CASE STUDY: ONLINE PACS REPORTING IN DENMARK

Reducing Time in Radiology Reporting

The function of a radiology department is entirely directed towards producing an answer to a clinical problem, the image being a mere tool with which the answer is procured. All production time from the moment a patient and doctor decide they need a radiological examination until they receive the answer, can be viewed as time lost for the patient. Every step in this process takes time; even deciding to put a paper in another pile takes time. These three mantras of radiology have driven our department to speed up this crucial reporting time, focusing on all steps from sending the request, to receiving the report. In order to produce a fast, secure online e-reporting system you need five elements: a unique patient identifier, a transfer standard, a secure network, fast reporting and a simple workflow.

In the Nordic countries this unique patient identifier consists of a central personal registration number (CPR), delivered automatically by the state at birth or immigration, numbers which are kept throughout life and are composed of the day, month and year of birth plus a 4 or 5 digit number. Hospital healthcare is public and free and family doctors are paid by national health insurance. In this way all medical interactions between hospitals, pharmacies, and clinics are registered for each citizen throughout life, based on the CPR numbers.

In Denmark, all practitioners must use a system of electronic requests and answers. This is based on a standard electronic request and answer form, developed by the national board for healthcare communication in Denmark (MEDCOM), based on the EDIFACT standard from the United Nations organisation CEFACT (Centre for Facilitation of Procedures and Practices for Administration, Commerce and Transport). It is a simple, segmented standard, that makes it easy for the receiving IT system to reuse the data, making the Danish healthcare EDI standard the backbone of health informatics, sending close to 3 million messages a month or 84% of the total healthcare communication.

All practitioners in Vejle County now use this standard as well as 80% of the clinical departments in the six County Hospitals. EDIFACT communication is sent on a closed national healthcare network between EPR and RIS.

Speech recognition in Danish was developed in our department based on the Philips SpeechMagic system and integrated into the RIS system, now in full clinical use since 2002. After dictation the reports are electronically signed by the radiologist in the RIS and automatically sent to the requesting doctor by EDI. Images can be seen in the AGFA Web1000 browser in all the county hospitals as soon as the examination is done, the reports can be read with the images or seen in the EPR. There is an integrated link from the EPR to the Web PACS with no new sign on or patient information input.

Ten years ago it took a mammoth eighteen steps to complete the examination process. After we achieved the film- and paperless workflow using a KODAK RIS and an AGFA PACS, we cut the number of steps in a normal examination to five. These are prioritising/protocoling, booking/calling, reception, examination and reporting.

From Monday to Friday, we have drop-in examinations for all conventional X-ray examinations. This further cuts the number of work steps to three, enabling the patient to go directly from the referring doctor to the radiology department, with results available the following day. These are reception/booking, examination and reporting. The department of radiology at Vejle County Hospital carries out 110,000 examinations per year with 68 full-time staff, including twelve specialist radiologists, three residents and an office staff of only eight. Vejle County Hospital is one of six oncology centres in Denmark and we have developed conveyor belt package examinations for lung-, breast- and colorectal cancer; e.g. a suspected lung cancer patient gets a CT scan, a CT guided biopsy, a mediastinoscopy and a final pathology diagnosis within one week, including a conference consensus and scheduled time for surgery, chemotherapy and/or radiotherapy.

Our intensive strategy of using electronic communication and speech recognition has enabled us to deliver 98% of radiology reports within the same day as the examination. Emergency examinations are reported as fast as possible. In-house patients are reported within one hour. Our overall mean production time from patient arrival in the department till report received by referring doctor is now only three and a half hours. Our success in using these technologies mean that often, in-house patients have the results in their EPR before they have physically returned to their wards.

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MIR 2005 - CONFERENCE REVIEW
'KEY TOPICS AND TRENDS'

Welcome to Imaging Management's first edition of 2006. Our purpose is always to cater to professionals and associations active in the field of medicine, science, research and informatics, whose occupations rely on efficient management practices in imaging. With this in mind, our cover story focuses on one of the key annual events that encapsulates this philosophy, the Management in Radiology (MIR) conference 2005, which took place in Copenhagen, Denmark, October 5-7. The MIR platform facilitates the exploration and dissemination of the latest developments in imaging management and technology in areas such as teleradiology, management, administration, research issues and many more. This issue, we take a closer look at four of the most illuminating presentations from the conference, to give our readers an idea of what new shifts are taking place in the world of imaging.

Amongst these, our expert authors addressed some of the most challenging issues of the day, for example, promoting quality and medical safety standards at both a national and international level. From Dr. Lawrence Lau, we have a presentation of the efforts of the International Radiology Quality Network (IRQN) to promote such issues on a global level, reflecting the rising interest in quality in radiology and the need for an increasing collaboration between the numerous quality-oriented organisations that exist on a national level.

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These organisations are working with their own objectives and the particular needs of their members that reflect their own local or regional agenda. However, this article provides a convincing argument for the fundamental need for a consolidating force to underpin and promote cross-border knowledge exchange and communication. In line with this theme, the cover story includes a presentation from Prof. Jarl Jacobsen, himself part of a Norwegian management network whose experiences on a national level reflect the benefits that are to be had by exchanging information and expertise.

One other key theme from the MIR 2005 congress that stood out as one of the primary challenges facing managers and administrators as well as heads of departments involved in imaging, is the inconsistencies that arise when trying to pinpoint the exact costs involved in radiological procedures. This need for better management of accounting practices is highlighted by our authors Olli Tolkki, Petri Parvinen and Juhani Ahuvuo, in 'Challenges in Quantifying the Distribution of Costs – Activity-based Vs. Traditional Costing in Radiology', which is a comparative study that explores the problematic area of delivering accurate product cost information. Along with cost management procedures, Finn Mathiesen covers the issues involved in time-saving, which was one of the key highlights of the MIR Conference.

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