Spaarne Hospital
Improves patient oriented care using the HOB RD VPN concept

The Spaarne Hospital originated on the first of January 1989 from the merger of two hospitals in the city of Haarlem: the Diaconessenhuis Heemstede founded in 1874 by Lady Teding van Berkhout, and the Mariastichting run by Pastor Thünissen. The integration of the Catholic and Protestant identity lays the foundation for the pursuit of a dignified health care. The Spaarne Hospital in Hoofddorp with about 2,000 employees and 450 beds is a leading regional hospital with a subsidiary in Heemstede and outpatient clinics in Hillegom and Lisse. Each year 17,000 patients are admitted to the hospitals, 11,000 day treatments take place and over 300,000 patients visit policlinics.

Secure access to patient records for physicians from their home office

The plans for a new hospital in Hoofddorp were accompanied by the decision to stop using paper records. As a result, the Spaarne Hospital in 2003 became the first hospital in the Netherlands with a complete, hospital-wide Electronic Patient Records (EPR) system at all policlinics. Over time, the EPR was further developed and connected to other systems. Now, for example, it is possible to open and view an x-ray image with just a mouse click, or to use lab results online. "With the availability of electronic EPRs, the physicians' desire to have access to patient records from home during non-office hours was

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> Michel Bouquet, IT Manager, Spaarne Hospital

logical," said Michel Bouquet, IT Manager at the Spaarne Hospital. "We want medical administration to be efficient and effective and remote access by physicians not only has a positive effect on the hospital processes but especially benefits the patient. We compiled a list of requirements to implement remote access and went searching for a solution to this challenge. It is evident that security was one of the requirements, because patient records contain very privacy-sensitive data that only may be viewed by authorized employees."

Secure and easy access

Most IT projects at the Spaarne Hospital are done by external consultants under supervision of the hospital. Consultants from Deploy IT analyzed the demands of the hospital and recommended the HOB solution. "Three terminal servers running Microsoft Windows Server 2003 – configured in a farm using Network Load Balancing – are used for accessing applications from the LAN and from home using broadband connections. They run a subset of business-critical applications and office applications that we also installed on our PCs," said Esmond Buswijller, consultant at Deploy IT. "Internally on the LAN we use the standard Microsoft RDC client on PCs and Wyse thin clients for accessing the terminal servers, but employees that connect from the outside use HOBLink JWT, the Java-based client from HOB. Because HOBLink JWT is written in 'native' Java, it fulfills one of our main demands of being able to run platform-independent ac-

cess without the need to install any local application on the remote desktops."""

WebSecureProxy from HOB acts as an access portal. From home locations, employees use a browser and an SSL connection to the WebSecureProxy, which passes the encrypted connection through to one of the terminal servers. "For additional authentication and authorization we integrated SecurID tokens and a RADIUS server with WebSecureProxy. This way we know for sure that persons who gain access really are who they claim to be and prevent unauthorized persons from being able to access privacy-sensitive information about patients. In addition, the high level of encryption of the communication itself assures us that eavesdropping is impossible."

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■ Satisfied physicians and patients as a result of increased efficiency

The physicians have long working days, because they often need to finish administrative tasks during the evenings. This is partly a result of the legally obligated diagnosis-treatment combinations (Diagnose Behandel Combinatie/DBC) in which all medical activities performed have to be recorded to be able to determine the costs of healthcare. Administrative work is not really fun to do, but thanks to RD VPN, physicians are able to continue and finish their duties from home, whenever they want. "The physicians are very satisfied with the ability they now have to work from home," continued Bouquet. "In addition, physicians on standby can look at relevant data from home and give an opinion without the need to travel to the hospital first – like a radiologist that needs to give advice before op-

erations – preparations for the next day now run more smoothly and are much more efficient. Previously, patient records had to be viewed late in the evening at the office in the hospital, but that is now a thing of the past."

Even more important than satisfied physicians, time savings and increased efficiency are the positive outcome for the patient. "We are now better able to offer professional and patient-oriented care. The quality and the productivity of the healthcare are higher, because physicians can simply spend more time during the day on patients instead of on administration," said Bouquet.

■ IT technology as an invisible link

Modern IT technology and a thorough architecture are important for the Spaarne Hospital. "We need innovative solutions that are robust as well. Our goal is to add no additional layers to the IT infrastructure to prevent complexity. HOB RD VPN is very modular and we were able to implement exactly those components that we needed for our goal: remotely accessing applications using Internet for our physicians," conclude Bouquet. "HOB RD VPN does not interfere with our IT infrastructure like competing products do and is very flexible. We manage the environment with the existing IT staff, which also uses RD VPN for remote system administration. Sometimes I receive a call during a problem escalation, while there are no system administrators physically present at the hospital. RD VPN proves to be an ideal solution for remote system administration as well."

Systems in use:

- **HOB RD VPN, with:**
  - HOB WebSecureProxy
  - HOBLink JWT

- **Microsoft Windows Server 2003**

- **Wyse thin clients**

- **RSA SecurID tokens**

- **Norma-EPD from MI-Consultancy**

- **AGFA RIS/PACS x-ray application**