



# CASE STUDY

Karolinska University Hospital

PROFDOC HIS FULLY IMPLEMENTED THROUGHOUT THE HOSPITAL.

# PROFDOC HIS - FULLY IMPLEMENTED THROUGHOUT THE HOSPITAL.

The largest, and perhaps most successful, installation of Profdoc is at Karolinska University Hospital in Stockholm, Sweden. Karolinska University Hospital is one of Scandinavia's premier health facilities. Together with the world-renowned Karolinska Institute, this institution is a leader in medical break-throughs. Also, the Karolinska Institute Nobel Assembly handles the awarding of the Nobel Prize in Physiology or Medicine.

Karolinska University Hospital is in fact two main hospital campuses, Huddinge University Hospital (located at Huddinge in Stockholm) and Karolinska Hospital (located at Solna in Stockholm), which were merged in 2004 under the common name Karolinska University Hospital. At that time, the Huddinge campus had been using Profdoc HIS since 1996, whereas the Karolinska / Solna campus had been using 3 different systems for electronic medical records and patient administration: BMS (originally developed by IBM), Melior from Siemens and various software components from Cambio Healthcare Systems. As soon as the announcement was made to merge the two hospitals, the process began to select one common IT-system for all of the merged hospital organization. The press release from Karolinska 16. June 2004 translated to English below explains how Profdoc came out on top of this selection process:

Press release – Karolinska University Hospital:  
**ONE COMMON ELECTRONIC MEDICAL RECORDS SYSTEM FOR KAROLINSKA UNIVERSITY HOSPITAL 16-06-2004**

A significant part of healthcare provision within the Stockholm region, about two thirds, will now get a common system for electronic medical records when Karolinska University Hospital now introduces one central system for medical records.

- This will be a great improvement for patient care says Cecilia Schedin Seidegård, Hospital Director of Karolinska University Hospital, because it will be much easier to exchange patient records between the different care providers within Karolinska. When Karolinska University Hospital was created [through the merger of Karolinska Hospital and Huddinge University

Hospital] a process began to map out the different IT-systems at the new hospital entity. A project group was given the task of creating an inventory of the different systems employed to get a balanced view of the pros and cons with each system. For electronic medical records there are currently four different systems in use. Four different perspectives have been used in benchmarking the systems; functionality and user friendliness, financial, technology and How the systems fit in the overall IT-framework which is being developed within the County of Stockholm.

- As for functionality, there was little difference between the systems, says Roger Andr e, head of IT-forum at Karolinska. Regarding user friendliness, however, the differences were big. Profdoc HIS has an intuitive user interface, is very easy to learn and is appreciated by the users
- Even financially, the option of Profdoc HIS came out on top, says Roger Andr e
- Annual software maintenance will increase with 2-3 million, while at the same time we can save 18-20 million per year when maintenance of the other systems disappear
- When it comes to the possibilities to adapt the system to the IT-framework of the County of Stockholm, there are not many differences between the alternatives. The roll-out of Profdoc HIS is estimated to take 18-24 months.

As soon as the decision was made to make Profdoc the common eHealth solution of all of Karolinska University Hospital, the deployment of Profdoc and phasing out of the other systems began. The success of this roll-out, well ahead of planned schedule, and the profound implications for the hospital can best be seen from the press release from Karolinska 23. January 2006:



Press release – Karolinska University Hospital:

## INCREASED PATIENT SAFETY WITH ELECTRONIC MEDICAL RECORDS 23-01-2006

The system for electronic medical records Profdoc HIS is after 10 years of development now in operation at every ward within Karolinska University Hospital. With Profdoc HIS, the healthcare professionals can follow the patients' medical history within the whole distributed hospital campus, which drastically reduces the risk of providing wrong treatment because of incomplete information. Profdoc HIS today contains medical records for 1.2 million patients. It is estimated that more than every second citizen of Stockholm has a medical record within the system. Profdoc HIS was introduced at the previously free-standing Huddinge branch of Karolinska and after 18 months of intensive work it is now also completely implemented within the Solna part of Karolinska University Hospital. Thereby, the Stockholm region is gradually approaching a status which from a patient-safety viewpoint would be ideal: "one patient, one record, one care process". Patients treated in error because of incomplete background information is seen internationally as maybe the single largest safety problem within healthcare. Extremely large efforts are being done at present time, among other places within the British National Health Service, to create unified electronic medical records systems. With Profdoc HIS, Karolinska University Hospital is placed at the forefront of this development. Also Visby Hospital, Norrtälje Hospital, Stockholm Sjukhem, ASIH (Advanced home care) Långbro Park and 27 healthcare centers belonging to those healthcare providers which are hooked up to the central Profdoc solution. In addition, every emergency unit within the Stockholm region can access the information in the system. The Profdoc installation at Karolinska has now grown to staggering proportions with campuses spread out over hundreds

of kilometres with tens of thousands of active users and more than one million patient records in the database. Several thousand clients are simultaneously logged in at any time, generating millions of server calls per day, almost all with response times of less than one second. The current system statistics are:

- More than 1,200,000 patient records
- 800 wards, geographically widespread
- 21,000 registered active users
- Approx. 6,000 simultaneously logged in clients during peak operating hours
- 70 server calls per second with 99.9% response times less than one second

The distance between the server and the wards farthest away is over 200 km, but there is no limitation to the distance other than the quality of the network infrastructure. The Profdoc HIS server software has an empirically proven extremely high availability ratio in the Karolinska University Hospital – close to 100%. It is practically never unavailable. Users of Profdoc are very satisfied with the system, helping them with their workflows and processes. The system was User Certified by the international group Users Award ([www.usersaward.se](http://www.usersaward.se)) in 2005, as the result of extensive user interviews and usability studies. A recent announcement further confirms the appreciation the users show for their Profdoc system. On behalf of Karolinska University Hospital, Profdoc is extremely proud to receive the Swedish User award 2006, which was just announced. This award spans all IT users in Swedish society, from industry to public sector, and the significance of Profdoc and Karolinska's award is best described through the translated press release on the next page of 10. May 2006 The User Awards Organization.

## Fact and Figures Karolinska university hospital

- 1,600 beds
- 14,500 employees
- 2,100 researchers
- 1.3 million patient visits per year
- 7 surgeries per hour, 365 days/year
- 5,000 nurses
- 2,400 physicians
- 600 physicians in PhD programs
- 2,100 nursing students
- 700 students in biomedical/lab science, physiotherapy, occupational therapy
- 85 internship positions
- 500 residency positions
- 1,200 biomedical/lab technicians
- 20 million lab tests/year
- 1.4 billion US dollar annual budget
- 270 million US dollar in external R&D grants/3 years
- 800,000 m<sup>2</sup> (7.2 million ft<sup>2</sup>) of floor space
- 15,000 scientific articles published/3 years (incl. Karolinska Institute)



### THE WINNER OF THE USERS' IT -PRIZE HAS BEEN DECIDED 10-05-2006

Karolinska University Hospital at Huddinge is the winner of this year's Users' IT-prize. It was Gastrocentrum at Karolinska University Hospital at Huddinge which today won the 2006 Users' IT-prize when they nominated their IT system Profdoc HIS from the vendor Profdoc. The Users' IT-prize is unique in Sweden in that it is only users who can nominate systems. 14 nominations had been received for the competition which shows that good IT-solutions are in short supply. Nine were selected for the second round of the competition which was subsequently narrowed down to 5 finalists where in the end it was Profdoc HIS which took home the prize. The prize consists of 50 000 kr which goes to the nominated workplace. The motivation of the jury was the following: "Gastrocentrum with the medical records system Profdoc HIS is the winner of the 2006 Users' IT-prize. The implementation of Profdoc HIS at the university hospitals in the County of Stockholm and other care providers in the region as well as in the County of Gotland fulfils well those requirements User-Awards puts on a well-conceived IT-system. With the help of Profdoc HIS the work of the healthcare professionals is made easier and co-operation in the whole continuum of care is facilitated so that safety and efficiency increases and so that the patients receive better service"



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PROFDOC SDN BHD (641262-M)  
Unit L3-I-2, Level 3, Enterprise 4,  
Technology Park Malaysia,  
Lebuhraya Puchong—Sg. Besi, Bukit Jalil  
57000 Kuala Lumpur, Malaysia.  
Tel +603 899 66 700  
Fax +603 899 66 707  
[www.profdoc.com](http://www.profdoc.com)