Wellsoft EDIS at Kingston General & Hotel Dieu Hospitals

Two Hospitals One System

Kingston General Hospital, a 449 bed research and teaching hospital, is Southeastern Ontario's leading centre for complex-acute and specialty care. KGH annually manages care for more than 57,000 ED patient visits.

Hotel Dieu Hospital, an Urgent Care Centre and ambulatory care hospital in Kingston provides care for more than 50,000 patient visits annually.

KGH and HDH are academic teaching hospitals which share a common patient population.

Both are affiliated with the Department of Emergency Medicine at Queen's University in Kingston. Residents are trained to meet the Emergency Medicine requirements of the Royal College of Physicians and Surgeons of Canada.

Residents and physicians work at both hospitals.

They are independently run corporations with separate governance.

Two affiliated teaching hospitals in Kingston, Ontario started with the traditional whiteboards and paper charting familiar to all emergency staff and then progressed to a fully automated and comprehensive EDIS that is now the foundation of high quality and excellent patient care

In 2010, the Emergency Department (ED) at Kingston General Hospital (KGH) and Hotel Dieu Hospital (HDH) Urgent Care Centre (UCC) were faced with operational metrics which exceeded provincial targets. *A plan was needed to increase efficiencies so that overall patient Length of Stay, Wait Times and Turn-Around-Times could be improved.* In addition, the mounting concerns of clinicians and staff about the sustainability of using manual processes at both sites led physicians and ED/UCC leadership to look at ways to automate and increase workflow efficiencies. The plan included implementing a software solution to automatically track patients throughout the ED/UCC encounter; manage orders and access results; facilitate ED/UCC management; incorporate internal and external reporting; and ensure a comprehensive patient record. The South East LHIN* provided one time funding to support the purchase of an EDIS.

Wellsoft's Emergency Department Information System (EDIS) was selected as Wellsoft best met KGH/HDH's requirements for features, service and support. IT integration requirements were met as Wellsoft EDIS supports HL7 integration with KGH/HDH hospital and ancillary department systems. In addition, Wellsoft EDIS runs on one centralized, virtual server, hosted at KGH. EDIS capabilities are extended to HDH from this central location. In addition, a centralized, clinical data repository of ED/UCC visits is used by both locations.

A "phased" implementation approach was followed as neither organization had previous experience with electronic documentation or Computerized Provider Order Entry (CPOE). In addition, there was a requirement to keep both locations fully functional during the implementation phases. This approach allowed the teams to manage change and to help the staff at both KGH/HDH adapt to the new workflows during and after the go-lives for each phase. Patient Tracking was implemented in 2011. Electronic Nursing and Allied Documentation was implemented in 2012 and Physician Documentation with the electronic capture of OHIP billing codes was implemented in 2013. CPOE and automatic results tracking were implemented in 2015. Today, KGH and HDH continue to look for ways to improve efficiencies and leverage Wellsoft EDIS to meet departmental, hospital and provincial requirements.

"Implementing an Emergency Department Information System is a process not an event!"

* The South East Local Health Integration Network (LHIN) is one of 14 networks established by the province of Ontario to plan, manage and fund the health care system at the local and regional level. Covering a geographic area of approximately 20,000 square kilometres, the SE LHIN serves a population of approximately 500,000 people.

Wellsoft EDIS
at a Glance
for KGH/HDH

- Patient Tracking
- Admission Tracking
- Registration Tracking
- Nursing Documentation
- Physician Documentation
- Allied Documentation
- CPOE (Order Entry)
  - Lab
  - Radiology
  - Med Orders*
- Orders Tracking
- Results Reporting
- Unresolved Issues Tracking
- Discharge Instructions
- Prescriptions
- Weblinks to Hospital Policies/Protocols
- Standard/Custom Reports
- ERNI Reporting
- OHIP Billing Codes
- Ontario Limited Use Codes
- Integration/Interfaces
  - Inbound ADT
  - Bi-Directional ORM (Orders)
  - Inbound ORU (Results)
  - Outbound MDM
- Clinical Data Repository

With built-in HL7 compliance, Wellsoft EDIS easily meets interoperability needs by integrating with hospital wide and ancillary department systems.

Wellsoft EDIS enables timely and accurate pay-for-performance, with billing tied to clinical documentation.

The reporting capabilities embedded in Wellsoft EDIS help meet ERNI requirements.

*non-interfaced

Requirement Met: Track Patients and Measure & Reduce Patient Wait Times

Prior to implementing electronic patient tracking, it was difficult to locate and track patient movement in the ED and UCC. This resulted in the ED/UCC staff spending time looking for patients and locating charts. Lab results were often sent to the wrong area in the ED – adding to the time spent tracking down the information.

Patient encounters were manually tracked on area specific "grease boards" with symbols and notes drawn by hand to identify certain patients. For example a "heart" was drawn on the grease board to show a "cardiac patient". Charge Nurses could not see from one area to another due to the physical layout so video cameras were installed in each area and the charge nurse toggled between views of different grease boards.

Requirement Met: Comprehensive Patient Record

Prior to implementing electronic Nursing and Physician documentation, KGH and HDH used paper charts. It was difficult to record a patient's progress in the ED/UCC. Notations made were often illegible; charts were misplaced and unavailable for scanning when a patient was admitted to the hospital. Charts were not presented in an easy-to read format which was frustrating for staff on inpatient floors and for the primary care provider. In addition, it was not easy to provide a complete patient chart for consulting physicians.

Requirement Met: Automate Billing & Coding

Prior to automating the documentation and billing processes, billing and coding was a paper based, time-consuming process that was not easily tied to clinical documentation. When the Medical Records staff discovered a deficient or incomplete patient chart it was placed in a "Yellow Folder" which was sent back to the physician for review and completion. If deficient charts were not corrected in the allotted time for response, that physician's privileges could be suspended. Shadow billing for physicians followed a separate paper based process. Incorporating automatic billing capture as a byproduct of documentation was needed to improve medical records coding.

"With Wellsoft EDIS we have a bird's eye view of patient care from the moment they arrive until the moment they leave."

"Many feared that an EDIS would slow down productivity and make wait times worse for patients. With Wellsoft EDIS productivity improved. We are more organized, faster and can handle multiple patients at the same time."

"Our Bed Allocators use their own tracking display of the Emerg – which dramatically improves the bed assignment and inpatient admission process – saving 60-90 minutes for each admission."

"I can document a complex chart in 2 minutes. The time savings, in addition to charting, is huge."

"We no longer have to take the time to manually place orders on paper, track down results, or find clinical information that used to be kept in multiple places in the department."

"We cannot remember the last time that an ED Attending was on the "Deficiency List". With Wellsoft EDIS we know when the patient visit is over we are getting a complete, legible medical record."

"Our primary care physicians have a post-visit patient record that is designed for them."

"With legible documentation, medical coding is easier and more accurate."

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Requirement Met: Automate Orders & Results

Prior to implementing CPOE for medication, laboratory and radiology orders, paper order sheets were used. Key information such as weight and height was often missing. The manual review process used to find missing information extended the wait times for patients. HDH sent all lab specimens to KGH by courier – with accompanying paper orders. Missing or illegible information had to be found or corrected, resulting in longer wait times for bloodwork.

While lab and radiology results were available online, there was no automatic notification that results were available. A significant amount of time was spent calling the lab and radiology departments to track results status. Paper copies of results were "auto-printed" which resulted in duplication and excess paper. Staff had to take the time to match the results with the patient chart and the clinical team so the next step in patient care could be performed.

Requirement Met: Data Management - Identify & Eliminate Bottlenecks

Prior to the EDIS implementation, data collection was inefficient and manual which limited the ability to have immediate access to ED measures – such as physician initial assessment time (PIA), real-time average Length of Stay (ALOS), total holding time, time to consult, and time to admit. There was an overall lack of awareness of the actual length of patient visits. Identifying inefficiencies or bottlenecks in the treatment process was a challenge. Resource allocation could not be effectively managed as baselining triage and admissions processes was limited. Collecting accurate data on wait times for external reporting as part of the Emergency Room NACRS Initiative (ERNI) was difficult. Analyzing trending data was time consuming.

Requirement Met: Accommodate Unique Workflows But Act As One System

KGH has an Emergency Department and HDH is an Urgent Care Centre with a shared patient population and physicians who work at both locations. Accommodating different workflows within the same system was required. Having a centralized clinical data repository to provide information on patients who visit either KGH or HDH was needed to ensure continuity of care for patients that start at one site and transfer to the other. The ability to generate reports for each location and for both in aggregate was a time consuming and inefficient process.

Wellsoft EDIS has met the requirements set forth by KGH and HDH

With all key operations automated - patient tracking, orders, results, report generation, billing and coding - and a comprehensive patient record - KGH and HDH has seen:

- Reduced Patient Wait Times
- Improved Clinical Workflows with Consistent, Accurate Documentation
- Shortened Length of Stay
- Improved Reporting Capabilities
- Timely Communication and Feedback
- Time and Cost Savings

"It is handy to have color coding on the Patient Track. When lab and diagnostic results are posted the colors tell our physicians what to do next."

"What used to take 40 minutes for a paper order to reach x-ray and for a tech to be paged now is done in seconds. An electronic order is placed, the tech is automatically notified and the patient is on their way to radiology."

"The Length of Stay for patients has been shortened dramatically. Just the lab orders and results turnaround alone has dropped from 90 minutes to less than 10 minutes. Using Wellsoft EDIS for CPOE has made all the difference."

"We now have instrument ready lab specimen collections and have realized improvements in quality and cost."

"Wellsoft provides real-time data and immediate feedback for our staff. "

"Reports that used to take a month or more to generate are immediately available."

"With Wellsoft EDIS, we track three key status indicators on our "Huddle Board". We post our targets and daily results for "Time to Physician Initial Assessment" and "Length of Stay" (for both minor and for complex non-admits). Feedback for staff is immediate and timely."

"With two hospitals that support a single patient population, we needed a system that supported a single patient experience - and one where the patient visit record followed the patient. We have that with Wellsoft EDIS."

"Communication with our patients, their families, and primary care physicians is improved. All now have a usable summary of patient care and discharge information."

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Implementing an EDIS in your hospital Emergency Department? Words of Advice…

….Focus on Efficiencies
- IT projects should be for the sake of the patient - improving workflow efficiencies ultimately benefit the patient
- Identify and baseline measurable outcomes before go-live; use to manage and continually improve after go-live
- Use EDIS to improve efficiencies for others (e.g., lab specimen collection; primary care offices, patient communications)

….Have Dedicated Team Members and Stakeholder Commitment
- A 100% dedicated project lead makes all the difference
- Make sure that identified clinical team members have time allocated to the project - have a physician champion
- Use focused, small working groups - but engage all of the players during the project
- Configure the system to stakeholder needs

….Choose the Right Partner/Vendor/Software
- Select a vendor that will partner work with you - before, during and after go-live
- Keep dialogue open to identify tweaks and changes - before, during and after go-live
- Select the right software that will grow with your organization– it is a tool to continually drive improvement after go-live

….Look for Input and Consensus
- Get opinions on workflow and design from many users - in the ED and other downstream departments
- Work with key primary care physicians and others who will receive the patient visit record - design output for them
- Use a test environment to configure the system to confirm workflow and design

….Communicate and Educate
- If engaged properly, those who are change adverse will become champions of change
- Super Users should be available and approachable - cover all shifts
- The more communication about change the better

…Remember...Change is Ongoing
- Be patient - some users need time to adjust to change
- Look for ways to gain efficiencies - even after go-live

Some Members of the
KGH/HDH EDIS Project Implementation Team

Photo: M. Manor/KGH

Contributors

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