ZEBRA

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Leiden University Medical Centre

TOP EUROPEAN HOSPITAL GETS REAL-TIME FEEDBACK ON URGENT CARE PATIENTS

The Leiden University Medical Centre, or LUMC, is based in the Netherlands. Formed in 1996, after years of collaboration between the university and the teaching hospital, LUMC is a centre for the education and training of medical professionals. With years of world class medical and clinical research, LUMC offers high quality patient care and plays a leading role in improving the quality of health care nationally, and internationally.

Challenge
NO REAL-TIME PATIENT VISIBILITY, MISSING DATA

Every hospital wants to deliver the fastest and best care to its patients. This is especially true when it comes to Myocardial Infarction. "With a heart infarction, every minute counts," says Maaike Hermans, Physician-Researcher, Department of Heart Disease, LUMC.

"In the case of an Acute Myocardial Infarction (AMI), patients have to be treated as soon as possible."
This is because AMI stops blood from reaching the heart muscle, so the faster the patient is treated, the faster the heart muscle can be saved.
The most serious patients suffering from AMI are sent to the catheterisation lab, where a balloon is inserted to open up the artery.
Previously at LUMC, this patient journey was tracked using hand written notes from hospital staff, which meant data was sometimes not immediately updated or incomplete.
"In more than half of the cases, time intervals were not recorded," recalls Maaike. "But because it's such an important performance indicator, we had to improve."
LUMC needed a solution that was quicker, easy to use and more accurate, but ultimately gave the hospital the ability to act faster for urgent care patients.
"Staff are in an acute situation where filling in a form isn't a priority," explains Maaike. "The priority is to take care of the patient, so we needed a solution that was easy and didn't put extra work load on the ambulance staff."

SUMMARY

Customer
The Leiden University
Medical Centre
Netherlandsame
Medical Industry

Challenge
- Enable visibility into patient and time consumed for emergency care
- Provide real-time tracking and feedback to medical staff
- Replace manually registered time tracking data
- Accurately measure door-to-balloon times
- Make door-to-balloon times visible to medical staff

Solution
- Immediate solution, ready-to-use in days
- No need for IT support system
- Bluetooth Smart Wristband
- Tablet computers
- Zebra Time Tracking Solution for AMI
- Zatar Enterprise IoT platform

Results
- Enables medical staff to focus on care of patient
- Increased efficiency with staff motivated to work faster
- Reduction in Door-to-Balloon time
- Automatic and complete capture of information

Solution

REAL-TIME PATIENT VISIBILITY FROM DOOR TO BALLOON

After seeing a demonstration of Zebra Technologies Internet of Things (IoT) platform Zatar, LUMC expressed interest in the Time Tracking use case for AMI patients. To meet the needs of LUMC, Zebra developed a bespoke Time Tracking Solution, which is broadly applicable for all hospitals. Made up of Zebra Bluetooth Smart Wristbands and strategically placed tablet computers along the patient's route, the solution tracks the patient time from "door-to-balloon", and using Zatar, provides accurate data stored securely in the cloud.
"The patient simply wears a wristband that sends a wireless signal and as they pass the tablets placed en-route throughout the hospital, they pick up that signal and record the time," explains Maaike.
Constantly talking to the wristbands and logging the time, the tablets also use a colour coding system, to show hospital staff the status of the door-to-balloon time. "We use our internal target of 60 minutes for a patient to complete the balloon insertion," says Maaike. "If a patient is too long in a particular department, the tablet screen turns red, if its lower, the screen is green. That's the feedback that the nurse or ambulance staff see."
The Time Tracking Solution is all powered by Zatar, an IoT cloud-based service from Zebra that allows information to be automatically and completely captured and then held securely.

"Stored in the cloud there's an overview of all the tablets and the beacons they see," says Maaike. "So we see a patient route and the time points in real-time."

Results

REAL-TIME FEEDBACK

Using the Time Tracking Solution from Zebra, the hospital could measure the door-to-balloon time more accurately and obtain real-time feedback on performance. Because of this, ambulance staff, catheterisation lab nurses and cardiologists are all focused on the patient and to improve door-to-balloon times.
To accurately measure the results, LUMC first conducted a blind registration phase, hiding the times from hospital staff. This was followed by a feedback phase, where the time intervals were revealed. "We hear staff in the catheterisation lab and even on Twitter, who say they are working on improving their door-to-balloon time by three minutes, or that they were very pleased with their time," says Maaike.

Because the Time Tracking Solution uses Zebra's IoT solution Zatar, the hospital can also use remote device management, data export and live dashboards, meaning they can capture and review patient data better than ever before. "With this new system our time registration is so much more complete and productive."

The Time Tracking Solution has impressed the hospital so much, that other departments are already trying to get funding for the technology. "Neurology is very interested in this solution," adds Maaike. "And not only in the LUMC, but they also want to do it in other hospitals." Surgeons are even interested in acute cases, because it could register time from emergency department to surgery.
"We are the first to really use this technique and with every minute that we can reduce, we are happy. Every minute of time reduction is better for the patient."

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> Maaike Hermans, Physician -Researcher, Department of Heart Disease, LUMC

Visit www.zatar.com, or for more information about the Time Tracking Solution for AMI contact us on d2b@zatar.com

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