Roadmap 2021

Improving Health Across North Carolina

NC Health Information Exchange Authority

NC HealthConnex
Powering Health Care Outcomes

NC DIT
NORTH CAROLINA DEPARTMENT OF INFORMATION TECHNOLOGY

The North Carolina Health Information Exchange Authority (NC HIEA) is an agency operating within the NC Department of Information Technology's Government Data Analytics Center

From the Director

In 2015, the North Carolina General Assembly laid out a vision for a statewide health information exchange (HIE) to support the move to managed care in the Medicaid program. It also aimed to build a centralized database of health information to support a robust analytics effort to improve health and health care quality for all citizens while reducing waste and cost in state-funded health care services.

Studies show that use of HIE in an emergency department reduces the odds of hospital admission, and access to HIE reduces hospital readmissions and repeat diagnostics like imaging. However, like other states nationwide, North Carolina's HIE efforts struggled historically to gain a strong foothold across all sectors and regions of the state. Amendments to the HIE Act in 2015 and 2018 now require HIE participation and submission of data from most providers to break down the data siloes that exist.

In North Carolina, gaps in access to care and the ability of health care providers to meaningfully exchange information to improve outcomes and lower costs are prevalent in rural areas. This is one of the primary reasons that the NC Health Information Exchange Authority (NC HIEA) serves as a figurative "public utility" to connect all communities of care across the state to facilitate improved and more timely data sharing regardless of geography or provider type.

The public sector is not alone in its efforts to improve care and lower the cost of care in North Carolina. The NC Chamber has been vocal in its call to see the state rank in the top 10 for health and health care value by 2030. The Chamber's Roadmap to Value Driven Health Care highlights the widespread benefits of these improvements, including a healthier and more productive workforce; lower and more predictable health care costs; and easier access to high-quality care—all with an end goal to make the state more attractive to employers and families.

Early on, leaders within the Department of Information Technology, the Government Data Analytics Center, SAS Institute, and the NC HIEA knew that there were certain foundational elements to becoming a successful state-governed HIE. First, the HIE would have to be built on a highly secure information infrastructure that prioritized reliable data. Second, the team would need to effectively engage, support and collaborate with stakeholders statewide. Finally, a highly responsive customer service team would need to be created and maintained to help North Carolina providers understand and derive value from the HIE's available data and features.

We understand that the health care community is undergoing significant change to its business models with dynamic regulatory requirements at both the federal and state levels. Building and sustaining trust through open, transparent dialogue is paramount to what we do every day.

The NC HIEA prioritizes support of the Triple Aim—improving quality of care and the health of populations while reducing the cost of care. As we deliver on the connectivity requirements and move into providing products and services for population health initiatives, all voices are important. We have included input from many of our stakeholders in the development of this NC HIEA Roadmap 2021. As we move into 2019, the NC HIEA is well positioned to play a critical role in working with the health care community, state agencies, and private payers and employers to drive health care improvement and better health in North Carolina.

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Executive Summary

Statewide HIE in North Carolina has seen two major governance transitions and multiple shifts in strategy since its inception in 2011. Yet, broad support in recent years from state government and myriad stakeholders of a vision for statewide HIE as a valuable, life-saving and cost-saving public utility has set it on track to become one of the nation's largest health information exchanges by 2021.

In 2015 the NC General Assembly established a state-managed Health Information Exchange Authority (NC HIEA) to oversee and administer the NC Health Information Exchange Network (NCGS § 90-414.7), now called NC HealthConnex. The NC HIEA is housed within the NC Department of Information Technology (DIT)'s Government Data Analytics Center (GDAC) and coordinates closely with the NC Department of Health and Human Services (DHHS).

NC HealthConnex is a secure, standards-based electronic system through which health care providers can share important patient health information. Providers in North Carolina today use more than 150 disparate electronic health record (EHR) systems, and NC HealthConnex bridges the gap between them—and between rural and urban health care—to promote access to and exchange of health information at the point of care for more appropriate treatment decisions and more effective care management.

Benefits of HIE:

- Reduces the number of redundant or unnecessary tests, medications and procedures
- Improves care transitions and coordination
- Reduces hospital length of stay (7 percent), risk of readmission within 30 days (4.5 percent) and number of doctors involved in a visit (12 percent)
- Advances public health monitoring and emergency management
- Helps providers and health plans support the transition to value-based care models

North Carolina state law now also requires that providers who receive state funds for the provision of health care services connect to the HIE and share relevant patient data by certain dates in 2018-2021 to continue to receive payments for those services (NCGS § 90-414.4, as amended by NC Session Law 2018-41). This law applies to an estimated 98 percent of the state's health care providers, transforming NC HealthConnex into an increasingly powerful tool for providers, public health programs, health plans, patients and others. Importantly, participation with the HIE and use of its services is currently funded by the State of North Carolina.

NC HealthConnex, By the Numbers:

- 6.9 million+ unique patients
- 41,500+ providers with contributed records
- 4,500+ contributing health care facilities
- 52 million+ continuity of care documents (CCDs)
- 187 unique EHRs engaged
- 6 border and intra-state HIEs connected

As of January 2019, NC HealthConnex links more than 4,500 health care facilities, including hospitals, physician practices, long-term care facilities, local health departments, behavioral health providers, Federally Qualified Health Centers (FQHCs), Rural Health Clinics (RHCs), radiology centers and others. More than 4,000 additional facilities are currently in the onboarding process, among them, laboratories and Emergency Medical Services.

In addition to sharing and retrieving patient history across the care continuum, HIE participants today leverage NC HealthConnex for secure provider-to-provider messaging, event notifications, automated reporting to the NC Diabetes Registry, and as a gateway to the NC Immunization Registry and required state hospital electronic laboratory reporting. Moreover, many more features currently in development will add value for HIE participants.

NC HealthConnex has seen tremendous growth in the past two years, multiplying its connected participant base by a factor of five, and demand for its services to inform value-based care and improve health outcomes

Janakiraman, Ramkumar et al. The Effects of Health Information Exchange Access on Healthcare Quality and Efficiency: An Empirical Investigation (February 10, 2017). Mays Business School Research Paper No. 2915190. Available: https://ssrn.com/abstract=2915190

is accelerating. As the NC HIEA cleared its first legislated connectivity deadline in June 2018, the need for a directional tool to focus on high-value, attainable initiatives was evident.

NC HIEA Roadmap 2021 attempts to do just this, setting a strategic direction with defined priorities and ambitious target goals for the next three years. It is intended as a living document, to be revisited as industry and stakeholder needs shift, and as regulations so demand.

Of note, NC HealthConnex would not be where it is today without strong partners at the NC General Assembly; NC Medical Society; NC Academy of Family Physicians; NC Healthcare Information and Communications Alliance; NC Institute of Medicine; multiple DHHS agencies including NC Medicaid, the NC Division of Public Health (NC DPH), and the NC Office of Rural Health; the NC State Health Plan; our technical partners at SAS Institute; our Advisory Board of health care experts; regional HIE partners; and countless health care organizations. These partnerships drive and inform the future path for NC HealthConnex, and the plans herein.

The challenges and opportunities ahead are many. With the following initiatives and defined goals, the NC HIEA will strive to make health care more transparent, enhance the patient experience, improve patient health outcomes, enable faster and better public health monitoring and action, and equip health care providers and health plans to deliver better and more efficient health care through HIE. The NC HIEA hopes to deliver for North Carolina a continually improving state of health and health care through a robust, reliable and sustainable NC HealthConnex infrastructure.

The initiatives outlined in NC HIEA Roadmap 2021 are organized into five developmental service areas, each with its own goals to serve the NC health care community and its patients.

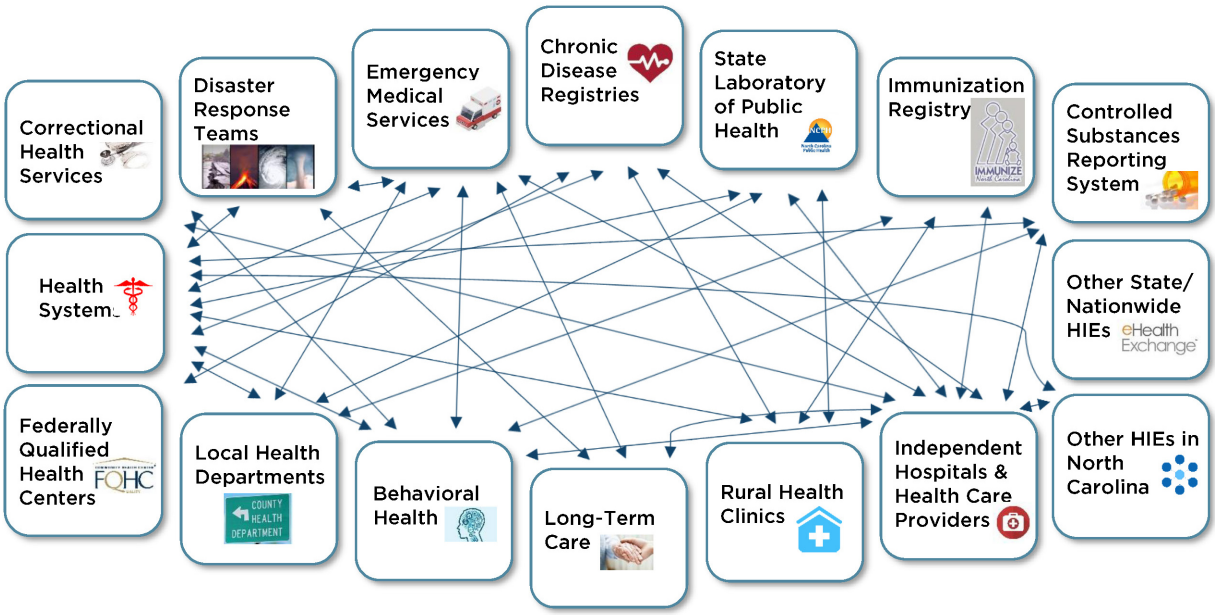
1. Maintain and build upon a strong HIE foundation to support health care providers, Medicaid and other health plans, public health and North Carolina patients.
2. Broaden exchange capabilities and pathways to include nationwide networks and more than 95 percent of North Carolina health care providers, ensuring high utility for users.
3. Advance notification services to make HIE data actionable, digestible, and strategically designed to fit the health care community's changing needs and workflows.
4. Expand on and refine population health and analytics applications for better health care management at the individual, community and state public health levels.
5. Embrace the NC HIEA's role as a facilitator of patient-centered, value-based care by promoting universal use of health information exchange statewide.

NC HIEA Roadmap 2021 Vision and Mission

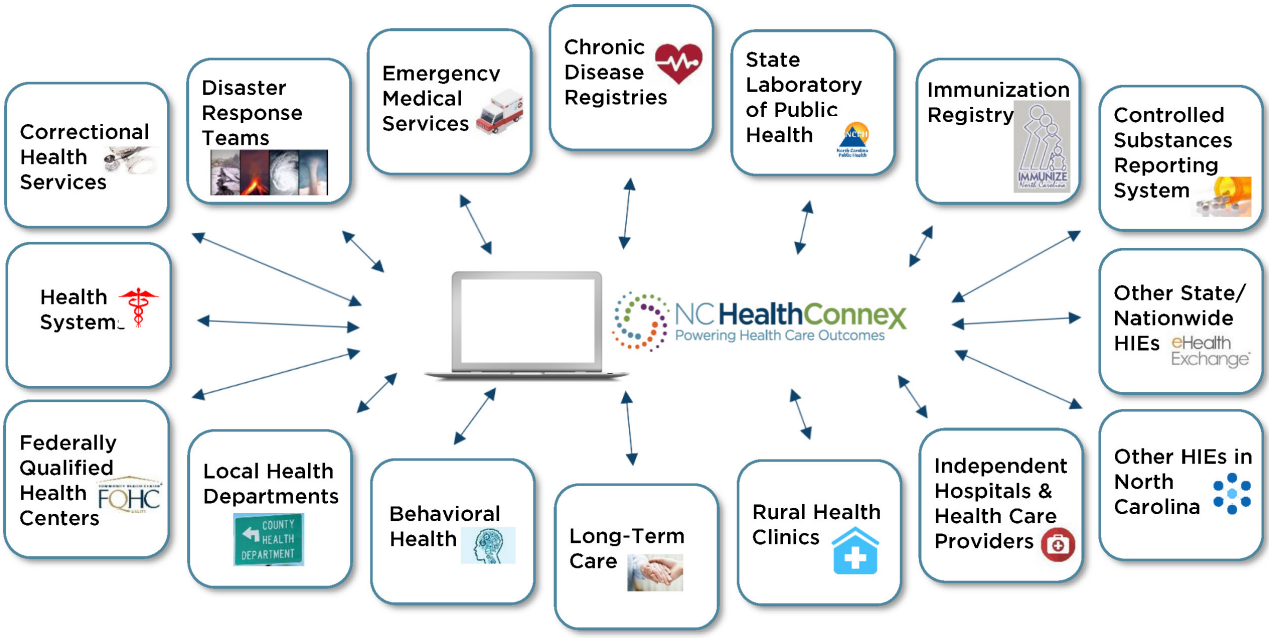
Our vision is to facilitate the sharing of health information across all health care providers in North Carolina to support the State's and providers' pursuit of a high-quality care experience, improved health of the population, and reduced overall cost to the health care system.

Our mission is to connect health care providers to safely and securely share health information through a trusted, centralized infrastructure to reduce administrative burden and improve health care quality and outcomes for North Carolinians.

Health Care Communications Without NC HealthConnex



Vision 2021 for Health Care Communications With NC HealthConnex



A Dynamic Landscape

Market, government, industry and other environmental factors will shape the road ahead. The NC HIEA is committed to the secure exchange of health care data for improved quality of care and reduced cost of care, and the HIE's infrastructure and services must be flexibly built to meet the changing needs of the North Carolina health care community. The initiatives in NC HIEA Roadmap 2021 echo the following trends and will be adjusted or re-prioritized to accommodate changes in the landscape.

Managed Care and Value-Based Payment

North Carolina Medicaid is moving to managed care, and together with the State Health Plan and other health plans, value-based payment. Health care quality and outcomes data inform these new payment models. The ability for entities like NC HealthConnex to collect and synthesize this data for providers and payers will be critical to the model's success.

New and Emerging Interoperability Models, Technologies and Policies

Health care technology, nationwide interoperability and associated policies are evolving rapidly. Thus, maintaining consistent federal standards that leverage new best practices is challenging. Promising developments like artificial intelligence, natural language processing, Fast Healthcare Interoperability Resources (FHIR), Blockchain and new interoperability frameworks could either disrupt or enhance existing HIE pathways.

Cybersecurity

Cyberattacks continue to increase, and the implications for health care can be devastating. Health systems, states and EHR vendors are among a long list of entities facing federal penalties or other costly repercussions for data breaches. NC HealthConnex is situated under NC DIT, the State's oversight agency protecting its data from cyberattacks. This puts the HIE at an advantage against cybercrime. Nonetheless, the NC HIEA must remain vigilant and take every precaution.

Data Usability

Getting the right data in a useful format at the point of care is one of the biggest challenges facing health care providers today. This task demands interoperability that works, data standards that are consistent and universal, a more nimble and analytic approach to moving data, and ways to present that information within a variety of workflows.

Long-Term Sustainability

North Carolina state law directs the NC HIEA to gradually move NC HealthConnex toward a 100 percent receipt-supported status (NCSL 2015-241 Section 12A.5.(a)(3)). State appropriations and federal Health Information Technology for Economic and Clinical Health (HITECH) Act funds currently support the HIE, and health care providers participate and leverage NC HealthConnex services at no cost. As the HIE's database grows in size and richness through 2021, the NC HIEA will work to determine the most appropriate business model for long-term stability.

Patient Engagement

Health plans, providers and employers have all taken steps to engage patients in managing their own health, and technology retailers like Apple and Amazon have recently announced a larger focus in this area. As patients' expectations for access to their complete health data rise, NC HealthConnex must proactively partner with health care providers in meeting patients' demands.

1. Ensuring a Strong HIE Foundation

Maintaining a modern, flexible HIE infrastructure amidst the ever-evolving health care and technology industries is a tough proposition. The NC HIEA is committed to ensuring a high level of system security, trust and reliability, and will work diligently over the next few years to improve data integrity and usability.

Top areas of focus include mastery of both patient and provider identity, an increasingly robust data target as use cases are implemented together with the provider community, fine-tuning data inputs with providers and vendors, and increasing HIE usage through system enhancements and workflow training.

Roadmap Initiatives for a Strong HIE Foundation

- **Upgraded HIE Platform.** NC HealthConnex will move to the InterSystems HealthShare HIE platform. Standout benefits include improved data mapping, reporting, Clinical Portal and consent capabilities.
- **Enterprise Data Management Application Programming Interface (API) Warehouse.** As part of a larger state agency effort, the NC HIEA will catalog the HIE's data assets and make them accessible via APIs for permitted use cases and with appropriate data use agreements.
- **Attribution Enhancements.** Consolidation in the State's health care landscape makes dynamic health system structures and multiple provider affiliations a challenge to track in the HIE. Flexible attribution methodologies between providers, facilities and their larger corporate entities will improve attribution accuracy, data integrity and reporting capabilities.
- **Improved Provider Directory.** The Provider Directory currently contains more than 20,000 direct secure email addresses. Planned enhancements include the addition of supplementary provider data for better identification and improved ease of access and self-maintenance by HIE participants.
- **Consolidated Continuity of Care Document (CCD) for EHR-Integrated Participants.** Providers who access the HIE from within their EHRs currently see a list of recent patient encounter summaries rather than a single, current, consolidated summary of care record. NC HealthConnex will make available this single record per the NC HealthConnex CCD data specification, which is modeled on federal standards.
- **Data Quality Program for HIE Participants.** The NC HIEA has operated a data quality initiative since its inception, but much work remains on the participant and EHR vendor side to ensure that incoming data is complete and accurately mapped. NC Area Health Education Centers (AHEC) Practice Support coaches will work with providers on their NC HIEA quality reports to hone the quality of inbound data.
- **Enabling Emerging Data Standards, Services and APIs.** FHIR is a flexible API-based standard that allows for data elements to be more nimbly requested, sent and retrieved by health care providers, managers, payers and patients via multiple types of devices and user interfaces. Enabling FHIR, and other data standards and services as relevant, will improve the HIE's ability to support Medicaid managed care, as well as myriad future use cases relative to HIE users and patients' demand for instant, relevant patient health information.
- **Natural Language Processing.** As technologies are better able to transpose human languages and text into computer code, and vice versa, their promise for efficiencies in health care analytics grows. The NC HIEA will evaluate available applications and their potential benefits for NC HealthConnex.

2. Expanding Exchange Reach & Capabilities

Like social media, the utility of an HIE is directly proportional to the size and quality of its network. State law connotes two advantages for NC HealthConnex in this area: 1) mandates for about 98 percent of North Carolina health care providers to connect and share data by 2021, and 2) a patient "opt-out" law that results in more than 99.9 percent patient participation, making for ubiquitously available patient records upon provider search.

Work remains to be done in delivering on the mandated connections, linking NC HealthConnex with nationwide systems that contain relevant patient health information, integrating the HIE with additional state public health e-initiatives to ease provider reporting burden and improve monitoring and disaster response activities, and building new exchange capabilities as users demand them.

Roadmap Initiatives to Expand Exchange

- **Adding Nationwide Networks.** Currently linked to the nationwide eHealthExchange, four border state HIEs and the Veterans Administration, the NC HIEA will add the Department of Defense and Patient Centered Data Home networks and assess participation with Carequality, CommonWell, the Social Security Administration, the Trusted Exchange Framework and Common Agreement and others.
- **Seamless Statewide Exchange with the NC Controlled Substances Reporting System (CSRS).** Per the NC Strengthen Opioid Misuse Prevention (STOP) Act of 2017 (NCSL 2017-74), NC HealthConnex will serve as an integrated gateway to the CSRS and include CSRS data in NC*Notify event notifications.
- **Meeting Health Information Sharing Needs of Emergency/Disaster Response Health Workers.** With the NC Office of Emergency Management and the NC Office of Emergency Medical Services, the NC HIEA will provide HIE patient history to health workers during a declared state of emergency, and ensure NC HealthConnex is otherwise leveraged for statewide disaster preparedness efforts.
- **Providing Continuity of Care Across Correctional Health Transitions.** Together with NC DHHS and the NC Department of Public Safety, the NC HIEA will enable NC HealthConnex access and record sharing for health services staff in state prisons, jails, juvenile detention centers and rehabilitative centers.
- **Single Sign-On to Other Public Health Portals via NC HealthConnex.** The NC HIEA will work to provide single sign-on access to other state-level public health portals via the NC HealthConnex Clinical Portal.
- **On-Demand Reporting for Providers and Health Plans.** To better support Medicaid, the State Health Plan and other health plans with value-based care, the NC HIEA will develop on-demand and standardized reporting capabilities for specific patient panels and data elements as needed.
- **Supporting Human and Social Services with Access to Health Information.** The NC HIEA will continually assess how NC HealthConnex can support human and social services workers, such as social workers or law enforcement officers, through provision of relevant information from the HIE.
- **Electronic Laboratory Orders and Results.** Integration with the NC State Laboratory of Public Health will enable lab orders and results from within an EHR; this capability may be added for additional labs.
- **Additional Exchange Capabilities.** The NC HIEA will consider use cases as they arise. Contemplated initiatives include eCase Reporting to NC DPH, an e-referral system and access to advance directives.

3. Advancing Notification Services

In an ever-growing environment of big data, health care providers need timely, concise, actionable information on their patients to provide the best possible patient care. Likewise, in the transition to value-based payment models, health plans, care coordinating agencies, patient transportation organizations and others will have a keen interest in knowing when and where a patient touches the health care system.

In 2018, the NC HIEA introduced NC*Notify, a statewide event notification service powered by NC HealthConnex. The service was developed in response to provider and stakeholder feedback to routinely place targeted, actionable patient data into the hands of subscribed providers, based on their desired, specified patient panels.

Unlike notification services previously available in the NC HealthConnex Clinical Portal, NC*Notify provides a secure, regular "push" of relevant notifications to providers as their patients receive services statewide and across the care continuum, including in acute and ambulatory care settings.

The NC HIEA will aim to put NC*Notify to work for Medicaid managed care and other interested participants by adding convenient delivery methods, increasing delivery frequency and expanding data inputs. In addition, the NC HIEA is working to incorporate clinical intelligence that will drive the most relevant and robust notifications based on a patient's history and health care event without a provider having to predefine the exact data sought.

Roadmap Initiatives to Advance Notifications

- **More Delivery Methods and Formats.** To accommodate varied workflows and communication preferences, the NC HIEA will work to make NC*Notify notifications available via Health Level 7 (HL7) messages into a provider EHR, through direct secure messaging (encrypted e-mail for health care providers) and via text message and FHIR-based mobile APIs.

- **Increased Delivery Frequency.** Subscribed participants may choose to receive NC*Notify notifications monthly, weekly, daily, or even less frequently, based on their practice's population health protocols. The NC HIEA will build the logic to provide notifications in near real time to make timely follow-up more possible and likely.

- **Addition of Data Elements and Sources.** NC*Notify currently alerts a participant to when and where a patient has touched the health care system. To better inform appropriate care management, the NC HIEA will begin to include chief complaint and diagnosis information, as well as information from various connected state registries and repositories, as selected by the participant, including but not limited to the North Carolina Immunization Registry (NCIR), the NC Controlled Substances Reporting System (CSRS) and the North Carolina Resource Platform (data on social determinants of health).

- **Smarter Notifications.** To move beyond a provider's best guess of the data they will need for a panel of patients, the NC HIEA will build a Clinical Intelligence Engine (CIE) to push only targeted data that is timely and relevant to participants. The CIE will interrogate various internal and external datasets to determine additional triggers of notifications and additional content to provide therein. Smart notifications will help to reduce alert fatigue while providing the most actionable information for appropriate follow-up and care management.

4. Building Value in Population Health & Analytics

Opportunities to better manage the health of certain populations loom large. Providers, health plans and public health entities all bear this burden, and the NC HIEA aims to make it lighter. NC HealthConnex currently hosts a Diabetes Public Health Specialized Registry and provides NC*Notify event notifications that assist health care providers with care management of certain populations.

Over the next three years, the NC HIEA plans to add access to the NC Controlled Substances Reporting System, incorporate NC Immunization Registry and Social Determinants of Health data, support scientific research, and otherwise inform NC DHHS and statewide population and public health efforts by linking data sources and providing relevant health information when and where it is needed.

Roadmap Initiatives to Improve Population Health

- **Combating Opioid Misuse and Other Substance Use Disorders.** As explained in an Expand Exchange initiative on page 8, NC HealthConnex will serve as a gateway to the CSRS. The NC HIEA anticipates the ease of this approach for providers will increase use of the CSRS, affecting prescribing habits and treatment plans for patients misusing opioids and other controlled substances.
- **Improving Cardiovascular Health.** North Carolina is one of seven states to receive a grant from the Agency for Healthcare Research and Quality for working with primary care practices to use analytics in cardiovascular patient care planning under its Heart Health Now Program. NC HealthConnex will provide clinical measure data for this effort to inform effective disease management by care teams.
- **Improving Colorectal Health.** Northeastern North Carolina was recently identified as one of three national colorectal cancer (CRC) hotspots nationwide. The NC HIEA selected a use case application from the University of North Carolina and the NC Community Health Center Association to support patient care and screening activities for CRC by providing relevant HIE data for use in community health centers.
- **Supporting Care Management of Chronic Conditions.** Under its former governance structure, the NC HIE, draft asthma, stroke, hypertension, and congestive heart failure specialized registries were built. The NC HIEA will evaluate whether to make these a part of the NC HealthConnex offering, building upon the disease-specific datasets with guidance from NC DPH, to leverage them within NC*Notify event notification services. The NC HIEA will also explore linking additional data sources, including encounter claims data, to better inform care management for patients with chronic conditions.
- **Contributing to Scientific Research.** One untapped application of NC HealthConnex is its ability to support research. The timely and complete nature of HIE data is an exciting prospect for health researchers, many of whom are accustomed to using population datasets that are months or even years old. The NC HIEA will vet proposed research initiatives through its Use Case Workgroup to provide HIE data where it may appropriately inform research and/or improve community intervention programs.
- **Informing Additional Population and Public Health Initiatives.** The NC HIEA will explore with NC DHHS how to further leverage NC HealthConnex to support high-priority initiatives, such as reducing infant mortality, combating tobacco use or supporting early childhood health across schools and foster care environments.

5. Facilitating Better Health with HIE

The NC HIEA is committed to enabling data sharing to improve patient care, while reducing the burden placed on health care providers relative to state reporting and population health analytics. To this end, it participates in several regular outreach, educational and collaborative efforts to advocate for the use of HIE services and capabilities; learn about best practices in other states and developments in interoperability nationwide; work to overcome challenges with EHR vendors on behalf of NC HealthConnex participants; and continually monitor and address the needs of its providers and stakeholders.

- **Work Groups.** One of the key ways the NC HIEA gathers stakeholder input, promotes adoption and use of the HIE, and continually shapes its services to fit the needs of the health care community is by hosting focused work groups. The NC HIEA co-sponsors an HIE Task Force together with the NC Healthcare Information and Communication Alliance; hosts two work groups dedicated to better understanding the unique challenges in implementing, and defining the benefits of, HIE for dental and behavioral health providers, respectively; collaborates with the NC Division of Public Health on a work group to advance and develop new disease registries; and hosts a work group to evaluate use cases brought forth by provider groups, researchers and health care organizations for leveraging HIE to improve population health and close gaps in care. Beginning in 2019, the NC HIEA will host a population health work group inviting physicians and payers to help determine a more efficient flow of clinical data for population-based quality reporting and care coordination purposes.

- **Assisting with EHRs for Behavioral Health.** As a community of providers largely excluded from federal EHR incentive program initiatives, the behavioral health work group identified lack of technology as a major barrier for this provider community to fulfilling their HIE connectivity mandate. In response, the NC HIEA, together with the NC Office of Rural Health, developed a program to fund the purchase of EHRs for 178 behavioral health and intellectual and developmental disability providers still using paper records. The NC HIEA recognizes that behavioral health providers are critical to the provision of whole-person care, and their ability to share data across the care continuum will have significant impact on the success of the value-based care model in North Carolina.

- **Reducing Administrative Burden.** A core focus for the NC HIEA remains its commitment to NC DHHS and the provider community to be a single point of electronic reporting of health information to the State of North Carolina. Providers who wish to comply with the HIE Act and electronically submit immunizations, reportable labs, communicable disease diagnoses and other reportable information to state systems may achieve these things through NC HealthConnex. Similarly, plans for NC*Notify to include data from the HIE as well as state registries and repositories aim to provide a single source of robust, actionable statewide patient data for efficient population health management at the health system or practice level. One persistent challenge for the NC HIEA is working together across so many state agencies and programs that are accustomed to operating independently. The NC HIEA will continue to advocate for smart use of state resources, and reduction of EHR vendor costs to providers, by encouraging consolidation of provider interfaces to state systems through NC HealthConnex.

- **Collaborating with Stakeholders.** The NC HIEA works closely with NC DHHS, NC DIT, the North Carolina General Assembly and other key stakeholders to provide meaningful input for needed policy and funding changes that support NC HealthConnex as a useful tool for the provider community.

Measuring Success

NC HealthConnex is poised for tremendous growth over the next three years. Measuring the success of the NC HIEA Roadmap 2021 initiatives through HIE adoption and utilization, data quality and provider satisfaction metrics will be valuable to informing service changes and new development. In addition to achievement of the individual initiatives herein, the following metrics will be continually tracked, reported quarterly to the NC HealthConnex Advisory Board, shared on the NC HIEA website, and included in future reports to the North Carolina General Assembly and the Centers for Medicare and Medicaid.

In addition to improving the reach and quality of NC HealthConnex, the NC HIEA anticipates engaging in qualitative and quantitative measurement of its impact on health outcomes and cost of care and looks forward to leveraging specific use of NC*Notify to begin to track this impact in the coming years.

NC HIEA Roadmap 2021 Goals

- **Area of Improvement: HIE Adoption and Utilization**
- **Alignment to Developmental Areas:** 1, 2, 5
  - December 2018 Baseline: 87 percent of NC hospitals (including State-owned and specialty hospitals) contributing data; 56 percent of Medicaid and State Health Plan providers contributing data
  - December 2021 Goal: 100 percent of NC hospitals (including State-owned and specialty hospitals) contributing data; 95 percent of Medicaid and State Health Plan providers contributing data
  - December 2018 Baseline: 300,000+ average monthly queries to NC HealthConnex
  - 2019-2021 Goals: Increase queries to NC HealthConnex by more than 50 percent year over year (2019-2021)

- **Area of Improvement: NC*Notify Adoption**
- **Alignment to Developmental Areas:** 2, 3, 4, 5
  - December 2018 Baseline: 250,000 patients monitored in Version 1.0
  - 2019-2021 Goals: 1 million patients monitored by December 2019; 2.5 million by December 2020; and 5 million by December 2021

- **Area of Improvement: Data Quality**
- **Alignment to Developmental Areas:** 1, 3, 4
  - December 2018 Baseline: 78 percent of participants compliant with the NC HIEA minimum data target
  - December 2021 Goal: 5 percent improvement year over year (2019-2021), with expansion of the NC HIEA minimum data target

- **Area of Improvement: Provider Satisfaction**
- **Alignment to Developmental Areas:** 1, 2, 3, 4, 5
  - January 2019 Baseline (2018 Survey): 77 percent
  - 2019-2021 Goals: 80 percent of participants satisfied or very satisfied with NC HealthConnex (overall) and NC*Notify by December 2019; 85 percent by December 2020; and 90 percent by December 2021

Future Forward

Health information exchanges across the country have encountered numerous challenges in moving from seed funding to fully sustainable business plans in the short time they've had to become robust, valuable tools. As NC HealthConnex moves closer to connecting the state's health care ecosystem, the North Carolina General Assembly has directed it to gradually become "receipt-supported." The NC HIEA agrees that, once fully built and functioning highly, the HIE's operational costs could be a shared expense by all who benefit, including the State, private health plans and others who leverage its data and services.

The NC HIEA anticipates continued funding for NC HealthConnex through recurring state appropriations and federal Health Information Technology for Economic and Clinical Health (HITECH) Act matching funds at least through state fiscal year 2021 (June 2021), and is exploring various business models for operations thereafter. With continued support from the General Assembly, other state partners and stakeholders whose own successes are tied to that of NC HealthConnex, the NC HIEA is confident that future operations will set the state on a path to improve health care outcomes while lowering the cost of care.

Conclusion

The initiatives in NC HIEA Roadmap 2021 are designed to deliver for the State a vital public infrastructure that supports connected care communities, from rural to urban and from mountains to coast. Their implementation, together with an overall increase in adoption and utilization of HIE services, will make NC HealthConnex an even more powerful tool for improving care quality and coordination, reducing unnecessary health care costs and supporting providers and state agencies in efficient communication for public health and other state policy initiatives.

Looking ahead, the NC HIEA hopes to continue to build trust as a neutral party that is working to improve health across North Carolina. This means serving providers in their clinical data sharing and state reporting needs, and equipping health plans to better manage and improve care while reducing costs. It means providing state public health and emergency management agencies with a single tool to facilitate the movement of timely clinical data when and where it is most needed statewide to respond to outbreaks and disasters and improve prevention programs. It means serving more than 10 million North Carolina patients who deserve and need to always have their complete records available at the point of care anywhere they happen to be. Not least, it means serving the State of North Carolina by improving the health of the population, reducing unnecessary expenditures in the Medicaid program, and supporting future research and innovation that could fuel economic growth.

Support for statewide HIE in North Carolina has never been so strong and widespread as it is now in 2019. The team at the North Carolina Health Information Exchange Authority is ready for the challenges ahead and eager to build a national model in HIE with NC HealthConnex. Together, we will work to achieve connected health care communities where health information exchange is ubiquitously used as a tool to improve health and health care across North Carolina.

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