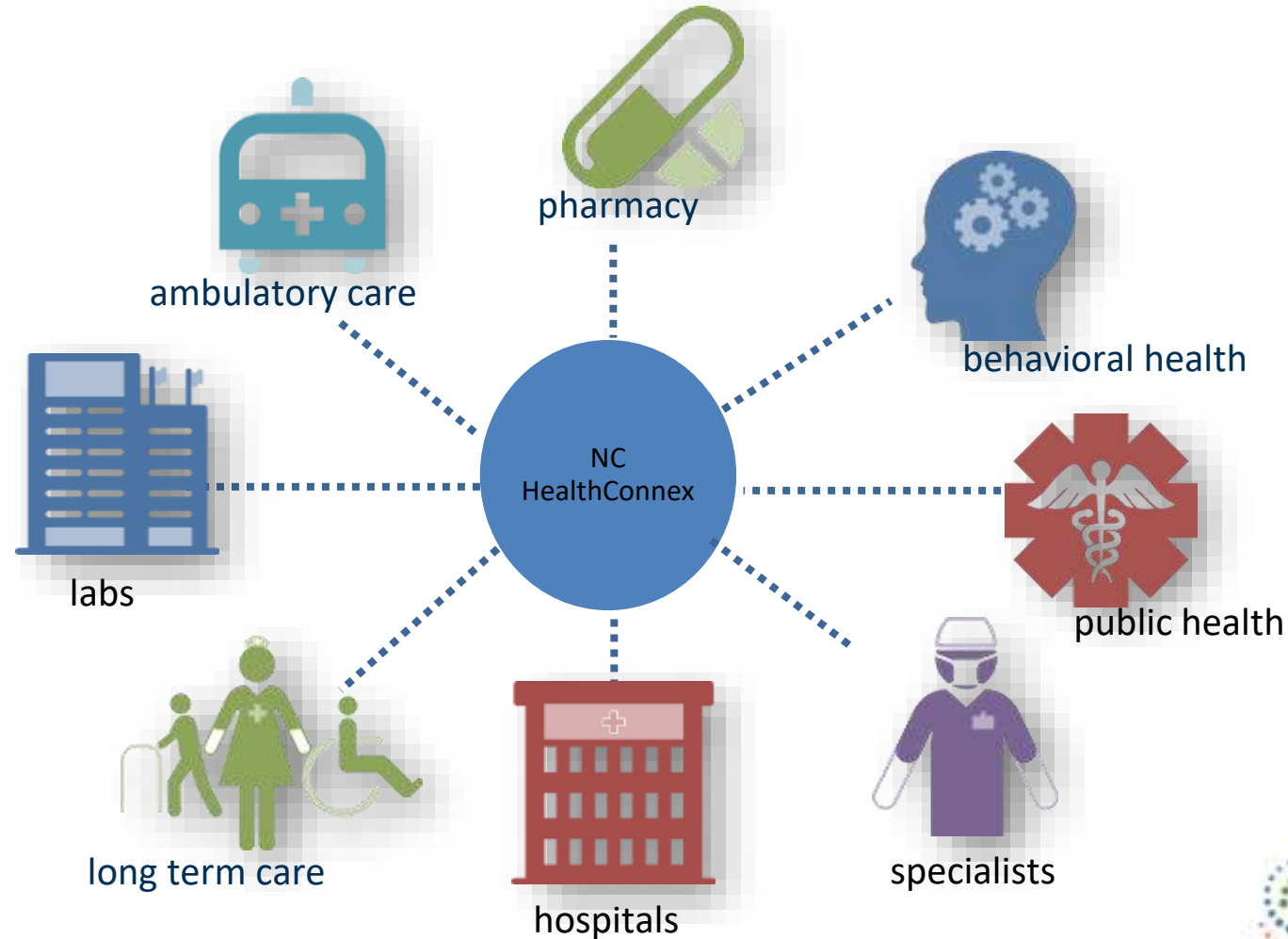
**NORTH CAROLINA** *Chapter*



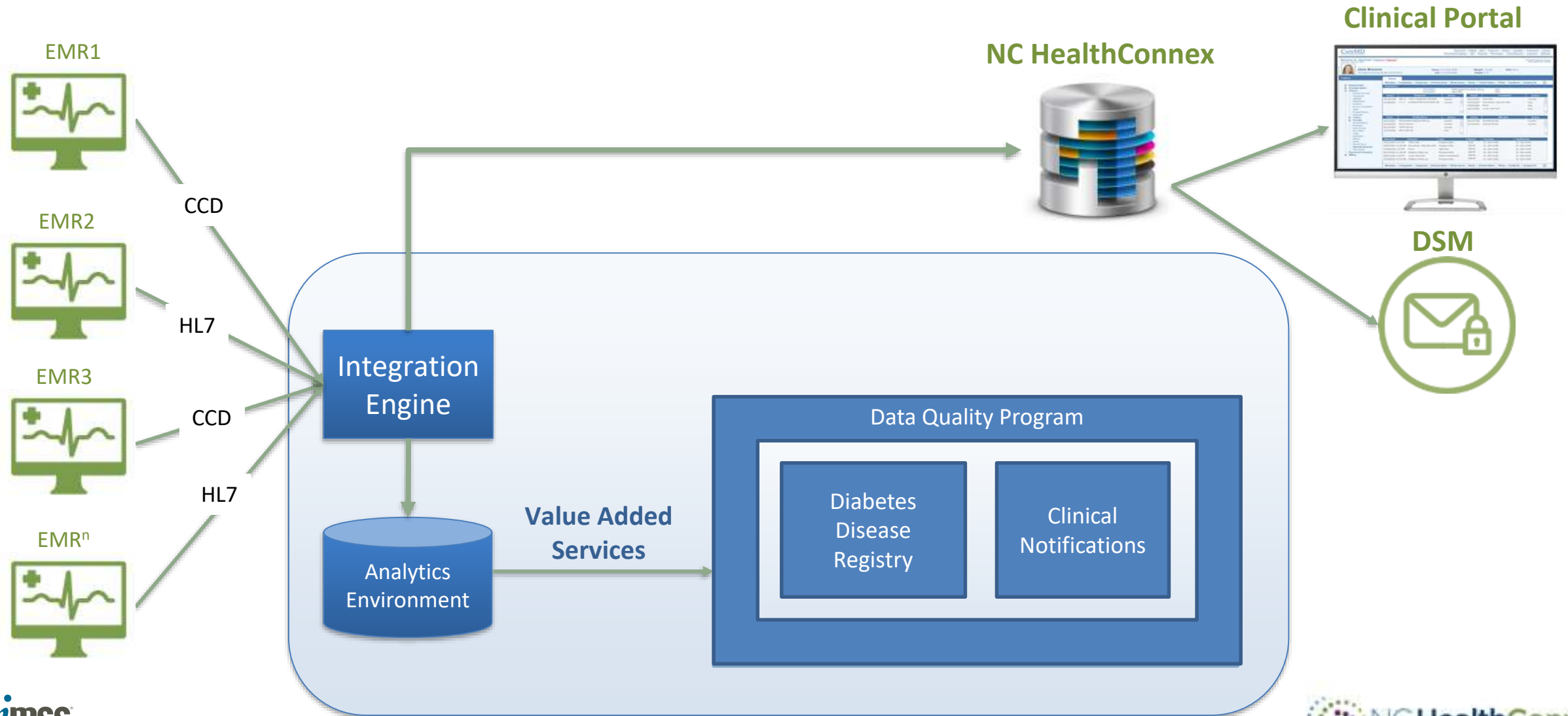
# About NC HealthConnex

# What is NC HealthConnex?

A Health Information Exchange (HIE) is a secure, electronic network that gives authorized health care providers the ability to access and share health-related information across a statewide information highway.



# NC HealthConnex High Level Dataflow



# The Mandate

- Hospitals as defined by G.S. 131E-176(3), doctors (licensed to practice under Article 1 of Chapter 90 of the General Statutes), and mid-level practitioners who provide Medicaid services and who have an electronic health record shall connect by June 1, 2018.
- All other providers of Medicaid and state-funded services shall connect by June 1, 2019.

## NC Medicaid Providers with Technology

- Hospitals
- Doctors
- Mid-Level Practitioners



## LME/MCOs

- Required to submit claims and encounter data

## NC Medicaid & State Funded Service Providers without Technology

- All other providers

# Connection Overview

## 1100+ CONNECTIONS

Total Health Care Facilities Live

- 80+ County Health Departments and Federally Qualified Health Centers
- 35+ Hospitals & Health Systems
- 300+ Primary Care Providers
- 500+ Ambulatory Sites, including specialty providers



\*These partners are not a conclusive list of all of Participants. For a complete list of connected providers, visit our website: [nchealthconnex.gov/nc-healthconnex-participants](http://nchealthconnex.gov/nc-healthconnex-participants)

# NC HealthConnex Current Data Targets

Patient ID	Name	Date of Birth	Address/ Phone	Language	Race/ Ethnicity	Gender
Date of Visit	Visit Number	Reason for Visit	Level of Care	Visit Location	Care Team Members	
Vital signs (height, weight, BP, BMI)	Immunization	Referrals	Care plan field(s), including goals and instructions	Problems	Medication Allergies	
Medications	Laboratory Test(s)	Laboratory Value(s)/Result(s)	Smoking Status	Discharge Summary	Procedures	

# Meet Lisa



- 5-year old girl who suffers from Type I diabetes and two other chronic comorbidities.
- Lisa has frequent visits with a variety of clinical specialists across the state



# Meet Lisa



- 5-year old girl who suffers from Type I diabetes and two other chronic comorbidities.
- Lisa has frequent visits with a variety of clinical specialists across the state
- Lisa's family & care team are struggling to keep up with all of her varied health care information across her care continuum.

# Meet Lisa

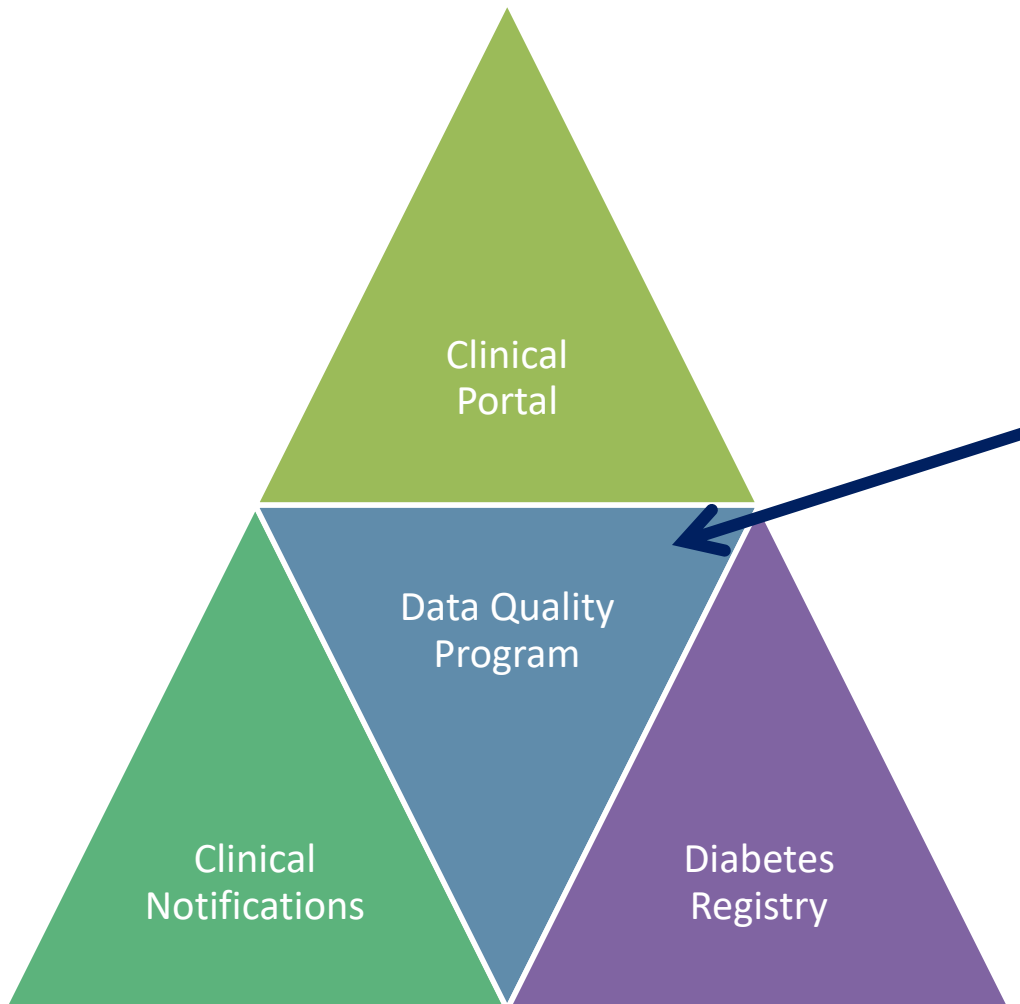


**How Can NC  
HealthConnex  
help Lisa and her  
family?**



# Value Added Services

# Services Available in 2018



## Data Quality Program

- Support NC HealthConnex Onboarding Process
- Ensure real-time notification of data delivery issues
- Educate and support Participants trying to improve their data to support Quality Improvement and other initiatives
- Confirm data is aligned with policies that ensure high-quality and accurate data outputs

**Foundational element that supports ALL Services**

# Data Quality – Participant Onboarding

STATUS	DATA	ALERT
Pass	Patient Information	0 of 32 records contained insufficient Patient info
Fail	Provider Information	16 of 32 records contained insufficient Provider info
Fail	Facility Information	32 of 32 records contained insufficient Facility info

During Onboarding to NC HealthConnex, Participants are alerted when there is a problem with required data elements.

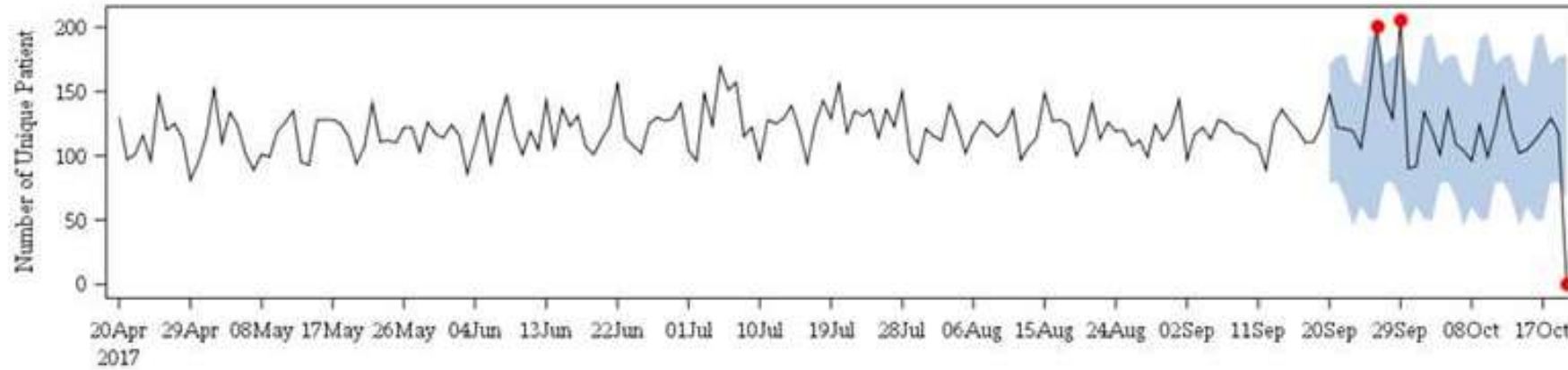
In addition, Participants can drill-down to see the specific Provider and Facility information that is missing.

Participants are also able to look-up the specific clinical documents/messages that contained insufficient information.

Provider Information	
Variable	Percent of Records Populated
Provider NPI	50.00%
Provider Last Name	100.00%
Provider Middle Name	50.00%
Provider First Name	100.00%
Provider Address	50.00%
Provider City	0.00%

CCD ID	CCD Extension
1	1_1_100_1_1
2	1_1_100_1_2
3	1_1_100_1_3
4	1_1_100_1_4

# Data Quality – Ongoing Monitoring



Participants are provided a monthly report that alerts them to anomalies in their data submitted to NC HealthConnex.

Potential problems are listed along with suggested priority for these problems, and allows for drill-down to see detail.

STATUS	PROBLEM	Number of Days
Critical	Abnormal amount of documents submitted	4
Critical	Abnormal amount of patients	3
Needs Review	Drop in percent of documents populating Care Plan	1
Needs Review	Drop in percent of documents populating Reason for Visit	2

Problem	Date Occurred	Day of Week	Median Value	Current Value
Abnormal amount of patients	20OCT2017	Friday	123	0
Abnormal amount of documents submitted	20OCT2017	Friday	126.5	0
Abnormal amount of documents submitted	12OCT2017	Thursday	132.5	307

# Data Quality – Ongoing Monitoring (cont.)

NC HealthConnex monitors data submissions overall, and by Sending Source and Organization. In the example below, one Organization stopped sending Smoking Status – one of the required elements from the Data Target.

**Data Target Section**

Required Patient Info	Optional Patient Info	<b>Required Clinical Data</b>	Optional Clinical Data
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[Click here for navigation instructions.](#)

## Number of Alerts by Source & Organization



## Number of Alerts by Data Element

Month	Dec2017	Nov2017
Field	Number of Alerts	Number of Alerts
Lab Results	0	0
Lab Tests	0	0
Medication Allergies	0	0
Medications	0	0
Problems	0	0
Procedures	0	0
Smoking Status	0	5

## Source Selection - Trend Graph

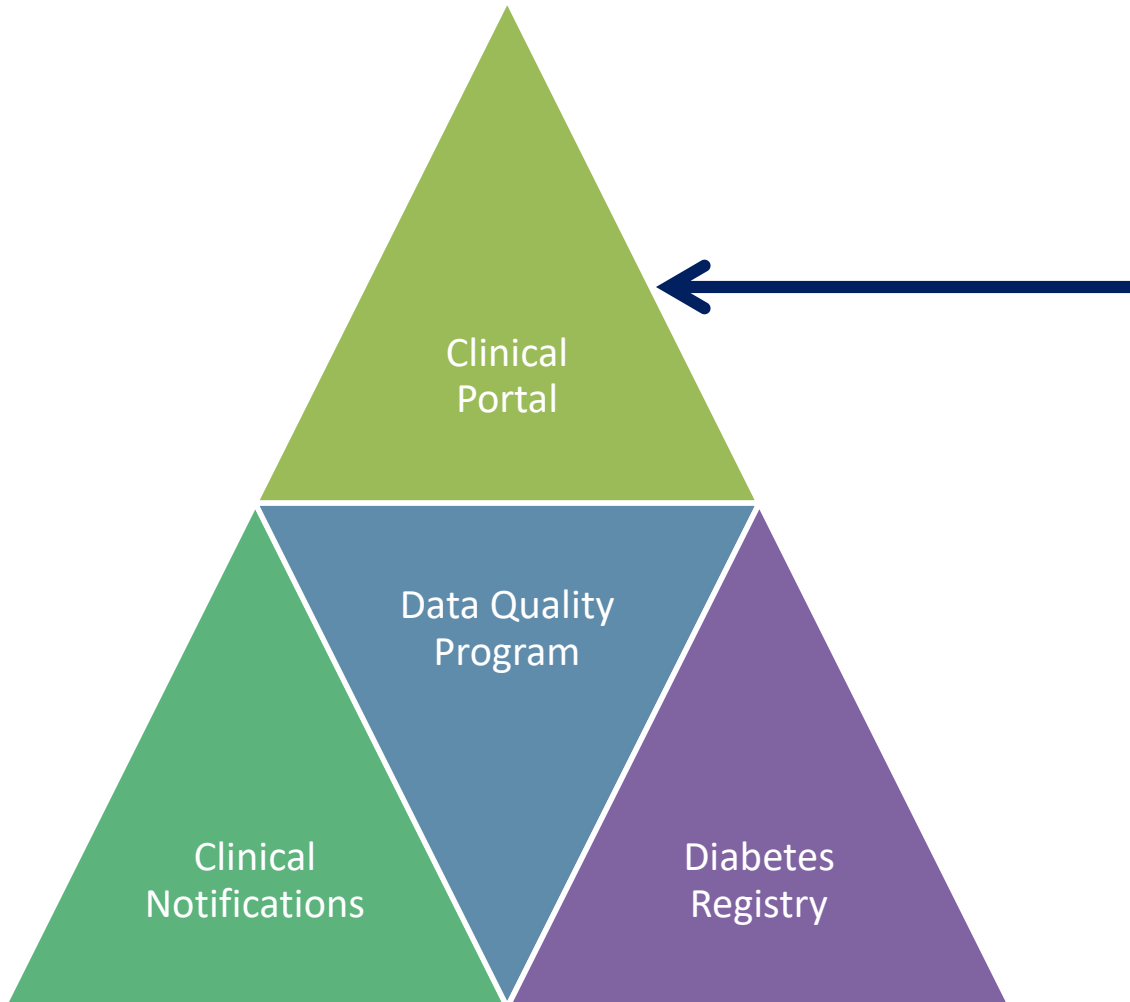
## Organization Selection - Trend Graph

## Data Element Selection - Trend Graph

Smoking Status



# Services Available in 2018



## NC HealthConnex Clinical Portal

- State-wide, longitudinal view of a patient's medical record across different care providers, health systems, etc.
- Access to Direct Secure Messaging (DSM)



# NC HealthConnex Clinical Portal

M00000863 (HRMC) TEST PATIENT PLAN ( M 82 years )

Patient Summary | Timeline

Document View  
Showing All Mark All As Read  
Group By Category Sort By Date

Patient Summary  
Dynamic Documents (1 / 1)  
Incoming CCD (1 / 1)

### EMPI Demographics

TEST, PATIENT PLAN

Other Identifiers		Emergency Contact	
HRMC	M00000863	Name	Snider, Kim
		Relationship	
		Phone	(336)829-4775

Demographics		Primary Care Provider	
Sex	Male	Name	Timberlake Jr, Roberts E
Date of Birth	01 Jan 1934 ( 82 years )	Clinic	Davidson Pediatric & Adolescent Medicine
Address	123 ROANOKE RAPIDS NC 27870		
Phone	5655555555		

### Allergy List

Details	Reactions (Severity)	Onset Time
Ambien CR	dizziness	On Date

Providers may view summary information about patients, as well as see the detail clinical documents that contributed to that summary.

### Clinical Documents

Showing All Mark All As Read  
Group By Category Sort By Date

Patient Summary  
Dynamic Documents (1)  
Laboratory (46 / 46)  
Blood Gases (1 / 1)  
Chemistry (11 / 11)  
02-May-2012 ESR (1 / 1) Dr Be  
24-Apr-2012 \* Electrolytes (1 / 1) Dr Jol  
26-Apr-2006 INR (4 / 4) Dr Jol  
09-Jan-2005 Creatinine (1 / 1) Dr Jol

Hematology (30 / 30)  
Immunology (2 / 2)  
Serology (1 / 1)  
Surgical Pathology (1 / 1)  
Microbiology (7 / 7)  
Radiology (8 / 8)

### \* Electrolytes (4.5 years ago)

Electrolytes Cumulative [Show Older](#) | [Show Newer](#)

	Number	1	2	3	4	5	Ref. Range (Units)
Collected		21-Apr-06 21:00	23-Apr-06 07:00	24-Apr-06 06:00	24-Apr-06 19:00	24-Apr-12 06:00	
Source		MR	MR	MR	MR	MR	
Sodium		140	141	138	140	* 130	135-145 (mmol/L)
Potassium		4.3	4	3.9	** 7.5	* 3.1	3.4-4.5 (mmol/L)
Creatinine		+ 0.12	0.1	0.09	0.11	+ 0.04	0.05-0.11 (mmol/L)
GLUCOSE		6.4	6.9	6.8	* 7.6	7.0	4.0-7.5 (mmol/L)
BUN		2.5	2.7	2.4	2.9	3.0	1.3-3.3 (mmol/L)

Graph No tests selected

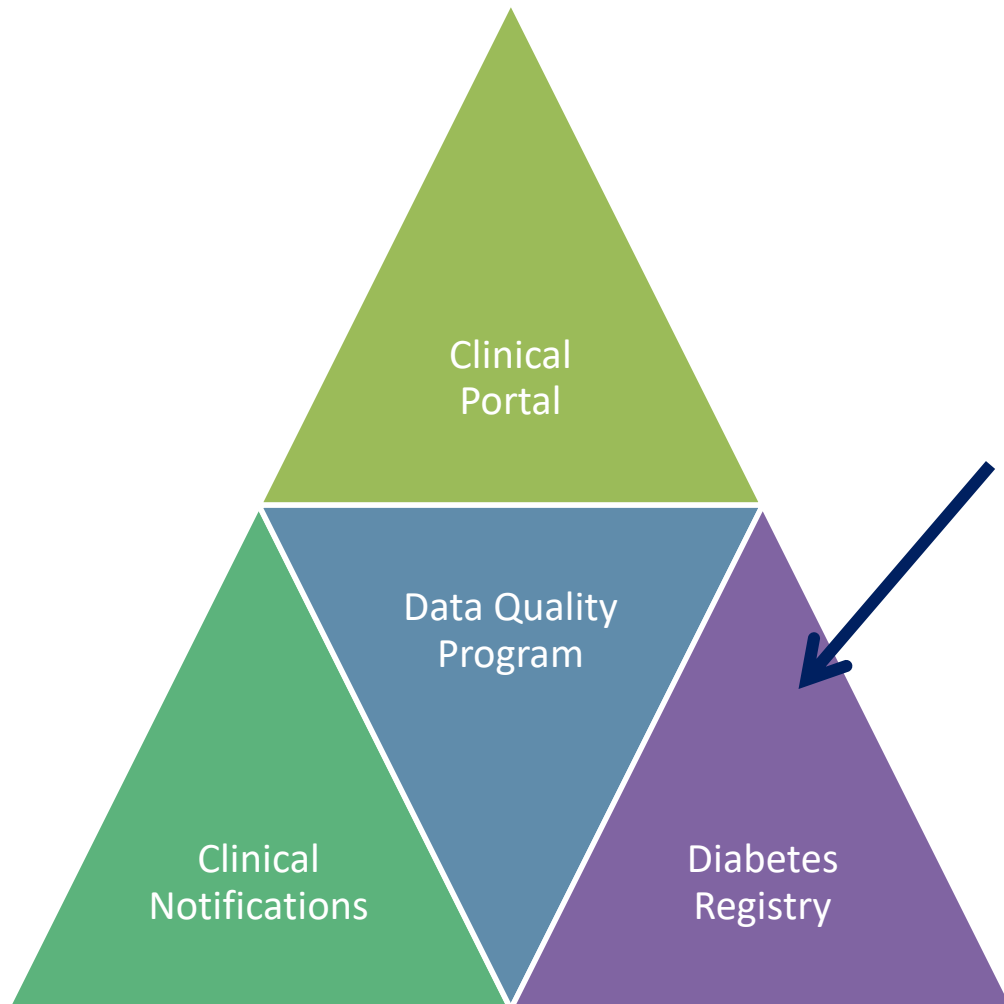
\* Abnormal \*\* Critically Abnormal Units or Reference Range differs

# Lisa's relationship to the Clinical Portal



- Lisa's care continuum extends across the state of NC.
- Lisa's providers are often in different networks, but are able to **leverage NC HealthConnex's Clinical Portal** to see all of Lisa's encounters, medications, allergies, diagnoses, etc.
- Full and in-depth view of Lisa's longitudinal patient record.

# Services Available in 2018



## Diabetes Disease Registry

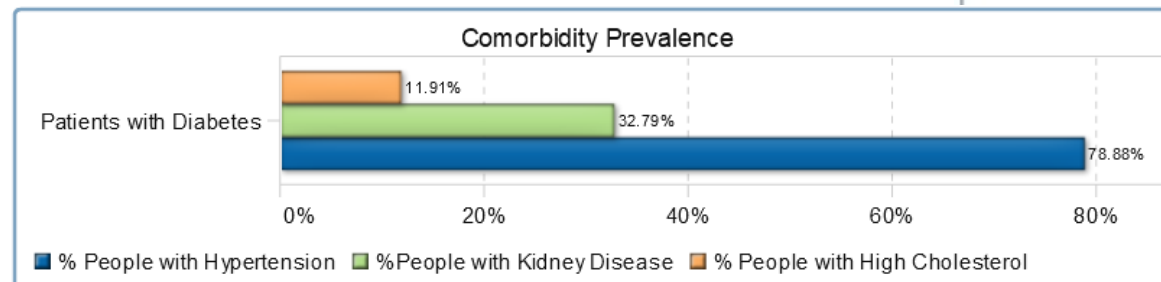
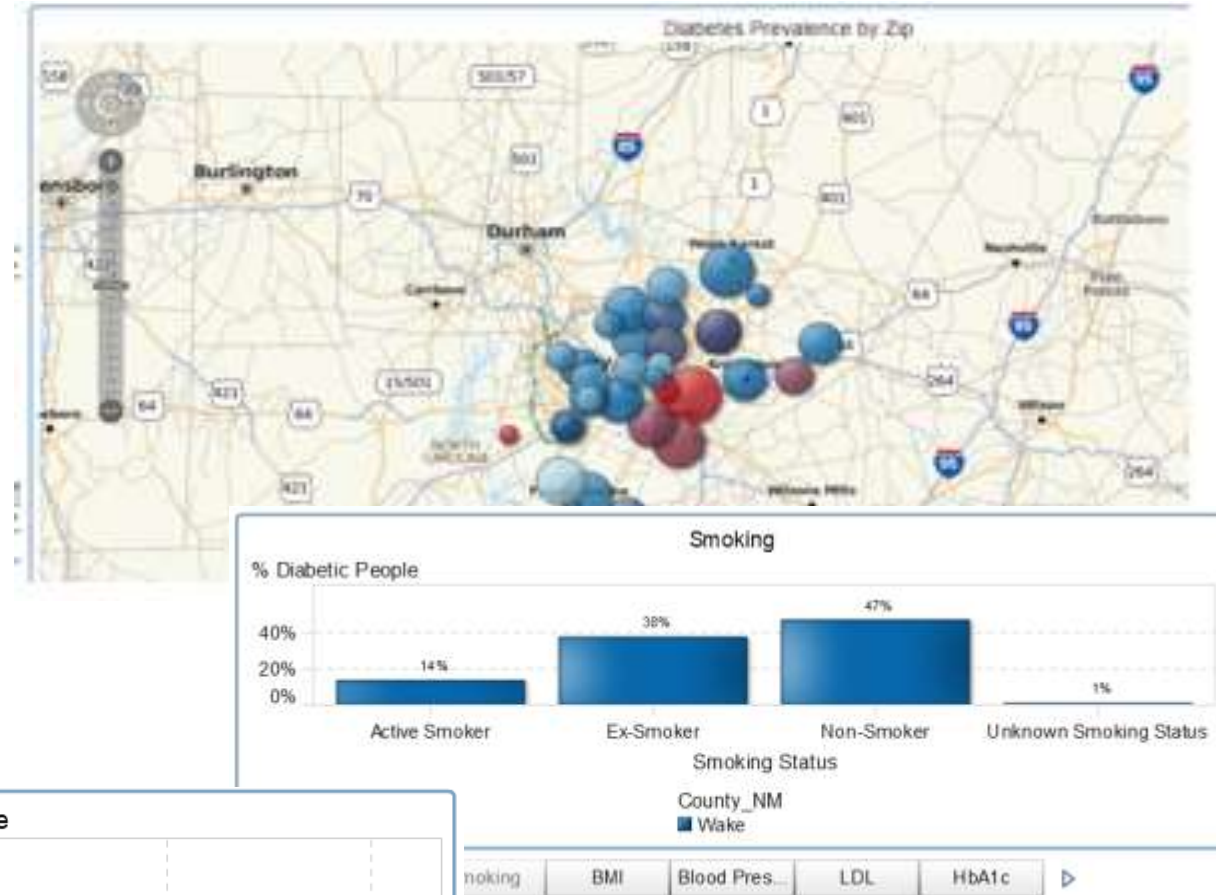
- Partnership between the NC DHHS's DPH and NC HealthConnex.
- Starting June 1, supports attestation for Meaningful Use Stage 3 and Modified Stage 2 for eligible hospitals, eligible critical access hospitals, and eligible professionals as well as Medicare Quality Payment Program Advancing Care Information for eligible clinicians
- Also includes a subscription based service for Participants where detail clinical data is provided based on a list of Participant's Patients
- Currently evaluating other clinical registries beyond Diabetes

# Diabetes Disease Registry

NC DHHS's DPH regularly receives data and visualizations used for tracking the clinical care and outcomes of the patient population in North Carolina diagnosed with or presenting signs or symptoms of Diabetes.

This information is used to:

- ✓ Identify where there may be geographic areas and/or other populations that would benefit from public health programs
- ✓ Augment other Public Health data sources with de-identified clinical information about patients with Diabetes

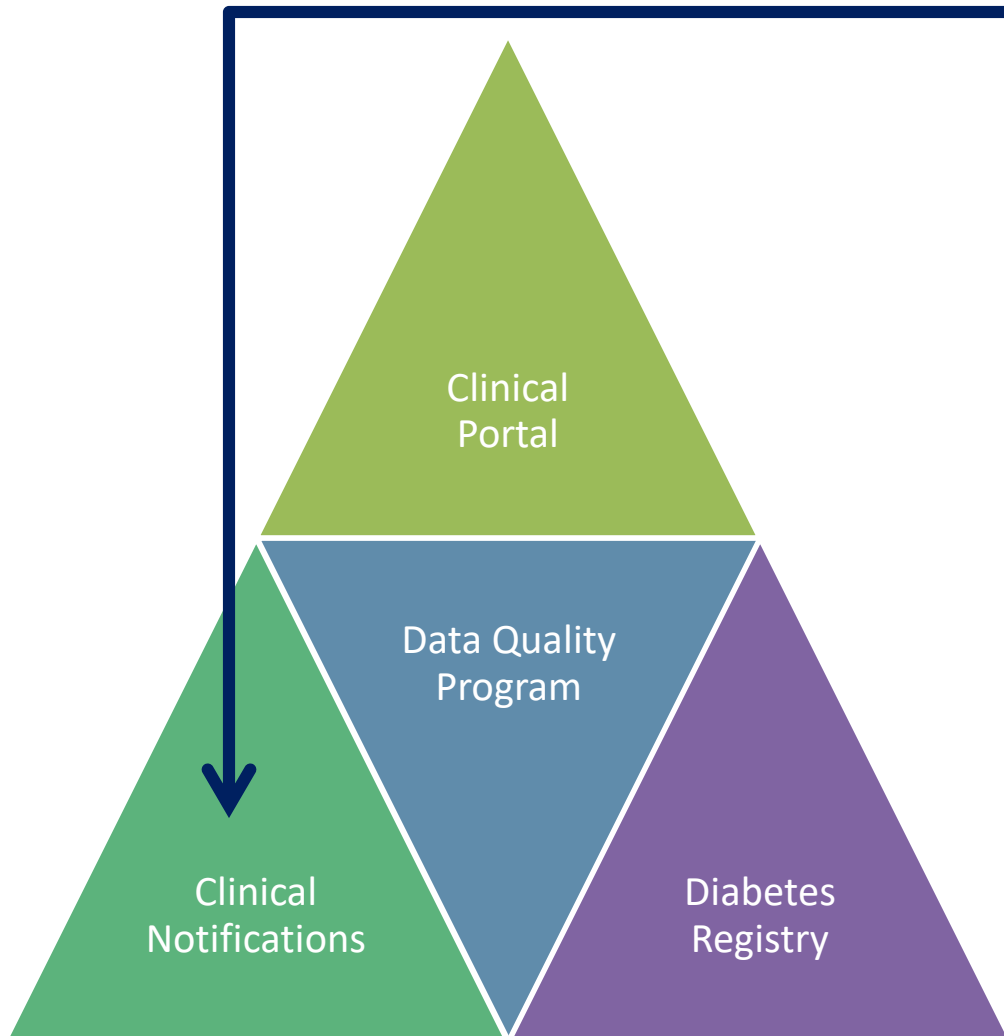


# Lisa's relationship to the Diabetes Registry



- Lisa is living with Type I Diabetes
- Lisa's encounter data will populate the **NC DHHS's DPH NC HealthConnex Diabetes Registry** to help NC DHHS's DPH better understand and provide support to North Carolinians living with Type I or Type II diabetes

# Services Available in 2018



## Clinical Notifications

- Subscription-based service to notify Providers as their patients receive services across the care continuum – spans geography, hospital systems, acute and ambulatory care settings, etc.
- Custom lists allow cohorts of Patients tuned to Providers' interest
- Custom delivery methods to integrate into Provider workflows

# Clinical Notifications - The Process

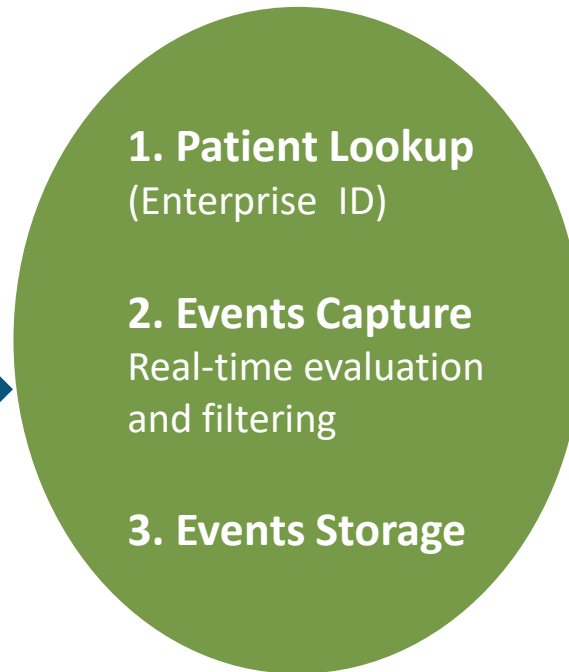
## Step 1 – Participant submits

### SUBSCRIPTION FILE

Data	Description/Use
Organization Information	Used for enterprise matching
Local Patient Identifier	Used for enterprise matching
Patient Name	Alternative matching criteria
Patient DOB	Alternative matching criteria
Patient Address	Alternative matching criteria
Patient Phone	Alternative matching criteria
PCP Information	Future use case

- SFTP/DSM
- Patient Files
- Incremental Updates
- Patient Lookup

## Step 2 – NC HealthConnex Event Capture Review



## Step 3 – Participant receives

### NOTIFICATION FILE

Data	Description/Use
(All Data from Inbound)	Echoed back for matching
Date of Clinical Event	Actual date of event
Date Event Received	Accounts for batch feeds
Clinical Event Type	Admit or Discharge
Patient Class	Inpatient, Outpatient, Emergency, etc.
Participant Feed	Sender of the data (EMR, Enterprise Org, etc.)
Facility Name	Participant level facility

- SFTP/DSM
- Notification files
- Custom delivery intervals

# Lisa's relationship to Clinical Notifications



- Lisa recently had an ER visit while on vacation in another part of the State
- After receiving information via **NC HealthConnex's Clinical Notifications file**, Lisa's PCP reached out to Lisa's parents to ensure that everything was okay with Lisa.
- Additionally, Lisa's PCP imported historical Clinical Notifications received from NC HealthConnex into her own analytics tool and can see this was an isolated incident.





# Next Steps

# On the Horizon...

- Controlled Substance Reporting (CSRS) Integration
- Use Case Workgroup (UCW)
- eHealth Exchange Connections (GAHIN & VA – currently connected)

