



**True minimum inhibitory concentrations,  
better informed therapeutic choices**

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Infectious disease control team are facing more challenges than ever, with emerging resistance mechanisms various pathogens, and less new drugs to market. Pathogens that are used to be susceptible to broad spectrum drugs are being seen with rising resistance rate, forcing changes in empiric treatment, and needs for accurate susceptibility testing result for treatment plan.

Invasive Candidiasis is a serious infection of yeast within sterile site. With emerging resistance from Candidas to Azoles group, there has been change to prescribe Echinocandins as empiric treatment. Accurate and comprehensive susceptibility testing is crucial to manage patient treatment plan. The recommended susceptibility testing method by CLSI is broth dilution method, which is laborious to perform and not able to be adapted as routine testing. Current commercial methods available are antifungal susceptibility testing by Sensititre (ThermoFisher Scientific), VITEK 2 (bioMerieux), and ETest (bioMerieux).

Mycobacterium tuberculosis is still among the top 10 causes of death worldwide in 2015. It is challenging to manage TB as it is easily transmissible, and the development of resistance due to inappropriate drug intake. The reference method for TB susceptibility testing is Agar Proportion Method (APM) that is only performed by reference laboratory with skilled technician. Sensititre MYCOTBI susceptibility testing has high categorical agreement with APM (94-100%) and is able to detect more resistant isolates.

Colistin and its prodrug CMS (Colistimethate) were used from 1950 to 1970 but was replaced due to severe side effects. However, this group of drug is reintroduced as a valuable therapeutic option for high CRE prevalence area. Caution for prescription of these drugs is crucial with reliable susceptibility testing method. EUCAST and CLSI have a recently announced recommendations that broth dilution method being the only reliable susceptibility testing method for Colistin.

We will discuss about how the healthcare system can cope with these challenges and what diagnostics tools are available today.