Dietmar Pawlik (right), Board Member of RHÖN-KLINIKUM AG, hopes for improved processing thanks to the electronic health record. Wants to integrate all medical technology and information technology in healthcare: Volker Wetekam, Head of Global Solutions Division at Siemens Medical Solutions.

# Trendsetter in eHealth

The introduction of the electronic health record at 46 hospitals of RHÖN-KLINIKUM AG is the largest privately-financed IT project in the German healthcare industry – and may send an international signal.

By Notker Blechner

Dietmar Pawlik, an acting Member of the Board at RHÖN-KLINIKUM AG, and Volker Wetekam, President of Global Solutions Division at Siemens Medical Solutions, are the two managers responsible for introducing the electronic health record (EHR) at the hospitals of RHÖN-KLINIKUM AG. In an interview with *Medical Solutions*, they explain the benefits and challenges of the joint project. RHÖN-KLINIKUM AG has been working with electronic health records for some time now, and is one of the pioneers in the implementation of digital technology in the clinical sector in Germany.

**Digitization has taken hold in most industries. In the healthcare industry, however, diagnostic reports are still written by hand and X-ray images are sent by regular mail. Why hasn't the digital age reached the healthcare industry by now?**

> “Our goal is to integrate other hospitals using different systems to provide services.”
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> Dietmar Pawlik, CFO,
> RHÖN-KLINIKUM AG, Germany

PAWLIK: Digitization in hospitals is far more advanced than one may think. Many treatment processes are supported digitally – to a much greater extent, however, in diagnostics than in process organization. Through the use of modern imaging methods such as computed tomography [CT] and magnetic resonance imaging [MRI], the percentage of the digitally supported value-added chain has now reached 50 to 60 percent.

WETEKAM: The data generated digitally – whether at a CT system or in a lab – are, however, not integrated in a centralized environment; they are stored separately at a variety of locations and systems. Most hospitals and physicians in private practice would rather store their data in their own facilities instead of using a modern computer center, where data would be available across hospitals and around the clock.

**The e-card is coming into increased use worldwide. It will soon be introduced in Germany. Will this further accelerate the digital revolution in the healthcare industry?**
WETEKAM: I do not think the introduction of the electronic health card will result in significant structural changes. It merely represents a change in medium from paper to card. The electronic health card makes sense only in conjunction with value-added applications. The process will not change until the electronic health record is introduced.

**To what extent?**
WETEKAM: With the electronic health record, care-relevant data from diagnostic findings, diagnoses, radiography, CT as well as MRI images, electrocardiograms [ECGs], lab values, therapy measures, and treatment reports, can be stored digitally and exchanged between hospitals. This will, for example, reduce unnecessary examinations and the prescription of incompatible medications. In addition, processes and hospital stays will be shorter. Patient care will be optimized and physicians will be relieved of unnecessary work. These savings are far greater than the costs associated with introducing the health record. With stroke patients, for example, the electronic health record can be a lifesaver. While the patient is examined in the ambulance on the way to the hospital, the data are already available there. Even before the patient arrives, the physician can decide whether or not to perform a head CT. Thanks to the electronic health record, therapies can be initiated much earlier, saving valuable brain cells.

**What is RHÖN-KLINIKUM AG doing to promote the electronic health record?**
PAWLIK: We started thinking about digitizing patient records several years ago. The question for us was how we could take the knowledge and documentation spread throughout our clinics and make them available to other institutions in the RHÖN group. In 2002 and 2003, we developed the concept of the teleportal clinic, which is very much based on the use of teleradiology. At the same time, we had the objective of introducing an electronic health record throughout Germany. In 2005, the project was set up in a lab situation. Since then, the system has been arranged and the technology works. We have established prerequisites regarding data protection regulations within the organization, as well as access mechanisms: If a cardiologist in the medical care center wants to see a digitally stored ECG performed in the clinic, he can retrieve it, given he is authorized to do so and can verify his authorization to the system.

**What is Siemens doing to promote the electronic health record?**
WETEKAM: First, we aim to integrate all medical technology and information technology in healthcare. We offer the electronic health record as a practical solution. For years, we have invested a lot of research and effort in the development and enhancement of the electronic health record, and are working together

> “The electronic health card represents a change in medium – not in structure.”
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> Volker Wetekam,
> President of Global Solutions Division,
> Siemens Medical Solutions, Erlangen, Germany

with excellent partners in healthcare. We are far ahead technologically, and our development is two years ahead of our competitors. This can also be seen in the fact that we are winning an increasing number of large projects in Europe – most recently in Scotland and France.

**You have been cooperating with RHÖN-KLINIKUM AG on the electronic health record for two years. Now, the group will implement the Siemens eHealth solution Soarian® Integrated Care in 46 clinics. What do you see as the promise within this partnership?**
WETEKAM: The partnership with RHÖN-KLINIKUM AG is very important to us. It is our closest and most strategic cooperation worldwide. We see RHÖN hospitals as the ideal partner, not only because they practice excellent medicine, but also because they are efficiency-oriented.

"The objective is to offer interoperability across sectors and providers."

Dietmar Pawlik, CFO,
RHÖN-KLINIKUM AG, Germany

PAWLIK: RHÖN-KLINIKUM AG has been working very closely with Siemens in all fields of medical technology since the 1980s. Since then, we have developed a number of projects, and have provided requirements that Siemens has implemented. At the moment, we are building the Center for Particle Therapy for €120 million in Marburg, Germany, with Siemens as the technology supplier. Our cooperation over many years has developed into a cooperative relationship with Siemens. Of course, it would have been possible to entrust a project like WebEPA to a younger software company. But we expect Siemens to represent far more potential for us. For this reason, the cooperative agreement has been set up for a longer period of time.

**What type of other potentials do you mean?**
PAWLIK: We have the opportunity to generate knowledge with the electronic health record. At present, we are investigating the development of a knowledge database for stroke patients.

WETEKAM: In the final project phase, we want to use the record as a knowledge-based medium. It certainly helps that RHÖN-KLINIKUM AG has scientific partners such as the German University Hospitals of Marburg and Gießen working with it.

**Was there any skepticism or resistance to the project from patients or physicians?**
WETEKAM: There was no general skepticism among patients. Naturally, there were a few loud voices who warned against 'the transparent patient.' We were able to eliminate these fears to a great extent through the two-year pilot project we just completed in April 2007. We had many discussions with physicians who feared technology because their dealings with patients would be much more visible than before. Now, however, most physicians recognize the benefits. Practical experiences during the pilot project have even resulted in a fascination for the technology among some of them. They enjoy participating in the project because they have seen that the record improves their performance.

**What is the economic importance of the EHR project?**
WETEKAM: Through digital integration of the hospitals of RHÖN-KLINIKUM AG, we will be in a position to offer high quality at a price that also covers costs in the future.
This project could serve as the initial spark within the German healthcare industry. In Germany, we are spending €1 to 1.4 billion to distribute 80 million electronic health cards. An enormous data highway is being built, but no one considers how to use this infrastructure until the tar is dry. Through the EHR project, we want to show feasible, value-added applications for the health card.
The project also increases RHÖN-KLINIKUM AG's competitiveness. Once all 46 clinics are connected, the company can offer the solution to other hospitals. All of the little networks currently being established in Germany are predestined to work with RHÖN-KLINIKUM AG. Discussions are currently underway with Lich Hospital, near Frankfurt am Main, Germany, which is not part of the RHÖN group. We have a good chance of becoming the standard platform for the electronic health record in Germany.

**Aren't you being a bit optimistic? The German healthcare system does not have a uniform standard for electronic health records...**

WETEKAM: Having all 2,200 hospitals in Germany use our Soarian Integrated Care is not our objective. We also support the electronic case record [ECR] initiative, which is examining how the electronic health records of different providers could work together. Supporting standard interfaces like HL7, we will continue developing Soarian Integrated Care to make it easier to connect with other systems.

PAWLIK: We have established it as an open system from the very beginning. We do not want to use the electronic health record to exclude service providers. Our goal is to integrate other hospitals using different systems to provide services. Thereby, we can accomplish interoperability across sectors and providers. When the clinics of RHÖN-KLINIKUM AG show the benefits, other hospitals will follow our example.

**What can be learned internationally from a German project?**
WETEKAM: The idea behind the ECR project in Germany can be applied globally. If the project is successful, we could be a trendsetter worldwide.

**Do you sometimes feel like a do-gooder?**
PAWLIK: Breaking new ground is always wrapped up somehow with idealism. I believe our high expenditures will pay off in the future and the project will be profitable.

WETEKAM: Yes, I feel like a do-gooder, somewhat. A huge project such as this requires a lot of idealism. I am certain that this project will change the importance of IT in the healthcare industry more than ever before.

***Notker Blechner*** *has been working since 1984 as a journalist in economics and reports on global trends – from corporate sustainability to private equity. His articles have appeared in* Die Welt, Frankfurter Rundschau, Financial Times Deutschland, VDI-Nachrichten, *and the French press. At present, the well-traveled German works primarily for the broadcast station* Hessischer Rundfunk (hr).

**Further Information**

www.siemens.com/ehealthsolutions

## The Electronic Health Record (EHR)

Thousands of people die annually in emergency situations because there is no information available on previous illnesses or prescribed medications. The electronic health record aims to change this. It shares diagnostic findings, radiography images, ECGs, treatment reports, and other data, all in a digital format. As a result, healthcare data are available quickly and can be accessed by authorized physicians as needed. Incorrect treatment of emergency cases, incompatible medications, and duplicate examinations can be reduced. The result is improved, more cost-effective care for patients. Physicians and nursing staff should be relieved of unnecessary tasks, giving them more time to care for patients.

According to the German Federal Health Ministry, 10 to 20 percent of the €140 billion spent annually on healthcare in Germany could be saved through digitization.
Numerous hospital networks are currently working on electronic health records. The largest of these projects is being performed by RHÖN-KLINIKUM AG together with Siemens. The WebEPA will be implemented in all 46 clinics of the RHÖN-KLINIKUM group. During implementation of the Soarian Integrated Care software solution, 130 information systems have to be linked. Over 15,000 users will work with WebEPA, and more than 1.4 million patients are treated every year.

## The Electronic Case Record (ECR)

Since there are still no uniform standards for electronic health records, most hospitals work with a variety of software systems. To exchange case-related patient data or radiography images across software platforms, a number of private hospital networks and public hospitals have established a consortium. Within the electronic case record network, RHÖN-KLINIKUM AG is cooperating with German Asklepios Kliniken, Sana Kliniken GmbH & Co. KGaA, public institutions, and the Fraunhofer Institute for Software and System Technology. They are currently testing the use of case records in a pilot project. The objective is to establish system interoperability while taking into account data protection regulations and technical security requirements.