

“The results that before were received through conventional mail now come in a few minutes and without mistakes.”

Dr. Francisco Javier Mérida De la Torre
Hospital de la Serrania

Increasing patient safety is one of the fundamental aims of Siemens Healthcare Diagnostics IT (information technology). The simple computer procedure described here is a way of reducing both workload and possible errors when sending samples to external reference laboratories.

IT in the clinical laboratory has become an essential tool to support safety, standardization, and correct management of analytical processes. Process optimization for production systems has, in recent years, been applied successfully in the clinical laboratory. The role of IT has expanded to include management of critical laboratory processes.

This case study shows how a very simple IT-enabled process can lead to very significant improvement in safety and efficiency. This is accomplished by changing the relationship between the user and the supplier of information technologies from one-way into a real collaboration focused on obtaining mutual benefits from the applications developed.

Increasingly, laboratories need to meet the demands of their clients within the limitations of internal resources. They also strive to achieve the maximum performance, both economic and functional, of their applications. This case study is a good example of collaboration between the laboratory and the IT supplier.

Hospital de la Serrania Makes Significant Improvements in Efficiency and Patient Safety

Winning with Diagnostics IT

Answers for life.

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Avoiding mistakes and delays in diagnostic test requests

Laboratory UGC of Área Sanitaria Serranía de Málaga, Ronda

The Unidad de Gestión Clínica de Laboratorio (Unit of Clinical Management), founded in 2007, groups all the diagnostic disciplines of the laboratory, including biochemistry, microbiology, hematology, and pathological anatomy, to meet the needs of patients and support blood and cord donation (in collaboration with the Regional Center of Blood Transfusion of Málaga) and public health.



The Hospital de la Serranía tends to a population of almost 120,000 inhabitants and has 147 beds. Every year, it performs more than 1,300,000 analytical determinations. Ninety-five percent of these are carried out in its own center, while the rest are sent to two external laboratories, a private one and the Clinical University Hospital of Malaga. This selective use of external laboratories is typical of medium-volume laboratories, and the test send-outs are performed manually.

Requisition process (former)

The request entry procedure at UGC began with a physician initiating the request on paper. In the case of complex studies with determinations that had to be sent to an outside laboratory, the physician needed to complete two different requests. In addition, the staff of the laboratory had to make a duplicate copy of the request to be sent out. All these processes were performed manually; given the volume of testing, mistakes were frequent; and the duplication of work decreased efficiency.

Analytical process (former)

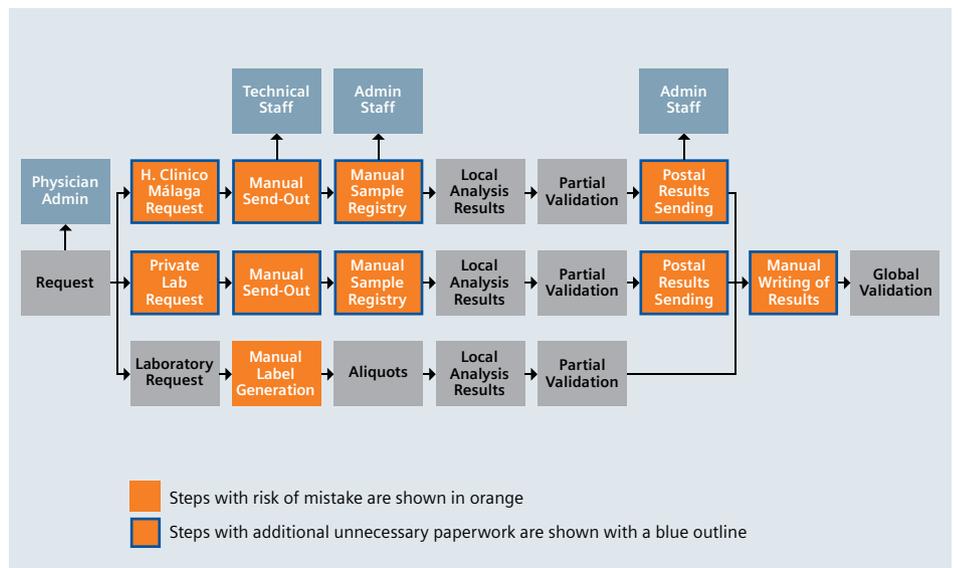
This process of duplicate requests by the physician and administrative staff resulted in mistakes and delays. Since results from external laboratories were sent by mail, there was a further delay in receiving test results. When the test results arrived at the laboratory, they were transcribed manually by lab personnel, introducing another source of potential mistakes. In the diagram shown below, the process steps with a risk of error are shown in orange and those with additional unnecessary paperwork are shown with a blue outline. The aim was to design a simple computer bridge that would reduce or eliminate both the risk of mistakes and the work overload.

Requisition process (current)

Servolab® Laboratory Information System is a powerful tool for managing and controlling data processing. It is especially designed for clinical labs, with the flexibility to adapt to specific lab and user needs. Once the complexity of the process for sending requests to external laboratories was clear, people in charge at UGC in collaboration with the IT specialists at Siemens Healthcare Diagnostics, designed a simple

“Duplications were taking place in the paperwork that were not contributing anything and they were a very important source of mistakes and a delay in the whole diagnostic process.”

Dr. Francisco Javier Mérida De la Torre
UGC Manager of Área Sanitaria
Serranía de Málaga, Ronda



Analytical process (former)

application using a computer bridge between Servolab software and the external laboratories. Forms were developed to capture critical information and ensure unequivocal identification of samples. The workflow was redesigned to enable computerized transmission of the information to its destination.

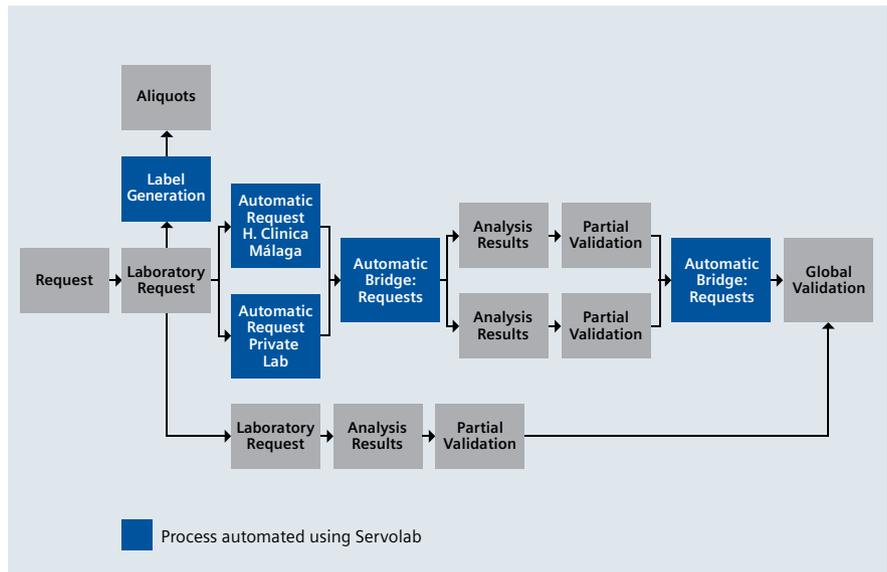
The key benefit was that the physician had to generate only one request, and the administrative staff of the laboratory did not need to duplicate any type of information.

Analytical process (current)

Once requests are received in the laboratory and verified, Servolab generates worklists of the samples that must be done in-house and those that need to be sent to other centers.

Aliquots of the samples are prepared and sent by a conventional messenger company to the external laboratories. The test requests, unlike in the previous process, do not accompany the samples. Instead, patient identification and profiles and the test requests are transmitted electronically following a specific encrypting protocol.

To eliminate the need for the samples to be re-labeled at their destination, labels are generated at the same time as the aliquots, automatically adding a single digit that identifies the origin of the sample. When the samples arrive at the external laboratory, the requests are already in the worklists, so there is no need to do any additional administrative tasks. Once the request is finished and the results validated, they are sent back electronically, so the information coming from the external laboratories is inserted in the UGC database. There it is accessible and validated by the physicians within the laboratory's network.



Analytical process (current)

The results that were received previously through conventional mail now arrive in minutes, without mistakes and without the cumbersome task of manual transcription by lab personnel.

Patient security, key objective for IT

This case study illustrates how IT is of critical importance in the pursuit of excellence in clinical lab management and patient safety. A laboratory information system must have enough flexibility to satisfy the needs of the changing environment of the clinical laboratory.

The process of remote request entry was improved with the application of IT using a simple procedure designed by the laboratory and Siemens Healthcare Diagnostics. The impact of the new automated procedure is substantial: up to 13 percent less administrative work, and a decline to 0 percent in mistakes produced in the transcription and duplication of requests for external laboratories.

The Paper Free Hospital tries to eliminate all the paper documents of the daily routine and replace them with electronic files. With this change, the transmission of information speeds up since, when physical transfer is reduced, unintended changes are avoided and the integrity of the information increases. According to a study published by Johns Hopkins University, the digitalization of patient records would reduce the risk of death during admission by 15 percent. The process change described in this case study, though more modest in its aim, helps to improve the quality of patient care and reduces costs.

Siemens Healthcare Diagnostics, the leading clinical diagnostics company, is committed to providing clinicians with the vital information they need for the accurate diagnosis, treatment, and monitoring of patients. Our comprehensive portfolio of performance-driven systems, unmatched menu offering, and IT solutions, in conjunction with highly responsive service, is designed to streamline workflow, enhance operational efficiency, and support improved patient care.

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Global Siemens Headquarters

Siemens AG
Wittelsbacherplatz 2
80333 Muenchen
Germany

Global Siemens Healthcare Headquarters

Siemens AG
Healthcare Sector
Henkestrasse 127
91052 Erlangen
Germany
Phone: +49 9131 84 - 0
www.siemens.com/healthcare

Global Division

Siemens Healthcare Diagnostics Inc.
1717 Deerfield Road
Deerfield, IL 60015-0778
USA
www.siemens.com/diagnostics

www.siemens.com/diagnostics