

Microbiology meets total lab automation

The experience of an Italian hospital that has integrated a WASP unit within the CoreLab automation track



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A shared vision to break down traditional laboratory silos

As clinical laboratories have strived to address workload increases, staff shortages and operational productivity targets, total laboratory automation has become well established in many Core Labs worldwide.

While much progress has been made in consolidating pre-analytical, analytical and post analytical tasks across chemistry and hematology departments, disciplines such as microbiology have remained tucked away in their separate area of the lab... until now.

In 2013, the Laboratory at Bassano Hospital elected the Inpeco-Abbott partnership as their vendor of choice. Bassano, Abbott and Inpeco shared a common vision to measurably improve the performance of the laboratory; it was built around leveraging the analytics, automation, inventory solutions and expertise to drive real impact through selection and monitoring of key performance metrics. Furthermore, the three partners shared the future vision to break down the physical and cultural barriers that separate microbiology and the Core Lab to ultimately combine the two disciplines in a shared vision to deliver better patient service. That shared vision has become a reality.

Inpeco has long led the way in driving multiple analyzer connections through lab automation and recently has expanded the connection possibilities to include a direct link to WASPLab®, the Copan solutions for microbiology, bringing this diagnostic specialty within the perimeter of total lab traceability, thus ensuring the reliable quality and optimal delivery of patient results.

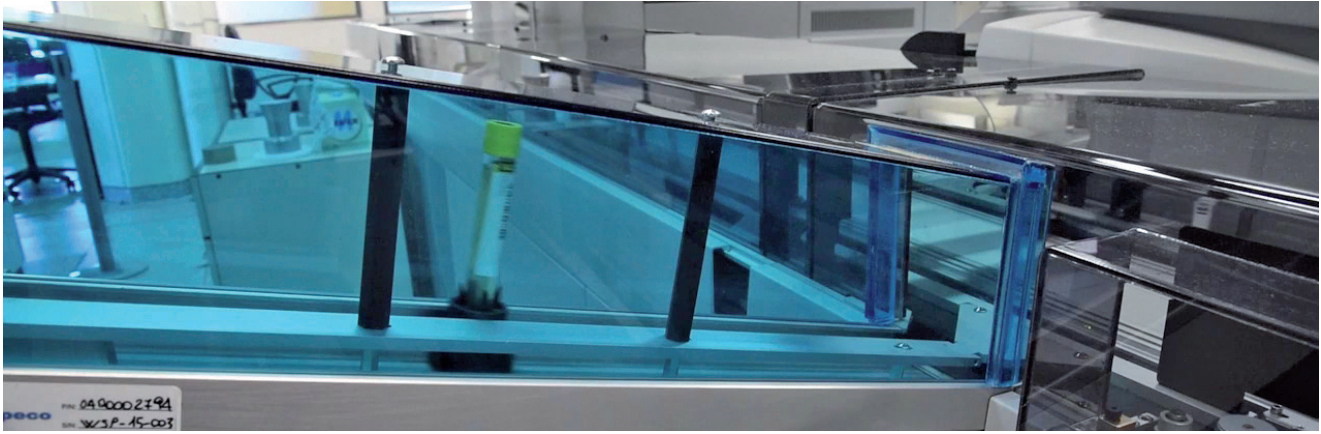
Integration of Microbiology into the Total Lab Automation system

Microbiology tests are run under particular conditions (the risk of contamination, non-standard containers, solid transport media, etc.) and operators often consider microbiology as too complex for total lab automation and think that no tool could efficiently replace the human activity required.

Therefore, until now, this specialty had been excluded from large total laboratory quality projects, preventing it from enjoying the traceability chain of custody benefits, offered by TLA tracks. However, since 2014 the Department of Laboratory Medicine of Bassano Hospital, directed by Dr. Giorgio Da Rin, has successfully integrated Microbiology into the Total Lab Automation system.

The connection of the Core Lab with the special Microbiology instrumentation has had a technological and organizational impact on the entire Department; professionals and operators from some quite diversified sectors, were now able to operate on a single functional platform, with the common goal of providing timely responses to clinicians. *"For our Department, integrating Microbiology into the Core Lab platform has meant consolidating the quality assurance of results"* - says Dr. Da Rin. To include WASP® in the TLA processing chain, Inpeco had to consider an ad hoc intervention on Copan's hardware, which presents an operations height (above the lab floor) that is higher than normal.

The R & D team at Inpeco designed a solution to 'scale' the obstacle, with a slightly inclined connection that carries the samples up to the height of the instrument.



This intervention - studied by Inpeco in collaboration with Copan - provides a complete solution for the process: WASP® receives the primary tube from the track and returns it there, also producing the culture plate which is transported and stored automatically in the WASPLab® system incubators. Inpeco has also validated tubes developed by Copan specifically for microbiology samples loaded by automation. The ability to study and implement solutions suited to each specific need is one of the strengths of Inpeco, which in fact has an R & D team of over 150 employees. In this case, the challenge presented itself in an undoubtedly interesting way; extending the benefit of sample safety and traceability to such a particular specialty as Microbiology.

A single check-in point for the entire laboratory

Doctor Da Rin and his staff are very satisfied with the solution, which is smoothly connecting different silos: *"A single check-in point for the entire lab was a big step forwards; this has enabled a reduction in the staff engaged in pre-analytical activities without added value. Now microbiology samples, like the samples of clinical chemistry, hematology etc., are stored in one single module, allowing traceability of the entire process and automatic disposal, further saving time and reducing human exposure to biohazardous material".*

Thanks to the inclusion in the TLA track, today even Microbiology samples can be loaded anytime, day or night, regardless of the presence of a technician from that sector. This allows a reduction in response time, to the benefit of the patient. The introduction of microbiology diagnostics in a TLA model helps improve the effectiveness and efficiency of all the services provided by the laboratory: *"After a few initial doubts, the operators' satisfaction now is undoubtedly a sign of the quality of the project; today both technicians and doctors no longer need to focus on repetitive and manual operations. But the greatest satisfaction is the awareness of having contributed to delivering a higher quality of service to the patient, safer and in less time".*

- Bassano Core Lab processes over 3 million tests per year and approximately 250 different assays from 14 different collection sites.
- The Core Lab solution integrates 14 different analyzers from various companies. The solution includes clinical chemistry, immunoassay, serology, hematology, coagulation and microbiology
- Connections developed by Inpeco: 48, for 6 different clinical specialties; 14 different pre- and post-analytical automation modules; 6 different track design options

