Luton & Dunstable University Hospital

Challenges

Excelling in Quality and Safety
Founded in 1939, the Luton & Dunstable University Hospital is a leading acute hospital in Bedfordshire, England. A UK National Health Services (NHS) Foundation Trust, providing medical and surgical services to an area northwest of London encompassing the counties of Bedfordshire, the north of Hertfordshire and parts of Buckinghamshire. The L&D is rated as one of the best performing hospitals in England for the rapid access, safety and quality of its care. The Trust has consistently been the best performing Emergency Department in England against the 4 hour access target. With a team of more than 3,600 employees and 400 volunteers, the hospital has managed to return a Financial surplus for over 10 years consecutively.

Chasing Paper

To deliver the highest level of patient care, L&D needs to maintain an efficient clinical and administrative operation. Consequently administrators and clinicians have sought innovative ways to increase both operational efficiency and quality of care. As part of this effort, L&D embraced the Department of Health’s quality, innovation, productivity and prevention program (QIPP), which aims to capture £17 billion of efficiency savings nationally.

Among the ideas emerging from the hospital’s efficiency initiative were proposals to streamline how the hospital manages the immense quantity of paper it processes every day, including hundreds of thousands of records and clinical notes associated with patient history, visits, treatments, and follow-up care. The hospital is required to track 100% of the clinical notes produced each day, 100% of the time.

“With the electronic records system, the patient history will always be available, so there won’t be a period of delay. So [we expect to] see an improved accuracy of diagnosis, improved treatment plans, and ultimately improved outcomes for patients.”

– Mark England, Director for Reengineering and Informatics, L&D

Study Highlights
Luton & Dunstable University Hospital, in partnership with Xerox, is moving to an electronic medical records system that is projected to generate £2.2 million in net benefits.

- Projected 15.7% decline in total operating costs
- Significant cost savings in staffing optimization, paper storage, transportation and management expenses
- Reduced instances of missing clinical notes to less than 0.5%
- Enabled repurposing of about 750 square metres of real estate for new clinical uses
- Increased protection of patient data with advanced security measures
- Provided clinicians and administrators with easy, secure access to medical records from any location, anytime

Business Benefit Assessment
L&D University Hospital Captures Efficiencies and Enhances Patient Care with New Electronic Records Solution

Healthcare
The High Cost of Paper
Handling and storing massive amounts of paper is costly—both in manpower and storage space. At L&D, over 50 employees were tasked with manually tracking the hospital’s entire library of medical records—a job that included retrieving and delivering clinical notes throughout the hospital as well as filing and archiving the records. The hospital maintained an onsite 600 square metres records library for this purpose, consuming prime real estate in the heart of the medical facility.

All told, the cost of operating L&D’s paper-based records system added up to as much as £14 million over a 10-year period. With budget pressure on NHS Foundation Trusts intensifying, L&D wanted to explore alternative solutions that could help rein in labour and material costs—and at the same time make medical records more accessible to clinicians and administrators.

The hospital also faced new paper-cutting mandates from the NHS, which calls on Trust hospitals such as L&D to adopt paperless electronic patient record (EPR) systems by 2018. Not least, clinicians were concerned about the impact of a paper-based system on clinical care and patient safety. As Mark England, director of Reengineering and Informatics at L&D explained: “The inelastic nature of a paper record, which can only be in one place at one time and has to be moved by a van from an offsite archive to the point of care, was becoming a brake on innovation.”

Key Issues
Key challenges posed by L&D’s paper-based records system included:

- Paper medical records have the potential to be misfiled or even lost, leading to delays at the point of care
- Medical decisions can be compromised when key patient data can’t be located immediately
- Only one clinician or administrator can access a paper file at any one time, creating bottlenecks when multiple experts across several locations are needed to make healthcare decisions
- Mobile and remote access to paper medical records is impossible
- Continuity of care can be a challenge because it’s difficult for paper records to follow a patient across a series of treatments and care sites
- Paper-based clinical notes lack mobility, limiting the range of care-delivery options (for instance, at home or community care settings)
- Handling customer-service queries and complaints is more difficult
- Regulatory compliance, auditing, and security is less efficient
- Patients’ access to their medical records is limited
- Paper records consume valuable real estate in the hospital, reducing the amount of space available for clinical care

“Xerox came in understanding this was a clinical environment, the importance of the notes, how important it was that if we didn’t have them we did everything we could to get them as quickly as possible. There’s a patient on the end of it, sometimes there’s an operation that’s either going to take place or not due to the availability of that information, and that’s been absolutely crucial.”

– Philippa Graves, Director of IT
Solution

Going Digital
By 2011 Luton & Dunstable Hospital was ready to replace its paper medical records with an electronic medical record (EMR) system designed to provide clinicians, administrators and patients with reliable, flexible and secure access to patient information. In its request for proposal, the hospital specified a contractor with broad capabilities in industrial scanning and document management outsourcing.

A year and a half later, after a rigorous selection process, the hospital signed a 10-year contract with Xerox, which proposed creating a single unified records management system featuring “intelligent paper” recognition and full process automation.

Single Electronic Records System
In partnership with Xerox, L&D is on its way to creating a unified electronic medical records (EMR) system and phasing out its paper files. To minimise risk, the hospital is going digital in stages, starting by rationalising existing records management processes. Among other improvements, the Xerox partnership integrated and consolidated multiple records libraries (some of them offsite) and implemented bar coding for efficient access and archiving of paper files. (NHS record retention and destruction policy will require L&D to retain the majority of its old paper records for at least eight years.)

The joint project with Xerox will steadily transition the hospital from a paper-based environment to a fully digital platform for managing medical records. It will provide clinicians, administrators and potentially patients with fast, flexible, secure access to records from any location, anytime. Multiple departments will be able to access patient records simultaneously, and clinicians will be able to enter notes into patients’ records using laptops and mobile devices right at the point of care. The culture created by the partnership of Xerox and the Trust allowed for both parties to work together and ensure workflow and specific department or specialty requirements were catered for.

To build the new electronic platform, Xerox subcontracted with Kainos Evolve Software, a leading supplier of EDMS systems to the NHS.

Benefits

Lower Total Ownership Costs
Based on current estimates, L&D’s move to an all-digital records management system should reduce costs significantly for the hospital. As shown in Figure 1, operating costs are expected to decline 15.7%, saving the hospital approximately £2.2 million over the life of its 10-year contract with Xerox. (The savings include all costs associated with medical records management, storage, and staffing.)

A major portion of these savings is expected to come from a reduction in physical storage and transport expenses.

Three-Stage Electronic Records Project
L&D teamed with Xerox to roll out an electronic document and records management system (EDRMS) in three stages:

• Stage 1: Streamline Current Paper Operation. All new paper-based clinical notes are scanned, matched to the patient’s record, and transferred to electronic library. Existing backlog of patient records are scanned and digitised. All paper records are barcoded for easier filing and retrieving.

• Stage 2: Rationalise Data Forms. Data entry forms are standardised using “intelligent paper” to provide efficient data capture – initially using paper forms, then converted to electric forms that can directly enter data into EMR system.

• Stage 3: Move to Digital Records System. Paper-based patient records are phased out as hospital deploys new electronic medical records system. Secure access to records and clinical note-taking shifts to computers, laptops and mobile devices. New online workflows implemented.
as L&D phases out its onsite inventory of some 300,000 paper medical records and reuses the space for clinical or other core functions. “With the paper record service we had around 50 staff responsible for filing paper and pushing trolleys around, trying to get records to the right location. So it was quite a people-intensive service and the costs were spiralling,” said England.

The digital initiative will free up space in the hospital formerly used for records storage for additional clinical capacity and allow L&D to reassign people to meet staffing needs in other areas. “We were very keen to reclaim that space and to use that for a Cardiac Centre for interventions and diagnostics,” England added.

The hospital also expects other expenses to decline as it eventually completes the scanning and digitising of its backlog of paper records and moves to an entirely electronic environment.

Mobile, Concurrent Access to Records
Beyond the cost advantages, L&D’s migration to all-electronic medical record is boosting operational efficiencies in ways that are leading to better patient care. Most notably, clinicians and administrators are gaining instant access to health records from anywhere using any approved device. Moreover, multiple clinicians can access the same records from different locations at the same time, an improvement that is accelerating and improving medical decision-making and continuity of care.

Remote access to records is giving clinicians more work flexibility. “Clinicians can access a record offsite, even at their homes,” Mark Patten, L&D’s medical director, explained. “Now they can prepare for work the evening before.” Remote records access also supports better multi-disciplinary care, helping community clinics understand a patient’s recent treatment history during visits.

Administrators noted that concurrent access to clinician’s notes should help streamline the hospital’s clinical coding tasks and improve handling of customer-service queries (and complaints), a process that often requires rapid reviews by teams across multiple departments.

Greater Availability
Although L&D has performed well using paper records, achieving 98.5% record availability rates, the hospital wanted to do even better. “In the paper world, there was always a number of records that were difficult to obtain, creating delays,” Patten said. “Now in a paperless environment it’s almost instantaneous. You can always see exactly what happened the last time the patient was admitted to the hospital.”
Today, the hospital consistently delivers 99.7% record availability as it has completed the move to fully electronic recordkeeping, as shown in Figure 2.

Along with better record availability, L&D’s ability to better track and index clinical notes (a function of its Xerox system) has virtually eliminated instances of temporarily inaccessible or “missing” notes. To date the hospital has reduced its missing-notes rate to less than 0.3% (within its hybrid environment) compared to the national average of 4%. The hospital expects to shave this rate further as it continues to move to all-electronic recordkeeping.

**Better Clinical Decision-making**

Faster, more reliable access to patient records is expected to pay off in better patient care and safety, according to clinicians at L&D. “One of the key benefits of the digital record is the amount of times that the record can be accessed quickly at each point in the patient’s journey through the hospital,” Patten explained. In some cases it could take hours or days to retrieve medical records, whereas today access is nearly instantaneous.

The result, L&D believes, will be more informed decision-making and better patient outcomes. “When the patient arrives, clinicians will have the historic record available to them immediately,” England said. “So there will be a sharper level of diagnosis and a better treatment plan available to the patient, and the clinician will be better able to make the correct decision to deliver the best outcome possible for the patient.”

Moreover, the hospital can be confident in its ability to track and audit every decision contained in its medical records, and to ensure patient confidentiality with tight security measures. “We’ve got very clear audit trails and you can make sure that your staff are only accessing the appropriate record,” England added.

**Streamlined Forms**

A key part of L&D’s medical records project focused on rationalising the huge library of forms that clinicians and administrators use every day to populate medical records. To date, the project has reduced the hospital’s inventory of some 1,400 forms to 500, helping simplify records creation, tracking and storage.
Looking Forward
In the years ahead, L&D’s Medical Director Patten sees the hospital and Xerox working together to capture even greater efficiencies from the digital recordkeeping system, enabling L&D to devote more time and resources to patient care. He also sees tremendous potential in using digital recordkeeping systems to accelerate medical research. “As more and more clinical records become digital, it will be a great boon to clinical research,” Patten explained, noting that researchers can query digital records far more quickly and productively compared to paper records, which “would take an enormous amount of time.”

About The Luton & Dunstable University Hospital
The Luton & Dunstable University Hospital is an acute hospital run by the Luton & Dunstable University Hospital NHS Foundation Trust. It provides medical and surgical services in Bedfordshire, the north of Hertfordshire and parts of Buckinghamshire. The hospital employs 3,600 staff.

As the first NHS Foundation Trust in Beds, Herts and Bucks — and rated the best hospital in England — L&D is rated as one of the best performing hospitals in England for the rapid access, safety and quality of its care. The Trust has consistently been the best performing Emergency Department in England against the 4 hour access target. With a team of more than 3,600 employees and 400 volunteers, the hospital has managed to return a Financial surplus for over 10 years consecutively.

About Xerox
Since the invention of Xerography more than 75 years ago, the people of Xerox (NYSE: XRX) have helped businesses simplify the way work gets done. Today, we are the global leader in business process and document management, helping organizations of any size be more efficient so they can focus on their real business. Headquartered in Norwalk, Conn., we have more than 140,000 Xerox employees and do business in more than 180 countries, providing business services, printing equipment and software for commercial and government organizations. Learn more at www.xerox.com.