Implementation Plan for Connecting Skilled Nursing Facilities to Health Information Exchange

CRISP

Chesapeake Regional Information System for our Patients

Connecting Providers with Technology to Improve Patient Care

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Introduction

In recent years Maryland has embarked on a significant and innovative effort to improve care and reduce growth in health care spending. In this effort Maryland has partnered with the Centers for Medicare and Medicaid Services (CMS) to transform the states' existing all-payer hospital payment system that has been in place for over forty years. Maryland received approval of the new All-Payer Model and began implementation at the start of 2014.

Improving care coordination is an important component of Maryland's strategy to meet the goals of the Model. To support this work, Chesapeake Regional Information System for our Patients (CRISP) has embarked on an expansion of its existing hospital-focused services to cover the cooperative IT and data needs of stakeholders and an expansion of the sources supplying data to CRISP including skilled nursing facilities and ambulatory practices.

Purpose of Project

Stakeholders have identified increasing skilled nursing facilities (SNF) participation in CRISP as an area of particular importance and interest to enable improved care coordination between hospitals and SNFs. Based on this feedback and as part of Maryland's Round Two State Innovation Model Design grant from CMS, CRISP worked with stakeholders over the past four months to develop a strategy to connect all 230 SNFs in Maryland to CRISP. In addition to developing a strategy to connect SNFs, we also engaged hospitals and SNFs to determine what data and reporting capabilities that are not currently available in CRISP would be valuable to add to support improving care coordination between these settings.

In parallel with this planning work—and funded through other sources—CRISP has been actively working to increase the number of connected skilled nursing facilities. As of June 2016, 64 of the 230 skilled nursing facilities in Maryland are connected to CRISP and sharing at least encounter data.[1,2] See Appendix B for the list of connected facilities.[3]

Background

Current CRISP Services

CRISP started eight years ago with a focus on enabling providers to access patient data at the point-of-care to support treatment use cases. The Clinical Query Portal, CRISP's initial services offering, provides access to lab results, radiology reports, electronic reports, discharge summaries, and other patient-specific clinically-relevant data. Over time the information available in the Clinical Query Portal has expanded to include encounter information and medications from the Prescription Drug Monitoring Programs (PDMP) in Maryland and other neighboring states. CRISP's service offerings have also expanded to include encounter notifications, the Payer Portal, and reporting analytics services. With the addition of these services CRISP has also moved from enabling point-of-care access only for treatment purposes to supporting a wider set of uses

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[1] Total number of SNFs is based on Maryland Department of Health and Mental Hygiene. Licensee Directory: Comprehensive Care Facilities and Extended Care Facilities. Accessed June 30, 2016 http://dhmh.maryland.gov/ohcq/SitePages/Licensee%20Directory.aspx

[2] Encounter data covers when a patient is admitted, discharged, or transferred. Encounter data often is received through from HL7 Admission, Discharge, and Transfer (ADT) Messages.

[3] The most current list of health care providers connected to CRISP is available here.

including care coordination and quality improvement. CRISP has also expanded the allowed users from providers only to include, for certain services and under set rules, care coordinators and payer staff.

Today, CRISP has 232 active clinical data feed connections from healthcare organizations in Maryland and Washington D.C. CRISP is connected to hospitals, long-term facilities, ambulatory providers, radiology facilities, laboratories, and emergency medical facilities. All of the acute care hospitals in Maryland and Washington D.C. are connected to CRISP. CRISP also exchanges encounter data with providers in Delaware (via the Delaware Health Information Network) and with Northern Virginia hospitals. More than 8,500 providers log approximately 125,000 queries for patient information per month from the Clinical Query Portal. Over 1.2 million encounter notifications are sent to subscribing providers per month.[4]

Deployment of New CRISP Infrastructure

The CRISP Integrated Care Network (ICN) Infrastructure project was launched in July 2015 and is the overarching set of shared IT infrastructure being developed statewide to support care management by providers and payers. The underlying assumption is that, in their efforts to achieve the three-part aim of health reform, Maryland stakeholders will need additional and enhanced tools and services beyond CRISP's core services. Pursuing some elements of the build-out cooperatively will result in more complete patient information being available to clinicians and care managers, since individual institutions using just their own data sources often have only a partial picture. A shared IT infrastructure with active exchange of patient data will result in better coordination for complex patients who use multiple different hospitals and health systems. Subsequently, better coordination will result in further cost savings, by avoiding duplication of effort.

Having been chartered to pursue health IT projects which are best done cooperatively, CRISP is well positioned to manage the build-out of shared infrastructure. By virtue of its governance model, the stakeholders who use CRISP services direct the organization, providing oversight and accountability, and this design has been extended to the new infrastructure project. The new tools are being built on top of the existing HIE platform, which CRISP already operates.

The CRISP ICN Infrastructure project aims to connect providers in multiple settings—from hospitals and physician practices to long-term care facilities—with the proper information to improve health outcomes and reduce costs by providing tools, data, and services to support care coordination. The ICN is a multi-year initiative that includes seven primary workstreams that together build on the existing CRISP data and service offerings to enhance clinical care and care coordination—especially when patients receive services from multiple providers. CRISP is working in collaboration with and in support of the state-funded Regional Partnerships for Health System Transformation participants. The ICN workstreams are organized into seven major initiatives that include:

1. **Ambulatory Connectivity:** Connect more practices, long-term care facilities, and other health providers to the CRISP network.
2. **Data Router:** Build a data router that includes data normalization, patient consent management, patient-provider relationships – for sharing patient-level data.
3. **Clinical Portal Enhancements:** Enhance the existing Clinical Query Portal with a patient care overview; a provider directory; information on other known patient-provider relationships; and risk
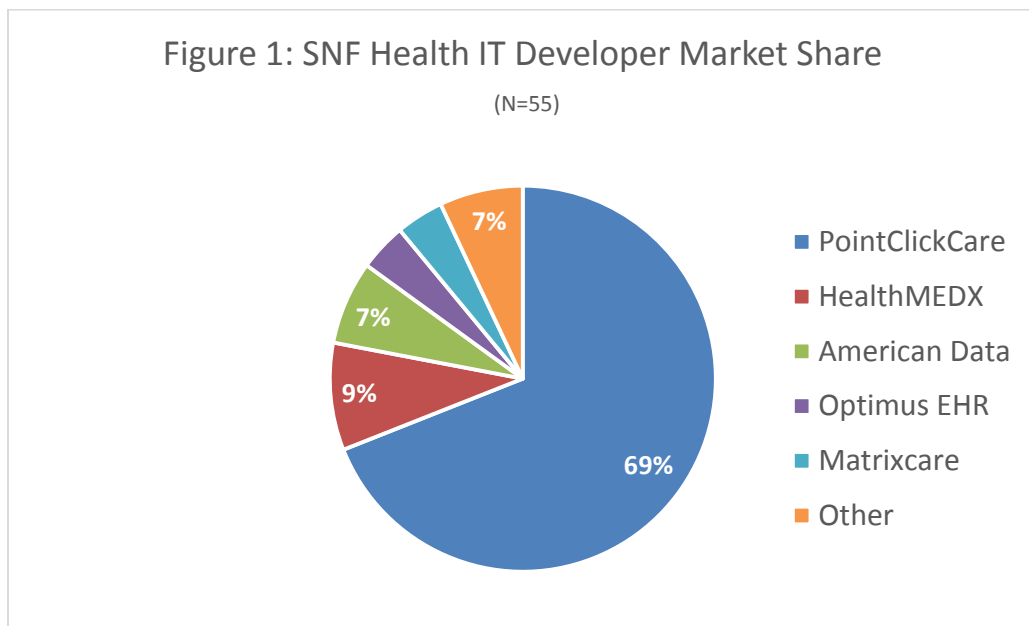
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[4] Data as of June 2016.

scores.

4. **Notification & Alerting:** Create new alerting tools to allow notifications to happen within the context of a provider's existing workflow.
5. **Reporting & Analytics:** Expand existing CRISP reporting services and make them available to a wider audience of providers and care managers.
6. **Basic Care Management Software:** Support care management efforts throughout the state and region—through data feeds, reports and potentially a shared care management platform.
7. **Practice Transformation**: Assist provider's efforts to improve care delivery by training them on leveraging CRISP data and service, sharing best practices, and supporting collaborative partnerships.

Current State of Skilled Nursing Facility Connectivity

Maryland

A 2014 survey by the Maryland Health Care Commission (MHCC) identified that SNFs in Maryland have significantly lower adoption rates of robust electronic health records (EHR) than providers who are eligible for the EHR Incentive Program.[5] Almost 72 percent of SNFs reported having adopted an EHR system, however less than half of them reported that they used all eight functions of a basic SNF EHR that MHCC identified.[6] Twenty-eight percent of SNFs in Maryland have not adopted an EHR. Approximately 48 percent of SNFs have not used all the functions of a basic EHR. Vital signs, laboratory data, and activities of daily living were the most commonly cited functionalities not being used by SNFs. The survey also identified that five SNF health IT developers account for approximately 93 percent of the EHR systems deployed in Maryland SNFs with one accounting for 69 percent of the market.

Figure 1: SNF Health IT Developer Market Share

(N=55)

- PointClickCare — 69%
- HealthMEDX — 9%
- American Data — 7%
- Optimus EHR
- Matrixcare
- Other — 7%

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[5] MHCC (2016). *Comprehensive Care Facilities Adoption of Electronic Health Records: An Information Brief*. Retrieved from: http://mhcc.maryland.gov/mhcc/pages/hit/hit/documents/HIT_LTC_Scan_Brief_2014.pdf

[6] The eight functions are: assessment (other than the Minimum Data Set): demographic information; activities of daily living; diagnostic related information; allergy list; vital signs; laboratory data; and discharge summaries.

As of June 2016, 64 of the 230 skilled nursing facilities in Maryland are providing data to CRISP. All of these facilities are sharing at least encounter information. Only five of the facilities are sharing additional clinical data with CRISP. Based on our experience to date, SNF health IT developers' ability to capture and export clinical data is significantly behind the capabilities of health IT developers serving the ambulatory and inpatient markets that have been driven by the EHR Incentive Program.[7]

As of June 2016, 74 long-term post-acute care (LTPAC) facilities have access to the Clinical Portal and 49 are live on ENS. In June 2016, LTPAC facilities logged 116 queries for patient information from the Clinical Portal. Over 3,466 encounter notifications were sent to subscribing LTPAC facilities in June.

Table 1: LTPAC Facility Connectivity and Access to CRISP

Total LTPAC facilities with live access to Clinical Portal as of June 2016	74
Number of Queries by LTPAC Facilities in June 2016	116
Total LTPAC Facilities live on ENS as of June 2016	49
Number of encounter notification received by LTPAC Facilities in June 2016	3,466
LTPAC Facilities Sending Encounter Data to CRISP	64
LTPAC Facilities Sending Other Clinical Data to CRISP	5

Federal Policy

A number of federal policy initiatives will be driving changes in the SNF environment in the coming years and are important considerations in designing a strategy for SNF connectivity. The IMPACT Act of 2014 requires CMS to develop standardized and interoperable patient assessment data elements that can be used in forms across long-term post-acute care settings. This effort will update the Minimum Data Set (MDS), the patient assessment form used by SNFs for all patients in a Medicare and/or Medicaid certified long-term care facility, with a set of standardized data elements. The implementation of this portion of the IMPACT Act is set to begin in October 2018. Increased standardization across the assessment forms should enable common use cases to be developed for leveraging the data from across long-term care settings.

In February of 2016, CMS expanded the permitted uses of federal 90 percent matching rate for state expenditures on activities to promote HIE to cover costs to support all Medicaid providers that Meaningful Use Eligible Professionals need to coordinate care with.[8] This expansion enables the use of Medicaid HITECH 90/10 funds to support HIE onboarding costs for long-term post-acute care providers (including SNFs), behavioral health providers, substance abuse treatment providers, and others who were previously not included due to the limitation that funds could only support providers eligible for the Medicaid EHR Incentive Program. To be able to support HIE onboarding for these providers, they must share patients with a Medicaid EHR Incentive Program Eligible Professional. As noted below, funding is a key barrier to SNFs participation in HIE; the ability to cover or help offset those costs will provide a significant boost to SNFs ability to participate in HIE.

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[7] For instance, we have found when SNF health IT developers are able to produce a care summary record (i.e. a continuity of care document (CCD)) the included data fields are limited compared to ambulatory and inpatient health IT developers.

[8] CMS (2016) *State Medicaid Director #16-003*. Retrieved from: https://www.medicaid.gov/federal-policy-guidance/downloads/SMD16003.pdf

Challenges

SNFs along with other LTPAC providers face financial barriers that create challenges to their adoption of EHRs and their participation in HIE. High staff turnover and the lack of IT skills and training are also challenges to SNFs, particularly smaller facilities, participation in HIE.[9]

As the functionality of EHRs serving SNFs improves, CRISP will be able to expand the amount of clinical data available from these providers. This expansion of functionality and standards will take time and the evolution will not be smooth or consistent across health IT developers. *No federal program has established a defined set of certification criteria for SNF EHRs as the EHR Incentive Program has done for ambulatory and inpatient settings.* The interoperability functionality available in SNF EHRs is often behind the abilities of EHRs serving the inpatient and ambulatory providers.

The drivers and incentives for SNFs to participate in CRISP vary based on the marketplace dynamics in different regions of the state. In regions with multiple hospitals and SNFs there are competitive drivers that increase SNFs' interest in participating in CRISP. Often hospitals in these regions are asking SNFs to sign up with CRISP. In regions with a single dominant hospital and SNF we often see situations where the SNF has access to the hospital's EHR, providing access to inpatient data for the majority of their patient, reducing the value of CRISP to the SNF.

SNFs find that patient data in CRISP is not always timely for their needs. For instance, discharge summaries are not available within CRISP until they are signed by the provider which may not occur before the patient is admitted to a SNF. As CRISP increases the amount of data available from ambulatory sources and begins to receive care summary documents, we anticipate SNFs will find additional value in the information available in CRISP.

Recognizing the significant variability in EHR adoption and use among SNFs, we have focused on developing a strategy that meets organizations where they are today. It has paths for facilities with robust EHRs who can share clinical information with CRISP and for facilities without an EHR focused on pulling information from available electronic sources such as the Minimum Data Set and ancillary vendors supporting SNFs.

Implementation Plan to Connect SNFs

A multi-pronged strategy is needed to connect all of the SNFs in Maryland to CRISP. The strategy must recognize and address the varying marketplace factors (i.e., competitive versus non-competitive regions), the lack of EHR adoption in some facilities, the varying capabilities of EHRs that SNFs have adopted, and financial barriers to HIE participation. All of these factors need to be considered when developing a realistic implementation plan to connect SNFs across the state.

Based on CRISP experience connecting SNFs to date and through conversations with stakeholders we have identified the following five steps that we will take to achieve our goal of connecting all SNFs across the state to CRISP:

1. **SNF Connectivity Program**
2. **Connect SNF Ancillary Vendors**
3. **Leverage MDS Data in CRISP**
4. **SNF Engagement and Learning Efforts**

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[9] Colene Byrne, PhD & Michelle Dougherty, MA. "Long Term and Post-Acute Care Providers Engaged in Health Information Exchange," Report to the U.S. Dept. of Health & Human Services, 2013, available at http://aspe.hhs.gov/daltcp/reports/2013/HIEengage.shtml.

5. Expand Clinical and Reporting Infrastructure to Support Hospital/SNF Care Coordination Needs

These steps combined provide a strategic path forward for CRISP to receive data from and provide access to the Clinical Portal to all SNFs in the state. Some steps are already in process and will be continued and expanded, while others will be implemented in the coming year. Below we outline each step in more detail.

SNF Connectivity Program

In order to connect their EHRs to CRISP, SNFs have to pay an interface or integration fee to their health IT developer and then face ongoing maintenance costs. These fees often present a financial barrier to SNFs' ability to share data with CRISP. To help address this barrier CRISP proposes to establish a SNF Data Exchange Support Program that will help offset the cost burden faced by SNFs when initially connecting to CRISP. Payments under the program will be tied to achieving set milestones. The first milestone is tied to signing the CRISP participation agreement and an interfacing agreement with their health IT developer. The second milestone is tied to going live with clinical data feeds. Under the proposed program, providers will be required to continue sending data for a minimum period of time or face a potential clawback penalty. Funding for the program will be supported through Medicaid HITECH 90/10 funds. To be eligible SNFs have to have accepted a Medicaid patient within the past 12 months. CRISP will prioritize the selection of eligible SNFs through the program based on a number of potential factors including but not limited to: readiness and willingness of the SNF to connect, technical integration capabilities of the SNF's EHR vendor, the EHR vendor's market share, and participation in priority health reform efforts (i.e. Regional Partnerships, etc.). We anticipate most SNFs in the state will be eligible to participate in the connectivity program.

Connect SNF Ancillary Vendors

To address the lack of electronic data available from SNFs without EHRs and to supplement the electronic data available from SNFs that have adopted EHRs, CRISP will increase efforts to connect SNF ancillary vendors—including institutional pharmacies, labs, and radiology.[10] Directly engaging ancillary vendors will help to create a common baseline set of electronic data available in CRISP from all SNFs in the state. Collecting data directly from these sources will allow CRISP to pull in data for all SNFs in the state—not just those with EHRs. CRISP has successfully implemented a similar strategy with lab and radiology vendors serving ambulatory and inpatient providers. CRISP will initially prioritize connecting institutional pharmacy vendors in 2017.

Leverage MDS Data in CRISP

DHMH has the ability to provide centralized access to MDS data from all SNFs in the state to CRISP. Similar to data from SNF ancillary vendors, MDS data could help fill information gaps from SNFs. CRISP has looked at two avenues to leverage MDS data moving forward: for point-of-care treatment purposes and to support reporting use cases. CRISP will work with DHMH to incorporate MDS data into the CRISP Reporting Service to leverage the data for future reporting efforts to support providers and Maryland agencies' needs.

For point-of-care treatment purposes in hospitals, MDS has significant limitations in its usefulness in evaluating the issues that brought the patient to the hospital, as the data is typically older than the event leading to the hospitalization. MDS data can be useful in determining the patient's usual state and certain

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[10] For example, three institutional pharmacy vendors, Omnicare, PharMerica, and Remedi Senior Care, serve the majority of SNFs in Maryland. Connecting these three vendors would provide access to dispensed medication information from the majority of SNFs in the state.

social and demographic facts. Appendix D outlines the MDS data elements providers identified as useful for treatment purposes.[11]

In discussions with stakeholders, CRISP has heard differing perspectives on the utility of MDS data for treatment use cases. Some providers expressed an interest in viewing the data, while others felt the data would not be useful. A handful of HIEs in other states have recently started or are in the process of launching pilot efforts to provide a subset of MDS data elements to providers, but no results were available as of the writing of this report. To test the usefulness of MDS data at the point of care, CRISP will launch a pilot initiative, funded under a separate project, with SNFs, hospitals, and ambulatory providers. The results of the pilot will be evaluated to determine how CRISP will proceed.

SNF Engagement and Learning Efforts
In the past year, CRISP has significantly increased its outreach efforts to SNFs in Maryland. CRISP has entered into a partnership with LifeSpan Network, a Maryland association of LTPAC providers, to provide boots-on-the-ground outreach and education to their SNF members. This partnership supports CRISP's efforts to educate SNFs about the benefit of HIE, sign-up SNFs, and provides a feedback loop to CRISP on how services can be improved to better support SNF needs. Leveraging internal staff and key partners, such as LifeSpan, CRISP will continue its dedicated outreach, education, and onboarding work to connect every SNF in the state.

In addition to continuing and expanding existing engagement and onboarding efforts, CRISP will establish a learning network for connected SNFs to support the identification and sharing of best practices on how CRISP can be leveraged by other facilities. This effort will provide a forum for SNFs to come together and learn from their peers about impactful ways to leverage CRISP to support improved patient care.

Expand Clinical and Reporting Infrastructure to Support Hospital/SNF Care Coordination Needs
Improving care coordination between hospitals and SNFs is an important element to support the efforts of Maryland's Round Two State Innovation Model Design Grant. CRISP has an important role to play by ensuring the needed information is available to support care coordination between these two care settings. We spoke with hospital and SNF stakeholders to identify additional information they need to enable improved care coordination.

Stakeholders identified two categories of needs to support improving care coordination between hospitals and skilled nursing facilities. First, stakeholders identified a variety of data that they do not receive today that would support the treatment of patients at the point of care. Second, stakeholders identified a number of reports that would support their population health management efforts. Appendix A outlines the detailed findings from these discussions, identifying the data and reporting needs expressed by SNFs and hospitals. In the coming years, CRISP will work with SNFs and hospitals to address these data and reporting needs.

Under a separate project, CRISP is currently launching a pilot effort with SNFs to test an initial set of patient-level, panel-based reports that will be made available to them. CRISP is also working to create reports based on Medicare claims data that will provide detailed episode based reports for hospitals and SNFs in the state. These reports will include many of the specific items hospital and SNFs expressed interested in tracking including readmission rate, average length of stay, and total cost of care. CRISP will work to supplement this initial pilot effort with the additional items identified by hospitals and SNFs through this planning process and lessons learned from the pilot.

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[11] Altarum Institute Center for Elder Care and Advanced Illness (2016) *Report on Information Transition into and out of Nursing Facilities, including Potential Use of MDS.*

As CRISP connects with more SNF EHR health IT developers, we will increase our experience with the quality and depth of information they capture and are capable of sharing. We anticipate the data captured in SNF EHRs will expand in the coming year as payment reform efforts across the nation create new incentives for SNFs to share data electronically with trading partners and as they push their health IT developers to offer additional capabilities.

Next Steps

As implementation of Maryland's All-Payer Model continues, improving care coordination between hospitals and SNFs will increase in importance to Maryland stakeholders. CRISP is working to expand its technical infrastructure to support the cooperative IT needs of stakeholders to succeed in the All-Payer Model. CRISP will work over the next year to start implementation of the SNF connectivity strategy outlined in this report and expand on its initial success in connecting SNFs. In 2017, we will launch the SNF Connectivity Program to help address the financial barriers that often slow or inhibit SNFs ability to participate in HIE, which will be vital to our ability to get all SNFs in the state connected. As an interim milestone towards connecting every SNF in the state, we will connect 160 long-term post-acute providers by June of 2017. We will work to increase the amount of SNF data available in CRISP and we will launch an initial set of reports addressing hospital and SNF needs by the end of 2017. This reporting effort will be refined based on stakeholder feedback moving forward.

Looking forward, there are a number of additional areas CRISP can expand its existing capabilities to support care coordination between hospitals and SNFs. We will work with stakeholders to prioritize new use cases of interest. Examples of such efforts include: the development a concise-targeted summary containing valuable clinical information that SNFs can send along with a patient when they are transferred to a hospital that; a description of why the patient was sent to the hospital; and what the hospital needs to do to send the patient back to the SNF.

Appendix A: Summary of Hospital and Skilled Nursing Facility Data and Reporting Needs

The following summary breaks reporting needs out by hospital and skilled nursing facilities. Addressing these stakeholders' needs will help to support the goal of the SIM Design work to develop a strategy to integrate care delivery for individuals who are dually eligible for both Medicaid and Medicare.

Stakeholder Identified Data/Reporting Needs

First, stakeholders identified a variety of data that they do not receive today that would support the treatment of patients at the point of care. Second, stakeholders identified a number of reports that would support their efforts to undertake population health management.

Hospital Data Needs

Hospitals identified the following data elements as needed from skilled nursing facilities to support treatment at the point of care.

- Encounter information
- Labs
- Medications
- Pressure ulcers
- Infections
- Discharge summary

New Use Cases of Interest

- When a patient is discharged from a skilled nursing facility, there is significant interest in understanding the following:
  - Where the patient is being discharged/transferred to?
  - If the patient is being discharged home, what wraparound services are they being discharged with and who is providing those services?
- Some hospitals want to be able to pull discrete skilled nursing facility data out of CRISP to run reports on.
- Develop a method for tracking patient progress/trajectory in the skilled nursing facility to determine if their risk for readmission has changed since the patient was discharged from the hospital. This would allow the hospital readmission coordinator to reach out to the skilled nursing facility to come up with a joint plan to assist the patient.

Table 2: Mapping of Hospital Data Needs with Potential Data Source

	Top SNF EHR Vendors[12]			Ancillary Vendors		Other
	PCC[13]	HealthMEDX[14]	American Data[15]	Lab	Institutional Pharmacy	MDS
Encounter information	X	X	X			
Labs	X	X	X	X		
Medications	X	X	X		X	X (medication categories only)
Pressure ulcers	X	X	X			X (lacks desired specificity)
Infections	X	X	X			X
Discharge summary	X	X	X			
INTERACT	X					

Hospital Reporting/Analytics Needs

Hospitals identified the following common reporting needs. As the efforts with the waiver advance to move global budgeting beyond the hospital there will be additional common needs identified.

- Average length of stay
- Admission rate
- 30-day readmission rate
- ED visits
- Total cost of care for the skilled nursing facility
- Average cost per day per patient

In addition to the areas generally identified by hospitals, the following items were raised by minority of hospitals.

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[12] Point Click Care, HealthMEDX and American Data are the top three EHR vendors by marketshare among Maryland skilled nursing facilities according to a recent Maryland Health Care Commission survey http://mhcc.maryland.gov/mhcc/pages/hit/hit/documents/HIT_LTC_Scan_Brief_2014.pdf.
[13] Source: Leading Age 2016 EHR Selection Matrix http://www.leadingage.org/uploadedFiles/Content/Centers/CAST/Technology_Selection_Tools/EHR_Matrix.pdf
[14] Ibid
[15] Ibid

- Bed/resource availability
- Successful discharge to the community

Skilled Nursing Facility Data Needs

Skilled nursing facilities identified the following data elements as needed from hospitals to support treatment at the point of care.

- Diagnosis and admit reason information included in hospital encounter data from all hospitals
- Timely discharge summaries
- Accurate reconciled medication list
- Medications
- Advanced directives

New Use Cases of Interest:

- Skilled nursing facilities want hospitals to use INTERACT as the transfer summary between the two settings. Some hospitals are asking skilled nursing facilities to use INTERACT transfer form when sending patients to them but are not sending using the corresponding INTERACT summary form when sending the patient back.
- Skilled nursing facilities want MDS and OASIS data to be incorporated into CRISP.
- Skilled nursing facilities want to be able to access information on patients prior to admission.
- One skilled nursing facility raised the idea of creating something similar to the care alert for skilled nursing facilities sending a patient to the hospital that would include valuable clinical information and a description of why the patient was sent to the hospital and what the hospital needs to do to send them back.

Skilled Nursing Facilities Reporting/Analytics Needs

Skilled nursing facilities identified the following common reporting needs. As the efforts with the waiver advance to move global budgeting beyond the hospital there will be additional common needs identified.

- Average length of stay
- Admission rate
- 30-day readmission rate
- ED visits
- Hospital utilization or admit by primary diagnosis
- Skilled nursing facilities want to be able to view the data/patient by payer type

Table 3: Mapping of Hospital and Skilled Nursing Facility Reporting Needs with Potential Data Sources

	Claims	MDS	ADT	Case Mix
Average length of stay	X	X	X	X
Admission rate	X	X	X	X
30 Day Readmission rate	X	X	X	X
ED visits	X	X	X	X
Total cost of care for the SNF	X			
Average cost per day per patient	X			
Hospital utilization or admit by primary diagnosis			X	X
Ability to view data/patient by payer type				

Items may require combining information from multiple data sources. For instance ADT or MDS and case mix data could be combined to determine a skilled nursing facility's 30-day readmission rate.

Appendix B: Long-Term Care Facilities Connected to CRISP as of June 2016

	Encounter Information	Lab Results	Radiology Reports	Electronic Reports	CCDA Documents	Image Exchange	ENS Admit Reason	ENS Discharge Disposition
Asbury Communities – Asbury Methodist Village	✓							
Asbury Communities – Asbury Solomons	✓							
Augsburg Lutheran Home Maryland	✓							
Aurora Health Services – Calvert Manor Health Center	✓							
Aurora Health Services – Caroline Nursing and Rehab Center	✓							
Aurora Health Services – Citizen's Care and Rehab CTR of Frederick	✓							
Aurora Health Services – Long View Healthcare Center	✓							
Aurora Health Services – Odyssey Assisted Living at Montevue	✓							
Aurora Health Services – Senior Living of Manokin	✓							
Aurora Health Services – The Gables at Caroline	✓							
Berlin Nursing and Rehabilitation Center	✓							
CommuniCare – Bel Pre Health & Rehab	✓							

Center								
CommuniCare – BridgePark Health Care MD	✓							
CommuniCare – Ellicott City	✓							
CommuniCare – Fayette	✓							
CommuniCare – Forestville	✓							
CommuniCare – Fort Washington	✓							
CommuniCare – Laurelwood Healthcare Center	✓							
CommuniCare – Marley Neck	✓							
CommuniCare – South River	✓							
Crofton Care and Rehabilitation Center	✓							
Erickson Oak Crest	✓	Jun-12		Jun-12				
Erickson Riderwood	✓	Jun-12		Jun-12				
Genesis Bradford Oaks Center	✓							
Genesis Caton Manor	✓							
Genesis Catonsville Center	✓							
Genesis Chesapeake Woods Center	✓							
Genesis College View Center	✓							
Genesis Corsica Hills Center	✓							
Genesis Crescent Cities Center	✓							
Genesis Cromwell Center	✓							

Genesis Fairland Center	✓							
Genesis Franklin Woods	✓	Jun-12						
Genesis Glade Valley	✓							
Genesis Hammonds Lane Center	✓							
Genesis Heritage Center	✓	Jun-12						
Genesis Homewood Center	✓							
Genesis Kingshire Manor Assisted Living	✓							
Genesis La Plata Center	✓							
Genesis Larkin Chase Center	✓							
Genesis Layhill Center	✓							
Genesis Loch Raven Center	✓							
Genesis Long Green	✓							
Genesis Magnolia Center	✓							
Genesis Multi-Medical Center	✓							
Genesis Patapsco Valley Center	✓							
Genesis Perring Parkway Center	✓							
Genesis PowerBack Rehabilitation – Brightwood Center	✓							
Genesis Salisbury Rehabilitation and Nursing Center	✓							
Genesis Severna Park Center	✓							

Genesis Shady Grove Center	✓						
Genesis Sligo Creed Center	✓						
Genesis Spa Creek Center	✓						
Genesis Springbrook Center	✓						
Genesis The Pines	✓						
Genesis Waldorf Center	✓						
Genesis Waugh Chapel Center	✓						
Genesis Woodside Center	✓						
LifeBridge Levindale	✓	Aug-12	Aug-12				
Lorien Health Systems – Bel Air	✓						
Lorien Health Systems – Bulle Rock	✓						
Lorien Health Systems – Columbia	✓						
Lorien Health Systems – Elkridge	✓						
Lorien Health Systems – Harmony Hall	✓						
Lorien Health Systems – Mays Chapel	✓						
Lorien Health Systems – Mt. Airy	✓						
Lorien Health Systems – Riverside	✓						
Lorien Health Systems – Taneytown	✓						
Lorien Health Systems – Turf Valley	✓						

NMS Healthcare Facilities	✓							

Appendix C: Methods

The Implementation Plan for Connecting Skilled Nursing Facilities to Health Information Exchange was developed based on conversations with a wide variety of state and national stakeholders and CRISP's extensive experience. CRISP spoke with the following organizations in the development of this report.

- Central Illinois Health Information Exchange
- Coordinated Care Oklahoma
- KeyHIE
- CORHIO
- Delaware Health Information Network
- LifeSpan Network
- Health Facilities Association of Maryland
- Maryland Hospital Association
- FutureCare
- Genesis
- Wicomico Nursing Home
- Lorien Health System
- Ingleside Engaged Living
- Doctors Community Hospital
- George Washington University Hospital
- Great Baltimore Medical Center
- Anne Arundel Medical Center
- Upper Chesapeake Medical Center
- University of Maryland Rehabilitation & Orthopaedic Institute
- Answers On Demand
- PointClickCare
- Leading Age
- IMPACT Project
- Capital Coordinated Medicine
- Emory Healthcare
- RAND Corporation

Appendix D: MDS Data Elements for Treatment Use Cases

The following MDS data elements were identified by stakeholders as being useful for treatment use cases.[16] Items marked with an asterisk are proposed composite elements that consolidate multiple MDS data element into a single data element. **A1800** Date of admission to SNF/NF

A1600 Date of assessment

A0310 Type of assessment

A500-1000 Demographics (to assure correct identification and identify the report if printed)

A1100; Language

***Section B, Hearing Speech and Vision Deficits,** any needed devices to enable communication

A1200 Marital status

Section I Diagnoses - active diagnoses checked – include tobacco use from J1300

A1500 Serious mental illness or developmental disability flag (PASRR)

J1400 Prognosis of <6 months

***C0500** Summary Score of BIMS Mental status or C0700-100 Staff Assessment for Mental Status – categorized as normal, limited, moderate, or severe – if the record has multiple MDS entries, could state trend

C1600 Acute Onset Mental Status Change (Y or N)

***Q0100** Resident participated in assessment, or had family (or significant other), or had guardian or legally authorized representative, or had no one

***C1300 Delirium** – yes, possible, or no

***D0200 Depression (PHQ-9) or by Staff D0500**– Scale categorized as depressed, sad mood, or normal

E0100, E0200, E900-1000 Any of a list of problematic behaviors as Yes-No –delusions, hallucinations, disruptive behaviors directed toward others, self-harm, wandering

Section G Function

- *Mobility - Self-Performance in **G0110 A to F** – collapse to (independent, needing cane/walker/wheelchair/artificial limb (or other device), but then independent, needing personal assistance, needing full lift, wheelchair by another person, bedbound (again, if multiple MDS are available, could state trend)
- *Other activities of daily living (ADL) **G0110 G to J** – N dependent on others/N tested (again, if multiple MDS are available, could state trend)

H0300 Continence – bladder – continent, leakage, occasional incontinence, diaper, catheter intermittent, catheter indwelling

H0400 Bowel Continence – continent, leakage, occasional incontinence, diaper

H0600 Constipation – none, managed with diet and activity, managed with medications, managed with disimpaction or enemas

Serious symptoms

- ***J0300 to J0600, or J0800 and J0850** Pain – (collapse to Moderate to severe most or all of the time, Moderate to severe occasionally, mild pain, no pain)
- **J1100** shortness of breath
- **J1700** Falls in past month

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[16] Altarum Institute Center for Elder Care and Advanced Illness (2016) *Report on Information Transition into and out of Nursing Facilities, including Potential Use of MDS*

K0200, K0300-310 Height and weight and recent change

K0510 Nourishment by IV, feeding tube, pureed diet, other therapeutic diet, or normal

L0200 Teeth and appliances (broken or ill-fitting denture, edentulous, abnormal mouth tissue, cavity or broken teeth, inflamed or bleeding gums, mouth pain or problems chewing) [Yes or No to these]

M0100 high pressure ulcer risk

*M0300 C1 or D1 or E1 or F1 or G1 Stage 3 or 4 or unstageable pressure ulcer present – if yes – M0610 for size - LxWxD

*M1030-M1200 Other skin problems – Y or N

O0100, O0400, O0500 Other treatments ongoing (medications to be sent separately)

O0250 A Influenza Vaccine (Y or N) and **O0250 B** if Y

O0300 A Pneumococcal Vaccine (Y or N)