

Mammography Screening Module Improves Efficiency and Integration

New RIS module for mammography optimises workflow, meets high demands for quality and enables easier, more flexible appointment scheduling

"It is very positive that mammography is no longer separated from other radiographic work, allowing better integration and collaboration across disciplines."

Nikolaj Borg Mogensen, Senior Consultant at Ringsted Sygehus, Sjælland Region.



Carestream Health developed a dedicated RIS module for mammography screening in collaboration with radiology physicians, specialists and administrative staff in Denmark. Development was initiated in 2007 by Ringsted Hospital, who were moving to digital mammography and wanted a system that was intuitive, flexible and able to optimise workflow.

Since its modest beginnings the project has grown and is now implemented across three of Denmark's five regions—Sjælland, Hovedstaden and Midtjylland. The module is currently used in 66% of all mammography screenings of Danish women, which amounts to over 240,000 women annually. The system handles large amounts of data with the Hovedstaden region alone uploading more than 1,000 screenings daily.

Denmark was the first country to successfully digitise mammography screening. The close cooperation between Carestream Health and the three regions has meant that Denmark is now seen as a textbook example of digital mammography, fuelling interest from other countries including Iceland who are using the module for a nationwide screening programme.

Process Optimisation

The CARESTREAM RIS mammography module replaces manual input with automated processes for better workflow. "It heightens the efficiency in terms of saving resources and making administration easier," notes **Lillian Kofod**, RIS/PACS System Administrator for

the Sjælland region, who adds, "With the mammography module it is possible to automate the vast majority of processes that previously would have taken a long time. The system can select and book 200 women in just a minute, ensuring that the correct address is married with each woman. This has meant a significant improvement in workload for mammography departments."

Carestream Health experts in Denmark and Canada worked with the three regions to specifically develop a system that can handle the demand for high quality, optimise workflow and meet EU requirements, such as double-blind reading.

The project's aims offered a unique opportunity for collaboration across regional boundaries. "We have had the opportunity to develop the system with help and input from many sides, all working together towards a common goal," comments **Nikolaj Borg Mogensen**, Senior Consultant at Ringsted Hospital, Sjælland Region. "It is not often that you get the opportunity to be part of such a development, and it has benefited both our professional skills and collaboration across the regions, which in itself has been a great reward."





Development of the module took into account the lack of a uniform structure for screening across the regions. In Sjælland mammography mobiles are located across the region to conduct screenings, where Hovedstaden and Midtjylland undertake procedures at the hospital. Solutions to these, and other differences in procedure, were incorporated during development of the module, with the overall aim of a system that can be scaled with global implementation potential.

“One of the great global challenges is the shortage of skilled labour. Here the shift to digital technologies can solve this problem because geographical distance no longer plays a role with digital screening. It is now possible to optimise work processes and thereby use existing resources in a smart way,” says Nikolaj Borg Mogensen.

Continuing Development

The mammography module is now fully implemented in the three regions, but work is continuing to develop new features and functions. “The next phase of the project has just been launched, explains Nikolaj Borg Mogensen. “A Web portal has been incorporated into the system through which woman can alter the time for their consultation, choose to wait until the next round or completely withdraw from the screening process. This will save hospital resources since booking administration will be much easier. Furthermore, it will reduce the number of women who do not show up for their consultation, which in turn leads to increased efficiency.”



CARESTREAM RIS Mammography Module

A number of unique applications were developed for the module including:

- Double-blind reading
- Customised input options
- Capture of statistical data to analyse workflow, evaluate and improve administration, for example the number of detected carcinomas, tumour size, false positives and false negatives
- Patient-portal where women can change their appointment to a more convenient time online.
- Web conferencing for discussion of cases
- Better security to minimise identity errors



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