Datalogic's GRYPHON™ imager ensures patient safety by optimizing blood product distribution at UMC St Radboud hospital in the Netherlands

Overview

UMC St Radboud is a 1,000-bed university hospital in Nijmegen, the Netherlands. The hospital employs over 9,000 people and hosts 3,000 students. It includes several departments that handle different branches of medicine. The transfusion department, in particular, plays a central role as it distributes blood and blood products throughout the hospital. Accuracy is key to ensure patient safety.

"In healthcare, the acquisition of flawless information can sometimes mean the difference between life and death. When a patient is administered the wrong medication as a result of inaccurate information, it can lead to serious and even fatal consequences. Getting the right information is also crucial when dealing with the administration of blood and blood products," indicated Jan van der Wijst, supervisor of logistics within UMC St Radboud in Nijmegen. "We use all means possible to assure a safe process without error. We monitor and update the system constantly," says Van der Wijst.

Prior to administering blood or a blood product to a patient, a number of checks are carried out in the UMC laboratory and in the ward. "For example, we make sure the blood group corresponds to that of the patient and that the blood or blood products in the lab are used by the expiration date. We check the patient's blood for antibodies, which may lead to another transfusion product being chosen," explains Van der Wijst. The required blood or blood products are then issued in the name of the patient and the same checks are repeated in the ward.

The Challenge

The laboratory process has been automated for over ten years. However, the second check in the ward was performed manually. "Two nurses check the materials independently. Despite these precautions, things can still go wrong in certain situations," mentioned Suzan Meijer, a nurse in the intensive care unit.

Although these mistakes only occurred rarely, UMC wanted to improve this vulnerable area. Quality of care is the hospital's top priority. "Initially we looked at an RFID solution. However, it was too costly to implement throughout the whole chain. Moreover, the experiences with this technology in other medical centers weren't very positive," says Van der Wijst.

The Solution

UMC St Radboud chose a solution using the MIPS Cyber Track module with Gryphon™ healthcare scanners GD4100-HC and GD4430-HC. In this manner, the hospital could take advantage of the bar codes that were already on the blood bags. The Gryphon healthcare linear and 2D imaging readers provide advanced performance and feature Datalogic's patented 'Green Spot' technology, which guarantees good read feedback with a green spot that appears directly on the code. This, combined with their disinfectant-ready enclosures treated with anti-microbial additives, made the scanners

ideal for healthcare environments.

The solution using the Gryphon healthcare scanners now operates in the Intensive Care Unit and the Neonatology department. "This differs from the previous system because the patient and administering nurse are linked to a bar code," Meijer points out. "Before the blood or blood products can be administered, the nurse must scan the bar code on the blood bag and then the individual patient code. In this way, the match confirmed in the lab earlier is checked twice. The bar code on the ID card of the nursing staff is also scanned, creating an effective track & trace system that can monitor the whole process, from beginning to end, in real time. However, the most important aspect of this new system is the enhanced security. We no longer run the risk of life-threatening situations due to the wrong blood bag being administered, with error rates reduced to an absolute minimum," remarks Meijer.

The Results

"This process using the Gryphon healthcare scanner solution raises awareness and keeps us alert" commented Wiel Smeets, team leader on the Neonatology department. "You can only start a transfusion after all the steps of the protocol have been followed precisely. If a step is not completed correctly, the system sends a 'stop' message, and you can no longer continue. In this manner, complete patient safety is ensured with the risk of error reduced to practically zero. The need for only one nurse to perform the process, rather than the two needed for the previous one, provides an additional advantage."

UMC Radboud was so pleased with the results obtained by Cyber Track and the Gryphon healthcare scanners, that the hospital decided to roll out this solution in other departments as well. The Hematology department recently started using the system and the scanners will be implemented in other wards later this year.

Customer: UMC St Radboud Nijmegen
Industry: Healthcare
Sub-industry: Hospitals
Application: Blood bag traceability
Country: The Netherlands
Datalogic Product: GD4100-HC + GD4430-HC
Datalogic Partner: Pentoprint B.V. – Breda