NC DEPARTMENT OF
HEALTH AND HUMAN SERVICES

Data Strategy Roadmap

December 2019

Overview

Since 2017, the North Carolina Department of Health and Human Services (DHHS) has asked, "How can our resources be optimized to buy better health for the people we service?" How can DHHS invest strategically in the health of North Carolinians rather than to think of DHHS exclusively as a buyer of services and administrator of programs? Achieving that goal requires a whole-person focus and coordination across health services, human services, and other internal and external partners.

The "buying health" vision also requires a data-driven approach to both strategic and operational decision-making, which in turns requires a comprehensive data strategy that prioritizes integrated, reliable data that allows business users to quickly and easily ask and answer business questions.

DHHS already produces an enormous quantity of data and already has many analysts and technology systems in place to utilize much of that data to meet many operational business needs. Some aspects of the Departmental data strategy described in this paper already exist in an informal or piecemeal way within some teams and divisions.

However, in the absence of a consistent and formal cross-Departmental data strategy, the current state of DHHS data is often not only incompatible with the strategic vision of "buying health," but also insufficient to meet many existing business needs. For example:

- Our **data use** is limited by many overlapping factors. Business decisions are usually not made in a data-driven way because there is no actionable data to drive them. Critical analyses are not performed either because we have no way to perform them or the level of effort is prohibitive.
- Our **data quality** is often either poor or unknown, resulting in analyses that either cannot be completed or are not meaningful because business users don't believe the data is accurate. We often don't know why the data is poor, so we can't address the underlying problem.
- Our **data infrastructure** is highly fragmented. Data is stored in many places across DHHS and it is often difficult to even understand what data exists, let alone answer questions that require integrating data from multiple sources.
- Our **data governance** is inconsistent. There is no consistent cross-DHHS strategy to manage data quality, usability, access, or security. As DHHS shares more data with a wider variety of external partners and stakeholders, this is an enormous risk.

Data limitations are business limitations. When DHHS leaders and analysts don't have access to integrated, high-quality, user-friendly data, they cannot answer foundational questions to make even many basic strategic and tactical business decisions.

DHHS needs a Data Strategy

In short, DHHS has not historically had a cross-Departmental data strategy. Developing one is an urgent need. A data strategy is a plan designed to improve all the ways an organization acquires, stores, manages, shares, and uses data.[1] The overarching goal of a data strategy is all about making it easier and more efficient to collect, protect, use, and share data so that it can be used to guide decision-making.

Purpose of this document

The purpose of this paper is to describe the DHHS data strategy that we are beginning to build towards at an executive level and in non-technical language. To that end, this paper has three goals:

1) Describe the future-state vision for DHHS data.
2) Lay out a simple framework to help build a collective understanding of the different categories of work that will be required to successfully operationalize the vision for DHHS data.
3) Provide a high-level implementation "roadmap" of the key projects required to implement the DHHS data strategy with a rough timeline of when different projects will occur.

Vision for DHHS data

Vision statement: Enable DHHS and its partners to quickly and easily make data-driven strategic and operational decisions by providing access to integrated, trustworthy, well-governed, and managed data.

The driving principles for the data strategy align with DHHS values:

- **Teamwork:** Democratize data to help more people across DHHS access data and the analyses/insights derived from it with fewer gatekeepers and bottlenecks.
- **Transparency:** Give business users the ability to easily access and work with data no matter where they are located or what application created them.
- **Stewardship:** Just as it is important to be good stewards of financial resources and time, it is important to be good stewards of DHHS data, managing and overseeing data assets in a way that provides high-quality, accessible data that can have a positive impact on those we serve.
- **People-focused:** The well-being of the people we serve is paramount, including safeguarding the privacy and security of their personal information.

Example use cases: The following are example use cases that are not possible today but are critical for DHHS going forward. A successful implementation of the DHHS Data Strategy will enable:

- **Early childhood:** Can we integrate data from multiple DHHS and non-DHHS sources into an automatically-refreshing, interactive dashboard that tracks statewide progress against the goals of the Early Childhood Action Plan?

[1] "The Five Essential Components of a Data Strategy," SAS.

- **Human Services:** Can the Human Services Business Intelligence Office ask and answer questions quickly and easily about the average time to permanency for children in foster care, without needing to go through a long and time-intensive data request process?
- **Medicaid:** Can the Healthy Opportunities Pilot evaluators quickly and easily integrate data from multiple sources to determine what combinations of non-medical interventions are most effective in improving the health of high-need Medicaid beneficiaries?

Overview of DHHS Data Strategy Framework

The four components of the DHHS Data Strategy

Operationalizing the DHHS Data Strategy requires parallel work in four interrelated components as shown in Figure 1. Below is a brief explanation of each component and why it is important.

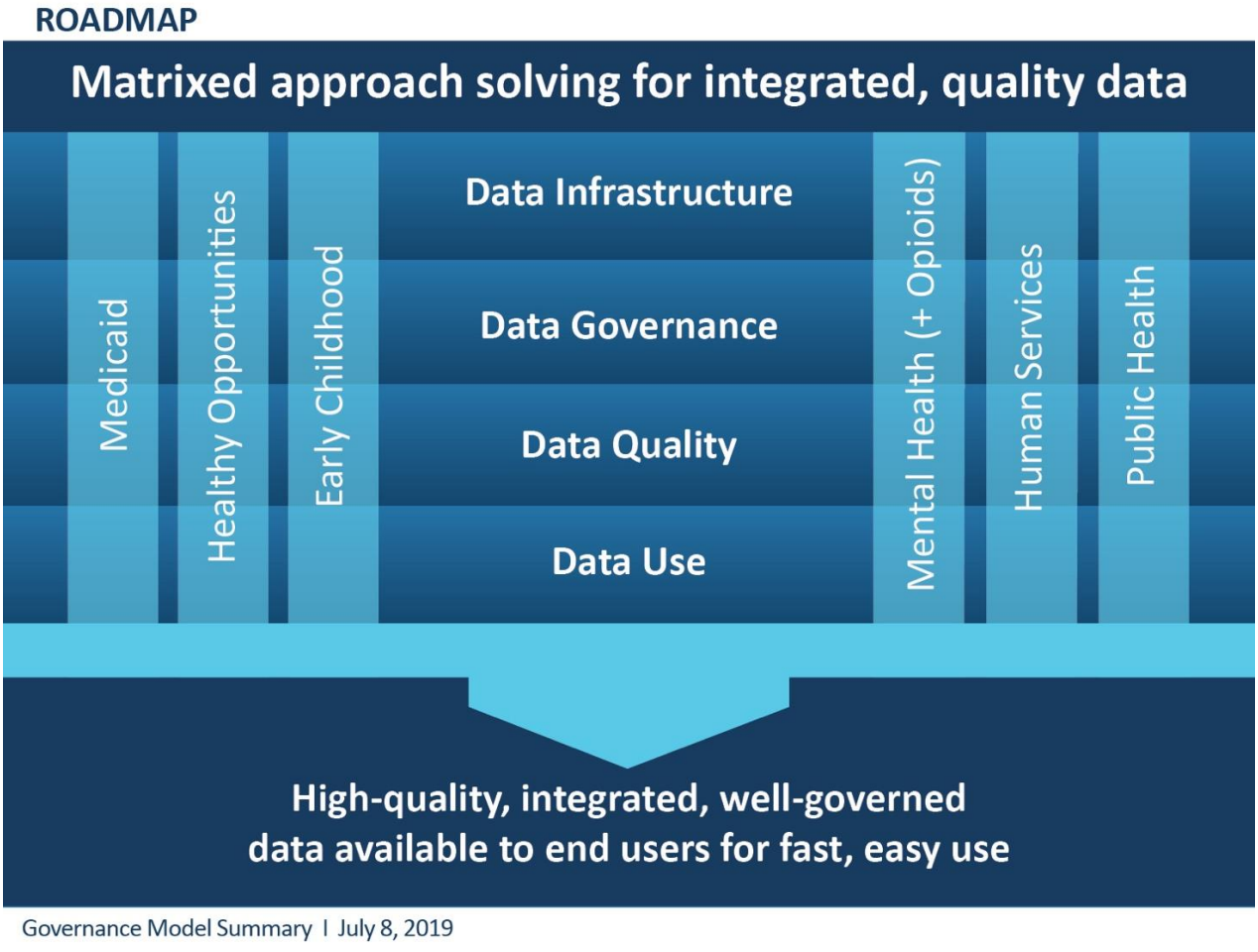

Figure 1: Four critical components of the DHHS data strategy that span all Divisions: i) Data Infrastructure, ii) Data Governance, iii) Data Quality, and iv) Data Use

These four key components are interrelated. There is sometimes a tendency to think of an organization's "data strategy" as being synonymous with its "data infrastructure strategy," but addressing data limitations to meet a business need will often require work in multiple horizontals and sometimes in all four.

For example, if DHHS wants care providers to be able to see whether patients who screen positive for food insecurity are enrolled in SNAP, that requires not only the infrastructure to make that data available to the clinician, but also clear governance controls to ensure the privacy and appropriate use of that data, a plan to ensure that clinicians can trust the quality and integrity of the data they see, and making sure that the clinician has the tools and training they need to effectively utilize that data.

The graphic above illustrates this matrixed approach across DHHS. Note that "matrixed" does not mean "siloed." An effective DHHS data strategy must support data integration so that business users and Departmental leadership can answer questions and meet needs that rely on information from multiple data sources.

Data Infrastructure

Data infrastructure refers to the technology used to store, exchange, and access data. Think of data infrastructure as being like the plumbing in a house, both the "pipes" through which data moves and the "faucets" through which data is access by the end users.

Key questions that need to be answered when creating a data infrastructure strategy include:

- **Data identification:** How can we identify and understand data regardless of its content, origin, or location?
- **Data transmission:** How is data transmitted or shared between entities?
- **Data storage:** How is data stored in a way that supports security, ease of authorized access, and intelligent querying?
- **Metadata management:** How do we collect, maintain, and enable easy access to our metadata (i.e., data about our data that provides business, technical, and operational information/context)
- **Data processing:** How is raw data transformed into ready-to-use data?
- **Data provisioning:** How is data packaged so it can be reused and shared, with rules and controls for access and use?

Data Governance

Data governance refers to the people, processes, and technology required for data quality, usability, and security. As a SAS Institute white paper explains, a data governance strategy "is intended to lay out

the ground rules for all players – business users, data stewards, data managers – so that data issues can be anticipated and handled swiftly."[2]

Key questions that need to be answered when creating a data governance strategy include:

- **Data stewardship:** Who will be accountable for providing data access, helping users understand data, and being responsible for data quality and metadata management?
- **Governance process:** How do we ensure there is a clear, consistent process for making decisions about data use, data sharing, and management and for raising and elevating data issues?
- **Policies, rules, and controls:** How do we provide clear guidance and mechanisms to ensure appropriate data storage, usage, standards, manipulation, and management across DHHS and external partners?
- **Data privacy and security:** As DHHS increasingly shares data both internally and externally, how do we ensure that all data is stored, transferred, and used in a safe, secure fashion and in accordance with all relevant statutes (but not with imagined statutes that people assume exist and limit their ability to share data)?

Data Quality

Data quality refers to the tools and processes to ensure data are valid, accurate, and trustworthy. If we can improve the quality of data, then we will have better and more reliable information to inform evidence-based decision making.

Key questions that need to be answered when creating a data quality strategy include:

- **Data quality assessment:** For each piece of DHHS data, how will we evaluate and understand its quality (including its completeness, uniqueness, timeliness, validity, accuracy, and consistency)?
- **Data quality prioritization:** Not all data needs to be of the highest quality, but some does. Data needs to be "fit for use," meaning that it is of sufficient quality to be used for its intended purpose. How will we determine what DHHS data requires what level of quality?
- **Data quality improvement:** How will we monitor and intervene to ensure that key DHHS data is high quality? (e.g. cleaning, de-duplication, enriching). How can we change the upstream processes that created or allowed the quality issues in the first place?

Data Use

Data use refers to the reports, visualization, and analysis produced using data and how those outputs drive DHHS decision-making. This includes not only the analyses themselves but also ensuring that the people, processes, tools, technology, and culture are in place to support them.

Key questions that need to be answered when creating a data use strategy include:

[2] "The Five Essential Components of a Data Strategy," SAS. https://www.sas.com/content/dam/SAS/en_us/doc/whitepaper1/5-essential-components-of-data-strategy-108109.pdf

- **Right questions:** What insights do DHHS business users need to derive from data to make truly data-driven strategic and operational decisions?
- **Right analysis:** Does a given question require advanced analytics performed by a data scientist or statistician? Or does it simply require ready access to basic counts, potentially across domains?
- **Right people:** How do we ensure that we recruit, train, and retain the right people in the right places throughout DHHS to perform those analyses?
- **Right tools:** How do we give end users (both analysts and managers/executives) the tools (e.g., dashboards, BI tools, programming languages, data formats) they need to derive actionable business insight from our data?
- **Right culture:** How do we make DHHS a truly data-driven organization, in terms of how we ask and answer questions and make decisions?

Roadmap Approach

ROADMAP

Phased approach to implementing data strategy- short, medium, long term goals

	SHORT TERM	MEDIUM TERM	LONG TERM
Area	**1-3 months**	**4-12 months**	**> 1 year**
Governance	• Establish DGC • Deploy data stewards • Begin campaign for hearts and minds	• MOU/MOA/DUA inventory • Governance process gap analysis • Data curation	• Culture shift • Clear processes for data sharing and integration
Infrastructure	• Identify data assets	• ETL use-ready datasets to reporting server	• Enterprise Data Management
Quality	• Define quality metrics	• Profile key data assets	• Policies and processes for continuous improvement
Use	• Develop use cases	• Deploy Tableau • Train workforce • Quick win analyses • Build partnerships with universities • Cross-DHHS analytics group	• Advanced analyses • Data-driven policy making and continuous improvement

Four key considerations shaped our approach to the Data Strategy Roadmap:

1) **Engage stakeholders.** Allow a broad set of business stakeholders to help shape the direction of the work to build buy-in and momentum.
2) **Balance short-term and long-term work.** There will be ongoing decisions and tradeoffs in this work between dedicating time and energy towards laying the groundwork for a longer-term vision versus creating interim solutions to solve immediate business needs or capturing quick wins to show utility and build momentum for the longer-term strategy. This roadmap attempts to strike an appropriate balance between short-term and long-term work.
3) **Don't "boil the ocean."** DHHS data lives in dozens if not hundreds of locations that widely varies in its current ability to meet many different business needs. It is not feasible for all DHHS data to be perfectly integrated, perfectly governed, and of the highest quality. This roadmap attempts to steer focus towards "verticals" (e.g., business areas) and "horizontals" (e.g., types of data interventions) that will have the biggest and most strategically important impact for DHHS.
4) **Preserve flexibility.** We anticipate that DHHS data needs will continue to evolve over time, as will the technologies and best practices available to meet those needs. This roadmap attempts to build towards a clearly defined future state while preserving flexibility to adapt to new (and potentially more complex) business needs.

A High-Level Roadmap to Operationalize the DHHS Data Strategy

The estimated timelines referenced in this section are based on a start date of August 1, 2019.

Data Infrastructure

Overarching goal: Design and implement an infrastructure to store, exchange, and access data that supports the easy, real-time use of integrated, high-quality, well-contextualized date to meet strategic and operational business needs.

Immediate work (<3 months):

- **Identity and prioritize data assets.** Data is a critical information asset for DHHS. A foundational body of work for building a successful DHHS data infrastructure is understanding what data assets exist across DHHS today, what kinds of information are contained in each, how they are currently used, and which should be prioritized in what contexts.

Short-term improvements (3-12 months):

- **Extract user-ready data sets into reporting servers.** Business Intelligence teams can produce actionable insight more quickly and efficiently when they can easily access user-ready data sets, rather than needing to go through a time-intensive process to request or extract data from a warehouse. The DHHS Data Office and the Information Technology Division are currently working with the Human Services Business Intelligence Office to begin operationalizing.
- **Begin moving from periodic data dumps to real-time interfaces.** Today, most DHHS data moves between locations via a data dump at a regular interval, with limited capabilities for data validation. Periodic data dumps are like sending a snail mail letter: it is not real-time and there is no feedback loop to tell you whether your letter was received by the end user. Moving forward, DHHS will begin transitioning to real-time interfaces such as Application Programming Interfaces (APIs, essentially connections where two computers can talk to one another). An API is like email: data is exchanged in real time and the sender and receiver can exchange information about whether the data was received and if its format is readable by the receiver. While IT staff may require training to use APIs, they are the modern standard for data exchange.
- **Begin improving metadata management.** High-quality metadata, which provides context around what data means, where it originated, who owns it, and other key information about the data, is an essential component of a sound data strategy. Creating and maintaining metadata that is not only informative but user-friendly and easily accessed can't be an afterthought— it requires prioritization, planning, and resources.

Longer-term improvements (>12months):

- **Enterprise Data Management (EDM) procurement.**
  EDM refers to the ability of an organization to precisely define, easily integrate and effectively retrieve data for both internal applications and external communication. The EDM procurement provides a unique one-time opportunity for DHHS to reconfigure the "plumbing" of its data infrastructure. With many possible options how to do this, some of which are cutting edge, DHHS is using a procurement vehicle called a Statement of Objectives (SOO). In a SOO, DHHS defines our objectives and respondents describe the work they would do to achieve those objectives, as opposed to DHHS providing a traditional Statement of Work that tells respondents what work we want them to do.

Data Governance

Overarching goal: Set the "ground rules" for everyone on data management, use, quality, and security and create a system where issues can be surfaced and addressed quickly.

Immediate work (<3 months):

- **Establish a Data Governance Council (DGC):** The mission of the DGC is to strategize, prioritize, and oversee activities across DHHS related to data governance. The DGC will be accountable for overseeing department-wide standards, technology, practices, processes, training, communication, and support related to data governance.
- **Begin a campaign for hearts and minds:** One of the most challenging components of moving a large organization towards a data-driven decision-making process is the significant cultural change required. The work to drive that culture change includes building a shared understanding across DHHS of the vision for data and how we will get there, as well as what opportunities it opens for divisions or individuals to do their jobs more effectively or efficiently.

Short-term improvements (3-12 months):

- **Deploy data stewards:** Data stewards assist organizations in leveraging their data assets to their full extent. Data stewards curate data and metadata and help ensure that data policies and standards are turned into practice. DHHS's first data steward started in August 2019.
- **Governance process gap analysis:** To understand what data governance processes need to be created, standardized, or changed, the Data Office needs to understand current processes across DHHS to identify and begin addressing key gaps.
- **DUA/MOU inventory:** Data use agreements (DUAs) and memorandums of understanding (MOUs) are two examples of written agreements between organizations or parts of an organization around what data is being shared and how it is allowed to be used. The data office wants to start by understanding what agreements currently exist to take stock and identify issues and opportunities for data sharing and use.
- **Begin data curation:** The main purpose of data curation is to ensure that data is reliably retrievable for analysis and reuse. This often includes improving metadata (information about the data), such as what a data field means, what the valid entries are, and where it came from.

Examples of metadata for a variable called "TYP_CD"	
Great	Type code- the type of provider as entered by the provider in NCTracks. Valid values are a DHHS-defined subset of taxonomy code IDs from the National Uniform Claim committee and consist of letters and numbers and end in X, e.g. 1223P0700X.
Ok	Type code- the type of provider, i.e. what specialty.
Bad	Type Code

Longer-term improvements (>12months):

- **Establish clear and routine processes for data sharing and integration:** Data housed in own division of DHHS can often generate actionable insights for other divisions or for external partners, but all parties need clear processes and guidelines to ensure that data sharing is easy and convenient but also appropriate and compliant.
- **Culture change:** As mentioned above, maybe the most challenging piece of the DHHS data strategy is the culture change that will be required across the department. This culture change will look different in different divisions and at different levels of the organization, but its central tenets include treating data as a critical business asset worthy of time and resources and adopting data-driven decision making for both strategic and operational decisions.

FAIR principles[3]

The FAIR Principles are often used to describe the end goals of good data management and stewardship. According to FAIR principles, data should be:

- **Findable**: The first step in using and reusing data is to find them. Metadata (which means information about the data) and data should be easy to find for both humans and computers.
- **Accessible**: Once the user finds the required data, she/he needs to know how they can be accessed, possibly including authentication and authorization.
- **Interoperable**: The data usually need to be integrated with other data. This is often achieved through the use of applicable terminology standards. In addition, the data need to interoperate with applications or workflows for analysis, storage, and processing.
- **Reusable**: The goal of FAIR is to optimize the reuse of data. To achieve this, metadata and data should be well-described with clear provenance and guidelines for appropriate use.

Data Quality

Overarching goal: Implement tools and processes to ensure data are "fit for use," meaning that data quality is sufficient for how we want to use that data. Accurate and trustworthy data is required to inform evidence-based decision making.

Immediate work (<3 months):

- **Identity and prioritize data assets:** As described in the "data infrastructure" section, data is a critical information asset for DHHS. A foundational piece of an overall data quality strategy is understanding what data assets exist so that we can conduct a data quality profile.
- **Define quality metrics:** There are several important components to data quality. The data office will need to define metrics that allow DHHS data assets to be assessed and compared along a

[3] [3] Wilkinson MD, Dumontier M, Jan Aalbersberg I, et al. Addendum: The FAIR Guiding Principles for scientific data management and stewardship. Sci Data. 2019;6(1):6. Published 2019 Mar 19. doi:10.1038/s41597-019-0009-6 at https://www.nature.com/articles/sdata201618.

variety of data quality dimensions, including completeness uniqueness, timeliness, validity, accuracy, and consistency.

Short-term improvements (3-12 months):

- **Profile data assets:** Once the data office understands what data assets exist across DHHS and has defined data quality metrics, we will profile key DHHS data assets to identify gaps and opportunities and help prioritize the highest-value places for data quality intervention.

Longer-term improvements (>12months):

- **Policies and processes for continuous and sustained improvement:** There are many possible interventions to improve the quality of a particular data set. Some interventions aren't really technical at all (such as calling a list of beneficiaries to make sure their addresses are updated) but many are labor intensive. It is critical to be selective and prioritize effectively, focusing on data where quality improvements will yield the biggest impact for DHHS, on making data fit for use, and on changing upstream processes to prevent quality problems from returning.

The components of data quality *(courtesy of Nuna)*

- **Completeness:** Are all data sets and data items recorded? (E.g., files are not truncated or contain columns that have no data.)
- **Uniqueness:** Is data recorded only once based on how the data element should occur in the data? (E.g., there shouldn't be a beneficiary enrolled three times in one month).
- **Timeliness:** Is the data received in a reasonable amount of time per submission requirements? (E.g., claims and encounter data should have at maximum a one month lag.)
- **Validity:** Does the data match the rules? (E.g., a date is a valid date.)
- **Accuracy:** Does the data reflect the real-world object it represents? (E.g., the number of Medicaid beneficiaries in an enrollment file reflects the actual number of beneficiaries.)
- **Consistency:** Is there an ability to match a data set across all the data (E.g., utilization patterns match from data set to data set)? This also helps to inform completeness and accuracy above.

Data Use

Overarching goal: Empower end users across DHHS to derive actionable insight from accessible, trustworthy data and to make data-driven strategic and operational decisions.

Immediate work (<3 months):

- **Define use cases:** To successfully implement a data strategy, DHHS needs to know what questions business users want or need to answer using data that they cannot today without prohibitive effort. Since August, the data office has been working with representatives from several divisions to help identify the most important uses cases that they would like to see enabled.

Short-term improvements (3-12 months):

- **Deploy Tableau:** Tableau is a data visualization tool that is useful for making strategic and operational business intelligence dashboards and interactive analyses. Tableau is already being used by several teams and divisions across DHHS, but the data office would like to push cross-DHHS deployment of Tableau, with a focus on dashboards that can refresh automatically rather than through a labor-intensive manual process. Note: Several teams within DHHS already utilize SAS or other visualization or business intelligence tools. Deploying Tableau will be additive to tools that teams already use today.
- **Quick win analyses:** One of the most powerful tools to drive an organizational culture change around data is to demonstrate the powerful of data to create actionable insight. To help do this, the data office is driving a handful of high-value, short-term "quick win analyses" to generate momentum and enable immediate, data-driven action. Current quick win analyses include an interactive dashboard on benefit program enrollment and a Medicaid managed care key performance indicator (KPI) dashboard.
- **Build additional partnerships with universities:** Leveraging the capacity and analytical sophistication of academic partners can be an effective way to derive additional analysis and insight from DHHS data. DHHS has the benefit of having top-tier research universities close by and already partners with UNC, Duke, and other institutions in several areas. We want to build on those existing relationships and find new ways to work with universities on data analysis projects that are tailored to the needs and questions of DHHS.
- **Train workforce:** As DHHS's data infrastructure, governance, and quality continue to mature and improve, there will be new opportunities to use our data that will sometimes require new types of analysis or new business intelligence tools for which some team members will need training. A successful workforce strategy for data both "raises the floor" (i.e., gives all business owners a baseline comfort with data concepts) and "raises the ceiling" (i.e., enables data specialists to do even more advanced work).
- **Establish a cross-agency analytics group:** There are dozens of analysts across DHHS who possess skills, knowledge, and information that can aid and inform each other's work. A cross-agency group can help build better communication between data analysts and teams across divisions help foster teaching, learning, and collaboration.

Long-term improvements (>12 months):

- **Advanced analytics:** While the most impactful analyses are often some of the most straightforward, some analyses require highly complex methods, processes, or systems. Performing these analyses often requires data scientists or others with specialized expertise in computer science or statistics and often requires powerful hardware or computing systems. The long-term vision for DHHS data is to have access to both the specialists and the technology to build these analyses into our work and decision-making.
- **Data-driven policy making and continuous improvement**: The central goal of the DHHS data strategy is to enable data-driven strategic and operational decision-making by DHHS business owners and leaders. This can facilitate better policy-making to help the millions of people we serve and foster a cycle of continuous, data-driven improvement across the Department.

Summary of key DHHS data meetings

Data Governance Council

The Data Governance Council (DGC) (monthly, 60 min) is the formal body responsible for overseeing DHHS-wide standards related to the governance of data and information. The scope of the DGC includes data ownership, stewardship, usage, sharing, access, standards, quality, privacy/security, and retention. Key duties of the DGC include serving as final authority to approve policies and procedures that guide overall management of DHHS' data, as well as prioritizing data governance investments across DHHS. **DGC meetings are open to all DHHS employees** but include a small group of voting members from across the Department and chaired by the Chief Data Officer (CDO).

Data Strategy Meeting

The Data Strategy Meeting (monthly, 60 min) is the primary vehicle to update Secretary Cohen on initiatives and projects across DHHS that address one or more of the four pillars of the DHHS data strategy: data infrastructure, data governance, data quality, and data use. While this meeting is chaired by, and its agenda is set by, the CDO, the primary presenters should be division executives and staff. Decision points can be brought to this meeting, as can general updates for discussion and questions. Ideally, each secretariat should have at least one representative at each meeting, with additional attendees added on an ad hoc basis depending on the agenda.

Executive Data Strategy Briefing

The Executive Data Strategy Briefing (quarterly, 30 min) is a synthesized senior leadership update on major data office initiatives, including execution against the DHHS data strategy roadmap. This meeting is also an opportunity to solicit feedback from senior leadership, who can both raise data-related issues/needs and react to data office updates. This meeting is also intended to prompt "cross pollination" of data projects and ideas across DHHS. For example, a project to fix a data quality issue related to early childhood can prompt discussion of similar concerns or possible interventions elsewhere in DHHS.

Data Governance Tactical Team

The Data Governance Tactical Team (biweekly, 50 min) is a larger group comprised of both DHHS employees and key vendors. The DGTT will take direction from and elevate issues to the Data Governance Council (DGC), which will define DHHS' strategic data and system priorities and policies. The DGTT will assess, triage, and manage operational data management issues and ensure their coordinated resolution across program areas. DGTT will provide the DGC with targeted subject-matter expertise and operational counsel related to data ownership, stewardship, usage, sharing, access, standards, procurement, quality, privacy/security, and retention.

How to get involved

We want to hear from you

To successfully implement the DHHS vision for data, every division and need will need to be stakeholders and active participants. Here are some steps that business owners can take immediately to make sure that the data strategy is not just a technical projecting sitting off to the side of the business but plays an integral in DHHS business owners answer questions using data and make data-driven strategic and operational decisions:

1) **Tell us your most important use cases.** What critical business questions do you want to answer in a data-driven way?
2) **Tell us your biggest pain points involving current data limitations.** What holds your team back from being able to make key data-driven decisions? What data doesn't exist, isn't trustworthy, or can't be integrated? Does your team need more analyst capacity or additional skills/tools?
3) **Share your ideas for quick win analyses.** Are there analyses you think would add a lot of value for your division, DHHS, or the people we serve that could be helped along by some additional data expertise or leadership?
4) **Ask us questions.**

Who to contact

Jessie Tenenbaum, NCDHHS Chief Data Officer
Jessie.Tenenbaum@dhhs.nc.gov

Zack Wortman, NCDHHS Chief of Staff and Deputy Chief Data Officer
Zack.Wortman@dhhs.nc.gov