

Entrustable Professional Activities (EPAs)

List of EPAs for Medical Microbiology

EPA Title	EPA Entrustment Level to be Attained by Exit
<u>EPA 1: Authorising Laboratory Results</u>	Level 4
<u>EPA 2: Assisting the Implementation of Quality Management Systems</u>	Level 4
<u>EPA 3: Assisting the Implementation of Laboratory Safety Management Systems</u>	Level 4
<u>EPA 4: Providing Consultations Related to Patient Management</u>	Level 4
<u>EPA 5: Providing Advice on Infection Control and Management of Antimicrobial Use</u>	Level 4

Entrustment Scale

Entrustment Level	Description
Level 1	Be present and observe, but no permission to enact EPA
Level 2	Practice EPA with direct (pro-active) supervision
Level 3	Practice EPA with indirect (re-active) supervision
Level 4	Unsupervised practice allowed (distant oversight)
Level 5	May provide supervision to junior learners

Microbiology EPA 1
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Title	EPA 1: Authorising laboratory results
Specifications and limitations	<u>Interpreting and reporting the following categories:</u> 1. Bacterial culture, identification, and susceptibility tests 2. Mycobacterial culture, identification, and susceptibility tests 3. Fungal culture, identification, and susceptibility tests 4. Virus diagnosis (different methods) 5. Molecular assays (detection, resistance genotyping and others) 6. Antigen assays 7. Serology 8. Pathogen genome sequencing, analysis and application <u>Resolving difficult or atypical microscopy:</u> 1. Using stains, including wet mount, for various specimen types 2. Managing uncertain findings <u>Troubleshooting pre-analytical, analytical, and post-analytical issues:</u> 1. Apply knowledge of test indications, test requesting processes, specimen collection, transport and storage issues and how to address them. 2. Apply in-depth knowledge of methodology and equipment, performance and limitations. 3. Apply systematic approach to factors contributing to errors, in the total testing process. 4. Apply knowledge of how the results are conveyed, acknowledged and used by the clinical team. 5. Address problems collaboratively with relevant laboratory and external staff or units e.g. IT, lab director, nursing. 6. Apply root cause analysis or other quality improvement tools to corrective or preventive action. 7. Apply functions of the laboratory information system for effective reporting of laboratory results. Limitations: NIL. Microbiologists are trained widely in different laboratory aspects to ensure adequate competency to authorise results in all the categories above
EPA Entrustment Level to be Attained by Exit	Level 4

Microbiology EPA 2
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Title	EPA 2: Assisting the implementation of quality management systems
Specifications and limitations	<u>Applying all aspects of a laboratory quality management system.</u> Trainee will participate in various applicable roles – leading changes, writing or reviewing or revising policies and work instructions, internal audits, meeting discussions, daily checks. Know how the quality management system functions and contribute to its continued and effective function. This includes the following areas (refer to ISO 15189 and applicable Singapore standards): • Document control • Responsibilities and authorizations • Managing vendors and potential conflicts of interest • Client requirements • Corrective action and quality improvement • External quality assurance programmes • Equipment and new test implementation (see below) • Management review To incorporate laboratory quality issues into hospital-level quality programmes and committees, including patient safety and other hospital standards. <u>Evaluating, selecting and implementing new tests and equipment.</u> Trainees may be involved in an actual process or a mock exercise using past evaluations: 1. May involve the same method or different methods for the same test. For example, EIA and IF, or resistance genotyping instead of phenotypic susceptibility testing. 2. This includes connectivity with laboratory information system. 3. This includes hazard/ risk assessments. 4. Evaluate the applicability of test to local situation/need. 5. Evaluate budget and cost-effectiveness of new test or method. 6. Performs analysis of statistical and test performance (test verification or validation study) data. 7. Design and planning of test evaluation. <u>Ensuring compliance to HCSA, MOH licensing, and other accreditation requirements</u> Knowledge and application of HCSA, licensing conditions, accreditation standards. Limitations: Excludes an evaluation of IT systems
EPA Entrustment Level to be Attained by Exit	Level 4

Microbiology EPA 3
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Title	EPA 3: Assisting the implementation of laboratory safety management systems
Specifications and limitations	1. Apply biosafety principles to all aspects of laboratory work, including facility design, operating equipment, laboratory practices 2. Do risk assessment using risk assessment matrix and related tools 3. Perform preventive and corrective action in relation to incidents 4. Apply principles from relevant references e.g. WHO laboratory safety manual 5. Comply with regulations e.g. BATA 6. Apply biosecurity measures to ensure authorized access
	Limitations: Nil
EPA Entrustment Level to be Attained by Exit	Level 4

Microbiology EPA 4
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Title	EPA 4: Providing consultations related to patient management
Specifications and limitations	<u>Providing consultations related to patient management</u> Providing consultations to clinicians, infection control practitioners, nurses, allied health practitioners on patient management including advice and education on epidemiology, pathogenesis, natural history, clinical and laboratory diagnostic approaches, treatment and prevention. <u>Provide advice on individual cases, on projects or clinical practices</u> Medical microbiologists are expected to address the special needs of different clinical specialties e.g. ICU, ED, surgery, orthopaedics, paediatrics, neonatology, haematology, transplant units <u>Providing consultation to relevant stakeholders on public health issues involving testing, prevention and control</u> Medical microbiologists are expected to contribute their expertise where required on public health issues involving appropriate microbiology testing and strain typing where applicable <u>Optimising test utilization</u> Practice effective diagnostic stewardship by recommending appropriate tests based on clinical and epidemiological information. Reject inappropriate test requests Limitations: Nil
EPA Entrustment Level to be Attained by Exit	Level 4

Microbiology EPA 5

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Title	EPA 5: Providing advice on infection control and management of antimicrobial use
Specifications and limitations	1. <u>Providing Infection prevention and control consultation and education</u> within the healthcare settings 2. <u>Providing consultation to relevant stakeholders on public health issues involving testing, prevention and control</u> Medical microbiologists are expected to contribute their expertise where required on public health issues involving microbial strain typing and infection prevention and control. 3. <u>Lead or participate in investigations or initiatives related to infection control</u>, as identified by the infection prevention team
	Limitations: NIL
EPA Entrustment Level to be Attained by Exit	Level 4