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CHRU (Tours) is leading the fight against cancer with Datalogic Mobile terminals

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The Regional Hospital Centre/University of Tours (CHRU) campus area benefits from a privileged position in the heart of the region. The establishment employs over 7,000 people, making it a formidable player in the regional economy. This public health establishment groups together 6 hospitals offering the most important medical services



(medicine, surgery, injury department...). Since 1998, the CHRU of Tours has accommodated a number of construction and renovation projects, so as to ensure the availability of structures which are customised to meet the new requirements of the medical industry and to be able to respond to the patients and their families' needs. Today, the CHRU of Tours includes over 2,000 beds, provides services to over 65,000 people a year and is looking for ways to accommodate another 375 people a day.

All types of cancers are treated at the Bretonneau hospital, home of the Henry S. Kaplan Center, a specialist institution for onco-hematology. This center includes a pharmaceutical unit called the Biopharmacy-Clinical-Oncology Unit (UBCO), with ISO 9001 certification. Every year it produces the products necessary for 25,000 chemotherapy treatments. The pharmacy has 3 production units, referred to as "Insulators". These are high-profile units in which chemical substances (cytotoxics) used during chemotherapy in a controlled environment are handled, guaranteeing sterility and security. Chemotherapy treatment preparation takes place in four progressive stages: the prescription provided by the doctor is checked according to a specific protocol; the relevant preparation is produced according to predetermined sheet manufacturing; the finished product is monitored by a weighing system or monitoring analyser; and finally, the preparation is delivered to the patient. In addition, there are a number of supplementary monitoring measures that can be recognised in each stage of the production chain.

At CHRU of Tours, all of these activities are performed by computers, thereby providing complete traceability of the manufacturing process, from the prescription stage right up to the delivery stage. To do this, CHRU uses a traceability solution developed by Polytech and Eticsys, a company specialising in this field. M. Tournamille, a pharmacist for CHRU of Tours explains in more detail "it was important for us to control/regulate each of these manufacturing stages and be able to ensure complete regulation of the preparations produced in our unit. Therefore, we turned to Eticsys, which was able to accommodate all our medical/environmental limitations, providing us with a suitable solution".

This complete solution, integrating both software and hardware aspects, was the result of a tightly-knit collaboration between CHRU of Tours, the IT Laboratory of Tours University, Polytech Tours (specialising in IT) (for the engineering/software side) and ETICSYS (hosting the project). It consisted of a software module, "Planning," for scheduling preparation production, and another module, "Pilot," for information flow, which follows the production process and assures preparation traceability.

Datalogic Mobile's terminals are at the heart of this solution, granting mobility to doctors, preparation operatives and delivery people. The Datalogic Memor terminals effectively keep the preparation operatives permanently connected to the central system of the hospital throughout the production cycle. Datalogic Skorpion? terminals are used for delivery operations and registering the signature of the person commissioned to receive the product.

During production, the various task stages and relative controls are registered using the Datalogic Memor terminal. These stages guarantee sequence control and authorisation for the person conducting them. Each sequence is performed in chronological order. The operator must go through an identification process in order to be able to access the application. Once

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the person has been identified, he/she can see all the manufacturing information on the Datalogic Memor screen, as well as the stage currently in progress. The user only needs to scan or (by default) use the keyboard to register the prescription number to access this information and to identify the task that is to be carried out. The user can also, at any time, verify that the operation is proceeding properly. All the traced data is submitted in real-time to the hospital's computer system thanks to a WiFi communication radio. It is also possible to change the date, time and name of the person who conducted or confirmed the operation at any time.

All ten sequences are traced for chemotherapy preparation. This is mainly related to the preparation stage and control of the trays used for syringes, pockets, cytotoxic substances, etc. It also includes sterilisation (equipment number/isolator and charge cycle), preparation execution (dosage in a controlled environment) and different types of controls (visual, weight or analytical). When production is complete, the pharmacist makes a final check and releases the preparation.

At this point, the preparation can be delivered and administered to the patient. The Datalogic Skorpion is used for this process. It's robustness makes it suited to this type of application, and the large screen allows for signature capture. The delivery person visualises all the preparations and services to be delivered to the patient on the terminal screen. From there, he/she leaves the pharmacy and places him/herself outside the area covered by the WiFi radio. The terminal then goes into "batch" functioning mode. Once the delivery person has accessed the service, he/she scans the preparations using the Datalogic Skorpion terminal, and submits them back to the nurse, who confirms having received them and signs the terminal screen. This signature will be registered as proof of delivery. Once all the deliveries have been made, the delivery person will come back to the pharmacy to pick up further preparations. Once the delivery person has once again entered the zone covered by the WiFi radio, the connection is established, and the data is automatically transferred from the Datalogic Skorpion terminal to the central system. The pharmacist will then be able to see all the information for deliveries that have just been made (date and time, number of preparation units delivered, service data and name of the person who received the goods, proof of delivery in the form of a signature photo...) on the IT system.

M. Touramille comments: "This traceability solution saves us much time with the production and delivery of chemotherapy solutions. We have tried to render our system digital but always without disturbing the work of our operatives, who are, of course, required to keep their concentration. The Eticys company knew how to respond to this imperative: the Datalogic Mobile terminals offer us total mobility; and this freedom of movement is today very much appreciated by our operatives." M. Tournamille finished by concluding: "We work in an environment that requires strict control. And in the medical field, we cannot allow any errors - an error can and does put our patients' lives at risk. But thanks to Eticys, Polytech'Tours and their solutions with the Datalogic Skorpion and Datalogic Memor, we can now regulate each of these phases in real-time, and retrace all the operations in connection with the chemotherapy operation for a given patient. It has really increased our confidence, and the safety of our patients."

Now, anti-carcinogenic chemotherapy operates at maximum efficiency, providing spectacular results in certain pathologies: over 85% of children diagnosed with leukemia who were treated with chemotherapy were cured. With women, more than 85% of breast cancer cases are under control today. When you look at the costs that this type of action incurs, and the efficiency that is expected in connection with it, you can understand how one can accept no approximation if they going to offer the patients suitable treatment.

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