

Syllabus for Tropical Medicine

The tables below detail the key areas of Tropical Medicine. Each of these areas should be regarded as a context in which trainees should be able to demonstrate CiPs and GPCs in the Tropical Medicine 2021 curriculum. Trainees will need to become familiar with the relevant knowledge, skills and values/attitudes related to these areas.

COMBINED INFECTION TRAINING (CIT)	
Basic Biology of Bacteria, Viruses, Fungi & Parasites	CiPs: G3, S1, S2, S3
Knowledge	Skills
<p>Describe and explain basic biology, including structure, function, genetics, and pathogenesis, of major bacterial, viral, fungal and parasitic agents</p> <p>Explains the principles of microbiological and clinical classification of microorganisms</p> <p>Explains local and global epidemiology of major infectious agents and their disease associations</p> <p>Explains the principles of the immune response to infection and the role of innate and adaptive immunity</p> <p>Explains the basis of different types of host-parasite relationships, e.g. the importance and evolution of normal flora, viral latency and quasispecies evolution</p> <p>Explains the principles of active and passive immunisation</p>	<p>Demonstrates application of knowledge of basic biology and host-pathogen relationship to inform clinical management of infection</p>
Laboratory Practice	CiPs: G3, G4, S1, S2, S3
Knowledge	Skills
<p><u>Pre-analytical phase</u></p> <p>Explains the range of investigation and diagnostics available in different clinical scenarios, the optimal samples to send and the conditions in which to send them</p>	<p>Demonstrates ability to select the most appropriate investigations for the individual patient</p>

<p>Describes the repertoire of investigations available for a given clinical scenario, and understand their merits and limitations</p> <p>Demonstrates ability to refer to the local laboratory standard operating procedures (SOPs) for guidance on the nature of the sample and the tests performed</p> <p>Explains the correct sample type, volume (where relevant) and optimal conditions for storage and transport that are required for the individual test</p>	
<p><u>Analytical Phase</u></p> <p>Demonstrates ability to understand and appreciate the advantages, limitations and use of investigations and diagnostics, and the role and use of reference laboratories</p> <p>Describes health and safety aspects of laboratory diagnostic procedures and bio-safety level classification when dealing with pathogens</p> <p>Explains the principles, uses and limitations of laboratory diagnostic procedures (manual, automated and Point-of-Care) – including microscopy, culture, protein/nucleic acid-based, serological/other assays of host-response, and more novel diagnostics</p> <p>Explains the repertoire and use of reference laboratories when dealing with pathogens</p>	<p>Demonstrate the ability to follow an SOP/examination procedure and use time effectively and efficiently to achieve an optimal turnaround time</p>
<p><u>Post-analytical Phase</u></p> <p>Explains the importance of keeping concise, accurate, confidential, and legible records of laboratory investigations</p> <p>Demonstrates ability to interpret laboratory investigations and their results accurately</p> <p>Explains results comprehensively, and demonstrates ability to integrate with results from other specimens and other investigations such as radiology, biochemistry and haematology</p>	<p>Demonstrate producing a laboratory report containing correct results and appropriate interpretative comments using appropriate IT systems</p>
<p><u>Laboratory Management and Quality Assurance</u></p> <p>Explains the principles of internal and external quality assurance, and laboratory accreditation</p> <p>Explains research methods relevant to service development</p>	<p>Demonstrates performing horizontal, vertical, and examination audits, as appropriate to level of training</p> <p>Explains the importance of good record keeping</p>

	Explains the principles of validation/verification of new laboratory tests
<p>Health and Safety</p> <p>Demonstrates an in-depth understanding of health and safety issues both locally and nationally in order to practise safely in a laboratory and in a clinical or other setting, and to advise on safe practice</p> <p>Demonstrates understanding of risk assessment for dealing with category 3 and 4 pathogens and be familiar with the requirements for handling of such pathogens and of patients potentially infected with them</p> <p>Demonstrates knowledge of current legislative framework underpinning Health & Safety (H&S) at work</p> <p>Explains basic laboratory hazards and precautions against them</p> <p>Explains principles of universal precautions, hazard groups and containment levels</p>	<p>Explains infection-prevention and control risk assessment procedures</p> <p>Demonstrates ability to work safely in a laboratory at appropriate Advisory Committee on Dangerous Pathogens (ACDP) level, including the use of appropriate sterilisation, disinfection and waste disposal techniques</p>
Principles of Public Health in relation to Infection	CiPs: G1, G3, S3
Knowledge	Skills
<p>Describes public health issues related to infectious diseases, including identifying and describing the key communicable disease threats: aetiology; how these diseases spread; how they are prevented</p> <p>Describes modes of transmission, incubation period, period of communicability of common agents with public health importance</p> <p>Describes basic epidemiological methods</p> <p>Describes the requirements for statutory and 'good practice' notification of infectious disease</p> <p>Explains the function of the health protection and environmental health officers (or their equivalents), and their relationship with key infection control personnel in the hospital and community</p>	<p>Demonstrates ability to notify with infectious disease (statutory requirements and 'good practice' notifications) when required</p> <p>Demonstrates provision of appropriate vaccine advice</p>

<p>Explains the role of the UK's health protection agencies and other NHS and governmental organisations at local, national and international levels in the control of, and emergency planning for, outbreaks of infection</p> <p>Explains the role of vaccination in vaccine-preventable communicable diseases.</p>	
<p>Infection Prevention and Control</p>	<p>CiPs: G1, G2, G3, G4, S2, S3, S5, S7</p>
<p>Knowledge</p>	<p>Skills</p>
<p><u>Legislative and Organisational Frameworks</u> Explains the responsibilities of healthcare institutions for IPC under relevant legislations and guidelines</p> <p>Describes the roles and responsibilities of individual members of healthcare institutions in monitoring, responding to, and resourcing IPC needs</p> <p>Explains the role of public health bodies as well as reference laboratories in relation to the management of healthcare associated infections (HCAIs)</p> <p>Demonstrates an understanding of the benefits of adhering to scientifically sound practices of IPC to patients and staff as well as the adverse outcomes resulting from failure to comply with them</p> <p><u>Principles of Infection Prevention and Control</u> Explains the basic biology of common agents implicated in HCAIs and their pathogenesis</p> <p>Explains the mode of spread and optimum prevention and control strategies of HCAIs</p> <p>Explains the concept of "The Chain of Infection": Pathogen or infectious agent; Reservoir (patient, healthcare worker, environment); Portal of exit; Portal of entry; Mode of transmission; Susceptible host risk factors</p> <p>Explains the concepts of colonisation, infection and disease</p>	<p>Demonstrate complying with current national legislation and guidance on IPC</p> <p>Demonstrates awareness of and involvement in the complaints process</p> <p>Demonstrates recognition of potential for transmission of infection in clinical settings</p> <p>Demonstrates counselling patients on matters of infection risk, transmission, and control</p> <p>Demonstrates following local infection prevention and control procedures</p> <p>Demonstrates performing practical clinical procedures using aseptic technique</p> <p>Demonstrates prescribing antibiotics according to local antibiotic guideline</p> <p>Demonstrates infection prevention and control practices</p> <p>Demonstrates critical evaluation of disinfectants, cleaning products and</p>

<p>Explains the principles of infection control audits and their importance to maintaining good medical practice</p> <p><u>Outbreaks and Surveillance</u> Describes the role of the laboratory in investigating disease outbreaks</p> <p>Describes the key principles underpinning outbreak investigation, control, and reporting</p>	<p>Demonstrates undertaking an IPC related audit</p> <p>Able to advise on appropriate Personal protective equipment (PPE) and demonstrate effective donning and doffing of PPE</p>
	<p>Demonstrates utilising laboratory resources appropriately when investigating an outbreak</p>
<p>Important Clinical Syndromes</p>	<p>CiPs: G3, S2, S3, S4, S7</p>
<p>Knowledge</p> <p>Demonstrate a detailed knowledge (incorporating epidemiology, pre-disposition, presentation, clinical features, investigations, differential diagnosis, management and prognosis) of key clinical syndromes including community acquired and healthcare-associated infections such as:</p> <ul style="list-style-type: none"> • sepsis and systemic inflammatory response syndrome (SIRS) • pyrexia of unknown origin • multisystem infections • paediatric infections • pregnancy-associated infections • blood borne virus infections (e.g. HIV, viral hepatitis) • tuberculosis and other mycobacterial infections • cardiovascular infections • skin and soft tissue infections • bone and joint infections • device-associated infections • upper and lower respiratory tract infections • gastro-intestinal, hepatic, pancreatic and biliary infections • urinary tract and genital infections including Sexually Transmitted Infections (STIs) • neurological infections • ocular infections • zoonotic infections • exanthemata 	<p>Skills</p> <p>Demonstrates ability to take relevant clinical/infection history, perform clinical examination, and use relevant investigations (including imaging) to establish a differential diagnosis</p> <p>Interprets and recommends appropriate investigations and subsequently interpret the results to guide the management of infection</p> <p>Demonstrates ability to use relevant local, regional, national guidelines especially those from specialty societies to manage infection</p> <p>Demonstrates ability to adjust management plan in light of progress and developments</p>

<p>Explain how to assess infection risk and recommend appropriate prophylactic or pre-emptive therapy</p> <p>Explain the nature of infection in special populations including the complexities associated with their management e.g. excessive alcohol and drug users, the elderly, pregnant and postpartum women, children, neonates, primary and secondary immunodeficiency</p> <p>Explain the types of immunodeficiency, including primary immunodeficiencies, HIV , haematology/oncology patients and solid organ transplants. Understand how the immunodeficiency affects susceptibility to infectious agents. Prevention and control of infections in immunodeficiency</p>	
<p>Use of Antimicrobial Agents</p>	<p>CiPs: G3, S3, S5, S7</p>
<p>Knowledge</p>	<p>Skills</p>
<p><u>Properties of Antimicrobial Agents</u> Explains the concept of broad and narrow spectrum antibiotics</p> <p>Explains the key properties of the classes of antimicrobial agents active against bacteria, fungi, parasites and viruses, including: mechanism of action spectrum of activity route of administration dosing regimen penetration side-effects resistance patterns cost</p> <p>Explains mechanisms of resistance to antimicrobial agents</p> <p>Explains the mechanism of action and role of monoclonal antibodies, antitoxins, and immunoglobulins in prophylaxis and treatment of infections</p> <p>Describes the pharmacodynamic and pharmacokinetics of antimicrobials, and how these affect choice and dosing of antimicrobials. Understand the differences in some patient</p>	<p>Demonstrates appropriate prescribing and/or advice on prescribing antimicrobial drugs</p> <p>Demonstrates adherence to evidence based guidance</p> <p>Participation in hospital anti-microbial stewardship rounds and Antimicrobial advice committee.</p>

<p>groups including in children, pregnancy and burns patients.</p> <p>Explains in vitro methods used to detect antimicrobial resistance and their limitations</p> <p><u>Use of antimicrobial agents in Clinical Management</u></p> <p>Explains:</p> <ul style="list-style-type: none"> • the principles of empirical use of antimicrobials for common infections and syndromic presentations, before laboratory results are available • the selection of optimal antimicrobials, including combination therapy, for treatment of infection based on susceptibility report, the clinical scenario, hypersensitivities, and potential interactions • the optimal duration of appropriate therapy and when to escalate/ de-escalate • the importance of measuring blood levels of certain antimicrobial agents to ensure clinical efficacy and reduce toxicity • contraindications to antimicrobial use <p><u>Safe use of antimicrobial agents</u></p> <p>Explains:</p> <ul style="list-style-type: none"> • the importance of the safe use of antimicrobial agents in adults and children • symptoms and signs of antimicrobial toxicity • the adverse consequences of antimicrobials, including effects on normal microbial flora, toxicity and interactions with other drugs • Describes the importance of measuring blood levels of certain antimicrobial agents to avoid toxicity <p><u>Antimicrobial stewardship and control</u></p> <p>Describes and explains Department of Health and other regulatory bodies' requirements for antimicrobial stewardship</p> <p>Explains:</p> <ul style="list-style-type: none"> • the importance of antimicrobial formularies, and prescribing control policies and processes 	<p>Demonstrates appropriate use of antimicrobial drugs</p> <p>Demonstrates appropriate use of local antibiotic policies and national guidelines</p> <p>Audits use of anti-microbial agents and adherence to local and national guidance</p> <p>Demonstrates the use of the most effective and non-toxic antimicrobial regimes</p> <p>Demonstrates caution for potential side effects and monitor appropriately</p> <p>Demonstrates prescribing inpatients particularly in relation to allergy, in pregnancy, in children and in individuals with deranged liver or kidney function</p> <p>Demonstrate communicating effectively on antibiotic policy and stewardship with antimicrobial pharmacist</p>
--	--

<ul style="list-style-type: none"> • how local antimicrobial resistance patterns should be used to direct antimicrobial usage • the role of the Medicines Management Committees (or equivalent) and antimicrobial pharmacist 	
Vaccination	G1, G2, S2, S7
Knowledge	Skills
<p>Explains:</p> <ul style="list-style-type: none"> • the use of licensed vaccines in prevention of disease caused by viral infection, bacterial infection and bacterial toxins • the advantages and disadvantages of live attenuated, inactivated and recombinant vaccines and conjugate vaccines • the UK and the WHO schedules for immunisation against infectious diseases • recommendations for immunisation of healthcare workers • the immunisation protocols for patients with reduced splenic function • the use of vaccines in post exposure prophylaxis e.g. rabies, hepatitis A, hepatitis B, tetanus • the use of vaccines to boost pre-existing immunity e.g. VZ • the safety of vaccines and their adverse effects • testing for immunity pre- and post-vaccination, the methods available for measuring this and their limitations • the effects of vaccination on a population e.g. herd immunity, age shifts in natural infection • how diseases can be eradicated by vaccination 	<p>Demonstrate ability to:</p> <p>select and interpret laboratory tests for immunity</p> <p>explain clearly the advantages and disadvantages of vaccination including assessment of safety profiles</p> <p>advise appropriately on the use of active and passive immunisation in prevention of infection, including in the management of outbreaks apply national guidance on vaccination relevant to common clinical scenarios</p>
Management of HIV infection	CiPs: G1, G2, G3, S3, S6, S7
Knowledge	Skills
<p>Explains:</p> <ul style="list-style-type: none"> • the function of the intact immune system • pathophysiology of HIV infection • epidemiology and natural history of HIV • Demonstrates providing relevant counselling to patients, carers and relatives, and to individuals potentially exposed to HIV 	<p>Demonstrates recognising clinical and laboratory manifestations of immune deficiency</p> <p>Demonstrates interpreting test results relating to the direct management of HIV infection and explain their significance to the patient</p>

<ul style="list-style-type: none"> • Demonstrates knowledge of therapeutic options in HIV management • Explains risk/benefit analysis of therapies for HIV and for prophylaxis against HIV and opportunistic infections • Recognises the clinical features of infections and other disease processes in the HIV infected host • Recognises the relevance of specific aspects of history and specific physical signs (and their absence) • Explains the utility of appropriate laboratory investigations <p><u>Specific HIV Diagnostics and Therapies</u></p> <p>Explains current diagnostic techniques</p> <p>Explains antiretroviral drugs including:</p> <ul style="list-style-type: none"> • pharmacokinetics, modes of action, interactions, side effects of the commonly used agents • indications for and use of antiretroviral drugs in treating HIV infection • laboratory tests used in monitoring response and in informing use of certain drugs • mechanisms of resistance and cross resistance • awareness of current treatment guidelines • post-exposure prophylaxis of HIV • anti-retroviral agents in the prevention of mother-to-child transmission • Indications for and use of pre-exposure prophylaxis (PrEP) 	<p>Demonstrates advising regarding risk reduction for opportunistic infections in the HIV-infected individual, through behavioural change, chemoprophylaxis and vaccination</p> <p>Demonstrates communication skills that allow patients, relatives/carers and others, including those at HIV risk, to participate in management decisions</p> <p>Demonstrates providing information on HIV transmission and strategies for risk reduction</p> <p>Demonstrates appropriate use of current diagnostic techniques</p> <p>Demonstrates applying guidelines and recommend appropriate treatment and interventions</p> <p>Recognises and monitor side effects and drug interactions</p> <p>Demonstrates engaging patients to support adherence and facilitate treatment decisions</p> <p>Participates in HIV MDT discussions</p>
<p>Travel and Geographical Health</p>	<p>CiPs: G1, G2, S1, S2, S3, S4</p>
<p>Knowledge</p> <p><u>Recognition and treatment of imported infections</u></p> <p>Explains clinical and epidemiological features of imported diseases, including viral haemorrhagic fevers and other high consequence infections</p>	<p>Skills</p> <p>Demonstrates ability to record appropriate travel history, and develop a differential diagnosis</p>

<p>Describes availability and limitations of specialised diagnostic tests</p>	<p>Interprets and selects appropriate diagnostic tests</p>
<p>Demonstrates familiarity with current guidelines and availability of tertiary care and information resources</p>	<p>Demonstrates managing malaria and other common imported infection</p>
<p>Describes management of malaria and other imported infections</p>	<p>Recognises when tertiary level care/advice is needed and to seek it</p>
<p><u>Provision of health advice for travellers</u> Describes and explains the geographical patterns of disease, risk factors for their acquisition, and the availability of paper, electronic and other resources (e.g. vaccination guides, websites, NaTHNaC, Imported Fever Service)</p>	<p>Demonstrates dealing with suspected and confirmed high-consequence infections (e.g. viral haemorrhagic fevers) and their infection control issues</p>
<p>Describes and explains the use, availability, efficacy and safety of vaccines</p>	<p>Demonstrates recording accurate pre-travel medical and travel history</p>
<p>Described and explains the use, efficacy and safety of antimalarial prevention measures</p>	<p>Demonstrates performing risk assessment appropriate to the traveller, including consideration of specific groups (e.g. the elderly, immunosuppressed) and the hazards of specific types of travel</p>
<p>Explains principles of organising a travel clinic, and the medicolegal issues involved</p>	<p>Demonstrates formulating and communicating appropriately verbal and written advice for traveller, and to motivate them to apply the advice</p>
<p><u>Infection related problems of immigrants</u> Outlines health needs of particular populations, e.g. ethnic minorities, and recognise the impact of health beliefs, culture and ethnicity in presentations of physical and psychological conditions</p>	<p>Demonstrates prescribing and administering immunisations as appropriate</p>
<p>Explains epidemiological and clinical features of imported infection in immigrant groups</p>	<p>Demonstrates ability to prescribe antimalarials as appropriate</p>
	<p>Recognise barriers to effective communication</p>
	<p>Recognise both acute and chronic infections, including those that are asymptomatic, in immigrants</p>
	<p>Demonstrates knowledge of New Entrant Screening programmes for TB and blood-borne virus infections.</p>

HIGHER INFECTION TRAINING IN TROPICAL MEDICINE

Diagnosis and management of community and healthcare acquired infections

CiPs: G1, G2, G3, G4, S2, S3, S4, S5, S6

Knowledge

- Demonstrates a comprehensive and extensive knowledge of the clinical presentations of Tropical Medicine that affect the:
 - Nervous system
 - Cardiovascular system
 - Pulmonary system and airways (including ears and nose)
 - Skin, soft tissue, bone, joint and other musculoskeletal systems
 - Gastro-intestinal, hepatic, pancreatic and biliary systems
 - Urinary and genital systems Including rare, atypical and unusual infections/presentations
- Demonstrates a comprehensive and extensive knowledge of syndromes and conditions in Tropical Medicine such as:
 - Pyrexia of unknown origin,
 - Fever in the returning traveller
 - Multi-system infections
 - Sepsis syndrome and shock
 - Infections in injecting and other drug users
- Explains the features, investigations, treatments and prophylaxes for rarer but important syndromes and scenarios including:
 - Envenomation and bites
 - Bioterrorism and deliberate release of biological agents
- Demonstrates a knowledge of optimum evidence-based management of infections
- Explains how to access up-to-date information and guidelines including those produced by agencies such as the public health/health protection organisations, BHIVA, infection societies, NICE

Skills

- Demonstrates ability to assimilate clinical, laboratory and epidemiological information and to use this to differentiate between infections and other conditions
- Constructs a problem list in scenarios where there are a number of issues that need to be considered
- Demonstrates continuing competence in core diagnostic, therapeutic and monitoring procedures including arterial blood gases, central venous cannulation, lumbar puncture, joint, pleural and ascitic aspiration, basic airway management and advanced life support (ALS)
- Demonstrates ability to commence a comprehensive, rational and adaptable clinical management plan

Management of Longer-Term Conditions

CiPs: G1, G2, G3, G4, S2, S3, S4, S5, S6

Knowledge

Skills

<ul style="list-style-type: none"> • Demonstrates extensive knowledge of the epidemiology, natural history and clinical management of chronic infections, including HIV, TB and hepatitis B and C (including drug-resistant strains) • Outlines the importance and advantages of multi-disciplinary working • Explains the roles and support available from allied healthcare workers, patient-support groups and other agencies • Demonstrates understanding of the impact of chronic and longer-term conditions on the physical, mental, psychological and social health of the individual, their relatives, friends and carers 	<ul style="list-style-type: none"> • Demonstrates ability to diagnose illness (including atypical presentations) using clinical and epidemiological skills • Demonstrates ability to select those patients suitable for treatment and those more suitable for monitoring • Demonstrates ability to safely monitor therapy and response, and to act accordingly in the event of adverse events or poor response • Demonstrates ability to counsel and support patients on matters of infection risk, transmission and control • Demonstrates ability to support the patient and carers to encourage compliance, and to act appropriately when non-compliance suspected or recognised mini-CEX, CbD • Develops and agrees a holistic management plan with the patient and carers, ensuring awareness of alternative therapies and means of patient support
---	--

Healthcare-associated and Nosocomial Infections

CiPs: **G1, G2, G3, G4, S2, S3, S4, S5, S6**

Knowledge	Skills
<ul style="list-style-type: none"> • Demonstrates a broad and extensive understanding of the presentation, pathophysiology and management strategies for healthcare-associated and nosocomial infections (including ICUrelated) • Describes the utility and limitations of diagnostics and other investigations in HcAI and nosocomial infections • Outlines the preventable and non-preventable predisposing factors for HcAI and nosocomial infections • Demonstrates understanding of the regulatory requirements associated with HcAI 	<ul style="list-style-type: none"> • Demonstrates ability to acquire relevant information pertinent to the specific clinical scenario. • Demonstrates ability to determine origin of infection and develop a strategy for its containment and treatment • Experience of and participation in infection prevention and control meetings and outbreak meetings. • Liaison with hospital management and communications teams

<ul style="list-style-type: none"> • Demonstrates understanding of confidentiality and consent issues in the unconscious patient. 	
Specific infections related to post-operative sepsis CiPs: G1, G2, G3, G4, S2, S3, S4, S5, S6	
Knowledge <ul style="list-style-type: none"> • Demonstrate and understanding of common infections associated with particular surgical procedures • Describe local/national anti-microbial resistance patterns 	Skills <ul style="list-style-type: none"> • Demonstrates ability to differentiate between colonisation and infection
Multi-resistant organisms CiPs: G1, G2, G3, G4, S2, S3, S4, S5, S6	
Knowledge <ul style="list-style-type: none"> • Demonstrates knowledge of local/ national/ international antibiotic resistance patterns, clinical standards, guidelines and protocols 	Skills <ul style="list-style-type: none"> • Demonstrates understanding of situations giving rise to antibiotic resistance • Demonstrates awareness of the therapeutic options available for the treatment of multi-resistant organisms • Demonstrates interventions to prevent the development and spread of multi-resistant organisms.
Personal Protective Equipment for Infection Scenarios CiPs: G1, G2, G3, G4, S2, S3, S7	
Knowledge <ul style="list-style-type: none"> • Demonstrates understanding of the specific categories of personal protective equipment 	Skills <ul style="list-style-type: none"> • Demonstrates ability to correctly don/remove, and instruct in the application of specific personal protective equipment, for differing infection scenarios
Antimicrobial Therapy CiPs: G1, G2, G3, G4, S2, S3, S4, S5, S6, S7	
Knowledge <ul style="list-style-type: none"> • Describes second- and third-line antimicrobial options in patients with multi-resistant organisms or contraindications to more standard therapies (including new and unlicensed medications) 	Skills <ul style="list-style-type: none"> • Demonstrates ability to correctly prescribe unusual or complex antimicrobial regimens, and to source information to aid safe and effective use • Demonstrates ability to optimally utilise OPAT – including assessment of patient suitability & parenteral access options; safe

<ul style="list-style-type: none"> • Demonstrates understanding of the appropriate use, advantages and potential complications of outpatient parenteral antimicrobial therapy (OPAT) 	<p>prescribing & monitoring; and subsequent escalation, de-escalation or discontinuation</p>
<p>HIV Infected and other immune-compromised patients CiPs: G1, G2, G3, G4, S2, S3, S4, S5, S6</p>	
<p>Knowledge</p>	<p>Skills</p>
<p><u>Immune Deficiency</u></p> <ul style="list-style-type: none"> • Outlines the biological and iatrogenic aetiologies of immune deficiency, and the resulting immune deficits and predispositions to infection <p><u>Infection in the Immune-Compromised Patient</u></p> <ul style="list-style-type: none"> • Demonstrates knowledge of pathophysiology and clinical features of infection in the immune-compromised host • Recognises relevance of specific aspects of history and specific physical signs (and their absence) in immune-compromised patients • Demonstrates understanding of the utility and limitations of laboratory investigations in immune-compromised patients <p><u>Counselling</u></p> <ul style="list-style-type: none"> • Demonstrates awareness of relevant epidemiology, natural history and therapeutic options for immune-compromising conditions • Demonstrates understanding of data that informs prognosis and sources of such information • Demonstrates knowledge of rates of transmission of HIV via sexual and non-sexual routes and guidance on post- 	<ul style="list-style-type: none"> • Demonstrates ability to advise regarding risk reduction for opportunistic infections relevant to the underlying condition • Demonstrates ability to recognise clinical and laboratory manifestations of immune deficiency • Demonstrates ability to interpret test results and explain their relevance to patient • Demonstrates ability to develop a rational, comprehensive and adaptable clinical management plan • Demonstrates communication skills that allow patients, carers and other to participate in management decisions • Demonstrates ability to relay information and answer questions on risk, prognosis and options in an understandable manner • Demonstrates provision of information regarding HIV transmission and strategies for its reduction for patient and partner(s)

exposure prophylaxis provision, counselling and follow-up	
Specific Therapies in Non-HIV Immune-Compromised Patients	
CiPs: G1, G2, G3, G4, S2, S3, S4, S5, S6	
Knowledge	Skills
<ul style="list-style-type: none"> • Demonstrates awareness of therapies and other interventions in non-HIV immunocompromised individuals - including prophylactic antimicrobials, vaccinations and, where available, ameliorative or definitive therapies • Demonstrates knowledge of guidelines and protocols, and where to source them 	<ul style="list-style-type: none"> • Demonstrates ability to apply guidelines and recommend appropriate interventions • Demonstrates ability to engage patients in supporting adherence and facilitating treatment decisions.
Specific Therapies in HIV-Positive Patients	
CiPs: G1, G2, G3, G4, G5, S2, S3, S4, S5, S6	
Knowledge	Skills
<ul style="list-style-type: none"> • Defines the indications for therapies and other interventions including prophylactic antimicrobials and vaccinations • Demonstrates an extensive knowledge of the data supporting and the uses of anti-retroviral therapy in HIV infection including: <ul style="list-style-type: none"> • indications, contraindications and relative merits • pharmacokinetics, modes of action, interactions and mechanisms and relevance to resistance and cross resistance • detailed awareness of current guidelines and other available resources • evidence supporting, and indications for, post-exposure and pre-exposure prophylaxis, anti-retroviral therapy for the prevention of mother-to-child transmission, and treatment as prevention. 	<ul style="list-style-type: none"> • Demonstrates ability to apply guidelines and recommend appropriate interventions, drug regimens and strategies • Demonstrates ability to recognise and act on side effects, drug interactions and potential lack of efficacy • Demonstrates capability of engaging patients to support adherence and facilitate treatment decisions
Clinical care in resource poor settings	
CiPs: G2, G3, G4, G5, G6, S2, S3, S4, S5, S6, S7, S8	
Knowledge	Skills
<ul style="list-style-type: none"> • Demonstrates an awareness of how social and geographic contexts influence access and care in resource poor settings • Demonstrates an awareness of common syndromes and diagnoses in resource poor settings 	<ul style="list-style-type: none"> • Uses clinical skills to minimise the use of expensive investigations and treatments • Displays cultural awareness and communicates effectively with local colleagues and patients

<ul style="list-style-type: none"> • Demonstrates an awareness of cost effective and available investigations in resource poor settings • Demonstrates awareness of cost effective and available treatments in resource poor settings 	
Imported infection and pre-travel health services CiPs: G1, G2, G3, G4, S2, S3, S4, S5, S6, S7	
Knowledge	Skills
<u>Imported Infections</u> <ul style="list-style-type: none"> • Demonstrates understanding of the detailed clinical and epidemiological features of imported diseases, including high consequence infections such as viral haemorrhagic fevers • Demonstrates appreciation of the availability and limitations of specialised diagnostic tests • Demonstrates a detailed understanding of the management of malaria – including severe, potentially drug-resistant and complicated disease • Demonstrates a detailed understanding of the investigation and management of other imported infections • Describes those infections acquired abroad that may be asymptomatic but lead to pathology, and the protocols behind screening for these infections <u>Health Advice for Travellers</u> <ul style="list-style-type: none"> • Demonstrates an extensive knowledge of the geographical patterns of disease and risk factors for their acquisition, and explain the availability of paper, electronic 	<ul style="list-style-type: none"> • Demonstrates ability to elicit and record detailed travel history, and develop a concise but comprehensive differential diagnosis • Demonstrates ability to select and interpret appropriate diagnostic tests, include those available through the reference laboratories. • Demonstrates ability to manage severe and complicated malaria and other imported infections • Demonstrates ability to rationalise and organise screening for relevant infections in those that have spent time in the tropics • Demonstrates ability to triage and manage those with potential severe communicable diseases (e.g. viral haemorrhagic fevers) including infection control issues • Demonstrates ability to take and record accurately pre-travel medical history and travel plans • Demonstrates ability to perform complex risk assessments appropriate to the traveller, including consideration of specific groups (e.g. the elderly,

<p>and other resources (e.g. vaccination guides, websites, NaTHNaC)</p> <ul style="list-style-type: none"> • Explains the specific issues faced in travel by those with comorbidities, the elderly, those with immunosuppression, and women who are pregnant, and when it is recommended to advise against travel in specific circumstances • Demonstrates a detailed knowledge of antimalarials, their indications and contraindications, advantages and disadvantages • Demonstrates a detailed understanding of the indications and contraindications, advantages and disadvantages, of vaccinations • Demonstrates understanding of the international regulations and requirements related to travel, and the certification requirements necessary for specific travel 	<p>immunosuppressed) and the hazards of specific types of travel, and seek advice as required</p> <ul style="list-style-type: none"> • Demonstrates ability to provide comprehensive, tailored advice on actions required in event of illness whilst abroad • Demonstrates ability to formulate and communicate appropriate verbal and written advice for the traveller, and to motivate them to apply the advice • Demonstrates ability to prescribe and administer immunisations, and to prescribe antimalarials, as appropriate • Demonstrates ability to consider alternative options in those unwilling to comply with standard advice
--	---

Parasitic infections
CiPs: G1, G2, G3, G4, G5, S1, S3, S4, S5, S6, S7, S8

Knowledge

- Demonstrates knowledge of the geographic distribution of parasitic infections
- Demonstrates understanding of the clinical presentations and syndromes associated with parasitic infections
- Demonstrates an awareness of individual and public health interventions for parasitic infections targeting vectors as well as parasites
- Demonstrates knowledge of diagnostic methods, including those most appropriate to resource limited settings
- Demonstrates knowledge of the biology and life cycles of parasites

Skills

- Demonstrates an ability to safely and accurately prescribe anti-parasitic drugs
- Demonstrates an ability to manage patients with complicated malaria both in person and by liaison
- Recognises the interaction of HIV and other immune-suppressive conditions with parasitic infections
- Knows how to seek expert advice in the event of serious and/or rare parasitic infections
- Demonstrates an ability to manage patients with delusional parasitosis

	<ul style="list-style-type: none"> • Demonstrates an ability to differentiate when parasites cause disease from when they are only asymptomatic infections
<p>International health partnerships CiPs: G1, G2, G3, G4, S2, S3, S4, S5, S6, S7, S8</p>	
<ul style="list-style-type: none"> • Demonstrates an understanding of the role of Governmental and Non-Governmental agencies in international health partnerships • Demonstrates familiarity with best practice guidelines on international health partnerships 	<ul style="list-style-type: none"> • Demonstrates an ability to evaluate evidence on the role of international health partnerships in various contexts

February 2020