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## Cross-Regional Medical Network Facilitates Patient Access to Diagnosis, Treatment Procedures



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As early as in 1959, the Clinic Dr. Hancken, which was founded 10 years before, concluded its first cooperation contract with the municipal clinic in Stade, Germany. Now in its third generation, the clinic closely combines outpatient with inpatient treatment, a trend-setting concept in healthcare today. According to their needs, patients are treated by the same doctor both as outpatients in the medical service center and as inpatients in the clinic. In addition to an own medical day care clinic with 50 beds, six other hospitals in the area are part of the group.

In 2013 the clinic decided to implement a standardized RIS at all sites. Mr. Brenk, IT Project Manager at the Klinik Dr. Hancken said: "The central appointment scheduling was especially important for us. If no appointment is available at a requested site, we wanted to be able to directly offer an appointment at another site." Patients are supposed to benefit from the excellent equipment of the medical service center that operates on a cross-regional level and offers state of the art diagnosis and treatment procedures that can otherwise only be found in specialized clinics in larger cities. For example, one of the two most advanced PET CT devices is available there since February 2013. It sets new standards in diagnostics and can detect even the smallest tumors. Due to the wide variety of services available within a networked group, the IT infrastructure grew heterogeneously. At the seven sites, two different RIS systems, one HIS, an additional ward information system and a radiotherapy information system were in use. Support and maintenance of this complex IT infrastructure was both time-consuming and expensive. In case of a dysfunction, it was difficult to find the error.

By introducing [medavis](#) RIS at all sites, the former system with three databases could be consolidated into one central system with up to 250 RIS workstations and four HIS interfaces. All external sites are connected to a central, high-performance server via broadband lines with a transmission rate of 100 Mbit/s. All 400 users have direct access to medavis RIS and all patient data. If there are no appointments available at one site, an examination can easily be scheduled at another site. Another benefit is that analyzing information across sites is easily accomplished due to the central medavis RIS database. Thus, the growing demand for statistics can be met quickly and easily. Mr. Brenk: "We can now easily access radiological and nuclear medical information from a single RIS and compile statistics across all sites from one database."

The implementation posed two big challenges for the organization: Firstly, the different systems had to be consolidated on a technical level in medavis RIS. Secondly, about 400 users had to become acquainted with the new system.

In order to increase efficiency in each process step, medavis RIS is consistently workflow-oriented and based upon sophisticated user role models. Initially, users had to review their previous working methods and internalize the new ones. An important prerequisite for this were comprehensive on-site visits. Each department was visited and employees were interviewed on their specific requirements. According to Mr. Brenk, each day invested into this project preparatory phase paid off during the implementation phase. Only if the requirements of each user group are known, the workflow and the training concept can be adapted precisely to these individual needs. This is an important basis for the users' willingness to handle their daily work and get accustomed to a new system at the same time. The on-site visits were practically combined with training sessions. All users were trained in dedicated groups – from registration to nuclear medicine, technicians, physicians, typists and billing staff. Mr. Brenk: "The medavis training concept is a great merit. All users were provided with a manual beforehand. Thus, everyone already had some knowledge at the time of the training and was able to ask specific questions." Training the staff was a huge challenge. Up to four medavis trainers trained for several weeks on site. A pleasant side effect: Users personally know their future contact persons from the very beginning, as most of medavis' trainers also work as support staff, thus providing an optimal foundation for a good cooperation in the future. The roll-out for all seven sites took only 5 months – from October 2013 until February 2014. The final system conversion at each site was done during one working day, respectively. Mr. Brenk: "There was not a single day of delay during the whole process, we could meet all deadlines."

With the introduction of a uniform RIS, system stability has been improved and error finding and debugging has been made easier. The medavis Agent also saves time and expenses. This software distribution tool ensures that updates as well as software enhancements are installed automatically. Thus, the IT administration effort is reduced significantly. In order to prevent system downtimes, virtualization was made a priority from the start. The medavis RIS was virtualized on Xen and the complete system is running in a SAN. This guarantees that a second device will be activated if one device fails. The workflow will continue smoothly without users noticing the incident.

In addition, medavis redundancy provides a double safety net, i.e. the RIS database is backed up on a medavis server. In case of an error, the medavis backup can be used to restore data. At the Klinik Dr. Hancken, the decision for medavis would be made again anytime. Mr. Brenk: "I strongly believe that medavis RIS is the best product on the market." The reliability and expertise of the medavis staff as well as the performance of the software solution has convinced both management and employees. The clinic's management particularly appreciates the flexibility of the medavis employees, who always come up with a pragmatic solution to every question raised.

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