

HNHB LHIN eHealth Office Status Report

March 2014

The HNHB LHIN eHealth Office manages the advancement of regional eHealth initiatives and priorities. HNHB LHIN eHealth, in concert with Hamilton Health Sciences are leaders in the advancement of eHealth systems and solutions which enable improvements in healthcare delivery, patient care and safety.

The HNHB LHIN eHealth Office also works in partnership with LHINs, HSPs, CCACs, eHealth Ontario, Connecting South West Ontario (cSWO), Health Links, providers and other partners to expand and leverage eHealth assets such as ClinicalConnect, Integrated Decision Support, Ontario Lab Information System, Resource Matching & Referral, Integrated Assessment Record and emerging Health Links care coordination tools.

The eHealth office provides management services such as regional eHealth strategic planning, stakeholder engagement, communication, adoption, transformation and change management, proposal preparation and negotiation, program and implementation management and enhancement planning. The HNHB LHIN eHealth Office and Hamilton Health Sciences are Solution Providers in the context of cSWO and the HNHB LHIN eHealth is also a cSWO Delivery Partner for eHealth adoption and change management.

Key eHealth Office 2013/14 Updates

- eHealth Ontario is funding via the cSWO Program the expansion of ClinicalConnect to two additional LHINs (SW and ESC LHINs) and resources for Change Management and Adoption. Integration of SW and ESC hospitals are scheduled for completion in 2015. Initial hospitals in SW went live March 2014. The CCACs in SW and ESC LHINs are tracking to be integrated to ClinicalConnect in March 2014 along with expanded CCAC data.
- The \$1M Canada Health Infoway-funded project to rollout ClinicalConnect Mobile and to evaluate patient care and workflow improvement is nearing completion (about 850 providers are now using ClinicalConnect on mobile devices – an increase of 200 over previous year). A final project evaluation report available March 31.
- Improving inter-operation with hospital systems and community electronic medical records (EMRs) with single sign on and contextual launch to ClinicalConnect (live at HHS, NHS, Jo Brant, and Brantford). Other hospitals and physician EMRs in HNHB and WW LHIN are in progress.
- Integration of the Ontario Laboratory Information System (OLIS) private / public lab data is in conformance testing. Live date tracking for Spring of 2014.

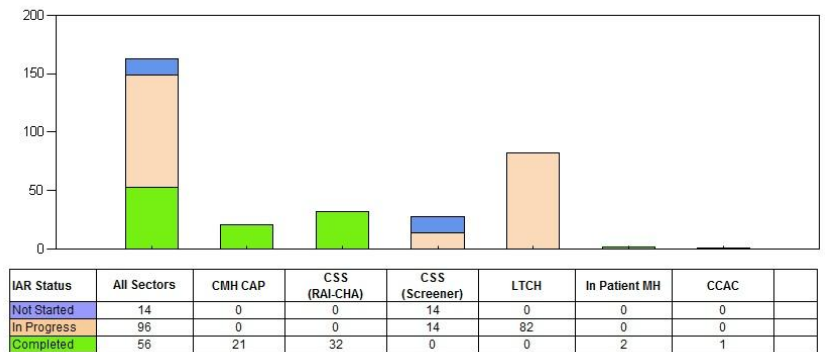
Mobile Survey

- 70% feel more confident in care decisions with information at their fingertips
- 75% are less likely to order a duplicate test with easier access to current results
- 80% agree mobile devices provide faster access to vital patient info, facilitating quicker consultations, diagnostic testing, interventions and transitions

- A separate TPA near finalization to leverage the existing ClinicalConnect integration to feed OLIS with hospital lab data. Work is projected to begin in April 2014 timeframe.
- Grand River Pharmacy Data was added and went live. Other WW LHIN hospitals Pharmacy data be added and be completed early 2014.
- Health Outcomes for Better Information and Care (HOBIC) Nursing Assessments went live Jan 2014. RNAO / HOBIC team will be completing evaluations during 2014.
- New Diagnostic Imaging viewer for PACS is available in ClinicalConnect (eUnity). Supports various browsers. Work to add Cardiology images are underway.
- Diagnostic Imaging repository integration work is progressing. Phased approach approved. Phase 1 to include both JBMH & NGH, proposed go-live date is June 4.
- Collaborating and planning with Health Links to leverage and enhance eHealth assets. One initiative includes the display of the frequent visitor / cohort in ClinicalConnect. Live date expected March 2014. Other considerations include functionality or capability such as eConsult, eNotification and an interim shared care plan repository (See Appendix for more information).
- Project to link with CCAC CHRIS eReferral through ClinicalConnect and passing relevant client information is in progress. Live expected Q2 of 2014. (See Appendix for more information)
- Planning for the new provincial Hospital Report Manager standard is complete and initial work in progress. Funding proposal for full implementation is being reviewed by eHealth Ontario.
- IDS Data Repository and Business Intelligence Solution – fully operational, expanding data sets. Implementing in Toronto Central (TC) LHIN, Planning SW LHIN. Working in progress to add additional data elements. Supporting Health Links projects. Working with eHealth Office to support integration Health Links cohort notification in ClinicalConnect.
- Telehomecare uses information and communications technology (ICT) to remotely link providers and patients. The eHealth Office will support Telehomecare alignment to our local IHSP priorities through initial review and planning.

- ALC WTIS upgrade planned and pending funding.
- The Integrated Assessment Record (IAR) is an application that allows authorized users to view multiple community based assessments for a single patient. HSPs and community care workers use the IAR to view assessment information from different source organizations through a single clinical viewer. The OCAN tool was first deployed in the Erie St. Clair LHIN and then went on to be deployed provincially. The IAR tool through the SWO cluster cSWO Project is planned to be integrated to ClinicalConnect. These combined assessments will be implemented throughout the SWO cluster and will be based on delivery partner implementation plans. This is a MOHLTC funded initiative via Community Care Information Management (CCIM). The LHIN eHealth office provides project management services to facilitate and provide local support for this project.

IAR Implementation Status for Hamilton Niagara Haldimand Brant LHIN at February 3, 2014 for IAR Implementations Targeted for Completion by March 31, 2014

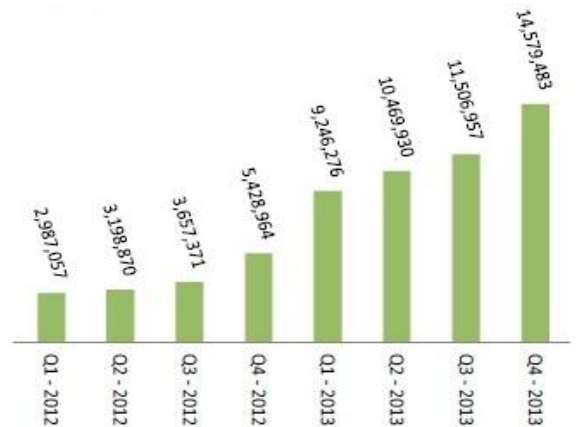


- A multi-year Transfer Payment Agreement (TPA3) with eHealth Ontario is in process to support ClinicalConnect. eHealth Ontario has included a number of initiatives such as:

- ODB (prescription drug data) available in ClinicalConnect
- Leveraging the eHO One ID in a federated model for authentication of ClinicalConnect Users
- Integration with the DI-r Common Services Project which is uniting Ontario's four regional Diagnostic Image repositories, NEODIN, SWODIN, HDIRS and GTA West.
- Integrate a Clinical Data Repository (CDR) to ClinicalConnect by making necessary enhancements to ClinicalConnect to retrieve and display primary care data from the CDR Pilot
- IAR SWO Integrated Assessment Repository (IAR) that enables access to standardized assessment data from key community sectors via ClinicalConnect.
- Integration to the provincial Client and provider registry starting with an initial pilot

Stakeholder Engagement/Awareness/Education Activities

- Adoption and change management resource capacity being added to the LHIN eHealth office as part of the cSWO (Connecting South Western Ontario) funding. Additional HHS ICT has added supporting staff.
- A new affiliate credential in place and non-credentialed physicians being on-boarded.
- Over 7,000 ClinicalConnect users - an increase of about 1,000 since last year and access of reports and results continuing trending upwards now about 14 million data accesses per quarter. (See graph)
- Working with all cSWO Change Management and Adoption, Communications, Regional Solution providers, teams and working groups.
- Updating and formalizing communication policies and procedures and training packages, awareness and educational tools, videos, eLearning resources
- Providing education and training to cSWO partners
- Refreshing ClinicalConnect website – now live
- Working collaboratively with other LHIN Delivery Partners on benefits realization and program metrics
- Adding Change Management / Transformational Specialists
- Electronic eUpdate newsletter subscription growing (over 1,200). Active Social Media presence and many following ClinicalConnect. Developed new user forum to go live spring 2014.



- Notable Recent Presentations / Engagements:
 - Jan 29, 2014 - Hamilton Academy of Medicine's 97th Annual Clinical Day. Presented ClinicalConnect and exhibited at kiosk.
 - Jan 30, 2014 - eHealth Advisory Committee
 - Feb 23-27, 2014 – HIMSS International. Presented ClinicalConnect.
 - March 20, 2014 – Digital Health Expo at McMaster's Ron Joyce Centre. Promoting careers in eHealth.
 - April 9, 2014 - West Lincoln Academy Day. Participation details TBD.
 - April 25, 2014 – Apps for Health at Mohawk College. Participation details TBD.
 - June 1-3, 2014 – COACH. Accepted for ePoster. Participating in panel with CHI/Ken Sutcliffe (COO), Dr. Glen Geiger (Ottawa Hospital), Partner with Hamilton EcDev in exhibition (includes Hamilton EcDev, McMaster, Mohawk, Oscar, ClinicalConnect)
 - TBD - LHIN-wide cSWO Launch Event for ClinicalConnect's next phase of adoption
 - HIMSS Ontario / COACH – Details TBD
 - Partnership with Mohawk College. New video is available on website.

Respectfully Submitted,

Mark Farrow,

eHealth Lead and CIO

(Prepared with Dale Anderson, Senior Manager, eHealth)

Appendix

ClinicalConnect Provider Portal / Electronic Health Record

Overview

Today, Physicians and other Healthcare Professionals across a broad region have **secure, real time, anytime & anywhere access** to their patients' electronically stored records via the internet. ClinicalConnect™ is a Regional Electronic Health Record (Provider Portal) that integrates data from 28 Hospitals plus Community Care Access Centres (CCACs) and Cancer Centres within the regions of Hamilton Niagara Haldimand Brant (HNHB) and the Waterloo Wellington (WW) Local Health Integration Networks (LHINs) representing over 2.3 Million patients. ClinicalConnect is currently accessed by thousands of hospital and community physicians and healthcare professionals across the continuum of care. eHealth Ontario has funded the expansion of ClinicalConnect to South Western Ontario. **Through the cSWO or Connecting South Western Ontario program ClinicalConnect will provide the Regional Clinical Viewer for 71 Hospitals, 3.6 million patients, over 46,000 healthcare users and 1800 healthcare organizations and providers across multiple sectors. This will provide an Electronic Health Record for 1/3 of the Province of Ontario. HNHB LHIN serves about 1,246 HSPs as follows: 21 hospitals, 1,026 Primary Care providers, 194 Community Sector providers, and 5 Public Health Units.**

ClinicalConnect has become a fundamental tool and framework to bridge the gap between acute care facilities and the community where access to patient information was often found in silos or was difficult to access in a timely manner. Health care professionals, such as family doctors and health care teams can gather essential information in seconds resulting in quicker diagnosis and treatment planning. This helps health care professionals make the best decisions when it comes to their patients' care and reduce the need for repeat lab and diagnostic tests and the time hospital staff spend sending patient information and test results to primary care providers. In the community, health care providers have access to patient medical information in one place, irrespective of where the patient was admitted or treated. Community physicians are integrating ClinicalConnect into their office workflow. They can also electronically transfer lab results and reports via the integrated hospital results manager process. This helps speed communication and ensures data accuracy since information is electronic. Continuity of information is improved. ClinicalConnect supports secure access via Mobile devices so physicians and healthcare providers can be better connected to their patient's ongoing care. This is improving patient care, safety and outcomes.

"I don't think I truly appreciated the value of what a tool like ClinicalConnect could bring until I became a patient.

I became acutely ill. This started a long journey to many different specialist visits & numerous tests at different locations to find a diagnosis and a resulting longer and longer story.

I have personally experienced the benefit of ClinicalConnect. It provides practitioners with the complete patient picture and timely access to results."

Joanne Whittaker, RN BScN

The established infrastructure and integration is being further enhanced through additional data and by leveraging to support Health Links and patient care improvements. Options are being considered to develop a provider / clinician dashboard or virtual medical office environment to evolve the One Stop shop for medical information. This would provide personalized and additional contextual links to the wide array of information.

More details on ClinicalConnect recent enhancements and in process initiatives

Ontario Lab Information System

- ClinicalConnect has integrated Hospital Based information. Integration to the Provincial OLIS (Ontario Lab Information System) is underway to add Private Labs and Public Health lab to the existing Hospital Lab data and other information). Targeted availability Spring 2014.
- ClinicalConnect is being leveraged to feed the OLIS provincial data repository with regional hospital lab information versus completing multiple separate hospitals to OLIS integrations. The initial scope is with HNHB LHIN hospitals. Further expansion will be determined by OLIS. Expected to begin April 2014.

C-HOBIC or Health Outcomes for Better Information and Care

- The C-HOBIC or Health Outcomes for Better Information and Care outcomes report went live ClinicalConnect early 2014. This provides standardized clinical outcomes information on patient's functional status, continence level, symptoms (pain, nausea, fatigue, dyspnea), safety outcomes (falls, pressure ulcers) and therapeutic self-care on admission and discharge to assist you in organizing and coordinating care for each patient. The assessments are completed at both admission and discharge. The functional status and related changes can support clinicians in ensuring the development of coordinated care plans for patients, e.g. on discharge from acute care to home, long term or primary care. The HOBIC team will be conducting an evaluation and planning enhancements.

Community Care Access Centres (CCACs)

- CCAC data is integrated in ClinicalConnect from HNHB and WW LHINs and includes Nursing Services the patient is receiving at home, medical and supporting contacts and whether the patient is waiting for long term care placement. The information can assist with Family Physicians to suggest changes to patients at home services. Early 2014 additional CCAC data will be available such as expanded admissions and services information, intervention focus, service plan goals, care notes, treatment orders, provider instructions, allergies, diagnosis, safety & referral information. Additionally two more CCACs will be added from ESC and SW LHINs.

- **Launch CCAC e-Referral through ClinicalConnect by providing a link**

Work is in process where ClinicalConnect will launch the CCAC CHRIS system portal and auto populate or pass all of the relevant client information that ClinicalConnect has collected to the CCAC referral as depicted below. The user would then fill in the missing pieces and press “Save and Send” to create the referral in CHRIS. Availability expected in Q2 of 2014.

CCAC Referral

Referral Source Information	
CCAC	Select
Referral Source	HAMILTON HEALTH SCIENCES CORP JURAVINSKI
Estimated Date of Discharge	

Patient Details and Demographics	
Health Card Number	Version Code
Reason For No HCN	Province Issuing Health Card
Surname	Given Name
Address	City
Postal Code	Tel#
Date of Birth	Gender
Patient Speaks/Understands English	Interpreter Required
Primary Language	
Primary Contact Person	
Relationship	
Tel#	Alternate Tel#

Health Information	
Community Primary Health Care Provider	Yes No
Title	Surname
Given Name	
Relevant Diagnosis	Unknown
Infection Control	
Medical Orders	Select
Referring Facility/Unit	ER
Facility Contact Number	
Completed By	Title
Contact#	Date

Save and Send

Diagnostic Imaging Repository

- Currently ClinicalConnect includes Diagnostic Imaging or Radiology Reports and in cases where there were performed at Hamilton Health Sciences the Image is available via a web-based image viewer.
- Access to the images performed at other regional hospitals will be provided through integration to the Diagnostic Imaging Repository, a provincial initiative where hospitals provide diagnostic images to a regional database. In the case of South West Ontario all hospitals contribute images to a repository located and managed in their behalf by SWODIN or the South West Ontario Imaging Network located in London Ontario. ClinicalConnect will be able to access these images as an adjunct to the existing Diagnostic Imaging reports in early 2014.

Health Links defined Frequent ED Users

- In early 2014, an indicator in ClinicalConnect will be available for patients that are Health Links defined Frequent ED Users. This is facilitated through integration to the regional Integrated Decision Support systems. From this indicator the care provider will be provided relevant information with the intent to contextually link to a shared care plan once available. The existing ClinicalConnect integration offers the opportunity to “plug in” a shared care plan when available and also provide easy “one-stop” access to other patient information by the patients care provider.

Utilizing Clinical Connect to “Flag” Health Links Patients for Integrated Care Planning

- Utilizing ClinicalConnect to “flag” Health Links patients for Integrated Care Planning
- High user patients are determined using Integrated Decision Support System
- Plan is to link to a Shared Care Plan once available

Logged in as: LH1M4 LH1N eHealth Office Training 1
Monday, July 1, 2013

MARTIAN, MARVIN Allergies

Attending Physician:	Responsible: Most	Encounter Date:	09/11/2010 13:32	Status:	ADM IN	Height (Metric):	276 cm
MRN:	H00010051	DOB:	25/02/1937	Location:	ONCOLOGY	Weight (Metric):	72.57kg
Account Number:	HA000025/10	Admit Age/Gender:	77YM	Room/Bed:	E3-06/2	SAI:	0.5
Facility:	Juravinski Hospital	HCN:	-ON			BSA:	2.62
Reason For Visit:	PHASOR BURN						

Welcome
Welcome to the MEDSEEK Clinical Portal

This icon ** appears in the Patient Header to indicate that the selected patient is in a Health Links high user cohort. When the user mouses over the icon, a text field appears indicating which Health Link (e.g. Hamilton Central) the patient belongs to. When the user clicks on the icon, a site is launched where the patient's Care Plan can be viewed.

The Patient Header appears coloured red, indicating that the patient selected is in a Health Links high user cohort.

** sample icon

Secure Single sign on and patient contextual launch from hospital or community EMRs

Accessing the regional view of the patient via ClinicalConnect is also being supported through the implementation of the facility to single sign on and patient contextually launch into ClinicalConnect from Hospital Information Systems and Community Physician EMRs. This interoperability eases the physician and caregiver's ability to access the breadth of the patient's information without having to leave their core medical information system or EMR. A number of regional hospitals have this in place and are expanding. Other hospitals and EMR vendors are in process or being planned.

Hospital Report Manager / Electronic Report Distribution

In addition to viewing information in the ClinicalConnect portal, Discharge Summaries along with other hospital reports and lab results can be electronically received by community physician's that have subscribed to the ClinicalConnect EMR Download facility (about 200 doctors). A number of Physician EMRs are supported such as Practice Solutions, Oscar, Nightingale and Optimed. Work is underway to support the Provincial HRM standard in ClinicalConnect. The plan is to have all the hospital reports across SWO be delivered via ClinicalConnect to HRM. HRM in turn distributes to Physician EMRs. HRM will also include other reports from other LHINs across the province as other LHINs feed HRM. The HRM proposal is being reviewed by eHealth Ontario.

Health Links Proposals (Funding Requirements Noted):

eConsults

Champlain Local Health Integration Network has implemented a SharePoint based e-Consultation system that allows providers to complete e-Consultations online. This initiative proposes that the Champlain eConsult system is leveraged by installing (duplicating) an instance for use in the HNHB LHIN. eConsult links the primary care physician with the specialist. Results have been quite effective in improving delivery of care of their patients. It also allows us to collect valuable data to better characterize this type of service, aiding the province in developing the broader strategy and prepare for general deployment.

eConsult Overview

Primary Care Provider uses a web-based template which prompts for key information and may attach additional information (test results, images and even consult letters generated by EMR)

- Specialists reply to specific questions, request for more information, recommend a referral (along with any tests to be completed beforehand)
- System uses secure technology based on Microsoft SharePoint
- System does not exchange any case information via email - email is only used for notifications that are sent to individual clinicians regarding a "new" action relating to their case (eg "an eConsult has been assigned to you", "an eConsult you submitted to Cardiology requires more information", or "an eConsult you submitted to Neurology has a response" etc.)

- The actual information resides in the secure site in Sharepoint that can only be viewed by the PCP and the Specialist after being authenticated. The system can produce a record of the emails sent back and forth for the physician's records.
- Once the PCP decides the case can be closed, they complete the survey, and a time-stamped transcript of the case is generated as a pdf file that is retained on the site for both the PCP and the Specialist. They both have the option of filing the pdf in their EMR, copy/paste from it, print and place in their paper file
- Patient identification is not required (although the application has been through TRA and PIA and is compliant with Privacy requirements)

By leveraging existing hospital SharePoint infrastructure such as in place at Hamilton Health Sciences, eConsult can be implemented incrementally, for an estimated cost of approximately \$30,000. Optionally integration with ClinicalConnect is estimated at \$25,000.

Infrastructure Configuration

- Leverages HHS Sharepoint environment but with incremental disk space, software, licenses
- Assumes Champlain provision of Workflow and Forms
- Professional Services to install Champlain BASE system

Sharepoint Disk Space / Licenses / Technical Services	\$10,000
Professional services to design and configure care plan	\$20,000
Contextual integration with ClinicalConnect (Optional)	\$25,000
Total	\$55,000

NOTE: Operational costs estimated to be approximately \$100,000 as per Champlain experience as follows:

	Time (minutes)	Number (per year)	Total (Hrs)	
User Setup/Registration/Trng (minutes/user)	30	200	100	(assume 200 new users in year 1, individually trained)
Assignments (minutes/case)	0.25	1000	4.166667	(assume 1000 cases in year 1)
Support (minutes/week)	900	52	780	assume 2 days/wk on average
Administration (minutes per month) * specialist schedules * monitoring and follow-up * reporting * billing * ...	1800	12	360	assume on avg 4 days/month
TOTAL (hours/year)			1244.167	
TOTAL (37.5 hour week/year)			33.17778	
Cost/week (\$)			1500	between 1500-2000?
Total Admin Cost per year			49766.67	
Total Specialist cost per year	15	1000	50000	
TOTAL COST PER YEAR			99766.67	

Care Plan virtual repository

Similar to eConsult, Sharepoint environment could be utilized as an interim repository for a shared care plan. Services to design and configure the CCT would be required. Contextually passing information from ClinicalConnect is an option.

Sharepoint Disk Space / Licenses / Technical Services	\$5,000
Professional services to design and configure care plan	\$25,000
Contextual integration with ClinicalConnect	\$25,000
Total	\$55,000

eNotifications

Sending notifications leveraging the existing ClinicalConnect integration is being planned. If a patient has a hospital visit (ED, Inpatient, Outpatient) notifications can flow to community physicians or to the CCAC or via HRM as a report for distribution. Features intended include visibility into the association of respective Health Links and user preference settings. The complexity is greater than the simplified CCAC Notification noted earlier and it is expected sophistication will evolve.

Leverage ClinicalConnect to send notifications to providers based on patient hospital encounters	\$50,000
Project Management	\$25,000
Total	\$75,000

Considerations

Today the ClinicalConnect viewer has all reports including Discharge summaries from hospitals across HNHB LHIN and WW LHIN. (Over the next 18 months it will be expanded to SWO). Discharge summaries along with other reports are contained in the Transcription Module of ClinicalConnect. There are options to sort and filter reports. For example there are quick filters today for Oncology and HOBIC Reports but others such as Discharge Reports could be created. Some community medical clinics or Family Health Teams utilize some of existing census functions in ClinicalConnect to help manage the 7 Day Discharge recall program. ClinicalConnect has existing functionality to manage patient lists with various census lists that can be leveraged to support Health Links and other needs.

Emergency Services is another area where ClinicalConnect may support improved information access and efficiencies.

ClinicalConnect interoperability of secure messaging services is being reviewed.

Anticipated future integration may include additional Oncology data (to add to the existing progress and consult notes), Nursing and physician documentation.

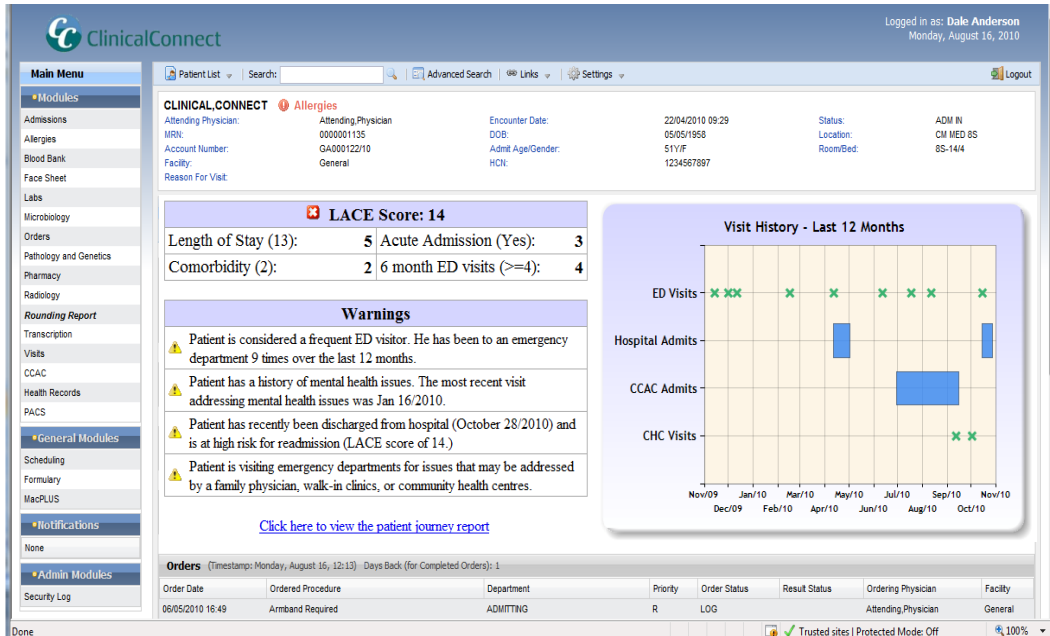
Leveraging the data rich Integrated Decision Support system (IDS) offers further opportunities for care improvements.

IDS – ClinicalConnect Integration to provide ‘intelligent’ Patient Profile to front-line.

Leveraging the Integrated Decision Support system data provides further powerful opportunities to support health care improvements and potentially avoid re-admissions. Combining IDS non-real time data and business and clinical analytics and reporting tools with real-time ClinicalConnect, opportunities such as the following concept could be achieved.

Profile created from IDS historical data containing:

- Counts
- Analytical measures
- Predictive measures
- Scoring e.g. LACE score
- Provides valuable complementary information to physicians at the point of care
- Provides valuable insight on patient susceptibility at the time of discharge (eg. Likelihood of readmission within 30 days)



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