Centre Hospitalier Universitaire (CHU) de Poitiers, Poitiers, France

A complete and bidirectional chain between the laboratory and departments of the CHU of Poitiers

With CyberLab, doctors can order exams and consult the results online, directly from their department. All of the information, as well as the patient's history, are accessible from the patient's electronic record. The speed of diagnosis is improved.

INTERVIEWEES » **Dr. Christine Pradère,** Geriatrician; **Alexandre Pavy,** IT Project Manager for the laboratory and operating theatre; **Florent Ribardière,** Hospital Engineer for the laboratory applications and robotics of the CHU of Poitiers

« From left to right: **Florent Ribardière,** Hospital Engineer for the laboratory applications and robotics; **Richard Mesdon,** Responsible applications department; **Alexandre Pavy:** IT Project Manager for the laboratory and operating theatre

CyberLab

- Web application that makes it possible to order analyses and consult laboratory results from any part of the facility that has a Web navigator and network access.

- Configuring of results type (definition of panels) to simplify ordering.

- Strong integration with the GLIMS laboratory management software and the electronic patient record (internally developed, TELEMAQUE).

- Status indicator from the request to the receipt of the results.

- Sample collection plan and single labelling directly within the departments.

- History of exam reports supporting graphics and images.

- Specific exam profiles for specialised departments.

- Audit of ordering for traceability of actions and stakeholders.

"No more need to run and check a file, or telephone the laboratory to confirm if the analyses have been completed, or wait for the hardcopy results," says Dr. Christine Pradère, geriatrician for nearly 30 years at the CHU (University Hospital) of Poitiers. "The orders and biological data for the patient are accessible directly from within the department, via a simple, user-friendly interface that can also view the history and evolution of exams." The installation of CyberLab in two stages – first the results server and then the ordering tool – complementing the MIPS GLIMS laboratory information management software, has helped accelerate and simplify procedures, not only for nurses and doctors, but also for the biology laboratory.

A FIRST IN FRANCE

The Poitiers hospital is the only CHU for Poitou-Charentes, a region with nearly 1.7 million inhabitants. Offering a complete chain of acute, follow-up and extended stay care, it has a capacity of 1,600 beds and a staff of over 6,000, including 517 medical personnel. A pioneer in hospital computerisation, the CHU had already set up its own electronic patient record system 20 years ago. This was converted into 'full web' mode in 2008, and today interfaces with a score of other applications: ultrasound, haemodialysis, the laboratory information system (LIS), the picture archiving & communication system (PACS), etc., which together cover the whole spectrum of the hospital's medical informatics.

In 2005, during the construction of a new building that would also house the emergency department, the CHU decided to centralise and regroup the 18 geographically dispersed laboratories and to totally rethink the exam procedure. "This situation offered the facility the opportunity to put in place an integrated chain (both analytic and pre-analytic) as well as an LIS, in a consolidation project that was the first of its kind in France, using GLIMS,"

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explains Alexandre Pavy, IT Project Manager for the laboratory and operating theatre at the CHU.

Florent Ribardière, Hospital Engineer for the laboratory applications and robotics, continues, "GLIMS was installed before the move to the new building. At the time, we had diverse systems that needed to be modernised. The solution of a single LIS with a shared platform was chosen, and the first laboratories were implemented in November 2004. The presence of GLIMS for the installation of the track was a real advantage in helping set-up the modular configuration and improving the responsiveness for the various stakeholders."

TIME SAVINGS FOR EVERYONE

Since its implementation in 2004, the GLIMS solution for the centralised laboratory, comprising 10 departments, has been complemented with the deployment of the CyberLab results server in the care departments. "Introducing CyberLab was a big relief for everyone," comments Florent Ribardière. "The goal was to allow all of the hospital's functional units to consult results directly from within their own department, without waiting for paper copies." Once the patient's sample has been collected, it takes less than a minute for the pneumatically-transmitted tubes to reach the centralised reception of the laboratory, where the patient file is entered. The results are thus accessible between 15 minutes and 1½ hours, depending on the type of analysis being conducted, and can be consulted by the doctors via work screens in the departments. "The CyberLab server is heavily used. It is a user-friendly and intuitive tool. This means fewer telephone interruptions for laboratory staff, who can concentrate on their tasks." For her part, Dr. Christine Pradère comments, "Now it is possible to make comparisons immediately, or to see the development curves graphically, for example for creatinines, anaemia or an inflammatory syndrome. There is also a colour coding for tracking the process: blue means the samples for analysis have

been received by the lab, yellow that new results are available."

CYBERLAB: A SECURE CHAIN

Starting in October 2010, in support of the CHU's objective to integrate the process in a complete, automated chain, the CyberLab tool for ordering laboratory tests was gradually installed, beginning with rheumatology, geriatrics, ENT (surgery), ophthalmology (surgery), neurology, neurosurgery, trauma, pharmacy and endocrinology. Its deployment is ongoing across all of the facility's departments and should take another two years. "The dialogue between the laboratory management solution and CyberLab is simple. There is little setup to do for the ordering tool. The LIS, specifically GLIMS, controls the generation of requests," says Florent Ribardière.

In the units and the laboratory alike, the solution provides safety and traceability, two fundamental requirements for accreditation. In the patient record, context sensitive calls to CyberLab let the doctor specify an order, whether it is immediate or deferred. The nurses prepare the tubes and carry out the blood sampling based on the sample collection plan indicated in CyberLab (generated by GLIMS). Labels

are printed and samples then labelled directly in the department. Then they are sent to the centralised sample reception. "Before, the tubes were first labelled with the patient number and then relabelled at the laboratory. CyberLab has reinforced on the one hand safety, because labelling is done only once, and on the other hand traceability. Another advantage: if, for example, the colour of the container is changed, it is no longer necessary to inform the departments because the information is indicated on the labels printed there,

Benefits of CyberLab

- Accelerates communication and data sharing between the laboratory and the hospital's care departments, smoothing the overall process.

- Increases safety and reliability by automating processes and minimising potential human error during information entry.

- Reinforces traceability, to meet regulatory requirements.

- Simplifies the preparation of tubes in the care departments by providing sample collection plans.

- Enables consistent ordering by doctors in the same service.

and is updated automatically. This simplifies things considerably," highlights Florent Ribardière.

A WINDOW TO THE OUTSIDE

With 140 technicians and 50 biologists, the biomedical laboratory, spread out over two floors of the CHU of Poitiers site, handles almost 2,500 files and 4,000 tubes each day. This volume is constantly increasing due to the regional biology project: the CHU of Poitiers is in fact increasing its activities by offering its

services to nearby facilities (the hospitals of Niort and Lusignan, and soon those of Montmorillon and le Blanc). "This window to the outside world impacts local medical practices, as well, with laboratory results being sent in electronic format using secure messaging. These results can then be reintegrated in the doctors' own software," explains Alexandre Pavy. In the coming months, an internet portal should also make it possible to consult CyberLab from outside the hospital, offering the possibility for duty doctors to check results from their homes. •

> " Introducing CyberLab was a big relief … It is a powerful and user-friendly tool, used a lot by all the hospital departments. "
> Florent Ribardière

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