



NORTH CAROLINA HEALTH INFORMATION EXCHANGE AUTHORITY

ADVISORY BOARD MEETING

OCTOBER 13, 2022





Operations Update

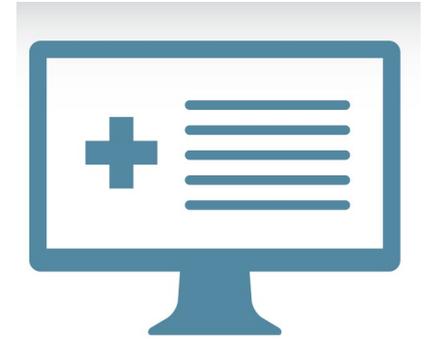
Shout Outs!



- NC HIEA finalist in [NCTech Awards](#) in the Tech for Good category
- Outreach and Communication team delivers video promoting NC HealthConnex
- NC HIEA and Division Public Health presenting at NC HIMSS October 18
- Participation Agreement with Adult Corrections

4th Quarter 2022 Activities:

- Staffing
- Legislative Long Session Planning
- Medicaid reporting; NCQA DAV program preparation
- Use Case Work Group – [ACURE4Moms](#)
- Stroke Registry Phase 2
- Data Connections
- CCHIE joint outreach
- Participant Survey
- Data Retention Planning
- Data Quality Program Enhancements
- Pharmacy Connection Pilot
- State Lab Integration
- CVMS, IDHUB



Civitas Networks for Health Updates



Civitas Government Relations & Advocacy Council Activities:

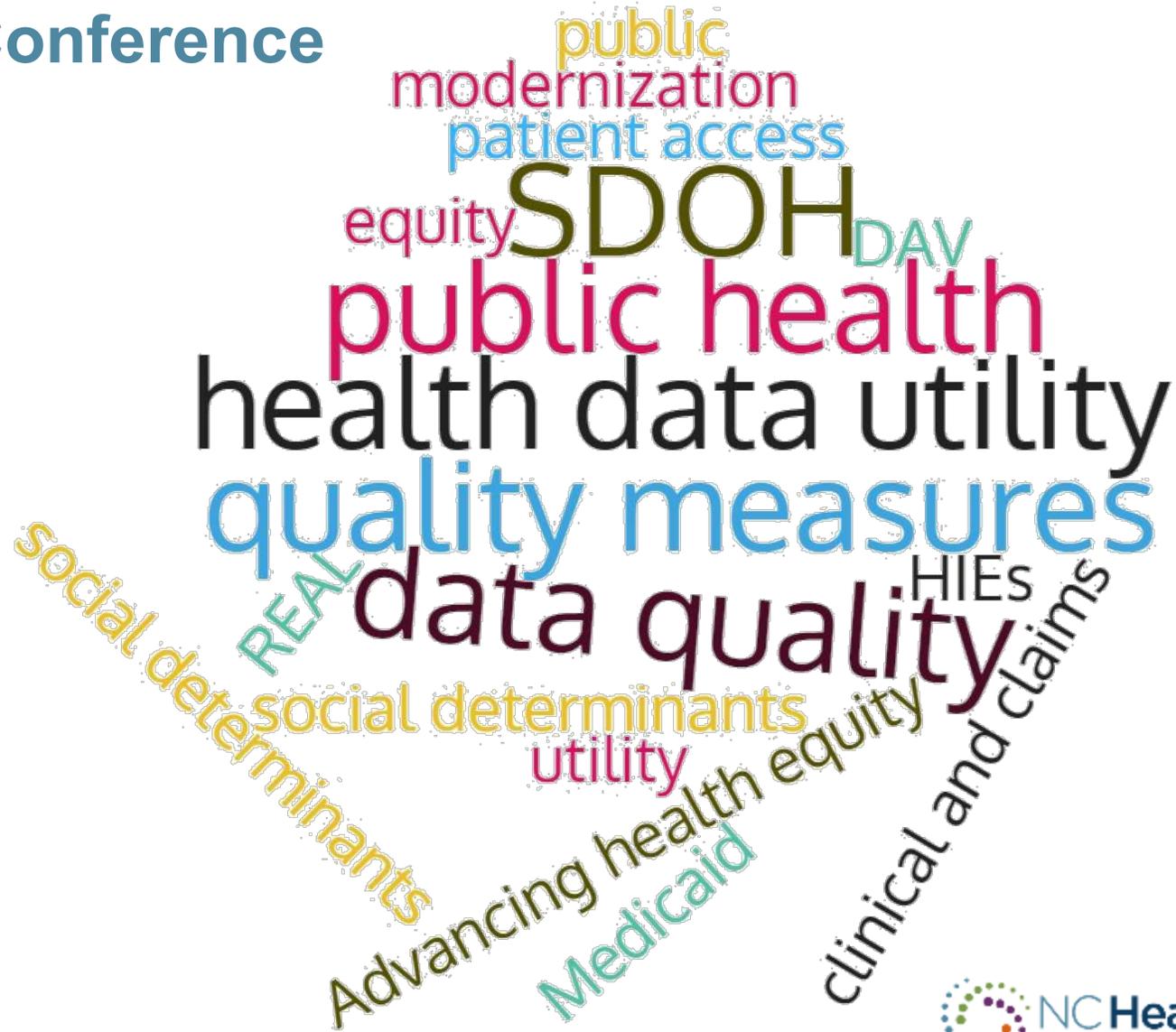
- [Civitas 2023 QPP Proposed Rule Comments](#)
- [Civitas CY 2023 OPPTS Proposed Rule Comments](#)
- [HIMSS/Civitas NIH RFI All of Us HIE HIN Comment Letter](#)
- CMS Issued [RFI for National Directory of Healthcare Providers](#) and Services – 60-day comment period ends on December 6.
- Information blocking [limitation on scope of Electronic Health Information lifted October 6](#).
- Health Data Utilities – [HDU 2-pager](#)

Other Activities:

Civitas Health Data Research Workgroup Newly Formed



Highlights from Civitas Conference



NCQA Data Aggregator Validation (DAV) Program

- NCQA DAV program validates electronic clinical data that organizations collect and share with vendors and health care organizations that undergo an audit for reporting NCQA's HEDIS® measures. The DAV program ensure that NCQA's standards and protocol are met.
- Overall program participation continues to grow, demonstrating significant interest from payers and the HIEs that support them.
- NC HealthConnex is targeting participation starting January 2023 to support Medicaid and its payers.

Process Standards Review

Standards to assess accuracy, consistency, accessibility and timelines of the data.

Primary Source Verification (PSV)

Reconciling data elements from the CCD with the primary data source (e.g., the EHR).

Conformance to CCD IG

A constraint on HL7 C-CDA R2.1 and reason and rank entries from QRDA Cat I.

New York, Alabama, California, Connecticut, Nebraska, Kentucky, Kansas are among the states with HIEs that have participated in this program.

Public Health Modernization

- Data modernization initiatives happening across the country in partnership with public health agencies and HIEs
- Strengthening the Technical Advancement and Readiness (STAR) of Public Health Agencies via Health Information Exchange Program – With ONC funding for specific initiatives, the STAR HIE Cooperative Agreement recently expanded to improve COVID19 vaccination data by connecting immunization information systems to HIEs.
- States highlighted at conference: North Dakota, Alaska, Texas and those involved in the STAR program
- Project Areas: core infrastructure, newborn screenings, registries (Cancer, IIS, Autism, ADD, ETOR), eCase Reporting, ELR, syndromic surveillance, vital statistics modernization
- Need to build public, private and tribal partnerships including with HIEs to prepare for future and improve health for all

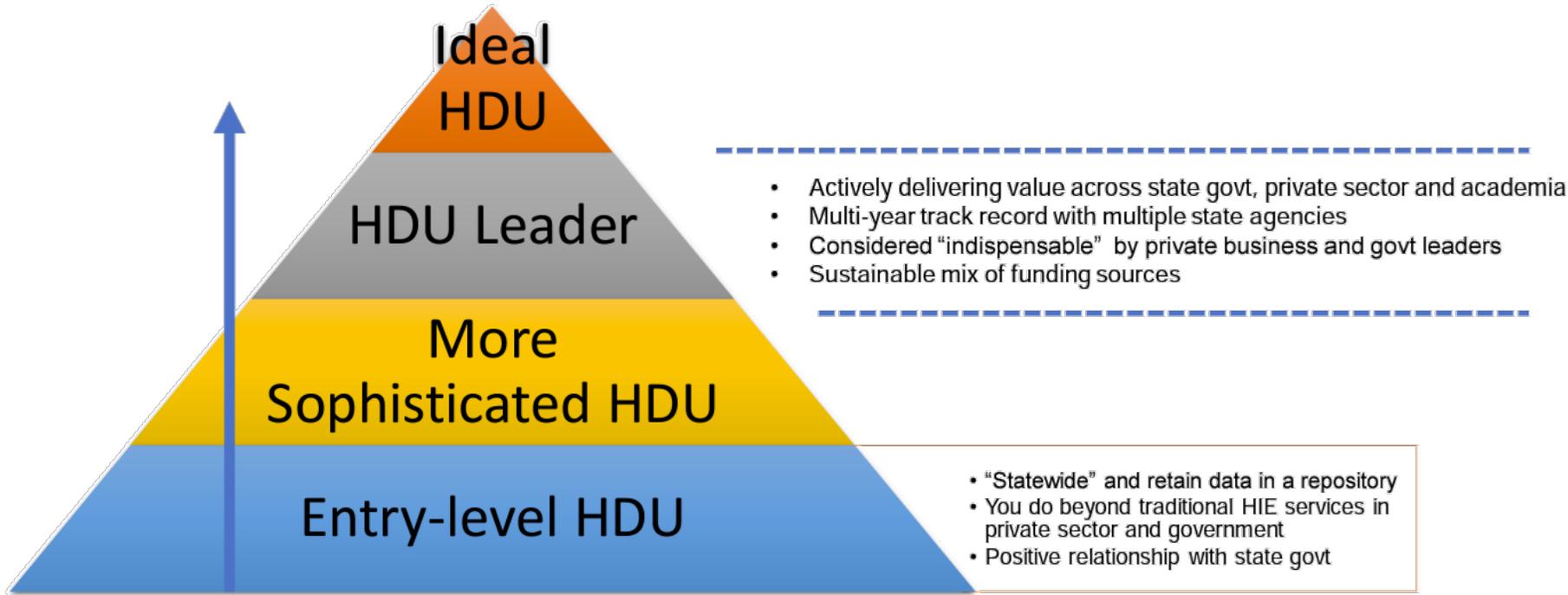


Health Data Utilities

[Maryland Designates CRISP HIE as State Health Data Utility](#)

[HIEs do double duty as public health utilities | Healthcare IT News](#)

Maturity Model as a Way of Defining HDU



Building out the Health Data Utility

Illustrating an HDU Maturity Grid (example only)

	Private Sector			State Government				Academia
	PROVIDERS	PAYERS	Employers	DEPT OF HEALTH	MEDICAID	PDMP	APCD	Universities
ADVANCED	<ul style="list-style-type: none"> EHR Integration Automated PH reporting Things that reduce burden 	<ul style="list-style-type: none"> Sophisticated stuff You are part of their overall clinical data strategy 	<ul style="list-style-type: none"> Sophisticated stuff 	<ul style="list-style-type: none"> Automated PH reporting Analytics – ad hoc or ongoing Services supporting LHDs 	<ul style="list-style-type: none"> Sophisticated stuff Supplement the program... with analytics or... other Medicaid (multi-agency) identity mgmt 	<ul style="list-style-type: none"> You run it 	<ul style="list-style-type: none"> You run it 	<ul style="list-style-type: none"> Ongoing support and enablement of research
MEDIUM	<ul style="list-style-type: none"> Repository (statewide) 	<ul style="list-style-type: none"> Medium stuff 	<ul style="list-style-type: none"> Medium stuff 	<ul style="list-style-type: none"> Medium stuff 	<ul style="list-style-type: none"> Medium stuff History of a financial relationship 	<ul style="list-style-type: none"> You sync data with it 	<ul style="list-style-type: none"> You exchange data with it or enhance data 	<ul style="list-style-type: none"> Some one-off support and enablement of research
BASIC	<ul style="list-style-type: none"> Clinical Messaging 	<ul style="list-style-type: none"> Simple stuff 	<ul style="list-style-type: none"> Simple stuff 	<ul style="list-style-type: none"> open communication / person-to-person relationships 	<ul style="list-style-type: none"> open communication / person-to-person relationships 	<ul style="list-style-type: none"> open communication / person-to-person relationships 	<ul style="list-style-type: none"> open communication / person-to-person relationships 	<ul style="list-style-type: none"> No evidence of supporting research

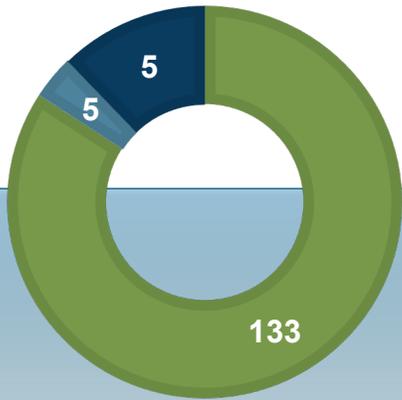


Metrics Update

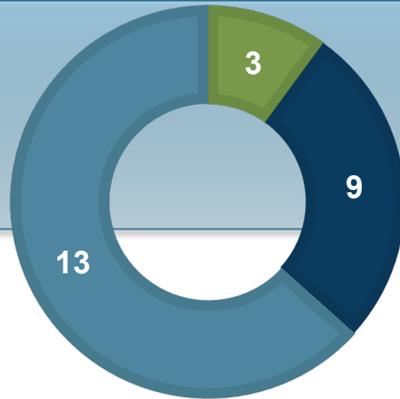
Enrollment in Services

(as of August 2022)

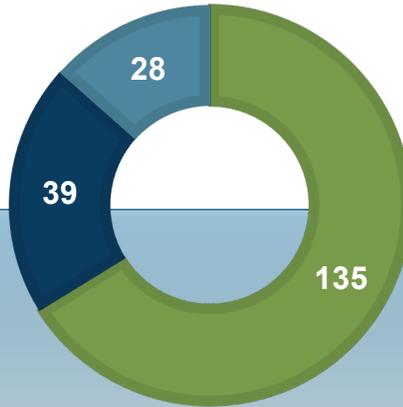
NC*Notify



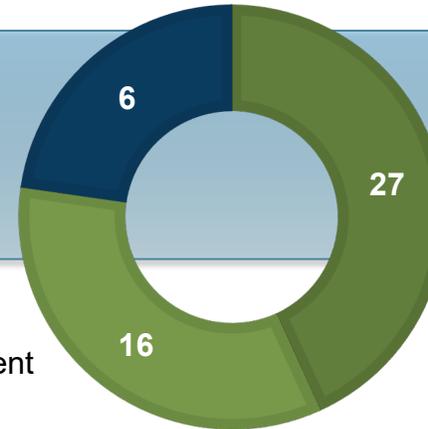
NCIR



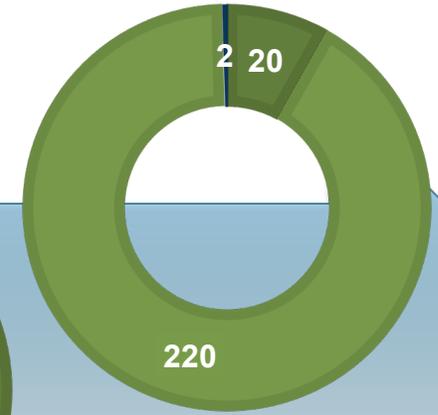
CVMS



ELR



DSM



- 133 Integrations Live (**605 Practices**)
- 5 Integrations in Development
- 10 Integrations Enrolled
- 50-100 pending Enrollment

- 3 EHRs Live (**212 Practices**)
- 9 EHRs in Development
- 13 EHRs Enrolled

- **135 Participants** Live
- 39 Participants in Development
- 28 Participants Enrolled

- **43 Live:** 27 full ELR feeds Live; 16 COVID-only
- 6 full ELR feeds in Development

- 240 Domains Live: 20 XDR, 220 Webmail
- 2 Participant in Development



Legislative Update

House Bill 103 / SL 2022-74

Governor Roy Cooper signed the state 2022 budget Monday, July 11.

Key NC HIEA Provisions:

- The budget provided NC HIEA an additional \$3.8M in non-recurring funds and three new positions (outreach and provider relations), which brings total funds for this fiscal year to \$16,881,722.00.
- Additionally, the budget law includes language that temporarily suspends the enforcement provision of the Statewide Health Information Exchange Act, which makes a provider's connection to and submission of data to the NC HIEA a necessary condition of receiving State funds. This enforcement provision is suspended until legislation is enacted that designates a lead agency responsible for enforcement of the HIE Act. Notably, the budget does not change the January 1, 2023, connection deadline for providers.
- The budget law also requires the NC HIEA Advisory Board to submit to the General Assembly by March 31, 2023, an updated report regarding the connectivity status and any supplemental recommendations. NC DIT requested the language that appears in the budget once it became clear that legislators had limited bandwidth and appetite to consider comprehensive statutory reforms during the abbreviated Short Session.



House Bill 103 / SL 2022-74

Additional Provisions:

JUVENILE JUSTICE HIE NETWORK REPORT - SECTION 19D.2. No later than April 1, 2023, the Department of Public Safety shall report to the Joint Legislative Oversight Committee on Justice and Public Safety, the Joint Legislative Oversight Committee on Health and Human Services, and the Fiscal Research Division regarding the use of funds appropriated in this act to the Department of Public Safety, Division of Juvenile Justice and Delinquency Prevention, for the digitization of juvenile health records and the **ongoing resources necessary to report digital health records to the Health Information Exchange network**. See page p. 148.

INTERCHANGEABLE BIOLOGICAL PRODUCT DEFINITION MODIFICATION AND BIOLOGICAL PRODUCT ELECTRONIC RECORD REQUIREMENT – Section 9K.4.(b) - "(b2) Within five business days following the dispensing of a biological product requiring a prescription, the pharmacist or a designee shall communicate to the prescriber the product name and manufacturer of the specific biological product dispensed to the patient. This required communication shall be conveyed by making an entry into any of the following that is electronically accessible to the prescriber: (1) An interoperable electronic medical records system. (2) Electronic prescribing technology. (3) A pharmacy benefit management system. (4) **The North Carolina Health Information Exchange Network**. (5) A pharmacy record. See p. 100.

House Bill 103 / SL 2022-74

Communications:

- NC HIEA distributed communications to all participants regarding legislative suspension of the HIE Act condition of receiving state funds
- Distributed target email communications to dental, chiropractic and pharmacy providers
- Developed and disseminated FAQs
- [What Does the Law Mandate? | NC HIEA](#)
- [Connection Deadline FAQs | NC HIEA](#)

Long Session Planning

July/August - Requested feedback on draft agency language from legislators/staff – none to date

September - Distributed Legislative Progress Report to all legislators

October – Working with NCDIT internal timelines for long session priorities

NC HIEA Long Session Priority Considerations:

- Enforcement Framework
- Additions to Advisory Board
- Dental & Chiropractors Designated as Voluntary
- Health Data Utility Designation
- Advanced Care Directives (electronic exchange; SB666)

November/December – Request meetings with legislators

North Carolina Health Information Exchange Authority
September 2022

North Carolina's health information exchange, NC HealthConnex, enables hospitals and other health care providers to safely and securely share patients' medical records (i.e., labs, medications, and prior diagnoses) in real-time with other providers who also have a treatment relationship with the patient. This system leads to better-informed, integrated care for patients.

"The goal is simple. It's just to make health care in North Carolina easier to deliver because there are no barriers to information exchange."
– Dr. Jeff Ferranti, CIO Duke Health, former NC HIEA Advisory Board Chair

NC DIT's North Carolina Health Information Exchange Authority (NC HIEA) works with the health care provider community and educates it about the state's requirements for connectivity (NC S.L. 2015-241) and the value of participating in the health information exchange. Through a public-private partnership with SAS Institute as the technology partner, the NC HIEA has made significant progress toward building a statewide health information network, which makes available data to improve care to the citizens of North Carolina.

"The partnership with NC HealthConnex was invaluable to DHHS during the pandemic. It allowed us to outsource entity resolution and record linkage between siloed data sources so that our epidemiologists and other staff could focus on our COVID response and not on reinventing the wheel with probabilistic matching."

– Jessie Tenenbaum, DHHS Chief Data Officer

What's more, NC HealthConnex has supported public health partners at the N.C. Department of Health and Human Services (DHHS) during the pandemic. NC HIEA has set up bidirectional data exchanges related to COVID tests and immunizations and provided data services for syndromic surveillance, analytic reporting, and patient matching. Health information exchanges like NC HealthConnex are very effective at combining multiple data sets at the identified patient level and become even more accurate as additional data sources are added. During the COVID pandemic, this capability has been important for gaining insights about race/ethnicity and comorbidities and will be increasingly important as treatments and vaccines are evaluated.

NC HealthConnex by The Numbers

- 84% of patients eligible for Medicaid have clinical data in NC HealthConnex
- 95% of State Health Plan members have clinical data in NC HealthConnex
- 79% of physicians, certified nurse midwives, nurse practitioners, physician assistants, and dentists participating in the Meaningful Use/Promoting Interoperability program are onboarded to NC HealthConnex
- 2M+ notifications delivered monthly via NC*Notify, NC HealthConnex's event notification service to support Medicaid managed care/value-based care and close gaps in care.
- 7,800+ ambulatory practices submitting patients' medical records, including primary care, county health departments, federally qualified health centers, free and charitable clinics, behavioral health, etc.; 140 hospitals connected and submitting data.

Benefits

This growing, secure electronic network enables NC HealthConnex participating health care providers to query and access their patients' comprehensive records across multiple providers. This results in decreased redundancy, more efficient, accurate diagnoses, recommendations and treatment; and improved coordination across all levels of care.

NC*Notify is an event notification service that proactively pushes admission, discharge, and transfer information to alert providers when patients with whom they have a treatment relationship receive care outside their electronic health record (EHR) or network. These alerts help in care coordination and close gaps in care, which is especially important for the Medicaid population. The most recent version of NC*Notify includes alerts for COVID positive lab results, chronic care management, high utilizers, diabetes diagnosis, and more. Additionally, participating health care providers are also able to now check the Controlled Substance Reporting System prior to prescribing via an integration with this database.

"The partnership with NC HealthConnex has improved our ability to engage our members. Using data from the HIEA, our care managers were better able to connect to high-risk members for critical follow-up during the transition to managed care."
Kelly Crosbie, Chief Quality Officer, NC Medicaid



Long Session Planning

December – NC HIEA will provide preliminary connectivity update at the December meeting (12/8/22)

January – NC HIEA will draft legislative update to include:

- Connected Organizations (Live in Prod)
- Unconnected Organizations (Onboarding)
- Unengaged Organizations (No PA on File)

Note: NC HIEA will not include individual providers connected/unconnected as the draft language for enforcement will focus on entities not providers.

February – Draft report shared with NC HIEA Advisory Board

March – Submission of report to NCGA

Legislative Recommendations Review

March 2022

1. Establish Clear Enforcement Articles in the HIE Act
2. Change the Voluntary Designations for Certain Providers
3. Include Representatives from Accountable Care Organizations and Payers on the Advisory Board
4. Discussed, but not submitted: *Require Entities that Provide State-Funded Health Care to Submit the Same Clinical and Demographic or Claims Data for All Patients, Regardless of Payer*

[Joint Legislative Oversight Committee report on NCSL 2021-26 \(final\)](#)

For Discussion:

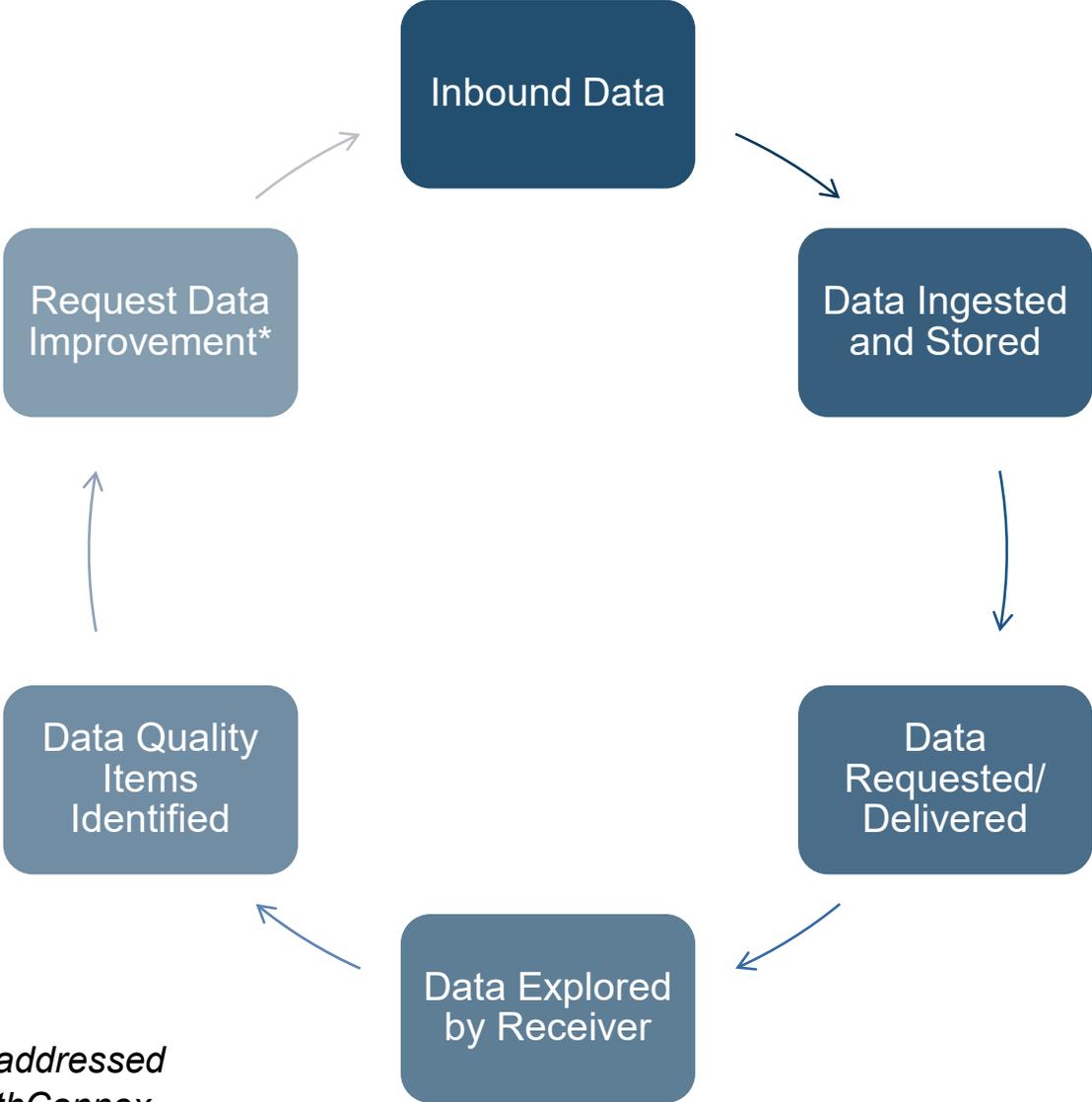
**Does the Board Want to Consider Additional
Supplemental Recommendations?**



NC HIEA's Data Quality Program

Michelle Hunt, Data Quality & Integrity Lead

Data Quality Improvement Cycle



**Data quality items may need to be addressed by the data submitter or by NC HealthConnex*

Data Quality: Challenges

- Missing/incomplete data from data sources
- Clinical workflow issue
- EHR configuration issue
- Inaccurate or unstructured data
- Local codes as opposed to standard codes
- Unexpected source system changes, such as EHR upgrades or migrations
- Changes in Healthcare IT standards, such as the progression from USCDI v1 to USCDI v2 and v3

State of NC HealthConnex Data Quality Program

2020

- Data element level data target
- Onboarding material revisions
- Place of service review

2021

- Data quality roadmap
- Data quality dashboard
- USCDI v1
- Participant data quality reports and outreach
- Place of service improvements

2022

- Focus on patient matching
- Ongoing implementation of USCDI v1
- Place of service improvements
- Revision of onboarding documentation (in progress)
- Participant outreach

2023

- Data target revision
- Ongoing USCDI v1 implementation and v2/v3 updates
- Data quality dashboard enhancements
- Partnership with AHEC/Medicaid
- Ongoing participant outreach
- NCQA Data Aggregator Validation (DAV)
- Clinical Data Workgroup

The NC HealthConnex Data Target



[NC HealthConnex Onboarding Packet and Technical Specifications](#)

The NC HealthConnex Data Target (Required for BH)

Patient ID	Name	Date of Birth	Address/ Phone	Language	Race/ Ethnicity	Gender
Date of Visit	Visit Number	Reason for Visit	Patient Class	Place of Service/ Facility Name	Care Provider Name/NPI	
				Problems		
		Medications				

[NC HealthConnex Onboarding Packet and Technical Specifications](#)

USCDI

- United States Core Data for Interoperability (USCDI) is a standardized set of health data classes and data elements supporting interoperable health information exchange
- [USCDI v1](#) adopted July 2020 - standard in the Office of the National Coordinator for Health Information Technology (ONC) Cures Act Final Rule
- [USCDI v2](#) finalized July 2021 – three new data classes and 22 new data elements.
 - Addition of health equity parameters, including gender identity, sexual orientation, and social determinants of health (SDOH) interventions
 - Removal of three redundant v1 elements.
- [USCDI v3](#) finalized July 2022 – added two new data classes and 24 new data elements, for a total of 94 data elements
 - Addition of Health Status/Assessments and Health Insurance Information data class
 - Medications data elements to align with existing CMS reporting programs

USCDI v1 Data Classes

Allergies and Intolerances	Goals	Medications	Provenance
Assessment and Plan of Treatment	Health Concerns	Patient Demographics	Smoking Status
Care Team Member(s)	Immunizations	Problems	Unique Device Identifier(s)
Clinical Notes	Laboratory	Procedures	Vital Signs

USCDI v3 Data Classes

Allergies and Intolerances	Diagnostic Imaging	Immunizations	Procedures
Assessment and Plan of Treatment	Encounter Information	Laboratory	Provenance
Care Team Member(s)	Goals	Medications	Unique Device Identifier(s) for a Patient's Implantable Device(s)
Clinical Notes	Health Insurance Information	Patient Demographics/ Information	
Clinical Tests	Health Status/ Assessments	Problems	Vital Signs

NC HealthConnex and USCDI

- USCDI standards were taken into account during development of the NC HealthConnex Data Target, but the NC HealthConnex Data Target is more specific than the USCDI standards. See example below:
 - USCDI lists a Data Class of Problems and a Data Element of Problems.
 - The NC HealthConnex Data Target includes the Problems section (Data Class) as Required if Collected, but we specify nine Data Elements to be included for each Problem, including the following examples (see [Appendix 1](#) for more details):
 - Problem/Code
 - Problem/Code Description
 - Problem/Code System Name
 - Problem/Time Low (Start Date)
 - Problem/Time High (End Date)
- NC HealthConnex can accept USCDI v1 Clinical Notes (configuration required)
- Upcoming revisions of the NC HealthConnex Data Target will reflect updates to USCDI v2 and v3

Patient Matching

- Fundamental to Health Information Exchange
- NC HealthConnex uses both deterministic and probabilistic matching:
 - **Deterministic** matching is at the organization level and relies on three data elements:
 - Source Facility – the organization from which the data originated
 - Assigning Authority (AA) – the entity assigning the medical record number/patient identifier
 - Medical Record Number/Patient Identifier – must be a unique value assigned to only one person and must come from a single pool of medical record numbers for that assigning authority
 - **Probabilistic** matching occurs across organizations at the MPI level and relies on numerous patient demographic data elements
- The Data Quality team has been engaged in participant outreach to improve clinical/registration workflow around the deterministic matching data elements (source facility + assigning authority + medical record number)

Deterministic* Matching Overview



Scenario 1	Record A	Record B	Data Element Match?	Deterministic Match Outcome
	County Hospital A	County Hospital A	Yes	<ul style="list-style-type: none"> Not a match MRN not the same Records will not deterministically link
	Assigning Authority 1	Assigning Authority 1	Yes	
	MRN 1234	MRN 9876	No	



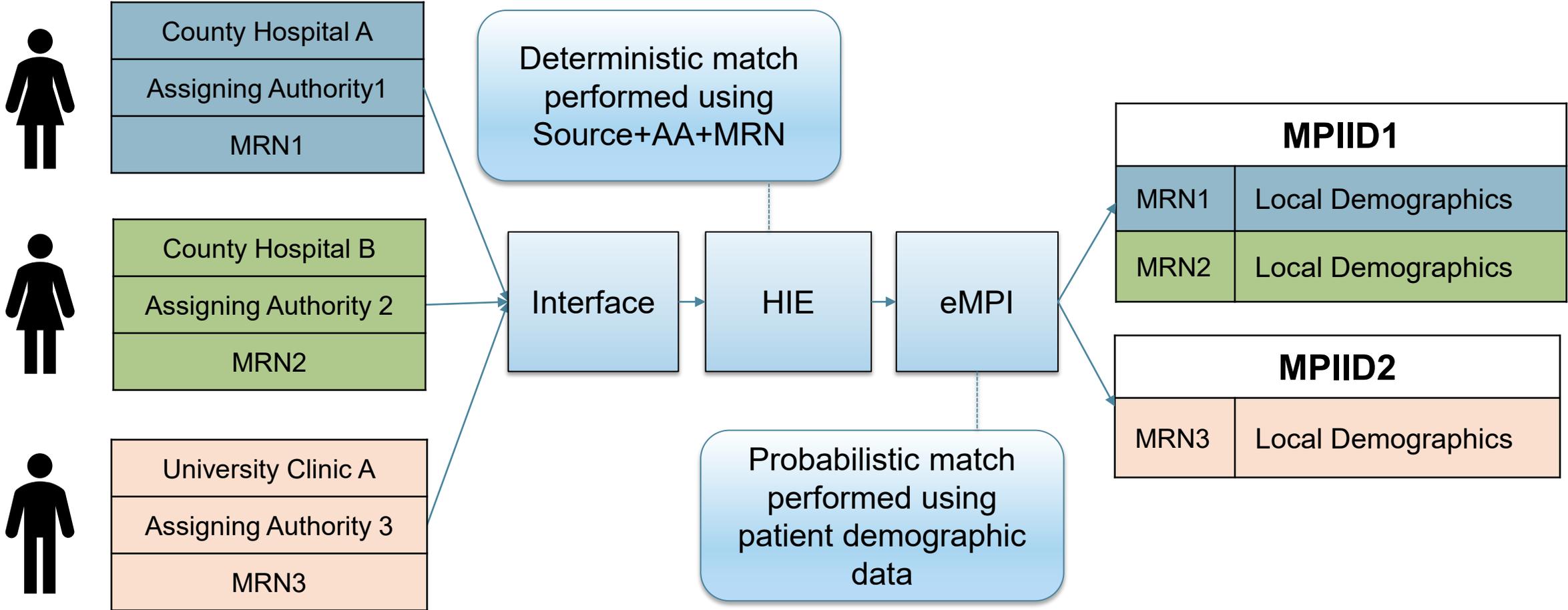
Scenario 2	Record A	Record B	Element Match?	Deterministic Match Outcome
	County Hospital B	County Hospital B	Yes	<ul style="list-style-type: none"> Not a match Assigning Authority not the same Records will not deterministically link
	Assigning Authority 1	Assigning Authority 2	No	
MRN 1234	MRN 1234	Yes		



Scenario 3	Record A	Record B	Element Match?	Deterministic Match Outcome
	University Clinic A	University Clinic A	Yes	<ul style="list-style-type: none"> Match All three elements match Records will be deterministically linked
	Assigning Authority 1	Assigning Authority 1	Yes	
MRN 6789	MRN 6789	Yes		

*Occurs before probabilistic (MPI) matching step

Probabilistic* (MPI) Matching Overview



*Occurs after deterministic matching step

Compare - Probabilistic Scoring

Data Element	Subfields	Agreement Weight	Disagreement Weight
Local Identifier	ID	<i>Deterministic Match</i>	
	Assigning Authority		
	Extension		
	Use		
Name	Family	14.000	-11.000
	Given		
	Middle		
	Prefix		
	Suffix		
	Type		
SSN	ID	13.152	-9.700
	Assigning Authority		
	Extension		
	Use		
Gender	None	2.100	-1.000
DOB	None	12.127	-9.000
Addresses	Unit Number	5.237	0.000
	Street		
	City		
	State		
	Zip Code		
	Country		
	Use		
Telecoms	Area Code	5.286	0.000
	Phone Number		
	URL		
	Email		
	Use		

Current Match (MPI) Threshold: 34

Additional considerations:

- Name matching uses known soundex and Winkler similarity
- Name frequencies affect score ceilings (+14)
- SSN uses edit similarity (ie: fat fingers)
- SSN matches against null/exclusions are not scored negatively
- DOB uses hamming similarity (“levels of different”)
- Normalized values used for scoring
 - Exclusion lists
 - Statistical variances
- Deterministic rules layered onto scoring, such as:
 - Newborns to account for mother’s name
 - Marriage: First Name + Gender + DOB + Address
 - Jr/Sr rule looking at DOB delta
 - Twin rules target children with same address

eMPI Health Maintenance

- **Onboarding** analysis of each source - 10k or more sample records
 - Demographics evaluation
 - Assigning authorities confirmed
- **Tuning** on regular intervals
 - Full copy sent to pre-prod environment
 - Match weights adjusted and re-run based on data frequencies
 - Deterministic rules evaluated for over/under matching
- **Worklist** evaluation by HIEA staff
 - Key reports to surface patient safety issues
 - Records flagged for more information – sent to GDAC EER

Data Quality: 2023 Initiatives

- Revise the NC HealthConnex Data Target (to include USCDI v2/v3)
- Data Quality Tool Enhancements
 - Enhanced content analysis at the data element level
- Partnership Opportunities – AHEC/Medicaid
 - Work with AHEC and Medicaid to improve data quality for various initiatives such as priority data elements
- Ongoing Process Improvement and Participant Outreach
 - Data Connections – onboarding process improvement and revision/improvement of onboarding materials
 - Place of Service – continuing outreach to participants to improve facility level data in HL7 and CCDs
- NCQA Data Aggregator Validation (DAV Certification)
- Clinical Data Workgroup

NCQA Data Aggregator Validation (DAV Certification)

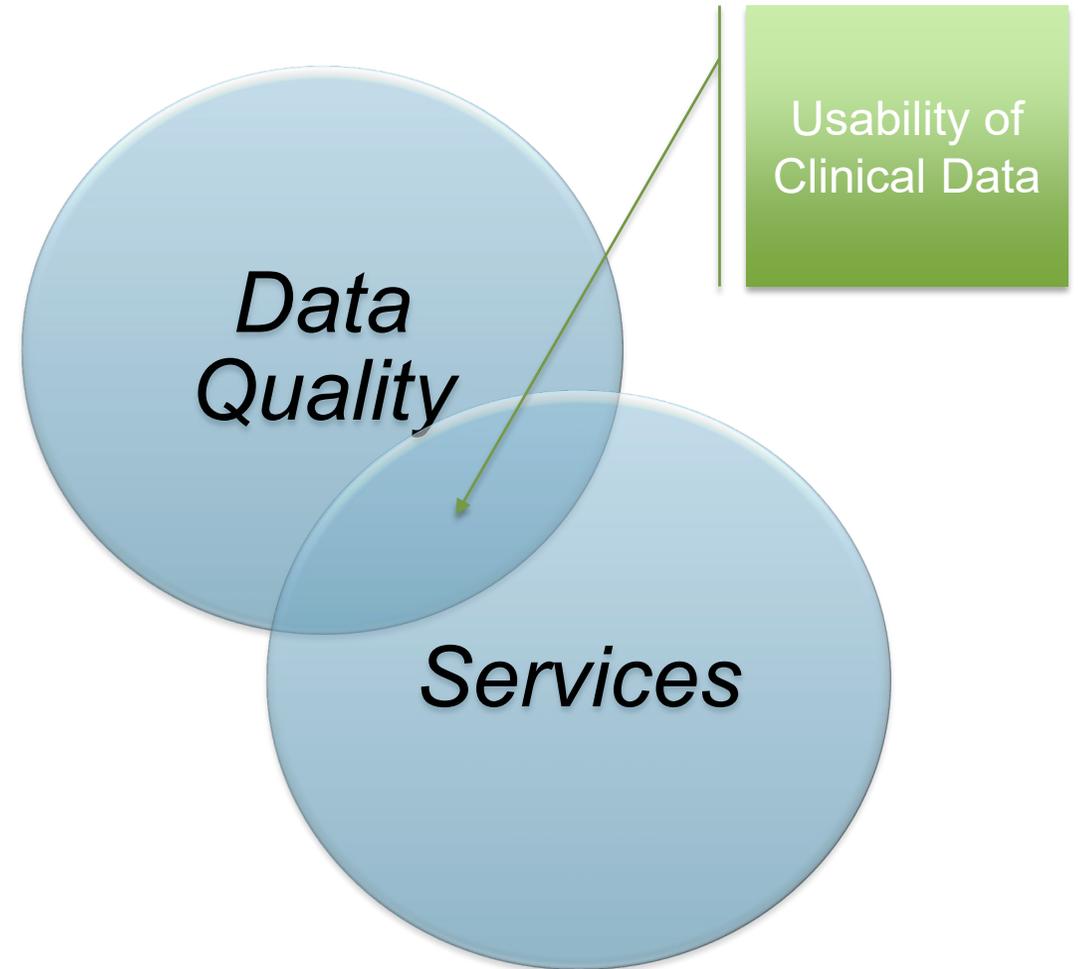
- Evaluation of clinical data streams to ensure the accuracy of aggregated clinical data for use in HEDIS (Healthcare Effectiveness Data and Information Set) reporting
- Data from NCQA validated data streams can be used as standard supplemental data in HEDIS reporting, which eliminates the need for primary source verification during HEDIS audits
- Saves time and money for provider organizations and health plans

NCQA Data Aggregator Validation (DAV Certification)

- Two sets of standards are used during the certification:
 - Process, System, and Data Standards
 - Assesses processes, policies, and procedures for ingesting, managing, and aggregating data
 - Output Data Integrity Standards
 - Confirms adherence to the NCQA CCD Implementation Guide
 - Primary source verification of the CCD output files
- Will submit a limited number of clusters of clinical data for initial certification in the 2023 cohort, to be expanded in future with additional clusters of clinical data

Clinical Data Workgroup

- Focus on clinical user feedback related to services and data quality
- Initial planning around composition of workgroup and charter currently underway
 - Board member to sit in on the work group
 - Full participants making use of bidirectional connections and/or the clinical portal will be invited to complete a survey indicating interest in this workgroup
- Launch in early 2023



Questions?