Part II
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The year 2011 clearly showed a major evolution in clinical microbiology with the availability of novel diagnostic tools based on high-level technologies. However, many questions are often asked to the laboratory about the use of these systems and the clinical relevance of the results obtained with these new technologies. We are now facing a time where we can unravel the role of unsuspected microorganisms or even question the impact of the microbial flora. We can also quickly obtain a correct identification in addition to a resistance mechanism thereby enabling improved infection control on both, bacterial and viral agents. Mass spectrometry (MALDI-TOF, ESI-TOF or even LC-MS/MS), in parallel to integrated nuclear amplification systems allow the characterisation of pathogens with few reagents and a very short turn-around time with a potential impact on patient care (e.g. for tuberculosis) or for the surveillance of microbial resistance. Characterisation of the microbial flora by metagenomic approaches -in the presence or absence of an active infection- might allow the definition of specific microbial patterns under defined pathological conditions. Finally, obtaining a nearly 100% correct identification rapidly, as for mucoïd bacteria or yeasts, is of outmost importance for the epidemiological surveillance of infections in cystic fibrosis or immunosuppressed patients, for example. Altogether, microbiology is entering an era of new technologies that we will try to review, not as a listing of devices, but as useful and clinically relevant solutions for the best management of infectious diseases.