

AZ Sint-Jan Brugge-Oostende AV, Campus Henri Serruys, Belgium

Digitization of order entry and blood transfusion management at the bedside and beyond leads to **greater patient safety** at AZ Sint-Jan AV, Ostend

With CyberLab and CyberTrack added to existing GLIMS LIS, hospital improves efficiency in the wards and the laboratory, while reducing potential errors

INTERVIEWEES » **Dr. Suzy van Erum**, Laboratory Department Head; **Kathy Boydens**, Chief Laboratory Assistant; **Wendy Jonckheere**, Laboratory Assistant; **Didier Timmerman**, ICT Specialist in the lab



330-bed AZ Sint-Jan AV Campus Henri Serruys, in Ostend, Belgium, is part of the AZ Sint-Jan Brugge-Oostende AV hospital group, which includes its larger, 900-bed 'sister' hospital in Bruges. The Serruys site comprises a full laboratory, with a staff of 30, offering chemistry, microbiology and haematology exams; molecular biology and rarer types of exams are handled at the Bruges campus. The Serruys-site lab performs tests for referring physicians inside and outside the hospital, and aims to deliver maximum service and quality.

A FOCUS ON QUALITY

For more than 12 years, the lab has been operating according to stringent quality guidelines. "This focus on quality is appreciated by hospital management, and quality awareness is now being extended throughout the hospital," explains Kathy Boydens, chief laboratory assistant. In two years, the hospital is planning an audit to qualify for Joint Commission International (JCI) accreditation.



To help achieve its own quality goals, the laboratory implemented MIPS' first generation laboratory information system (LIS), which was then upgraded to GLIMS in 2005. "It offers us a lot of functionality, and helps us meet our goals of delivering high quality service," comments Dr. Suzy van Erum, head of the laboratory department.

Quality guidelines supported AZ Sint-Jan AV Campus Serruys to avoid errors in the lab, says Dr. van Erum, but "about 75% of lab-related errors can be attributed to errors in the pre-analysis phase, such as in the ward when

samples are being taken. These include errors in patient ID, the use of the wrong sample material, the sample being taken at the wrong time, etc."

CYBERLAB: WIRELESS BEDSIDE SAMPLE MANAGEMENT

To solve this issue, MIPS suggested integrating its web-based CyberLab order entry module into GLIMS. Dr. van Erum recalls: "We realised that bedside scanning would give us the best results for the ordering workflow: we were the first lab to implement this workflow. We were also the first hospital in Flanders to choose a

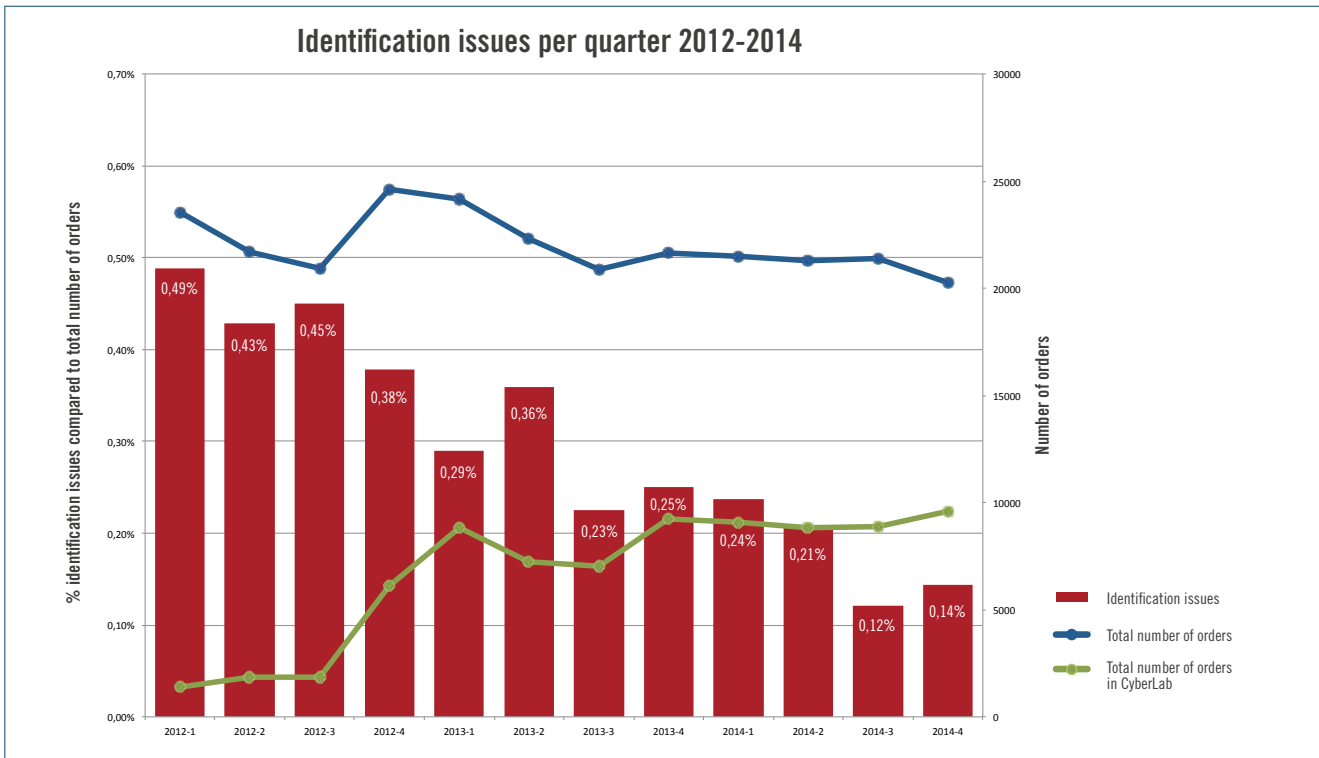
“ Since implementing CyberLab, pre-analysis errors have dropped by 50%. But that’s not all: we also have seen improvements in lab efficiency.” Dr. Suzy van Erum



100% wireless solution for both scanning and printing. This eliminates the need for a PC trolley when taking samples, making work easier for the nurses and increasing hygiene, especially in case of infectious diseases. Initially we were a bit apprehensive about the reliability of the wireless system but we added a few antennas in some of the wards and it worked perfectly."

Roll-out began in 2011, with the surgery ward as a pilot site. Organising training proved a challenge, however: as Wendy Jonckheere, laboratory assistant, explains: "We discovered it was very difficult to get all of the nursing staff together for training, so we decided to train the head nurses for each department first, and then have them accompanied by lab assistants for a week, which worked well." By 2012, all of the departments were using the solution.

With the user-friendly CyberLab, nursing staff can enter orders for lab tests, which then must be authorised by the treating physician. For each order, labels with barcodes and additional info are printed right in the ward and attached to the sample tubes. As the number of labels corresponds with the number of tubes needed, there is no question about how many blood samples the nurse needs to take.



When taking the samples, the nursing staff has all the necessary information at hand, for example if serum needs to be cooled in ice. The sample label and the patient's wristband are both scanned and if they do not match, the computer will give an alert. If everything is correct the samples can be sent to the lab via the pneumatic post system. "As soon as the tubes reach the lab, they are scanned again and, after centrifugation, they are transferred immediately to the devices for analysis; samples from emergency cases are prioritised. This results in a very quick transmission of results to the electronic patient record," describes Kathy Boydens.

While staff were a little hesitant initially about the wristbands and scanning, they soon saw the advantages. "In particular there was concern about the complete traceability of every action," recalls Wendy Jonckheere. "But when they saw that we used that information to approach nurses in private to explain how they could improve their processes, they were able to accept it. And they appreciate having all the information and instructions at hand when sample-taking; it helps them feel more secure." Kathy Boydens adds: "Since the introduction of CyberLab, the use of the wristbands rose from 40% to virtually 100%, helping us avoid many patient ID issues."

One nurse from the surgery ward, Chantal Soete, agrees: "The new working method

required a change in mentality, but once we got there, it was really easy. Now we embrace each opportunity to digitize and are becoming 'allergic' to paper."

And the results are impressive: "Since implementing CyberLab, pre-analysis errors have dropped by 50%!" says Dr. van Erum. "But that's not all: we also have seen improvements in lab efficiency and we can now work in a paperless way, which is better for the environment. At the same time all data is 100% traceable, from the moment the sample is taken till the results are distributed." Didier Timmerman, ICT specialist in the lab adds: "Once the order is created, all the data is automatically available in the GLIMS: no more manual entry by the lab assistants. And we save time previously spent filing paper forms and checking the data entered manually into the GLIMS."

And while the lab has maintained the same number of staff to guarantee good follow up of lab activities, the improved efficiency means they have more time for other critical tasks, such as quality assurance.

CYBERTRACK: TRANSPARENT TRANSFUSION, FROM START TO FINISH

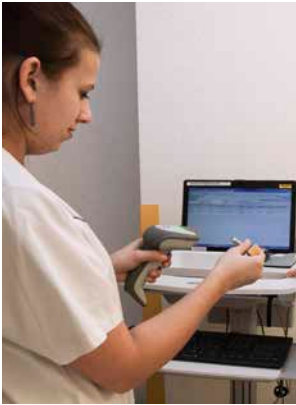
With the big success of the CyberLab implementation, the hospital quickly decided to add the CyberTrack blood transfusion management module. Using the experience

CyberTrack

- Full traceability of entire transfusion process, from ordering the blood bag to registering the transfusion.
- Clinicians throughout the hospital can consult the transfusion data registered in CyberTrack.
- Statistics help keep track of important performance indices.

CyberLab

- Flexible module for requesting lab exams.
- Supports bedside scanning to avoid patient identification errors.
- Seamless integration with third-party systems.
- 100% wireless solution for both scanning and printing.



and acceptance – and tools, such as barcode scanners – gained from CyberLab, CyberTrack could be launched throughout the hospital in no time. In fact, once CyberTrack was introduced in some wards, staff from other wards requested it, too.

A transparent transfusion process assists the nurses from start to finish. The nurse first takes the patient's pulse, blood pressure and temperature. If everything is fine, the nurse then prepares the blood bag, attaching it to the stand. The barcodes on the bag and patient wristband are scanned, and if they do not match, the computer gives an alert. If they do match, the nurse can begin the transfusion. The system asks the nurse to check and enter the patient's parameters at specified intervals. With the transfusion complete, the barcodes are again scanned, and the nurse can enter any remarks, such as if the transfusion had to be interrupted and why.

CyberTrack plays an important role in patient safety as CyberLab. Kathy Boydens explains: "When administering blood, if something goes wrong, the consequences can be grave. Previously, before starting a transfusion a second nurse had to verify that all was fine. This verification now is done in CyberTrack."



From left to right: DIDIER TIMMERMAN, ICT specialist in the lab, KATHY BOYDENS, chief laboratory assistant, WENDY JONCKHEERE, laboratory assistant, DR. SUZY VAN ERUM, laboratory department head

Benefits of CyberLab and CyberTrack

- Improved patient safety by decreasing human errors.
- Fast exchange of information between the lab and the clinicians, resulting in quicker patient care.
- Simplified administration helps enhance efficiency in the lab and in the ward.
- Traceability of all activities supports the hospital to meet legal requirements.
- Close collaboration between MIPS and the client, helping to adapt the system to the lab's specific needs.

"We also have a better overview: GLIMS keeps a log of all blood bags from the moment they enter the lab until they are removed, while CyberTrack tracks the transfusion data, which any clinician can consult," says Dr. van Erum. "And statistics also help us keep track of important performance indices such as the average time for administering blood."

Once again, the lab's quality and efficiency efforts are being noticed: "Our colleagues at the Bruges campus have seen the benefits CyberLab and CyberTrack offer for increasing patient safety. I think we will soon see them integrating these modules in their LIS, as well!" concludes Dr. van Erum. •

