

Cape Cod Healthcare:

Cape Cod Healthcare's Development and Implementation of Health Information Technology, Workflows, and Standardized Data Sets for the Electronic Transmission of CCDAs for Patients Discharged from Inpatient Hospital Settings to Post-Acute Care Organizations Serves to Advance Care Coordination Regionally

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Overview

In June 2016, the Massachusetts eHealth Institute (MeHI) awarded Cape Cod Healthcare (CCHC) a Connected Communities Implementation Grant to improve the coordination of care for patients in the Cape Cod community. CCHC includes Cape Cod Hospital and Falmouth Hospital and serves as the primary acute care healthcare provider for patients in Cape Cod. CCHC works closely with a number of post-acute care (PAC) providers to coordinate care for patients after they are discharged from the hospital. Prior to receiving the grant, the only way CCHC could communicate discharge information to certain organizations was manually.

The purpose of the project was to develop a consistently reliable way to track and manage the process of sending clinical information to outside care providers when a patient is discharged. For CCHC, this meant developing and implementing technology, workflows, and standardized data sets to send Consolidated Clinical Document Architecture (CCDAs) for shared patients to PAC providers.

CCHC established a project team of sponsors that included representatives from IT, clinical, finance, and administrative leadership and engaged the consulting firm ECG Management Consultants to serve as project managers and coordinate interactions with outside collaborating organizations. CCHC and ECG also worked closely with MeHI representatives who provided tools and resources to support the initiative.

The project began with over 30 potential collaborating organizations that were assessed for their readiness for participation (e.g., technical capabilities, resources, operational processes, time commitment). Following this assessment, CCHC identified 10 PAC organizations that would become collaborating partners for the duration of the project. These organizations were organized into two separate waves based on their level of readiness and ability to successfully implement the new workflows.

Organizations that had active Mass Hlway addresses; the technology in place to exchange information (via EHR or webmail address); and a willingness to commit resources to testing, training, and go-live support were assigned to wave one of the implementation. These organizations included JML Care Center, BAYADA Home Health Care, and Kindred at Home.

Organizations that required more lead time to properly prepare for the implementation were part of wave two and included Gosnold (a behavioral healthcare provider), Mayflower Place Nursing & Rehabilitation Center, the Pavilion Rehabilitation and Nursing Center, Seashore Point, Windsor Skilled Nursing and Rehabilitation Center, and Bourne Manor Extended Care Facility.

ECG worked with CCHC to develop a comprehensive Transformation Plan that detailed the timeline, resources, tasks, and budget required to execute the project. Over the next 18 months, activities were broken down into key milestones, as outlined below. During this time, ECG met individually with each collaborating organization to check in on progress, answer questions, and provide guidance/resources as necessary to achieve each of the milestones.

- **Milestone 1** focused on connectivity issues, initiating the development of clinical documentation standards, testing direct messaging and then finalizing documentation standards. CCHC used their inpatient EHR to generate the CCDAs that the unit secretaries sent to the PACs through the Mass Hlway using one of the following methods:
 - Direct webmail address to JML Care Center
 - Surescripts HISP to BAYADA Home Health Care (direct integration with EHR)
 - MedAllies HISP to Kindred at Home (direct integration into its EHR)
- **Milestone 2** required developing care coordination prototypes. These were created by documenting the workflows at each organization, developing process improvement plans, revising CCDAs to streamline the data content and make it more accessible to the collaborating organizations, and converting discharge summaries from transcription to front end-clinical templates;
- **Milestone 3**, CCHC reviewed and updated the process improvement plans for further streamlining and develop custom reports to track performance and pinpoint breakdowns in the processes that needed to be corrected.
- **Milestone 4**, these processes and workflows were expanded to the wave two collaborating organizations and became the foundation for the project's sustainability and expansion plans.

CCHC also hosted a series of on-site networking and educational events that presented project updates, training related to project activities, lessons learned, and educational sessions presented by ECG, MeHI, and the Mass Hlway. CCHC plans to expand the workflow with other organizations throughout the Cape Cod area, as well as introduce bidirectional document exchange that will provide CCHC real-time access to the patient's latest medical information upon admission.

The CCHC project team presented this Use Case at the May 7, 2017, Massachusetts HIT Council meeting as an example of a regional approach to the electronic sharing of patient health data. The council is charged with recommending HIT policy for the state.

Description of Use Case and Trading Partners

The Use Case focused on the electronic transmission of CCDAs when patients are discharged from its two hospitals to three PAC providers who historically receive high volumes of hospital referrals.

CCHC is the leading provider of healthcare services for residents and visitors of Cape Cod. CCHC has two acute care hospitals in Massachusetts, one in Falmouth and one in Hyannis; a skilled nursing and rehabilitation facility; an assisted living facility; five outpatient centers, and more than 450 physicians and 5,300 employees.

Wave One Collaborating Organizations:

Since 1989, JML Care Center, located in Falmouth, Massachusetts, has offered Cape Cod residents expert care for post-surgery rehabilitation, treatment to restore abilities following a stroke, long-term nursing care for complex medical issues, and assistance for individuals living independently.

BAYADA Home Health Care offers assistive care services in Hyannis, Massachusetts, including nursing, rehabilitative, therapeutic, and hospice services to children, adults, and seniors.

Kindred at Home, a national home healthcare provider, operates a location in Sandwich, Massachusetts. Its full range of services includes skilled nursing, physical and occupational therapies, cardiac and pulmonary care, neurorehabilitation, medication management, and hospice services.

Wave Two Collaborating Organizations:

Gosnold is the primary behavioral health treatment provider on Cape Cod and serves individuals and families affected by mental health and substance use disorders. For 40 years, Gosnold has provided an end-to-end continuum of care for residents in the Cape Cod region.

Mayflower Place Nursing & Rehabilitation Center is located in West Yarmouth, Massachusetts, and offers assisted living and respite care.

The Pavilion Rehabilitation and Nursing Center is an 82-bed facility in Hyannis, Massachusetts. It offers skilled nursing and rehabilitative, long-term, respite, and inpatient hospice care. It is managed by Landmark Solutions.

Seashore Point is a wellness and rehabilitation center and senior living community in Provincetown, Massachusetts, that provides short-term rehabilitative care, long-term care, physical and occupational therapies, and wound and medical condition care management.

Windsor Skilled Nursing and Rehabilitation Center is located in South Yarmouth, Massachusetts, and is a member of Berkshire Healthcare.

Bourne Manor Extended Care Facility in Bourne, Massachusetts, offers 24-hour skilled nursing, short-term rehabilitation, long-term care, and physical and occupational therapy services.



Goals and Outcomes

The project goal was to transmit 80% of CCDAs electronically to the PAC organizations at the time of patient discharge. This was measured by calculating the number of CCDAs successfully sent from CCHC's EHR (Cerner) to a collaborating organization via the Mass Hlway over the total number of outbound referrals sent to the same collaborating organization. Because this information came from two disparate data sources, it was incumbent upon CCHC to develop a custom report to measure the performance.

Perhaps the most valuable aspect of this report from an operations standpoint was that CCHC could now pinpoint which referrals did not have the CCDAs electronically sent upon discharge and troubleshoot accordingly.

As a result of the project, CCHC is well positioned to expand these processes to many more PAC organizations across Cape Cod and improve performance with existing partners, with a long-term goal of transmitting 100% of CCDAs electronically to all referral partners.

Lessons Learned

Project Team

CCHC's internal project team focused on the technical and operational tasks that it needed to accomplish to meet the project's objectives. CCHC assigned an internal project manager who led all of CCHC's internal developments, testing, go-live, and optimization efforts.

It was ECG's responsibility to manage the deliverables associated with the grant, plan and develop materials for the networking events, and coordinate activities with collaborating organizations. The CCHC project manager worked closely with ECG's project manager to ensure that activities were coordinated and executed successfully across all stakeholder groups. ECG also drew on similar project experiences to develop educational materials and facilitate discussions during the networking events.

Technical and Data Requirements

During the project, various unexpected issues arose, such as the need to upgrade the Soarian system in order to transmit CCDAs electronically to the PACs and the patient's primary care provider. The project's IT team was adept at troubleshooting these issues and worked closely with Cerner on the upgrade and other problems.

CCHC created work-arounds for staff workflows to enable the timely transmission of the CCDAs to the collaborating organizations. They reconfigured the system logic to prevent CCDAs from cancelling out if there is a delay in the timing of discharge.

CCHC initiated and completed the testing and go-live exchanges of the electronic documents, and developed presentations for quarterly meetings with the collaborating organizations to provide the HIT information necessary to implement the Use Case.

Additional due diligence on the part of the project's IT team was required to develop custom reports in order to track when CCDAs were sent along with a patient's discharge.

Integrating Workflow

Convening the collaborating organizations on group conference calls to address specific requirements of each Milestone was extremely valuable for troubleshooting and streamlining the processes for electronic exchange of pertinent patient health information. This was especially helpful to the development of new workflows. ECG worked closely with the receiving organizations to develop and strengthen workflows that adapted to CCHC's electronic data-

sharing processes. Moreover, CCHC hosted quarterly meetings where the PACs shared lessons learned, best practices and tools to develop new workflows.

Timeline

The project took place over the course of 18 months. The first milestone was delayed due to the fact that CCHC needed to upgrade their EHR system to accommodate the workflows. Once the technology was available, it took approximately 12 months to complete the testing, go-live workflow process improvement, and expansion plans.

Feedback from Staff

At the end of the project, collaborating organizations were asked to provide feedback on where to focus future improvement efforts. The most common requests included the following:

- The ability to add additional data to the CCDAs (e.g., H&P, assessment plan).
- The ability to see a patient identifier in the transaction list before opening the file (currently the webmail inbox of CCDAs omit the patient's name for security reasons)
- Organizations that use the Mass HIway maintain different workflows from those that continue to send information manually.

Staff Resources and Costs

CCHC used funding from the grant to cover five major components:

1. Costs associated with upgrading its Cerner Soarian system to be able to electronically send/receive CCDAs.
2. Expenses related to Mass HIWay subscription fees.
3. Administrative overhead supplies associated with the networking events and project materials.
4. ECG consulting fees.
5. Expenses incurred by the collaborating organizations in order to participate (e.g., costs to upgrade technology, Mass HIWay subscription fees).

Risks, Challenges, and Resolutions

Due to the varying levels of expertise and project readiness, organization types, and IT systems used across organizations, finding effective ways to communicate and coordinate activities was one of the biggest challenges. To control this, ECG introduced major project activities to the collective group of PACs and then followed up with each organization to explain how it should interpret the directions for its specific situation. The major risks and challenges included:

- Many collaborating organizations continued to print CCDAs for providers to quickly reference as a temporary step until the structured clinical data could interface directly into their EHRs and/or the providers felt more comfortable using EHRs;
- Because there is no way to accurately track the exchange of paper, organizational administrators were limited in their ability to measure and control these processes;
- Limitations in EHR functionality proved to be one of the biggest barriers for all organizations.

To address these challenges, CCHC is working with its EHR vendor to add additional data elements to the CCDAs and integrating more structured fields from the CCDAs to various EHRs.

Recommendations

There were many lessons learned by CCHC in its work with such a diverse group of provider organizations, including:

- Ensure that adequate resources are allocated to developing future-state design as well as testing, training, and supporting the changes.
- Consider an iterative process to decrease the disruption to operations and staff.
- Take advantage of resources such as MeHi and the Mass HIway for guidance and as sources for connections.
- Organizations that have not previously been the focus of EHR incentive programs (e.g., MU, PQRS) may require additional effort to upgrade technology and implement IT-centric workflows.
- Ongoing performance improvement should be factored into all future-state designs; workflows should be

designed to allow performance to be tracked and reported.

- Technology limitations are common, and organizations should be prepared to work closely with vendors to develop the necessary functionality to support the changes.

How Will You Apply This Experience to the Next Big Thing?

CCHC plans to expand electronic data exchange to many additional organizations in the region and has already identified future collaborators. CCHC will continue to promote standardized workflows to staff, collaborate with Cerner to add additional data elements to the CCDAs, focus on integrating more structured fields from the CCDAs to various EHRs, and identify mechanisms to better alert staff when a patient is discharged.



Resources

The CCHC project team and wave two collaborating organization, Gosnold, Inc. participated in the MeHI Learning Collaboratives and utilized MeHI's HIE Use Case Planning Form and HIE Technology and Workflow Project Plan as helpful tools to support their work on the project.

<https://mehi.masstech.org/support/learning-collaboratives>

<https://mehi.masstech.org/programs/past-programs/connected-communities/connected-communities-implementation-grant>

All resources were shared with and utilized by many of the collaborating organizations and included specific information on enrollment and rates for Mass HIway services.

<http://www.masshiway.net/HPP/HowtoJoin/StepstoEnroll/index.htm>

<http://www.masshiway.net/HPP/HowtoJoin/Rates/index.htm>