

October 7, 2016

Patrick O'Donnell
Clerk of the Legislature
State Capitol
Lincoln, NE 68509

Dear Mr. O'Donnell:

Pursuant to LB 657 (2015) Section 95(8), the Department of Health and Human Services was required to contract for an independent study of the current health data systems in the State of Nebraska. The Department previously filed an interim update to the study with the Legislature on June 29, 2016.

Attached, please find the final report related to health data systems in Nebraska.

Sincerely,



Courtney N. Phillips, MPA
Chief Executive Officer
Department of Health and Human Services

HMA

HEALTH MANAGEMENT ASSOCIATES

Study of Nebraska Health Data Systems

Final Report

LB 657 (2015)

PREPARED FOR THE NEBRASKA DEPARTMENT OF HEALTH AND HUMAN
SERVICES

BY

HEALTH MANAGEMENT ASSOCIATES

SEPTEMBER 19, 2016

*Research and Consulting in the Fields of Health and Human Services Policy, Health Economics
and Finance, Program Evaluation, Data Analysis, and Health System Restructuring*

ATLANTA, GEORGIA • AUSTIN, TEXAS • BOSTON, MASSACHUSETTS • CHICAGO, ILLINOIS • COLUMBUS, OHIO
DENVER, COLORADO • HARRISBURG, PENNSYLVANIA • INDIANAPOLIS, INDIANA • LANSING, MICHIGAN • NEW YORK, NEW YORK
PHOENIX, ARIZONA • PORTLAND, OREGON • SACRAMENTO, CALIFORNIA • SAN FRANCISCO, CALIFORNIA
SEATTLE, WASHINGTON • SOUTHERN CALIFORNIA • TALLAHASSEE, FLORIDA • WASHINGTON, DC

Table of Contents

Introduction.....	2
Project Scope.....	2
Approach to Current State Analysis	3
Description of DHHS’ Current Health Data Systems	5
Analysis of DHHS’ Current Health Data Systems.....	8
Future Directions.....	12
Guiding Principles for Future System Development and Data-Sharing Collaborations	17
Roadmap Recommendations	20
Conclusion	25
Appendix A: Project Timeline Gantt Chart	i
Appendix B: Key Informants Surveyed and Interviewed for this Project.....	ii
Appendix C: Survey Instrument.....	iii
Attachment 1: Report Inventory	vi

Introduction

The health data and information technology systems the Nebraska Department of Health and Human Services (DHHS) uses to collect, manage, share, and report data can impact DHHS' and the State's ability to identify opportunities to improve program quality and efficacy, achieve cost efficiencies, and improve health care effectiveness.¹ Having accessible, quality data are key to health system reform; without the right data or the information technology (IT) infrastructure to easily manage and share that data, it is very difficult to analyze program capacity and effectiveness, create actionable reports, or make relevant clinical information available to clinicians and systems of care. Ultimately, this impedes providers' and systems' ability to prevent unnecessary utilization and costs. To realize efficient, effective health care solutions, particularly for the Medicaid population, DHHS needs to be able to understand what data are necessary to improve health care and outcomes, and achieve cost efficiencies, and the best vehicles to both collect and aggregate data and to analyze and report meaningful and actionable information. To that end, DHHS engaged Health Management Associates (HMA) to conduct a study of the current state of its data and information technology systems and provide recommendations for how to enhance and expand its capacity to collect, manage, analyze and report actionable information.

Project Scope

Given the complex nature of the work and the short time frame for developing deliverables, HMA used a structured project management approach to provide the level of information requested by the Nebraska State Legislature by the designated deadline (see Appendix A for the Project Gantt Chart). Additionally, while project participants acknowledged that including systems and data outside of DHHS would provide a more complete picture of the healthcare-related data and systems across the State enterprise, given the timeline, the State and the HMA project team agreed to focus on DHSS core data and IT systems. The project is divided into two primary components:

1. **Analysis of the “current state” of health data and health data technology systems.** This provides a clear picture of what exists today, where it is, how it is used, and by whom. Activities include:
 - a. Using existing documentation to map current data enterprise architecture and identify gaps in data and data analytics.
 - b. Documenting how DHHS is collecting, warehousing, sharing, and using health, health care, and social determinants of health data.
 - c. Cataloguing current reports generated, by Division (see Attachment 1).
 - d. Documenting regulatory and legal challenges cited to enhancing data sharing and use.
2. **Recommendations and a “roadmap” for moving toward a “future state,”** building on the analysis of the current state of health data and IT systems. The recommendations include ways to incorporate and integrate various data and information more seamlessly and in ways that State officials and staff can use to better inform program decisions and management. The proposed future state should leverage existing infrastructure, systems, and software to the

¹ Throughout this report HMA uses “DHHS” to identify the Nebraska Department of Health and Human Services. Where “State” is used, this refers to the larger Nebraska government.

extent possible.

Interim Report to the Legislature

HMA provided an Interim Report to the Legislature on June 30, 2016. The interim report included:

- Scope of Work
- Timeline and Schedule
- Project status as of June 25, 2016
- Interim findings

The Interim Report served as the foundation for the recommendations included in this final report.

Approach to Current State Analysis

Review of current healthcare program documentation for data and IT systems. HMA reviewed a range of DHHS health data and IT documentation, including:

- *Medicaid Information Technology Architecture (MITA)* – MITA is an initiative of the federal Centers for Medicare and Medicaid Services (CMS). It is used to establish national guidelines for technologies and processes that improve program administration for the State Medicaid Enterprise. CMS requires each state to complete a MITA 3.0 State Self-Assessment to obtain enhanced federal funding for its Medicaid program. All technology-related funding requests from the state Medicaid agency to CMS must reference MITA status and explain how MITA maturity will be enhanced through the funded work.
- *State Medicaid Health Information Technology Plan (SMHP)* – The SMHP identifies the health information technology (HIT) planning activities DHHS will engage in over the next five years that may be eligible for 90 percent HIT administrative match from CMS. The focus of the SMHP is on the implementation of electronic health records, including the technology, incentives, and program oversight. DHHS' most recent SMHP was released on September 10, 2014.
- *Medicaid Management Information Systems (MMIS) Replacement Planning Project, Legislative Quarterly Status Report April – June 2016.* Quarterly MMIS Replacement Planning Project Reports required by Nebraska Legislative Bill 657 (2015).²
- Nebraska DHHS Requests for Proposals, including:
 - *Request for Proposal for Contractual Services, RFP Number 5151Z for the purpose of selecting a qualified Contractor to provide full-risk, capitated Medicaid managed care program for physical health, behavioral health, and pharmacy services.*³ Released on October 21, 2015. Contracts were awarded on March 1, 2016, with a start date of January 1, 2017.
 - *Request for Proposal for Contractual Services, RFP Number 5330Z1 for the purpose of selecting a qualified Contractor to provide Data Management and Analytics (DMA)*

²http://www.nebraskalegislature.gov/FloorDocs/104/PDF/Agencies/Health_and_Human_Services_Department_of/492_20160907-143134.pdf

³ RFP 5151Z1: <http://das.nebraska.gov/materiel/purchasing/5151/5151.html>

*Services.*⁴ Released on June 1, 2016, with a bid opening scheduled for September 20, 2016, and an operational start date scheduled for late 2018.

- *Request for Proposal for Contractual Services, RFP Number 4611Z1 for the purpose of selecting a qualified contractor to provide a Division of Behavioral Health Centralized Data System (DBH CDS).* Released on January 16, 2014. A Contract was awarded to Orion Healthcare Technology Inc. on October 20, 2014 – October 19, 2018.
 - *Contract to supply and deliver a Division of Behavioral Health Centralized Data System (DBH CDS) to the State of Nebraska.*⁵
- Minutes, Appropriations Committee, for the purpose of conducting a public hearing on LB154, LB532, LB533, LB560, LB417, LB110, LB593, LB496, LB108, and LB436 heard on March 03, 2015.
- Nebraska Legislative Bill 593, A Bill for an Act relating to appropriations; to appropriate funds to the University of Nebraska to study current health data systems, January 21, 2015.⁶

Data and Information Technology Systems Survey. HMA developed and conducted a survey of DHHS Division leaders about DHHS programs and data, as well as barriers, challenges, opportunities, and priorities. Interviewees are listed in Appendix B. The survey, which can be found in Appendix C, was designed to identify:

- The healthcare programs that reside in each Division and the data being collected for each program.
- Who collects data.
- How data are collected and stored.
- What the data are used for and in what formats.
- Specific security, confidentiality and privacy requirements related to each program’s data and systems.
- Division staff who support data collection, data analytics, and reporting (number, function, and skill sets), and the IT systems used for each.
- Perceived and real barriers and challenges to collecting high quality, timely, reliable health data for each program, and suggested solutions.
- Perceived and real barriers and challenges to sharing health data across DHHS programs and Divisions, and for aggregating data.
- Perceived priorities around unmet needs for data and information.

Key Informant Interviews. After the survey was administered, HMA interviewed Division leaders and staff and other identified stakeholders to gather additional detail on current strengths and limitations of data and the IT systems used to collect, store, manage, and analyze data. Respondents were also interviewed about what they see as the ideal future state for Nebraska’s health data and IT systems. The interviews were also used to identify strengths of existing data, analytics capabilities, and IT systems, and areas upon which to build the “ideal state” roadmap (see Appendix A).

⁴ RFP 5330Z1: <http://das.nebraska.gov/materiel/purchasing/5330/5330.html>

⁵ [http://das.nebraska.gov/materiel/purchasing/contracts/pdfs/63249\(o4\)awd.pdf](http://das.nebraska.gov/materiel/purchasing/contracts/pdfs/63249(o4)awd.pdf)

⁶ <http://nebraskalegislature.gov/FloorDocs/104/PDF/Intro/LB593.pdf>

Compilation and Analysis. HMA created a comprehensive list of federal, State, Nebraska Legislature, and internal program management reports and descriptions of the key data elements and metrics for each Division’s identified health and human services programs. Technological issues such as data definition and mapping, extraction, transformation, and loading challenges were also catalogued.

HMA reviewed inter-agency data use and data sharing agreements and current agency capacities to share and collaborate, including regulatory barriers to sharing certain types of data (e.g., federal limitations on sharing substance use data under 42 CFR Part 2) as well as perceived barriers, often arising from differing interpretations of federal law. Additionally, HMA compiled high-level summaries of the core data that include: data elements, types of data, data collection methods, frequency of data collection, quality of data collected, data storage and access, data reporting, and data sharing.

Gap Analysis. The collected documents, surveys, and interviews were assessed for the current state strengths and gaps across DHHS programs, data, and systems. This analysis was used to support recommendations for “quick win” opportunities for sharing or aggregating data, as well as identifying where medium and longer-term program collaboration, software and systems upgrades, or new procurements may be required to achieve more comprehensive, DHHS-wide data analytics.

Description of DHHS’ Current Health Data Systems

The Nebraska DHHS is comprised of six Divisions that provide direct healthcare services: Behavioral Health, Children and Family Services, Developmental Disabilities, Medicaid and Long-Term Care (MLTC), Public Health, and Veterans’ Homes. The DHHS health information technology enterprise is managed by two entities: the DHHS Division of Information Systems and Technology (IS&T) and Nebraska’s Office of the Chief Information Officer (O-CIO). IS&T administers DHHS’ computer resources, including the operations and management of the Medicaid Management Information Systems (MMIS). O-CIO, which is in the Nebraska Department of Administrative Services (DAS), manages technology services for all State agencies, boards, commissions, and political subdivisions, and works with IS&T to operate, manage, and maintain the MMIS.⁷ DHHS also contracts with Truven Health Analytics, Inc. (Truven) for data management services and data reporting.

The main systems used by the Division of Medicaid and Long-Term Care include:

- (1) *The Nebraska Family On-line Client User System (N-FOCUS):* N-FOCUS is the State’s legacy eligibility and enrollment system. Implemented originally in 1996, and updated with full conversion in 1998, it is a single, integrated information system designed to facilitate case management.⁸ N-FOCUS supports the majority of the State’s social service programs, including

⁷State of Nebraska Request for Proposal for Contractual Services, RFP 5330Z1, September 20, 2016.

<http://das.nebraska.gov/materiel/purchasing/5330/5330.html>

⁸ N-FOCUS does not contain data prior to 1998. Historical case data from the legacy systems are available upon request.

TANF, SNAP, Child Abuse/Child Protective Services, Foster Care, State SSI Supplement, Child Care Subsidies, other State programs, and Medicaid eligibility and enrollment.

- (2) *Medicaid Management Information System (MMIS)*: This is a legacy system developed in 1973 and fully implemented in 1978. DHHS administers the MMIS itself and contracts with Truven as the data manager for information from the MMIS.
- (3) *ACCESSNebraska*: Used by DHHS to administer and manage eligibility for Medicaid and economic assistance programs. An on-line service allows Nebraskans to apply for and manage their benefits.⁹

One large-scale change that will impact DHHS' data management, analytics, and IT infrastructure is the State's transition to an integrated full-risk managed care program for its Medicaid population. The program, known as Heritage Health, will begin in January 2017 and will be administered by MLTC. Under Heritage Health, it is predicted that the vast majority of Nebraskans in Medicaid and the Children's Health Insurance Program (CHIP) will receive physical and behavioral health care and pharmaceutical services through a participating managed care organization of their choosing.

The change in the administration of Medicaid managed care is happening concurrently with several large health IT projects. Recognizing this change in the Medicaid business model, DHHS is seeking to move toward an environment where MMIS services are largely outsourced. Currently, DHHS is replacing its legacy MMIS with an innovative modular services and technology platform rather than a traditional full MMIS replacement.

DHHS Heritage Health participating MCOs - WellCare of Nebraska (Wellcare), Nebraska Total Care (Centene), and United HealthCare Community Plan (United HealthCare) - will be responsible for Medicaid claims and encounter processing, while the procurement's highest scoring MCO (United Healthcare) is assuming responsibility for claims brokering services for the remaining fee-for-service (FFS) population, including processing FFS claims for the Long Term Services and Supports (LTSS) population. DHHS will also contract with a dental benefits manager (DBM) to provide risk-based managed dental care for its Medicaid population. Similar to the procedure for the physical/behavioral health MCOs, the highest scoring DBM bidder will assume responsibility for FFS.

DHHS also is currently procuring a Data Management and Analytics (DMA) vendor, targeted for implementation in late 2018. The DMA is expected to support program integrity, quality, performance, and federal and State reporting and data exchange, as well as more robust data analytics capabilities. The DMA vendor will collect and manage data from all existing disparate DHHS systems, MMIS modules, and contractors, including the Heritage Health MCOs, the DBM, and the Nebraska Timely, Responsive, Accurate, Customer Service (NTRAC) enrollment and eligibility product. The scope of DMA activities includes:

- Medicaid enterprise data warehouse functions, such as:
 - Management and Reporting Subsystem (MARS)

⁹ This is not intended to represent all systems employed by the Division of Medicaid and Long Term Care, but only those systems that are used to collect, manage, share, and report data are included in this report.

- Decision support system (DSS)
- Ad-hoc queries and reporting
- Federal reporting
- MCO quality (including performance measures) reporting
- MCO encounter data processing including various MCO data (e.g. claims, authorizations)
- Program integrity, including:
 - Surveillance and Utilization Review Subsystem (SURS)
 - Fraud and Abuse Detection System (FADS)
 - Case management
 - Reporting, analytics and program integrity staff augmentation¹⁰

DHHS has also contracted with IBM Cúram to replace the Medicaid eligibility and enrollment functions of its single information system, the N-FOCUS. The new IBM Cúram enrollment and eligibility solution, NTRAC, addressed earlier, is scheduled for implementation in 2017, with Wipro selected as the systems integrator to manage and coordinate the implementation of the various systems. Initially, NTRAC will only support Medicaid eligibility and enrollment, but is expected to be expanded to include eligibility determinations for other economic assistance programs in the future, such as Supplemental Nutrition Assistance Program (SNAP) and Temporary Assistance for Needy Families (TANF).

Another significant and diverse data enterprise resides within the DHHS Division of Public Health. As the agency charged primarily with protecting and promoting the health of all Nebraskans and visitors to the State, the Division of Public Health collects a wide array of data used by the Division to protect the population during disasters or by providers or other organizations to intervene when various factors adversely impact the health of the public. The Division provides a complete inventory of public health data at <http://dhhs.ne.gov/publichealth/DataCenter/Pages/InventoryHome.aspx>. To encourage the use of its data by the academic and research communities, the Division partners with the University of Nebraska Medical Center, College of Public Health, to support the Joint Public Health Data Center (The Center). The Center also is supported by the federal Centers for Disease Control and Prevention (CDC). The Center strives to enhance data standardization and integration, provide analysis for public health decision-making and research, and improve data dissemination.

The Division of Public Health collects and aggregates a variety of data to identify population health trends that need to be addressed long-term. In the event of infectious disease outbreaks, these data allow the Division to respond to emergencies quickly in cooperation with other State agencies. Aggregate data and reports on a variety of topics are routinely available on the Division's website, and include, but are not limited to: cancer; vital statistics (birth, death data); hospital discharge; newborn screening; minority health; and sexually transmitted diseases.

¹⁰ *State of Nebraska Request for Proposal for Contractual Services, RFP 5330Z1, September 20, 2016.*
<http://das.nebraska.gov/materiel/purchasing/5330/5330.html>

Other systems used by DHHS include:

- *Netsmart Avatar EMR system (myAvatar)*: Netsmart Technologies Electronic Health Record product.
- *THERAP*: Electronic documentation solution for the Division of Developmental Disabilities. THERAP functions include incident management, individual budgeting and annual care plans, billing, and other Nebraska specific modules.¹¹
- *OnBase*: Automated Enterprise Content Management solution developed by Hyland Software Inc., which offers access to “scanning capabilities, e-forms, custom queries, filing cabinets, and management overview of the business process.”¹²
- *EnterpriseOne*: State accounting system.
- *Children Have a Right to Support (CHARTS)*, the Division of Children and Family Services’ child support system, including financial and case management, and enforcement.
- *Centralized Data System (CDS)*: A data management information system required under the Nebraska Behavioral Health Services Act and procured by the Division of Behavioral Health (DBH). Implemented to review, monitor, and report on programmatic, administrative, and fiscal accountability functions with all DBH and Regional Behavioral Health Authorities’ contracted providers. CDS is operated through a contract with Orion Healthcare Technology, Inc.

Analysis of DHHS’ Current Health Data Systems

As in many states, much of Nebraska DHHS’ current health data and IT portfolio functionally exists in silos—solitary and disparate systems and applications that are not designed to share information or data. These silos were largely driven by individual Division needs, isolated and uncoordinated regional or national funding streams, contractor limitations, or a combination of these factors and others. This decentralized approach to purchasing and developing systems has occurred slowly and has become commonplace. In some instances, a solution purchased to meet the requirements of one Division was rolled out to other Divisions without assessing the value and viability of the solution for the needs of other programs or the populations they serve. This has created situations in which Divisions expend significant time and resources to meet program requirements and data/information needs using systems not designed to support their programs. We identified the following findings.

Meeting Federal Requirements is Time and Labor-Intensive. DHHS staff is able to meet most federal, State, and Legislative reporting requirements. However, it is often a time- and resource-intensive process that requires manually pulling data from multiple systems and integrating and manipulating it in Excel or Access for reporting and analysis. For example, completing the CMS 64 form¹³ requires staff to

¹¹ <https://www.therapservices.net/nebraska/>

¹² http://edocumentresources.com/assets/uploads/NE_Department_of_Health_and_Human_Services_.pdf

¹³ States use the CMS-64 form to report actual quarterly Medicaid expenditures.

obtain data from three separate systems—EnterpriseOne, DSS, and N-FOCUS — a time-consuming effort that can take up to 30 days to complete.

Siloed Systems Do Not Connect. DHHS systems are largely unable to “speak” with each other. While there is limited communication between disparate systems through irregular data transfer, it is typically via a nightly batch report. There is no ability to exchange near- or real-time data between systems.

Documentation is Lacking. The Department overall lacks documentation of report processes. This complicates an already complex process for creating reports that are consistent, accurate, and timely. Further, tasks for report generation—gathering, aggregating, and analyzing data—frequently rest with only one or two staff who know the processes, but have finite availability. This is especially concerning given that the lack of documentation could severely hinder DHHS’ ability to meet reporting requirements without sufficient back-up staff who understand the complicated procedures necessary to generate most reports.

Lack of Training Impedes Efficient Access. Interviewees from multiple Divisions reported a lack of training for staff on how to use existing reporting solutions. This, combined with pre-built reports that many believe are inadequate, and systems that do not support or have sub-optimal ad-hoc reporting capabilities, makes efforts to build customized reports – especially those needed to assess quality, performance, or more sophisticated analyses – difficult, if not impossible. This issue is compounded by the lack of documentation addressed above.

Systems Were Not Designed to Meet Current Requirements. Many of the systems currently used by DHHS were developed prior to advancement in federal regulatory reporting requirements, as well as changes in requirements to receive federal funding support, particularly across the Medicaid IT enterprise. In addition, resources necessarily were focused on modifying systems to meet changing policy requirements, such as those embodied in the Patient Protection and Affordable Care Act (ACA) concerning Medicaid eligibility determination, administration, and reporting. As a result, many systems in place now cannot support the current data and information reporting needs of the Department’s Divisions, programs, or facilities. Thus, data management must be performed outside of the systems actually gathering the data, compelling Division, program, or facility staff to perform data management functions themselves using Microsoft Excel, Access, or Sharepoint.

Due to the time-intensive nature of existing reporting requirements, developing and pulling together ad-hoc reports in this environment is untenable or at the very least, challenging, and requires pulling staff resources from other necessary projects.

“Optional” Reporting Does Not Occur or is Very Limited. The resource-intensive nature of meeting federal, State, Legislative, and internal reporting requirements means staff must frequently forego reporting and data analysis that is outside the scope of required reporting but that could help Divisions and the Department better understand covered populations, assess quality, and improve performance.

Legal Climate Hinders Access. Real and perceived legal barriers have inhibited the development of data-sharing protocols between Divisions and the systems that support their programs. Because data are

sometimes collected and stored in multiple systems, staff from one program may need to gather information for reporting from several systems. However, because programs often limit who can access their systems and information, some staff cannot get required data to complete their program reporting, and must rely on “approved users” to supply needed information, adding to time and complexity of completing reports.

Prior Purchasing Was Narrowly Focused. In purchasing many of their systems, siloed federal agency approaches and funding streams, marked by a lack of cooperation and coordination among and between federal agencies, as well as within federal agencies such as CMS, did not encourage states to look broadly at the business needs and requirements of programs across Divisions that might want or need similar functionality. This resulted in the purchase of systems that often served the more narrow business requirements of the program that funded its development, though, due to funding considerations, were often pushed out to other divisions or agencies for uses beyond the technology’s scope. Additionally, interviewees cited challenges posed by varying business requirements by multiple Divisions to procurement of a shared technology platform. To note, DHHS has implemented new policies in procurement designed to address the latter issue.

For example, the Division of Behavioral Health uses a physical health Electronic Health Record (Avatar) that does not fully meet its needs to support behavioral health providers and clients most effectively. The Avatar platform’s limited customization potential in terms of its ability to meet the very specific needs of divisions with different workflows and needs. For the Division of Behavioral Health, this has necessitated significant workarounds to meet the Division’s business and reporting requirements. Further, Avatar has limited administrative and practice management reporting abilities, and the Division is unable to pull administrative reporting that would support staff resourcing and budgeting needs, and other facility management duties. Avatar maintains billing information for the Division of Behavioral Health. However, it is not designed to aggregate data, and is not interfaced adequately with RxConnect.

Overall, HMA’s findings largely mirror those of the Nebraska’s Medicaid Information Technology Architecture (MITA) State Self-Assessment (SSA). For the most part, business areas and businesses are at a Level 1 MITA maturity level.¹⁴ As noted in the MITA-SSA, this is mainly due to:

- Outdated and/or limited documentation of business processes.
- Lack of uniform data management standards and practices.
- Lack of standardized process capability/coordination.
- Legacy systems with limited flexibility to keep pace with changes in technology, legislation, and regulations.
- Limited ability to interface with other systems (current norm is batch processing not a true interface).¹⁵

¹⁴ As defined in the MITA Maturity Model, a State at Level 1 the State agency focuses the on meeting compliance thresholds set by state and federal regulations. It primarily targets accurate enrollment of program eligibles and timely and accurate payment of claims for appropriate services, but is not able to utilize data to efficiently support quality, cost effectiveness and value.

¹⁵ Nebraska Department of Health and Human Services, Division of Medicaid and Long-Term Care, *Nebraska Medicaid Information Technology Architecture 3.0 State Self-Assessment (MITA 3.0 SS-A)*, March 19, 2015.

As described above, the DHHS Divisions face significant challenges accessing and sharing timely data. While information and data are available, the difficulties are quickly and easily accessing necessary data and sharing it across programs. DHHS collects a significant amount of useful information, but many of its systems were originally designed for more traditional process-oriented reporting instead of today's outcome-based data reporting and analytics capabilities required to support more sophisticated programs, such as integrated care, complex case management, full-risk managed care, and value-based payment models. While most Divisions and programs have the resources and systems in place to capture and report necessary data to meet current federal, state, and legislative requests, staff spend an extraordinary amount of time manually compiling these reports because the data systems were not designed to meet today's health care system demands.

Recent Changes to DHHS' Approach to Data and Information Systems

Over the past 12 - 18 months, DHHS has begun to take a more organization-wide approach to systems and software that will enable it to comply with provisions of the ACA, the CMS MITA Framework, and the CMS Seven Standards and Conditions that states must meet for Medicaid technology investments to be eligible for enhanced-match funding. (It should be noted that these funding requirements, which have driven state purchasing policy, have evolved over the past decade to support more organization-wide, less siloed, approaches to IT system design and development.) This will also enable the State to more effectively achieve its current and future objectives of providing higher quality, more cost efficient healthcare to its citizens. For example, DHHS has developed a Data Management Strategy, the foundation of which is the DMA platform, currently in the procurement stage. Though focused on Medicaid, the contracted DMA is intended to establish a foundation that can also be used for other DHHS programs.

DHHS IS&T leadership is actively engaged in the changes related to implementing a DMA and has been working to harmonize procurement for all IT needs across Divisions to ensure they map to the DHHS plans and support the DMA, as well as fully support future health data and IT systems development. The strategy includes a focus on promoting interoperability within DHHS and all State agencies. Contractual arrangements reflect this commitment to enterprise-wide architecture. For example, as noted earlier, the Division of Behavioral Health recently implemented a new Central Data System. Although the CDS platform was procured prior to the issuance of the DMA RFP, the contract requires the platform to be flexible and able to communicate with and gather data from any other systems the State may employ, which would include the DMA.¹⁶

<http://das.nebraska.gov/materiel/purchasing/5330/Medicaid%20Information%20Technology%20Architecture%20State%20Self%20Assessment%203%200%20MITA%202014%20v1.pdf>

¹⁶ The contract states "The DBH CDS must securely transmit and retrieve data on behalf of contracted providers, the State's six Behavioral Health Regions (Regions), and other DHHS information systems. The DBH CDS must have a standardized, overarching data metastructure into which it maps data, including the flexibility to store, rationalize and normalize data from disparate systems, thus eliminating duplicity [sic]. The DBH CDS must be capable of data collection from a variety of sources to facilitate ease of reporting, analytics, performance tracking, authorizations, billing reconciliations, and funding management for the Community Based Services section as funded through DBH, among other data analytics functions."

The DMA itself, however, is not a single solution. Without architectural preparatory work and data governance structures in place, DHHS cannot realize the full power of the DMA. To complete these critical components, DHHS also needs a comprehensive understanding of all the health and health-related data and IT systems across the Department.

As noted earlier, DHHS is concurrently moving the majority of Medicaid clients into MCOs while internally building out its data analytics capabilities and seeking to outsource the majority of traditional MMIS services. Adding the right data management tools will allow DHHS to focus more on improving outcomes and quality, and less on obtaining the data to measure outcomes and quality. DHHS will need to create data reporting requirements to assure it can get the data it needs to both monitor MCO performance and support overall DHHS and State population health goals. DHHS may also consider requirements for MCOs to analyze and report out on their populations (to be addressed further in the Roadmap).

Future Directions

Over the last decade, the national health care landscape has been shifting rapidly towards greater coordination, integration, and collaboration between patients, providers, payers, and other health system players. Underpinning much of this shift has been significant investment in and development of a sophisticated array of data collection and analysis products, systems, and networks; as well as changes in federal requirements for enhanced funding in support of new systems. While much of the U.S. health care system remains fragmented today, despite significant investment and policy shifts, the future will require greater integration, interoperability, and innovation as health care costs and service demands continue to increase.

Even a cursory review of national sources leaves no doubt that greater system interoperability and data-sharing to improve health and health system performance will remain a major focus well into the future. The U.S. Department of Health and Human Services, Office of the National Coordinator for Health Information Technology, recently released *“Connecting Health and Care for the Nation: A Shared Nationwide Interoperability Roadmap,”* which underscores the policy and payment drivers for better health and system outcomes for big publically-funded health programs like Medicare and Medicaid, and identifies what changes need to occur to realize success and how success will be measured. It will be critical for Nebraska to monitor and participate in the continued development and implementation of this National Roadmap. Likewise, in 2015 the National Quality Forum published, *“Data Needed for Systematically Improving Healthcare,”*¹⁷ which outlined that agencies and organizations will need to

¹⁷ The Office of the National Coordinator for Health Information Technology, *Connecting Health and Care for the Nation. A Shared Nationwide Interoperability Roadmap*, Final Version 1.0 (Roadmap), 2016.

<https://www.healthit.gov/policy-researchers-implementers/interoperability>

make policies that lead to meaningful use of data and create cultures focused on quality to improve system performance and patient health outcomes.¹⁸

As all payers look to further improve population health, drive costs down, and improve quality and patient satisfaction, DHHS will be in a unique position to leverage its own systems to improve health and ease the continued transition to greater payment reforms; it can make and implement policies that aid other systems in the same efforts. Modernizing and integrating its data infrastructure and management will also allow DHHS to track and address disparities across various populations and monitor demographic changes that affect program management now and into the future.

Tomorrow's health care enterprises must include greater data and IT systems integration, interoperability and innovative application—all while protecting confidentiality and privacy, enhancing and evolving security protocols, and protecting legal and financial authority and responsibility.

As has been described in detail above, Nebraska needs significant changes in its health data and IT systems to most effectively support DHHS and policy makers in making program decisions that will positively impact both health outcomes and costs. DHHS leaders and administrators, State Legislators, health care providers, community-based organizations, stakeholders—all Nebraskans—have a significant opportunity to set a course for a modern, sophisticated, unified health data and IT systems strategy that leads to capabilities that meet the needs of all users and systems.

Nebraska's Potential

From a health policy perspective, Nebraska is in a positive position that not many states find themselves in today. First, Nebraska's Legislature has taken an interest in how State and federally funded programs serving Nebraskans can be better coordinated to determine health impacts and financial efficiency. Second, DHHS' relatively new Chief Executive Officer (CEO) has helped to create a more transparent enterprise-wide approach to health data and IT systems that can help the State realize its vision. This is supported by a commitment by Information Technology and DHHS leadership to ensuring that any health IT solution purchased fits into the broader vision. Third, the foundational and transformational changes underway in the Division of Medicaid and Long-Term Care through the implementation of Heritage Health and procurement of a new DMA platform present a significant opportunity on which to capitalize and integrate other DHHS health data sources, as appropriate and as business needs allow, in a common infrastructure. Fourth, since the health data and IT systems provide a foundation on which outcomes are measured, reports are generated and funding is allocated, a transformational shift to a shared, comprehensive, and cohesive data management strategy and IT systems architecture can significantly improve DHHS staff's ability to complete required reporting work more efficiently, which will give them time to focus on more sophisticated program, Division and Department-level data analysis. The current enterprise architecture represents an improvement over past infrastructure plans in its ability to support system-wide change at DHHS.

¹⁸ National Quality Forum, *Data Needed for Systematically Improving Healthcare*, July 31, 2015.

http://www.qualityforum.org/Publications/2015/07/Data_for_Systematic_Improvement_Final_White_Paper.aspx

For instance, as noted, today most programs within DHHS operate in isolation of one another, but can often impact many of the same individuals and households every day. Nebraska Medicaid and CHIP serve approximately 240,000 individuals today. If DHHS staff had quick, easy access to more robust data, they could identify Medicaid and CHIP clients who also are enrolled in other assistance programs such as SNAP, TANF, child care, and low income energy assistance, and develop interventions and make programmatic decisions that improve outcomes and efficiencies across programs and ensure that individuals and families are accessing the services they qualify for and need, when they need them. These could include changes such as aligning eligibility periods and coordinating mailings that potentially could save the Department money and improve services and information for impacted populations. Avoiding disenrollment due to confusion about program deadlines could limit work involved in re-enrolling and support better outcomes for enrollees.

State Innovations Scan: Directions to Consider

To assist Nebraska and DHHS in developing and shaping its long-term strategies, HMA performed a scan of state-based best practices or innovations in harnessing the power of data to achieve better outcomes and cost efficiencies with state Medicaid populations, that could be relevant to future Nebraska projects or provide insight and perspective to what could be attainable. This section is not intended to be exhaustive, nor does it recommend or endorse any particular projects or strategies over others. HMA includes these to simply illustrate innovations other states were able to achieve.

Statewide Data Analytics & the Colorado Accountable Care Collaborative (ACC)

In Colorado's primary Medicaid (Health First Colorado) health care program, the ACC, seven Regional Care Collaborative Organizations (RCCOs) contract with the State Medicaid Agency - the Department of Health Care Policy and Financing (HCPF) - to support Primary Care Medical Provider (PCMP) networks in an effort to help curb increasing costs and improve health outcomes. Each RCCO is tasked with creating a PCMP network, providing case management for clients who need it, and overseeing administrative support. In this managed FFS structure, HCPF then pays both the RCCOs and PCMPs a per member per month (PMPM) payment meant to cover these additional costs. Enhanced PMPM payments or quarterly "incentive" payments are available if RCCOs meet key performance indicators (KPIs), aligned with the performance, outcome, and quality goals of the Medicaid program. In 2015, these included reduced emergency room visits, and increased postpartum visits and well-child visits (EPSDT screens). RCCOs may receive additional PMPM payments for meeting quality standards.¹⁹ There currently is a separate, full-risk structure of Behavioral Health Organizations (BHOs) supporting five regions across the state.

To support its ACC mission, HCPF contracted with a "Statewide Data and Analytics Contractor" (SDAC), currently administered by Treo Solutions, to create a platform to collect performance-based information for each RCCO and PCMP. By pooling this information for all the RCCOs, PCMPs, and other stakeholders,

¹⁹ Colorado Department of Health Care Policy and Financing, Accountable Care Collaborative at <https://www.colorado.gov/pacific/hcpf/accountable-care-collaborative>; & *Supporting a Culture of Coverage, Accountable Care Collaborative 2015 Annual Report*, <https://www.colorado.gov/pacific/sites/default/files/Supporting%20a%20Culture%20of%20Coverage%20Accountable%20Care%20Collaborative%202014-15%20Annual%20Report.pdf>

the SDAC can create a more comprehensive profile of Medicaid utilization that can be viewed in aggregate, by region, by provider, and by client. The SDAC also utilizes predictive modeling to risk stratify RCCO enrollees.²⁰ Currently, the SDAC houses information regarding Medicaid claims data, predictive modeling scores, and behavioral health encounter data.²¹

The RCCOs also interface with the state's Health Information Exchange, the Colorado Regional Health Information Organization or CORHIO, to collect real time hospital admissions and emergency department (ED) information. The data are used to identify emergency department (ED) high utilizers, allowing the RCCOs to connect those individuals with more appropriate and cost efficient care in the future, such as primary care or specialty care providers. When alerted to a hospital admission, RCCOs can immediately begin transition planning, including follow-up care and provider appointments, to return the member to the community in the most expedient and safest way possible.

In 2017, HCPF will transition to a new MMIS system and a new Business Intelligence Data Management entity – Truven Health Analytics, Inc. – as the state moves towards its vision for the “ACC 2.0” restructure and rebid. HCPF will combine the current RCCO and BHO model into a single “Regional Accountable Entity” or RAE, which will be responsible for administering both physical and behavioral health services, building broader regional “healthcare neighborhoods,” and developing regional value-based payment models. The BIDM is expected to support this new level of integration across the RAEs and allow the RAEs and the state to more easily share information through statewide HIE systems. The structure and functionality of the BIDM is similar to what Nebraska is building with its DMA procurement.

Identifying High-Risk Patients in Washington

Washington State uses its Predictive Risk Intelligence System (PRISM) program to predict which patients might be at risk of high utilization. It pulls data from claims, managed care, and other health assessments and looks at patient risk factors, service utilization, and health outcomes. The predictive element is used to identify those with the potential to incur high costs/hospitalization. Beyond that, it also looks at a patient's most likely primary care provider (PCP) and avoidable ED visits.²²

²⁰ Kaiser Commission on Medicaid and the Uninsured. *Data Analytics in Medicaid: Spotlight on Colorado's Accountable Care Collaborative*, Issue Brief (2013). <http://kff.org/medicaid/issue-brief/data-analytics-in-medicaid-spotlight-on-colorados-accountable-care-collaborative/>

²¹ Colorado Department of Health Care Policy and Financing. *Statewide Data Analytics Contractor*, 2014. https://www.colorado.gov/pacific/sites/default/files/Statewide%20Data%20Analytics%20Contractor%20Fact%20Sheet_0.pdf

²² Milbank. *PRISM: The Predictive Risk Intelligence System*. http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=10&ved=0ahUKewjW7JmsqODOAhWkaT4KHcOJBIGQFghLMak&url=http%3A%2F%2Fwww.milbank.org%2Four-work-with-states%2Freforring-states-group%2Fresource-library%3Fview%3Ddownload%26file%3Df72ef75067656985207cccd274a5cac0.pdf%26name%3Dprism%3A_the_predictive_risk_intelligence_system_&usg=AFQjCNFX3YFWyChv3J22RZ_o7Y1gllabhw&sig2=CLhUP-Uc86uoyCu9ie-kVw

By bringing health information for a potentially high-risk patient in one place, other Washington initiatives, such as their Health Home Model, can use this information to better identify and serve these specific populations. Beyond identifying patients, PRISM can also give providers information on a patient's utilization of a health system as well as other predictive measures, such as treatment adherence. Essentially, PRISM will become the mechanism for care coordination among all providers that serve a single patient.²³ This coordination will help eliminate unnecessary care and help better align goals towards more overall, outcomes-based measures.

The predictive element of PRISM again can be used to identify those potentially high-risk and high-use patients within Medicaid. With this feature, there is the potential for major cost savings by identifying people who may not be receiving the most appropriate care, and therefore using costly services within the health system. By identifying these patients and moving them towards more coordinated care efforts, the system will hopefully see a reduction in unnecessary and costly healthcare use.²⁴ Nebraska could potentially build a similar system through its MCOs to help providers quickly identify individuals in the ED or those with patterns of high ED utilization that require intervention.

Identifying and Assisting High Emergency Department Utilizers in Oregon

To better respond to the care needs of high utilizers of Oregon's EDs, the Oregon Health Authority (OHA, the State Medicaid agency), Oregon Health Leadership Council (OHLC), and Oregon hospitals and health systems established the Emergency Department Information Exchange (EDIE).²⁵ The web-based technology allows ED clinicians to identify in real time that a patient is a high utilizer of services and to access patient care summaries.²⁶ These real-time alerts reduce duplicative services and help clinicians direct high utilizers to the right care setting. ED providers can then direct patients to outpatient and other care settings when appropriate. The system is compliant with state and federal security and privacy regulations related to personal health information.

In 2013, the OHLC, OHA, Oregon Association of Hospitals and Health Systems, Oregon Chapter of the American College of Emergency Physicians, and OHLC member health plans collaborated to implement the technical infrastructure that allows sharing of clinical information across care sites for the purpose of provider/care team notification. OHA, OHLC, and member health plans sponsored first year costs. The group expanded data collection to include care guidelines and all inpatient admissions, discharges, and transfers. Oregon began implementation in the summer of 2015 and now has universal participation by

²³ HealthPath of Washington. *Washington State Health Home Model: Hypothetical Chronic Care Management Patient Scenario*. Washington State Health Care Authority.

http://www.hca.wa.gov/documents/health_homes/HHBeneficiaryScenarioCCM.pdf

²⁴ McGinnis, Tricia, Crawford, Maia, and Stephen Somers. *A State Policy Framework for Integrating Health and Social Services*. The Commonwealth Fund: Issue Brief (2014).

http://www.commonwealthfund.org/~media/files/publications/issue-brief/2014/jul/1757_mcginnis_state_policy_framework_ib.pdf

²⁵ The OHLC is a collaborative working to develop practical solutions that reduce the rate of increase in health care costs and premiums so health care and insurance are more affordable to people and employers in the state. Members include health plans, hospitals and physicians.

²⁶ High utilization is defined as five or more emergency department visits in a 12 month period, has visited more than three different EDs in the last two months, or has a care guideline established.

Oregon's 59 hospitals, as well as strong participation by Medicaid managed care plans. EDIE is governed by a representative committee of hospitals, health plans, coordinated care organizations (CCOs), and other stakeholders across the state.

Oregon implemented functionality called PreManage that allows real-time hospital event data to be pushed to health care organizations outside the hospital. Notifications inform providers, health plans, CCOs, and health systems of ED or inpatient admission, discharge, and transfer in any hospital in Oregon. This allows providers in the ED to connect and share notifications directly with those responsible for the care of the patient in order to improve follow-up and care coordination during and after serious health care events.

Hospitals report on their outreach efforts for high utilizers visiting the ED, including the rate of outreach notifications that hospitals send to primary care providers for patients visiting the ED five or more times in the previous 12 months. Notifications must be sent within 72 hours of discharge from the ED. Also tracked is the rate of care guidelines completed for patients visiting the ED five or more times in the previous 12 months. A care guideline is only completed for those who do not already have one.

In year one (benchmark year), hospitals reported notification and care guideline completion rates. In year two (the first performance year), each hospital reported on both rates, with the goal of meeting a statewide benchmark or an improvement target based on the hospital's performance in year one.

Guiding Principles for Future System Development and Data-Sharing Collaborations

To enable DHHS Divisions and programs to meet the needs of Nebraskans and take advantage of opportunities to improve health outcomes, enhance collaboration, and make the most effective and efficient use of taxpayer funds, HMA recommends a set of guiding principles that can help DHHS direct the development of long-term health data and information technology strategies, Division planning and implementation, and project development. These principles were developed with the needs of Nebraska's families, health care providers, funders, government officials, and community stakeholders in mind. They build on or are similar to much of the long-term planning or guidance provided by agencies within the federal government and other national or global health organizations. Additionally, they can help to ensure data security is maintained and protected, transparency is promoted, systems are able to communicate and share more valuable information on impact, and spending can be monitored and analyzed.

Guiding Principle 1: Protect patient and client confidentiality and support appropriate use of data for program operations, analysis and policy making

Nebraska's current health data and information systems, like those of other states, contain HIPAA-protected health information, as well as personal demographic information and other data pertaining to individuals and households served by DHHS Divisions and programs. Great effort is taken today to protect individual and household information. DHHS needs to create the governance and legal structures to share this information between programs serving the same individuals or households,

allowing analysis in aggregate for cross-Division or cross-program analyses. DHHS' design of new health data and information technology systems should include an assessment of each specific program's and Division's legal requirements for data sharing. Not only will the right data-sharing agreements need to be in place between Divisions and programs to define roles and responsibilities, but DHHS will need to consider future uses and sharing of data to establish the right data governance framework to most easily adapt to changing policies and needs.

Guiding Principle 2: Transparency is key to driving agency performance

Today's health data and information systems must promote transparency and opportunities to ensure accountability across systems, showing value to taxpayers and informing Nebraskans about the quality and cost of the health and human services. In terms of transparency, the State must provide easily accessible information for stakeholders at a variety of levels to clarify what is working well and what is not, so that administration, legislative, consumer, and other stakeholders can make informed policy, program, and personal decisions about the health care system.

Transparency must exist for the State and for its partners. As more of the Medicaid program is administered through managed care entities and other vendors, the State will increasingly rely on information from vendors to support program and policy decisions. Contracts must include clear rigorous requirements for the information to be shared with DHHS.

The State also must be able to provide easily understood information about the performance of different aspects of the health care system, program effectiveness and efficiency, and the health outcomes that result from investments of public dollars in services and systems. In addition, because of the high rate of change in insurance coverage of Nebraskans (i.e., "churn" between Medicaid, private insurance, and no coverage), to truly understand costs and program impacts, the State needs to be able to track and report on the total costs of care for Nebraskans across systems, across providers, and across programs.

Guiding Principle 3: Data system interoperability will support development of a complete, whole person picture of the impact of DHHS programs on Nebraskans

Nationally, awareness has grown that systems must address the health needs of the "whole person," to most completely and positively impact health outcomes. With this growing awareness, there is also awareness that health data and information technology systems must incorporate a much broader view of "health."²⁷ To be useful in efforts to address the social determinants of health, health data and technology systems must accommodate the need for data and information about individual, family, community, and population health. Systems must link to other data systems in ways that allow for a more complete exploration of the needs of individuals and communities, and of the broad sets of services that may be available to them – or as importantly, not available. DHHS needs to have the capacity to link data at an individual and community level across the Department, as well as across other

²⁷ This includes the health impacts of housing, transportation, access to healthy food, safety, educational opportunities and other factors.

State systems, with other commercial health systems, and with community based organizations. To make this happen, the technology must be interoperable and the definitions and parameters for the data must be aligned. (See Guiding Principle 4)

Guiding Principle 4: DHHS data users, leaders, and system developers need shared, mutually understood definitions, constraints, and terminology

To build health data and information technology systems that can be used across DHHS and the State, it will be critical to develop and use shared and mutually understood definitions, constraints, and terminology. Without shared terminology, it is not possible to connect data between systems. The first step is an exploration of existing legal and other definitions, constraints, and terminology. Next, a thorough crosswalk of these elements should be conducted to determine agreed upon required elements and identify any areas of duplication created by different terms and definitions that fundamentally have the same implications for DHHS' data and technology systems. Once completed, DHHS should have a better understanding of required elements and avoid unnecessary duplication. Even where definitions are not the same between systems, increased understanding about the meaning of data elements will support improvements in cross-system analyses.

Guiding Principle 5: A master client identification number can help link data across programs, Divisions and Departments

To meet the intended goals of an ideal, future health data and information technology infrastructure, the State should incorporate a master client identification number at minimum across DHHS programs and systems. To the degree possible, the State should consider using the same master client ID across Departments. Such a master client ID would facilitate sharing and linking of data and increase the ability to examine costs and outcomes across systems. Recognizing that Medicaid clients may also be SNAP recipients or engaged in the Juvenile Justice System, a single ID can support holistic analyses and planning.

Additionally, in support of these Guiding Principles, DHHS should seek to increase agility in the implementation, management, and use of IT systems and infrastructure and connecting its data management strategy to its IT strategy. Specifically, DHHS should:

- Continue to create a more nimble, responsive approach to IT implementation.
- Provide for a gradual/progressive approach to IT innovation.
- Incorporate "component based" and "service oriented" IT solutions that are designed to interoperate and support various programs/lines of business: wherever feasible, work from common IT components that can interoperate and be replaced or upgraded over time without compromising the functionality and performance of other components.
- Ensure IT supports more rapid, timely changes to policies, business rules, and processes.
- Enable greater workforce mobility and flexibility.
- Enable more significant, ideally real-time interaction across Divisions and programs and with external stakeholders.

Roadmap Recommendations

HMA has developed specific recommendations for DHHS to use in its move toward its ideal future state for data management, data sharing, data analytics, and the IT systems and infrastructure necessary to support them. This roadmap lays out an executable plan with recommended initiatives that will enable the State to establish a foundation to be deployed in concert with the DMA implementation process, to support the transformation of statewide data collection, data sharing, and performance management.

The recommendations in this roadmap are focused on addressing root issues through the seamless coordination of data across multiple programs. This model is characterized by:

- A holistic focus on DHHS clients rather than on a collection of fragmented programs and services that are challenging or impossible to navigate.
- A shared commitment by DHHS Division and program leadership to realize a Department-wide vision.
- A recognition by leadership that, while the various programs and Divisions are bound by common clients and purposes and must interact and coordinate efforts, they are “steeped in difference” and have unique needs that must be acknowledged and addressed.
- A shared accountability for outcomes allowing for greater ability to leverage information in decision-making at all levels: operational, tactical, and strategic.

The Roadmap is inherently iterative and we anticipate that DHHS will update it as the Department moves forward on its path to data maturity.

Roadmap Initiatives

(1) Establish and fill a position to provide leadership in the form of a Department-level Data and Health Information Technology (DHIT) Director.

The Department DHIT Director would have authority to bring various DHHS leaders to the table, participate and engage in the work described in the following steps. The Director would drive the process of achieving the vision for a “to be” state, and would be both accountable for achieving this vision and empowered to take the required steps to make it happen. In addition to being someone with an understanding and expertise in health data and health IT, this individual should have knowledge and experience with DHHS programs in order to understand Divisions’ needs.

Estimated timeframe: 3-9 months

(2) Establish a governance structure that supports Department-wide change.

The first task for the DHIT Director would be to establish a Data and HIT Steering Committee. The Director would use his/her organizational authority to bring Division leaders to the table, including program, data, and HIT representatives. Together, the Steering Committee would formalize a governance structure for data and technology at DHHS.

Estimated timeframe: State Fiscal Year 2017

(3) Conduct detailed planning

DHSS will need a clearly articulated structure, as well as defined policies and procedures, to effectively govern, plan, and implement future data system development, interoperability, and data management activities. Whether accomplished with existing or new resources, this structure ideally would represent the Divisions and programs of DHHS, but be independent of those Divisions.

As with any initiative of this scale, there must be agreement on how success is defined. While there is inherent efficiency with increasing system integration when compatible, the real value in greater systems integration and data-sharing is in obtaining a reliable, accurate, and timely comprehensive view of DHHS' impact on individuals, households, and Nebraskans as a whole, and then acting on that information as necessary. As DHHS considers what to address first, it is important that Department leaders and managers, as well as State Legislators, stakeholders, and other policymakers reach some level of shared goals, performance expectations, performance measurements, and definitions of success. This can boost longer-term sustainability of such efforts by both creating a learning environment and laying the groundwork for future collaborative initiatives.

This includes an evaluation of various acquisition strategy options for IT components, reaching agreement on the optimal strategy for one or multiple components (e.g., leverage an IT solution from another jurisdiction that supplies functionality consistent with several IT components), and establishing the project management, stakeholder communications, and engagement infrastructure for sustaining such an initiative.

Planning would include evaluation of potential acquisition strategies for IT components, reaching agreement on the optimal strategy for one or more components (for example, whether to utilize a solution from another state that supplies functionality in several needed areas), and establishment of project management capabilities and the infrastructure to support stakeholder engagement and communications.

This planning process would also include the development of a master data management approach that includes detailed information about data linkages that must be made across IT systems to ensure the new system can be used to support the strategic, operational, and tactical decision-making it is intended to support. This part of the planning process will require a deep dive into the key data elements of each system, including individual-level identifiers, and development of a strategy to link these across systems. The deep dive must also examine which activities, utilization of services, and outcomes need to be linked across systems to ensure that the most useful analyses can be conducted.

Estimated timeframe: State Fiscal Year 2017

(4) Develop shared data definitions and requirements

To achieve more efficient and effective health IT systems that can yield more actionable health data, future planning cannot be limited to simply what is required for reporting. Nebraska also must consider what specific needs it has today and may have in the future. HMA recommends DHHS leaders, State

Legislators, and stakeholders identify and discuss these key planning considerations for future system development and data needs, and incorporate to the extent State and federal laws or rules allow.

For DHHS policy makers, program managers, attorneys, and IT professionals alike, it is critical that shared and consistent data semantics, component and data definitions, system requirements, and understandings about joint system development, data-sharing or other efforts be adopted and followed. Diverse educational backgrounds and professional experiences can yield significant variance in meaning and understanding of what data elements mean, as well as how they are collected, reported, and used. For long-term success, it will be important that DHHS professional staff agree not only on common goals or legislatively-directed policies to decrease costs and improve health, but how they communicate and define the data and system components, elements, processes, and procedures required to achieve these goals.

Under the guidance of the DHIT Director, DHHS leadership must develop shared definitions and requirements. This cannot be done by a DMA or other vendor. One problem states often have is a desire to make change without a clear understanding about what the resulting “to be” should look like, much less a detailed list of the requirements that their staff and vendors must meet. Without this clarity and definitions from DHHS, staff and vendors can only act on what they think the State *might* want, which invariably leads to errors and confusion. Even in the best case scenario, without clear guidance from DHHS, staff and vendors will act in ways that benefit their skill sets and competencies – which may or may not benefit DHHS or meet its needs.

Uniform Data Format. DHHS should consider developing uniform data formats and standards for structured information, such as demographics, some needs assessment components, or certain services used. This would not include unstructured information, such as clinical notes or client observations. However, DHHS could assess a set of key data points collected across programs and then develop uniform formats and standards for this data. This will be particularly important, for example, in working with the MCOs to develop reports that will allow DHHS to compare performance across MCOs. However, there also are important implications for data collected from non-traditional providers such as those supporting LTSS, as well as non-medical organizations providing social and human services supports.

Universal Security Protocols. To the extent that State and federal funding and program rules allow, DHHS should develop and train staff on universal security protocols that plan for and govern the entire chain of custody for the data within its systems. From the point of system design and build, to the point of data collection or analysis, DHHS staff should be governed by and have extensive knowledge of universal security protocols necessary for their position type and level.

Stakeholder, Provider, and Consumer Involvement. Achieving integration and interoperability of systems, common data sharing and analysis, and shared, uniform standards, protocols, and understanding, even for common health policy goals, is neither simple nor short-term. Recognizing that program purpose and design, stakeholder concerns, consumer demands, and systems-level planning can be complex and long-term, HMA recommends DHHS establish external advisory groups representing a

diverse group of stakeholders, health care providers, community organizations, and consumers to assist in key planning or implementation milestones for new data strategies and systems.

(5) Maximize the data and data analytic power of the MCOs

On January 1, 2017, the majority of Nebraska’s Medicaid population will receive physical and behavioral health care, as well as pharmaceutical benefits, from one of four fully capitated managed care organizations (MCOs). DHHS leadership, State Legislators, and stakeholders must also apply the key planning considerations in detailing data contractual obligations for MCOs. Other considerations include:

- DHHS should carefully and in detail map out the data requirements for MCOs and ensure they are honoring contractual obligations, as well as meeting performance standards and goals of the program.
- Data requirements and consequences for non-compliance must be included in contracts to ensure participation.
- Data must be clearly defined in order to ensure DHHS is requesting comparable data from all MCOs.
- DHHS can and should require MCOs to perform analyses of data gathered on their members. The DMA does not have to bear sole responsibility for data analytics; MCOs typically have powerful data systems that can help inform the program. For example, DHHS could require MCOs to analyze and report on utilization trends, benefit design impacts, innovative interventions, and pilot projects, or other relevant metrics. Performance and quality data should show that MCOs are, at minimum, meeting contract requirements and if they are exceeding State expectations in any ways. The MCOs will be analyzing data in support of utilization management and program administration. They should be required to share this information with the state for contract management purposes. This also would allow MCOs the opportunity to highlight how well they are performing and what that means to their members and to DHHS.

Effectively collecting and managing MCO data is critical for a state to understand how well its MCOs are performing. For example, the State of New Mexico’s Human Services Department (HSD) limited contractual reporting requirements of Centennial Care MCOs and in some cases, put certain reports on hold during the transition to Centennial Care, severely limiting the utilization data collected. Further, utilization data reporting requirements were reduced from 27 to nine categories, and for those remaining nine categories, measures differed from prior requirements. This effectively rendered much of the data incompatible for comparison to data collected prior to the implementation of Centennial Care. HSD also did not require MCOs to submit sub-capitation agreements, impairing the state’s ability to fully assess whether MCOs are meeting required Medical Loss Ratios, among other matters.²⁸ This

²⁸ Report to The Legislative Finance Committee, Human Services Department Centennial Care Waiver and Medicaid Managed Care Costs, June 24, 2015.
<https://www.nmlegis.gov/handouts/ALFC%20062415%20Item%20%20Centennial%20Care%20Waiver%20and%20Medicaid%20Managed%20Care%20Costs.pdf>

severely hindered the State's ability to monitor MCO performance, as well as understand cost drivers, and assess successful (and unsuccessful) initiatives and pilot programs within the Medicaid program.

It should be noted MCOs can be and often are good partners in the development of data requirements and processes. In Oregon and Colorado, the Coordinated Care Organizations (the State's version of MCOs) and Regional Care Collaborative Organizations participated in the development of the data elements tied to annual incentive payments, along with state staff and stakeholders with expertise in the Medicaid program, data analysis, and other relevant areas.

Estimated timeframe: Phased approach ongoing through 2017

(6) Acquire, implement the required infrastructure

The DHIT Director, working with the Steering Committee, should implement the infrastructure plan. This requires clear and detailed shared understanding of data management and system architecture goals.

As significant investments are made or new systems are funded, to the extent possible, DHHS should build upon existing and capable universal infrastructure outfitted with adaptable modules or applications for the use of various programs. Such systems of large enough scale could include the upcoming DMA platform or even a more traditional system such as the vital records registration systems.

HMA recognizes that the State is currently engaged in significant procurement activity, and will continue to be doing this work in State Fiscal Year 2018. However, the status of open procurements and contract negotiations should not supersede activities described above (e.g., designating a lead with authority over the process, developing shared definitions, and planning for coordinated purchasing) as these activities will improve State contracting and the value of the work conducted under those agreements.

Estimated timeframe: Fiscal Years 2017-2018 and ongoing

(7) Support State Health Information Exchange (HIE) to increase uptake and improve its usefulness

The State HIE can play a powerful role in realizing Nebraska's HIT vision. For this to occur, the HIE must be more widely utilized. The following steps could bolster the HIE and enable it to realize its potential:

- Increase awareness (of what it is, value, etc.).
- Make it simple to connect to it and use it.
- Offset implementation costs for small providers (incentive payments, making the underlying technology in rural areas more available, maximize federal funding opportunities, etc.).
- Share successes through examples that personalize the benefits.

To optimize the impact of the HIE, the State and DHHS could start by continuing and increasing efforts to increase awareness: help providers and health systems better understand what it is, what it can do, and the value this creates for providers and the State. While making more providers aware of the HIE is an important first step, take up is largely dependent on making it easy to connect and to use. Adopting electronic health records (EHR) can be an expensive proposition for small group providers and individual practitioners. The barrier to entry and use is lowered by providing support for adoption, offsetting the

cost for smaller providers, and supporting the underlying technology (particularly in rural areas). Recently, CMS has made 90/10 matching funds available to State Medicaid programs to help connect “non-traditional” providers who were not included in the EHR incentive program to state HIEs. Another tactic to be adopted in parallel is to share successes, especially in ways that personalize the impact of EHR adoption and make connections between the technology and the individual benefits to consumers, providers and other stakeholders.

Estimated timeframe: Fiscal Years 2017-2018 and ongoing

(8) *Develop DHHS staff capacity to manage contracts in this outsourced program*

As the State moves more of its day-to-day operations for Medicaid and other human services programs to vendor partners, the role of State staff will change from program administration to contract administration. The skills associated with managing and overseeing contracts are very different than those that most Medicaid and human services staff have today. Training and support for these new skill sets will be required to ensure successful contract management and oversight. This dovetails with the need to define program parameters and vendor performance standards in data and HIT contracts. Once definitions are created, staff must understand how to appropriately monitor performance and work with vendors to ensure quality and consistency, without overburdening them with requirements that do not add value to the State or the vendors.

Estimated timeframe: Present and ongoing over next several years, as needed to build appropriate capacity

Conclusion

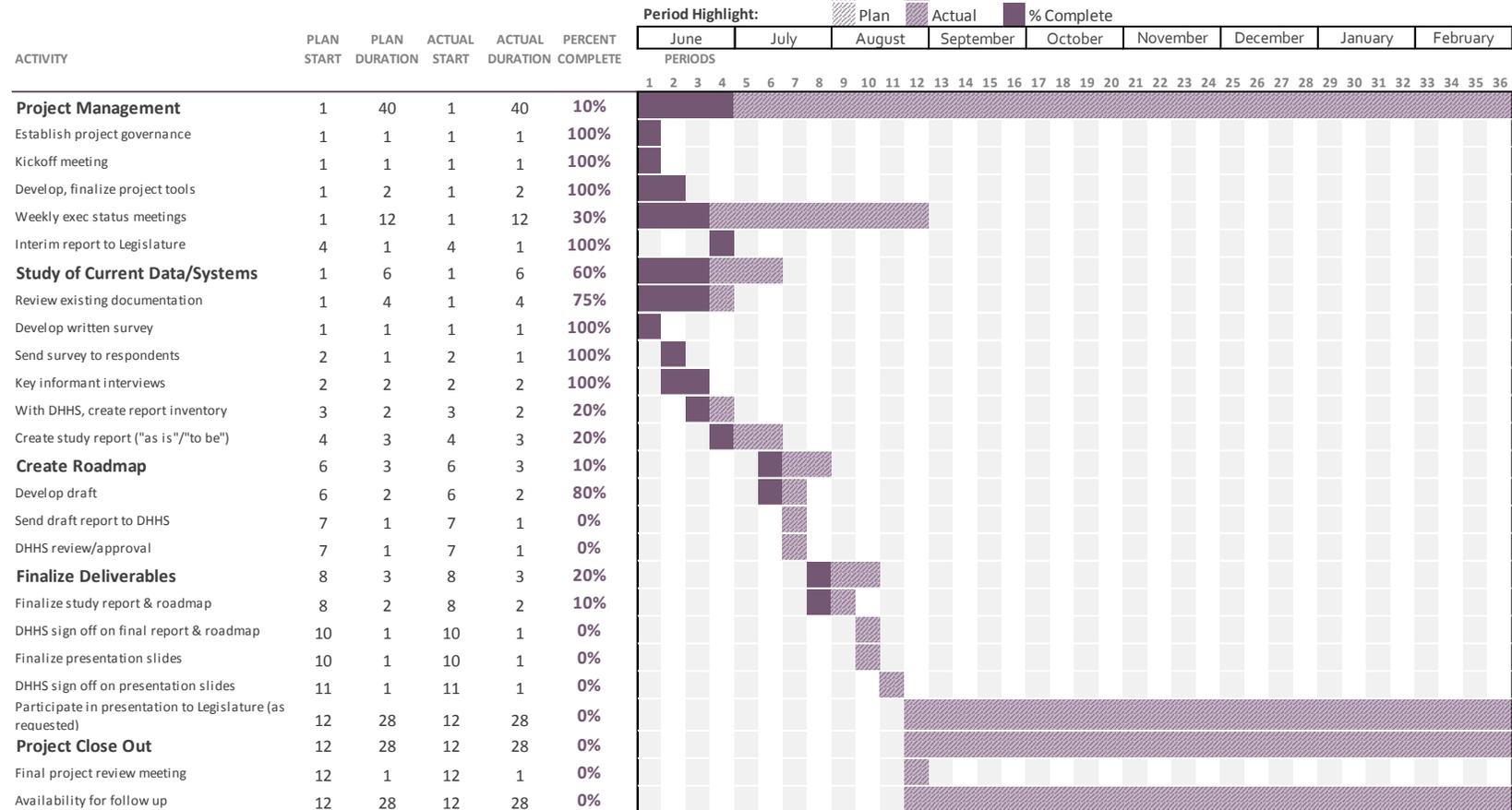
The State of Nebraska is seeking to implement efficient, effective health care solutions, particularly for the Medicaid population. To achieve this, the Nebraska DHHS needs to determine the data that are necessary to improve health care and outcomes and achieve cost efficiencies, as well as understand the best vehicles to both collect and aggregate data, and to analyze and report meaningful and actionable information.

Today, the DHHS Divisions face significant challenges accessing and sharing timely data, as summarized in the assessment of the current state of health data and health data technology systems. To begin to move toward the future “ideal” state, this report also presents recommendations and a roadmap for DHHS to consider.

This report, however, is limited to data and IT systems across DHHS. To develop a comprehensive roadmap, and to fully understand the impact and aspects of State spending on health and healthcare services, HMA recommends the State review systems and data outside of DHHS – including the Departments of Correctional Services, Education, and Insurance, as well as the Nebraska Health Information Initiative (NeHII), and others. This would provide the State a more complete picture of how health care dollars are being spent, where there are opportunities for savings and efficiencies, and how the State can most effectively address the health care needs of Nebraskans.

Appendix A: Project Timeline Gantt Chart

Nebraska Healthcare IT and Data Assessment



Appendix B: Key Informants Surveyed and Interviewed for this Project

The following individuals were surveyed and interviewed:

Behavioral Health

Tanner Mitten

Sara Steele

Stacey Werth-Sweeney

Heather Wood

Developmental Disabilities

Brad Wilson

Michelle Waller

Medicaid and Long-Term Care

Kris Azimi

Kim Collins (Financial Services)

Ruth Vineyard

Aaron Ziska

John Lasota (Contractor)

Keith Morehouse (Contractor)

Veterans Homes

Dawn Longwell

Information Systems & Technology

Chris Hill

Dave Walker

Interviews outstanding

Public Health: Ming Qu

Children and Family Services: Doug Beran

Appendix C: Survey Instrument

Nebraska Department of Health and Human Services (DHSS) Data Survey

June 3, 2016

Context

HMA has developed this survey to begin the process of collecting information from DHHS divisions to understand requirements for the Department's future data system. We will use the information gathered from this survey to conduct on-site sessions with DHHS division Subject Matter Experts (SMEs) who can further elaborate on the current capabilities, barriers and future data needs of each division/program. The survey and on-site sessions will focus on the following topic areas:

- What healthcare programs reside in each division and what is the data being collected to support the programs?
- Who is collecting the data? How are the data being collected and stored?
- Who are the division staff who support data collection, analytics, reporting and the related IT systems? (Number, function, skillset)
- Who is using the data and how is it being used? In what format is it used?
- What are the specific security, confidentiality, and privacy requirements related to each program/system?

We will also collect information on:

- Perceived and real barriers and challenges to collecting high quality, timely, reliable healthcare program data, and suggested solutions to these challenges.
- Perceived and real barriers and challenges to sharing healthcare program data across the divisions and for aggregating data and information so that DHHS leaders can make better informed program decisions for DHHS as a whole.
- Unmet data and information needs, including identifying which data domains or general areas are most needed, where improved alignment of measures across systems would be useful, and priority areas in which improved ability to share data or link individual data would be valuable.

The following initial survey will be conducted via a Microsoft Word or PDF form. HMA will collect and analyze this information for use in the on-site sessions with DHHS SMEs.

Initial Survey Questions

1. Enter DHHS Division

2. Enter program supported

Note: if supporting multiple programs, please complete a survey for each program

3. For the program noted above, what types of data are you or others collecting?

Circle all applicable:

- Beneficiary data
 - Demographic, enrollment, assignment

- Health status and preferences: diagnosis, health risk assessment documentation, risk level, linguistic needs and cultural behaviors
 - Member experience, grievances and appeals
 - Utilization: service use, ER/hospital admissions and discharges
 - Care management: care management assignment, linkages to medical and/or non-medical services, medication management, care plans, transitions of care support, coordination with other entities
 - **Provider data:**
 - Licensing
 - Network adequacy
 - MU reporting (CQMs)
 - Authorizations
 - Referrals
 - Program data linked to claims
 - **Performance/QI:**
 - key performance indicators
 - outcome data
 - financial data
 - **Other (identify):**
-

4. At what unit are the data available? For example, is the data organized by beneficiary, by provider, by population?
5. Where do you get the data (e.g. what is the source?)
 - a. Are the data from another state or federal source?
 - b. Are the data from providers, and if so, what type of providers?
 - c. Are the data from internal systems or teams, and if so, who?
 - d. Are the data from beneficiaries?
 - e. Other data sources?
6. How often do you obtain or refresh the data? (e.g. daily, weekly, monthly, annually)
7. How do you collect the data?
 - a. Is it electronically collected or on paper? If electronically, what format?
 - b. If paper, what is the process you use to collect it?
 - c. Do you edit the data to use it or is it used in the format in which it is collected?
8. How and where do you store the data?
 - a. Database? If database, what type?
 - b. File cabinets? Hard copy records?

9. How do you use the data? (For example, program management, evaluation, reporting, etc.)
 - a. Why do you collect this data? Was the use of the data driven by a contract requirement or other driver?
 - b. Do you externally report the data?
 - i. To whom? Federal? Other DHHS Divisions? Providers? Beneficiaries? Other?
 - ii. For what purpose? (e.g. required report)
 - iii. Is the data “pushed out” without refinement, or do you analyze/manipulate the data internally first?

If manipulated before externally reported:

- - How and in what format do you report this data? How often do you report it?
- c. What data do you wish you could manipulate or create for partners? What prevents this?
 - d. Do you use the data for internal purposes?
 - i. For what purposes? Population management? Trending? Performance/quality improvement?
 - ii. Who is the data reported to?
 - iii. How often is it reported?
 - iv. How do the data recipients use the report?
10. Are there data elements you collect that you don’t have the capability to analyze or use? What are they and what prevents analysis or use? What would it take?
 11. Are there data elements you don’t have access to, but would like to have to support your work (i.e. registry information, facility information, HIE data, other federal or state data)? What are they and what prevents access? What would it take to get access?
 12. Is there anything else you would like us to know now about the data strategy and capabilities for this program/division?

Attachment 1: Report Inventory

The Attached Excel file represents the inventory of reports submitted by the Divisions to HMA. Because each Division generates hundreds, if not thousands, of reports in fulfilling their missions, the reported inventories are not comprehensive of all ad hoc reports generated by Divisions.

Attachment: Report_Inventory.xls