TECNICA OSPEDALIERA

Applied research
Certified solutions

Computerised Operating Rooms
Enhanced safety and transparency for the patient

The Rizzoli Orthopaedic Institute has installed a certified IT platform to manage its ten operating rooms. Launched in February last year, the system has been implemented to ensure complete traceability of the patient's entire hospital path, improving safety and encouraging service efficiency and quality through rapid common access to information.

Maria Pia Longo

Enhance patient safety, make information traceable and accessible to all operators, encourage service efficiency and quality - these are the main goals of the computerisation process implemented in operating rooms at the Rizzoli Orthopaedic Institute with a DIGISTAT system, a modular solution produced by UMS (United Medical Software) that specialises in software for data management in critical hospital areas. It is a CE marked Class I Medical Device. This IT platform for operating room management at the Rizzoli was launched late in February last year with the efforts and cooperation of the various subjects involved. Implemented gradually, the system is still being developed. The parties involved include directly concerned healthcare professionals, such as surgeons, anaesthetists, operating room staff, and also supportive services, including IT, Technical, Pharmacy and Clinical Engineering Departments, the Sterilisation Station, Medical and Healthcare Administration.

A project that has been developed by degrees
Established in 1896, the Rizzoli Orthopaedic Institute is a hospital and research facility that is highly specialised in the field of Orthopaedics and Traumatology. Since 1981 it ranks among the 45 Scientific Institutes for Hospitalisation and Healthcare based in Italy and, along with the Galeazzi Institute in Milan, is one of the two Italian Institutes that specialises in Orthopaedics. As a single-specialty facility with 60% of its patients coming from various Italian regions, the Rizzoli is a hospital that mainly performs surgical activities. 2011 recorded the performance of 24,000 operations, 15,000 of which were major ones. «However,» as Dr. Maurizia Rolli, Medical Executive of the Hospital Management says, «though the Rizzoli has long been a highly computerised facility, documents regarding surgery performed in the operating rooms were incomplete prior to the use of the DIGISTAT system. We had a surgical report but lacked IT management of all the other information, including that of the materials used. All these data were collected in hard copy format.» The DIGISTAT platform was implemented in degrees to involve all the departments and units concerned by the project, and provide adequate training. The first step entailed drawing up an electronic version of the surgical list by entering in the system information about the surgery to be performed. The definition of an in-house diagnostic and surgical nomenclature allows to access encoded information that can be related to the materials used. Hence, the Pharmacy and the Operating Room can instantly and precisely establish the surgical instruments and implantable materials required for the scheduled operations. In this regard, Dr. Rolli says «We chose the DIGISTAT platform

because it is user-friendly and can be easily used even by personnel who are not accustomed to IT tools. Moreover, it is a modular, flexible solution that can be customised in several ways to suit every user's requirements. And the results prove this. Today, for instance, the surgeon plans the operations and, then, uses the system to decide which operations should be taken to the operating room, defining all the details associated with every specific type of surgery (surgical times, team, materials, etc.). We have also successfully entered a Material Count Sheet, and also a Nursing Record that takes into account specific needs.» Following a project carried out in cooperation with the anaesthetists, March 2012 witnessed the launch, at the Rizzoli, of the Electronic Anaesthesiological Record based on the DIGISTAT system. Prior to this, said document was only available in hard copy format. It has been designed as per indications provided by specialists. This transition has provided anaesthetists with the additional benefit of finding all laboratory test results directly in the medical record. A pilot project was started up late in May 2012 in one of the Rizzoli Institute's Operating Rooms by entering in the DIGISTAT system not only the Surgical Report, the Intra-Operative Anaesthesiological Report and information about the Team, but also the vital parameters recorded by anaesthesiological devices present in the Operating Room. Then, the Electronic Surgical Register was gradually implemented in all the operating rooms from September, stating Time of Access to the Operating Room, Team, Surgical Report, Nursing Record, Material Count Sheet and SOS-net Sheet. «We count on completing this process,» says Dr. Rolli, «only after the reorganisation phase has been completed with the expansion of the surgical block and addition of a new operating room fitted with new appliances.»

Management of materials and interfacing with other systems
An intensive effort was first made to conduct a census and encode the anagraphic details of supplies before materials could be ticked off from the supplies list for every operation. «Orthopaedic surgery,» says Dr. Valeria Sassoli, Pharmacy Director, «is particular as it requires the management of a considerable amount of material. We have about 27,000 medical devices on consignment that we must be able to manage and trace. The DIGISTAT system has allowed us to solve two issues we consider as priorities, namely the clinical risk and the administrative responsibility. On the one hand we have complete traceability of prostheses implanted in operated patients. In case of complaints, for instance, from the manufacturer, the system can automatically provide the list of patients who were implanted with that certain prosthetic lot. On the other hand, the system can provide, in real time, information about the actual extent of the supplies, thus allowing us to automatically manage the consignment stock. Until now all this information could be accessed but only in the hard copy format, which demanded time to conduct a search. We chose DIGISTAT because it has proven to be the only software, of those analysed by us, that can read the various barcode formats. We found this an essential condition, since we manage medical devices produced by 37 different manufacturers and, hence, with different coding systems.» An additional strong point of the DIGISTAT system is total integration with the Rizzoli's IT System, which allows to remove all risk of error in selecting the patient and forwarding the information produced to the patient's Electronic Medical Record. «We started one year ago by implementing the computerisation project in Operating Rooms,» says Serena Accarisi, Director of Rizzoli's IT Department, «but we already had a clear idea of the objectives the new system had to enable us to achieve. The overall goal was to manage information about the patient's track in a structured orderly manner, ensuring traceability and retaining control of all that occurs before, during and after surgery. The new system had to be able to better support all that concerns patient safety, without hampering clinicians with the need to use mouse and keyboard, by

using touch screen interfaces instead. The problem was that a system designed to do all this had to also be easily integrated into a strongly computerised framework. For the project to be a success, the new system had to interface with 17 systems produced by different suppliers. Besides the product's shelf-life, we deemed it important to identify a supplier who could adequately support us. UMS is a partner who has expertly managed and coordinated a major part of the project by interacting with multiple suppliers of systems that were already present and had to interface with DIGISTAT. The work performed provides extensive evidence that DIGISTAT is not only a clinical system but also a management software designed to handle the entire work-flow of the surgical patient. Moreover, the consulting services offered by UMS have allowed to address the Rizzoli Institute's organisational choices in view of enhancing process efficiency by exploiting the resources and devices available.»