Safer and Faster: Digital Data Capture in the Field of Anaesthetics

Mönchengladbach clinics keep records with digital pen and paper

"We use the dotforms® technology with 30 pens for the anaesthe-tists and their staff to record our anaesthetic logs. Apart from that our staff did not have to change their work routines, owing to the continued use of pen and paper, we also benefit from the direct availability of the data in the network and our hospital computer system..."

Werner Welters, IT-specialist at Mönchengladbach's municipal clinics

The municipal clinics of Mönchengladbach in Germany employ about 1,100 people in eight specialist departments. There are around 600 beds available for patient treatment and rehabilitation in two fully networked locations. Patients often need to be treated under ana-esthetic – whether it is for broken bones, appendectomy operations or Caesareans.

For medical and legal reasons, documentation of the entire anaesthetic process is essential.

The core element of the documentation is the anaesthetic log. The anaesthetic log contains all the relevant information such as admini-strative data, patient details, medication, ana-esthetic procedure and order of events, right through to details of supplementary measures taken between operations.

Handwriting is difficult to process
This documentation used to take the form of handwritten notes in ballpoint pen. The data were only available on paper, and had to be entered manually into the computer systems for further processing, which was time-consuming. Another drawback was that it was extremely difficult to evaluate the data because of their abundance. The municipal clinics of Mönchengladbach

were therefore looking for an option that would enable the data documented during the anaesthetic procedure to be entered straight into the hospital computer system.

Several commercially available solutions were considered, such as tablet PCs and scanners. But ultimately it was the solution from Diagramm Halbach that was convincing, because the documentation processes could remain unchanged. Also, with this solution, a paper protocol stays with the patient from the start, enabling every staff member to see at a glance, which measurements and therapies that have been applied, without opening any files or loading any data.

Data capture in real time

Diagramm Halbach implemented its dotforms® intensive application in the clinics of Mönchengladbach. The solution is based on Anoto Digital Pen and Paper technology. The application consists of a digital pen and paper that has a unique dot pattern printed on it, in addition to the usual log content.

As they are written, the letters and words are saved in the pen's memory, and then they are digitised. The anaesthetic log is sufficient for a typical operation lasting about four hours. This log, which was developed from the original standard log, is mapped onto an A4 page printed on both sides. The patient's data, including his or her medical history, are documented on the front. An account of the anaesthetic procedure is entered on the back of the form. Additional forms can be appended if necessary.

Mix-ups are ruled out

At the start of treatment, a patient barcode is stuck on one of the consecutively numbered anaesthetic logs and then read in via the digital pen. The form is thus uniquely assigned to the patient. The barcode only needs to be read in once for each anaesthetic log. It is also possible to enter the case number manually without the barcode, using the digital pen.

From pen to hospital computer system

The data are transferred from the pen to the central server via a docking station. On the server, all the data records relating to the same form are consolidated and synchronised with the entries of other pens used by the doctors and nursing staff. Data are then generated in the form of a pdf file in the patient records as well as data in the Mönchengladbach clinics database. Consequently, no manual input of data is required.

Familiar processes – security in the clinics' dynamic day-to-day lives

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dotforms intensive combines maximum flexibility with the highest reliability and thus lightens the workloads for medical and commercial staff alike in the clinics' dynamic day-to-day lives. It also means that extensive patient data along with analysis options are available throughout the clinics at any time of day. The solution offered by Diagramm Halbach and Anoto combines efficient hospital management with high-quality patient care.

Partner profile:
Diagramm Halbach was founded in 1832 and is based in Schwerte, Germany. With over 300 employees, the company is dedicated to forms solutions for automatic data capture and digital services. Being an Anoto partner right from the beginning, Diagramm Halbach is an experienced service provider for digital pen and paper solutions, offering smart and complex solutions under the brand dotforms®. dotforms solutions are always harmonized regarding solution efficiency and paper functionality, as Diagramm Halbach is a certified print provider too. Based on proprietary handwriting recognition with highly efficient verification front end, the offering covers solutions for local, intranet or internet use. The dotforms web portal allows ASP applications as well as new digital services for digital pen and paper.

www.halbach.com/dotforms

Customer profile:
The municipal clinics of Mönchengladbach, Germany, employ about 1,100 people in eight specialist departments. There are 577 beds available for patient treatment and rehabilitation in two fully networked locations.

www.sk-mg.de

Anoto Digital Pen and Paper technology

An Anoto Digital Pen looks and feels like a normal ballpoint pen. However, it contains an integrated digital camera, an advanced image microprocessor and a Bluetooth® transmitter. Any paper can be used with a digital pen, if the Anoto dot pattern is added to the layout before printing the paper. The Anoto dot pattern consists of numerous black dots that can be read by the digital pen, but are almost invisible to the naked eye. The pen reads the pattern and registers what and where the user writes.