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Symposium

System interoperability to improve the treatment and surveillance of infections

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Today, most laboratories have their in vitro diagnostic devices connected to their information management system, either directly or via an intermediate system steering the work of a set of devices, exchanging the work orders and their corresponding results up and down the stream. This connectivity of the IVD devices to the laboratory information system is achieved for all specialties, microbiology included. It enables the clinical laboratory to streamline its internal processes while improving the level of quality of those processes, thus contributing to meet the requirements of overall quality management standards such as ISO 15189. However, this connectivity is often still relying on non-standard communication protocols as well as on locally agreed coded vocabularies to identify objects such as the types of specimens, the analytes, the microorganism or the antibiotics. This results in a high cost of deployment and maintenance of these interfaces, for both the vendors and the users. Moreover, this lack of standardized protocols and coded vocabularies weighs on the laboratory capability to communicate its results to the stakeholders surrounding it: The information systems of clinicians waiting for the laboratory reports, the shared electronic health records operated by the region or country to improve continuity and coordination of care, and the public health repositories, who need to track and consolidate knowledge on the ongoing status of infections on broader territories, such as Europe with ESCMID for example. A better handling of these laboratory results and especially microbiology results can only occur with an end-to-end connectivity relying on stable standards and consistent vocabularies, used in the same way by all systems potentially dealing with such laboratory results. The international organization Integrating the Healthcare Enterprise (IHE) is contributing to this goal of end-to-end connectivity, by providing a consistent set of profiles of standards in the IHE Laboratory domain, covering the various use cases of laboratory information exchange. Recently this set of profiles has been complemented with the help of another international organization - the IVD Industry Connectivity Consortium (IICC). This two years joined effort of IHE and IICC has produced a new profile called "Laboratory Analytical Workflow". With the complete set of IHE profiles provided for the laboratory domain, not only, clinical information systems but also public health systems and clinical research systems can consolidate and compare results coming from different laboratories, and apply safely reasoning rules on these results, thus improving both the treatment and the surveillance of the infections described by these results.