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Digital Quality Manuals: Delivering More Efficient Quality Management

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The Hamburg-Eppendorf University Hospital

The Hamburg-Eppendorf University Hospital consists of 14 centres containing more than 80 interdisciplinary, collaborative inpatient and outpatient departments and institutes. With 1,369 beds at its disposal (plus 120 beds in the University Heart Centre, managed by a private limited company) it is one of the largest hospitals in Hamburg. Every year, about 52,000 people receive inpatient treatments and a further 200,000 outpatient treatments are performed on approximately 70,000 outpatients. The hospital also deals with roughly 50,000 emergency admissions annually. More than 1,100 of its 6,400 staff are doctors and scientists, with almost 3,000 staff employed as nurses or therapists.

"Quality comes first" has been the motto of the Hamburg-Eppendorf University Hospital (UKE) since time immemorial. Around ten members of the hospital's staff are engaged in hospital- wide quality management activities on behalf of the clinics, institutes and laboratories. Recently, the UKE launched a digital QM manual with a view to simplifying the publication of more than 60 on-site quality management manuals.

A comprehensive quality assurance system has been in place in the Hamburg-Eppendorf University Hospital since 1998. The role of the QM department is to document, manage and develop this extensive quality assurance system. The department advises the clinics, institutes, central services and subsidiaries of the hospital on the implementation, testing (internal audits) and development of their QM systems. In 2006, the quality management department became the first of its kind to receive DIN EN ISO 9001 certification. The UKE was also the first German hospital to introduce a quality assurance manual. A paper edition launched in 1997 was followed by a digital version in 2003. Major changes in quality assurance in medicine over recent years have meant that hospitals and independent providers of medical services are now required to implement and continuously improve internal quality management systems. For this reason, the UKE set out to find a user-friendly tool that would significantly reduce the workload of QM staff charged with implementing quality requirements, including those associated with ISO certification.

Ambitious Aims to Assist Patients

The hospital's goal in introducing a new QM system was to extend the reach and impact of quality management on the campus. This objective was to be realised by raising awareness of the relevant QM documentation among frontline staff, simplifying document management and guaranteeing accessibility to QM documentation – in short, the new system would be a uniform, user-friendly tool that would eliminate the wide range of document and access types and remove all obstacles impeding the development of a single QM document management system conforming to ISO standards. The success of the new solution was to be measured in terms of the level of acceptance among staff because they needed to be able to navigate the new QM documentation quickly and easily.

The UKE's 10-Point Programme for a Digital QM System:

1. Minimal maintenance due to extensive automation of work processes
2. Integration potential for portals, etc.
3. User-friendliness (posting, researching and editing documents)
4. Consistent management of all documents in every processing stage (Word and PDF) using a check-in and checkout system.
5. Version control and workflow
6. Monitoring and transparency of all editing stages and identification of new documents.

7. Saving of editing history (workflow protocol).
8. Automated resubmission.
9. Complete configurability.
10. Associative searches.

The QM department's search for a software solution that simplified editing, maintenance and publication of QM manuals lasted for more than a year. Meeting our requirements would be difficult; different QM manuals – about 60 in all – are available in the various clinics and laboratories. Produced by the QM co-ordinators of the individual clinics, these manuals need to be updated regularly. To begin with, the department tested QM solutions provided by six companies but only one system corresponded to requirements.

The Digital QM Book

With a digital QM book, the individual QM manuals, including chapters and associated documents, are reproduced using a file structure. To ensure staff were able to access the correct documents at the first attempt, the distinction between clinics and centres was maintained in the QM book structure. The manuals are arranged in a hierarchal form and contain as many as 120 entries on three levels. A single manual may consist of up to 600 documents. It is possible to edit a document by first “checking” it out and then “checking” it back in once modifications have been made. Documents are keyworded automatically using the features listed under “Properties” in Word documents.

Based on our experience to date, the new software solutions meet our expectations. We have been able to fully implement our strategic objective in QM documentation, namely, to offer rapid and secure navigation of the new system. The user-friendly features of the digital book significantly reduced workload for frontline employees and QM staff. The content management system used heretofore for editing and publication purposes required the completion of at least 20 steps – clicks of the mouse - before a document could be published. Moreover, procedures for releasing and archiving documents were paperbased, which created additional work for all concerned. Using the new software, the entire process, from the drafting of a document to its publication on the hospital's portal, is completed in a few short seconds. As a result, QM documentation is always up-to-date and can be easily accessed by users. The reach and impact of quality management is extended several times over and generates a positive response among QM staff. As a result of this simplified digital approach which has significantly reduced the amount of work involved in amending documents, staff are much less likely to avoid updating QM documentation.

One particularly positive development has been the implementation of a powerful but simple release workflow which meets the requirements of the ISO standard for releasing QM documentation. This has been achieved notwithstanding the highly heterogeneous IT landscape in the UKE. In addition, the solution delivers a workflow as a release process for document revision which controls the testing and release of new or modified documents and enables amended or new documents to be forwarded to other members of staff for proofing or revision purposes before being released. For example, a newly drafted document will be emailed to the relevant clinic director for approval prior to release. He then has a series of options available to him. He can choose to approve the text with or without amendments, reject it or call a meeting to discuss it. The workflow ensures the release process is documented to ISO standards at all times. The released documents are published from the archive on the UKE intranet via a web server, which is integrated in the UKE portal. The documents are displayed via the web client.

ISO Requirements Fully Met

At the end of this year the University Hospital Hamburg-Eppendorf will have 52 ISO certified quality management systems in operation. To this end, a range of standards in the areas of documentation, release and the communication of amendments to documents must be observed. The digital QM book fully meets all such requirements with the minimum of effort

– only a few clicks of the mouse suffice for each document. Furthermore, using the digital release workflow it is possible to forego creating a master version on paper. For the user – and this is of paramount importance – the most up-to-date version of the documents can be accessed at all times from any clinical workspace. As such, we have achieved our goal of establishing a hospital-wide, unified, userfriendly, ISO-compliant, QM documentation system.

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