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Conference Abstract

Aintree University Hospital NHS Foundation Trust rolls out new electronic medical records system to improve the quality of patient care

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Abstract

Summary of speech: o In the context of the Government's QIPP agenda and Jeremy Hunt's challenge to the NHS to be paperless by 2018, scanning paper medical records has gained in popularity as Trusts seek to solve seemingly mutually exclusive challenges – remove a unsustainable paper process, improve the quality of patient care, enhance operational productivity while reducing cost.

o A variety of approaches have been taken to try to achieve this:

o Some Trusts have invested heavily creating in-house scanning bureaus;

o Others have digitised the whole record but paid little attention to navigation so clinicians are faced with hundreds of pages of notes in an unwieldy PDF.

o With 86,000 emergency admissions every year, 330,000 outpatient visits and 77,000 inpatient day cases – some 4,200 paper files moved daily - Aintree University Hospital couldn't 100% guarantee availability with clinicians complaining that finding information took too long.

o To address this, the Trust has implemented an electronic medical records system to provide clinicians instant access to patient information, guarantee notes availability, improve efficiency, and reduce the costs, risks and space associated with paper handling and storage.

o The EDMS solution cost £1.5 million, with the Trust realising annual savings of £1 million.

o Professor Mike Pearson, consultant physician and the clinical lead on the project, will talk about the project – its goals, the solution deployed, what has been achieved, and how the project was successfully managed so that others - both clinicians and operational staff - can benefit from Aintree's experience.

o Ultimately it is not the actual software or the underlying technologies which have ensured success, but the careful application of them along with an understanding of the accompanying organisational and medical processes. This mandates a partnership between the suppliers and the Trust as all have to deliver which has been the case on this project.

o Outlined below is comprehensive detail which it is hoped the King's Fund will find useful as it selects speakers for the International Digital Health and Care Congress 2014 [Innovations in technology category].

Project goals:

o Aintree University Hospital recognised that it needed to implement a solution which offered two key things:

1. Addressed the issue of legacy patient records and all the problems associated with a paper management and delivery process;
2. Provided a platform for the future which had clinical support.

o All project goals have all been met which are summarised as follows:

- o Save money;
- o Provide fast access to health records;
- o Improve patient care through 100% records availability;
- o Improve clinical effectiveness and safety;
- o Provide multiple user access;
- o Offer 24/7 multi-site access – even from home
- o Be simple, dependable and secure to use;
- o Have the support of clinicians;
- o Be built on standards-based best-of-breed technology;
- o Provide intelligent document searching;
- o Provide future expandability;

Solution

o Aintree University Hospital has stopped using paper health records in clinical practice. It has installed CCube Solutions' electronic document management software (EDMS) and custom portal to provide clinicians a digital version. Outsourced scanning services have been provided by Capita Total Document Solutions powered by Kodak production scanners and Capture Pro imaging software.

o To ensure system acceptance by around 3,000 health professionals who use it every day, the following was carried out:

- o A clinical team was involved in helping define the functionality of the software which CCube Solutions has incorporated into the user interface design work.
- o Workshops were also set up so that staff could engage with a prototype system and provide feedback to the project managers.

Groundbreaking IT

1. 1st NHS Trust to successfully use forms recognition technology including OCR to automate the process of recognising pre-printed forms – which make up 95% of the paper file - when digitising records. This ensures contents are correctly indexed even if forms are incorrectly filed in the physical records. This is in contrast to other Trusts where staff manually go through the paper files prior to scanning to check and order contents.

Forms recognition technology allows the system to automatically “find” forms in the scanned patient record rather than clinicians having to “search” for them.

2. 1st NHS Trust to successfully work with a third party using a scan-on-demand approach to outsource the huge task of scanning its records library. Capita Total Document Solutions (TDS) is providing this service using Kodak production scanning hardware and software to ensure high quality image capture. Data is then sent via a secure FTP link back to Aintree.

- o 282,000 patient files will be scanned which equates to 45 million pages.

- o As outpatient case notes are used – on average – 2½ times a year, once a person's file is scanned, the notes are available digitally for subsequent visits.

Project management

- o The project took 15 months and was completed on budget and to acceptable timescales.

- o A staggered rollout was adopted to:

- o Minimise risk in contrast to a 'big bang' approach which would have meant the whole clinical community switching from paper to computers and changing working methods over night.

- o Allow the project team to measure, learn, and improve each time a new department went live.

- o Staff access the EDMS via the Trust's Patient Management System (PMS) when they login. Various IT solutions are integrated including pathology and radiology results, pharmacy, prescribing and theatre systems.

- o By linking the EDMS to other systems, Aintree University Hospital has ensured that information is sensibly integrated so that EDMS doesn't just become an archive, but directly improves sharing documents and collaboration among staff thereby enhancing organisational efficiency.

- o Prior to starting the project, Aintree University Hospital ensured that its IT infrastructure was capable of supporting the new EDMS system and allowing remote access to it.

Return on Investment: Financial & operational benefits

1. This is an 'invest to save' initiative and in line with the Government's QIPP agenda to improve the quality of care and make £20 billion of efficiency savings by 2014/2015.

£1.5 million was spent on software, scanning hardware, and services with Aintree University Hospital saving £1 million annually based on reducing labour, transport and storage costs.

2. 30% space gain in a new £45 million building now used for clinical activities not paper storage - a £13.5 million estate benefit as a whole floor has become available.

3. 100% scanning of paper case notes by June 2012 which will allow Aintree University Hospital to close its records library. Paper files will not be provided to clinicians.

4. Headcount reduced by 50 with salary costs saved. Staff numbers have reduced through natural wastage and redeployment of some people to other vacancies.

5. The innovative use of forms recognition technology to index records automatically rather than having people do it is one of the reasons so much money is saved.

6. Aintree University Hospital measures the success of its medical records process using two metrics:

- a. Availability of records – 100% with the new EDMS solution. With paper, it was 97%. While a 3% non-delivery might appear low, this adds up to a considerable number of patient consultations given the thousands seen each year.

- b. Error rates converting paper to digital– 0.4% working with Capita TDS to provide scanning services against a target of 1%.

Clinical benefits

1. The fundamental principle of good records management is that the right patient file should be available at the right time for the right clinician. This has been achieved.

Immediate access to the scanned notes improves the clinical experience and care provided to patients.

2. Integration with the Trust's PMS- clinicians don't have to use different systems to access historical records.

3. Innovative indexing means navigating is as quick or faster than with paper - the system allows "three or four clicks" to information.

4. Cleverly designed portal makes the record easy to use:

a. Each section of the record is split by specialty;

b. An innovative 'timeline' tool shows a patient's journey over time and what has happened to them. It lists all specialties seen with clinicians able to drill down to review what has occurred, when, treatment provided, by whom, and recent medical episodes – this is key for chronic disease management given patients tend to see more than one specialty;

c. Fast access to actual test results such as X-rays, ECGs and respiratory function tests in addition to written notes.

5. Enhanced collaboration among clinicians who can access notes irrespective of their location using secure remote access technology.

6. Provision of all historical notes to clinicians whereas with paper only the current volume could be provided. This has helped clinicians diagnose patients who have had health issues spanning many years.

7. Easier exporting of information between Trusts if patients are referred elsewhere for specialist care.

8. Easier provision of medical information following legal requests as data can be provided electronically rather than via paper which has time/cost impact to process.

An award-winning project

The EDMS project at Aintree University Hospital has been recognised as being innovative winning a variety of industry awards over the past two years, as below:

o Computer Weekly's European User Awards for Enterprise Software – public sector project of the year 2013;

o eHealth Insider's Best use of IT to support healthcare business efficiency 2013;

o Document Manager magazine's Gold project of the year 2012;

o Techworld – shortlisted in the 2012 enterprise project of the year category;

o UK IT Industry Awards 2012 – high commended in the best not for profit IT project category.

Why should the King's Fund select Aintree to speak at the conference?

o Digitising health records is not only an invest to save initiative, but it gets crucial patient information to the point of care automatically so people have a better clinical experience. The well-designed solution deployed does just this and means Aintree University Hospital has stopped transporting paper files and trying to manage an unmanageable logistics operation.

o The challenge with any NHS IT project is getting computers to work the way medicine works rather than the other way round. Aintree University Hospital and its project partners have worked hard to successfully achieve this.

o To meet the QIPP agenda, the real temptation in a lot of NHS organisations is to find savings by not changing working methods. Aintree University Hospital has not taken the easy route. It has completely re-engineered a mission-critical process, and saved money and improved patient care as result. In terms of a successful project, this is everything it could have wished for and what has been achieved.

o The project team would like to share its experiences within the health service both in the UK and internationally – health organisations who will have similar if not exactly the same issues with medical records management.

KEY QUOTES

CLINICAL: Professor Mike Pearson, consultant physician, says, “It’s been hard work but now we’ve finished the project, we have a solution which is already saving the NHS money. The key innovation is the indexing so that data can be retrieved quickly and easily. This has defeated other projects in the past but we’ve managed to solve this working closely with our software partner. Our system is applicable to any hospital in the country and is a significant contribution to meeting the Government’s target of hospitals being paper light. ”

Professor Pearson says, “Trusts must recognise that projects like this involve more than just buying a software package. It’s implementing a system to process and digitise all your records while at the same time teaching staff how to manage them in the electronic new world. This must be done while keeping the service operational, so it’s rather like changing an engine on an aircraft while it’s flying.”

IT/OPERATIONS: Ward Priestman, the former IT lead on the project says, “This type of project is risky, difficult, and we went out on a limb to do it. We didn’t just buy off-the shelf software, but created the solution in partnership with our IT suppliers such that we are at the vanguard of using this technology in the NHS. It means we are one of the first Trusts in the country to truly get legacy records management right – forms recognition, timeline view, and quick access to information to deliver a streamlined and modern solution which clinicians accept and like.”

Keywords

EDMS; medical records; paperless NHS; Aintree University Hospital

PowerPoint presentation:

https://www.conftool.pro/digital-health-care-2014/index.php?page=adminPapersDetails&path=adminPapers&form_id=71
