EDCTP

The power of sharing science

EDCTP Strategic Research Agenda

Version 4 – July 2020

Supported by the
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Contents

Introduction

The EDCTP Executive Secretariat (SEC) with scientific and strategic advice from the Scientific Advisory Committee (SAC) prepares a Strategic Research Agenda (SRA). This document is updated annually and provides the basis for the SEC to propose the annual work programme of the following year to the General Assembly for approval. The SRA outlines the key research and capacity gaps for diseases within the EDCTP scope and ranks them in terms of priorities. It aims to help researchers and other partners better understand current EDCTP research priorities, in light of EDCTP's overall mission to accelerate the development of new or improved medical interventions against poverty-related neglected diseases and enhance research capacity.

The priority rankings consider the current importance of a topic and whether EDCTP or other partners are already funding projects addressing it. An asterix is added to a ranking if the topic is considered important but it is not within EDCTP's remit or is already being addressed by EDCTP or other partners. The priority rankings are:

- **Priority A:** Areas of research or research capacity development of utmost importance for the short term
- **Priority B:** Areas of research or research capacity for the medium term
- **Priority C:** Areas of research for the long term
- **Priority D:** Areas of research that do not have to be addressed by EDCTP
- **Priority A/B/C/D*:** Areas of research that are deemed as priority topics in the field but are currently not a primary priority for EDCTP, either because of good coverage in EDCTP project portfolio or are covered by other partners.

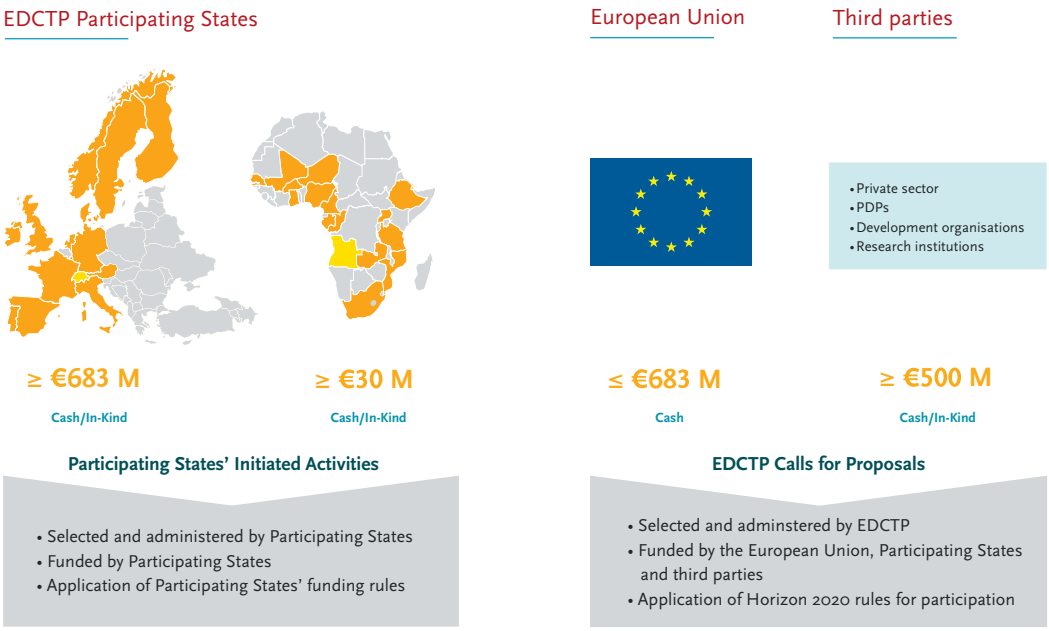
The SRA also indicates how those priorities are being addressed through calls for proposals that are centrally managed by EDCTP (EU-funded actions, supported with the EU contribution to the EDCTP2 programme) and through activities managed by the EDCTP2 Participating States - so-called Participating States' Initiated Activities (PSIAs). The calls for proposals that are centrally managed by EDCTP are implemented using three distinct types of actions:

i. Research & Innovation Actions (RIA),
ii. Coordination & Support Actions (CSA),
iii. Training & Mobility Actions (TMA).

PSIAs are the main mechanism for EDCTP2 Participating States to make in-kind contributions to the EDCTP2 programme and comprise activities in the scope of EDCTP2 that are funded and implemented independently from EDCTP by one or more Participating States. PSIAs count towards the matching of funds by the European Commission (up to a maximum ceiling of € 683 million), provided they are included in the EDCTP2 annual work plans and are co-labelled as being part of the EDCTP2 programme supported by the European Union. Only the completed PSIAs for which final reports have been received as per 31 December 2018 have been included in this document. Majority of PSIA activities are relatively broad and cross-cutting in nature and consequently cover several SRA categories and priorities.

Funding arrangements

EDCTP receives funds from the European Union (EU) through the Horizon 2020 programme. Participating States also make contributions (cash or in-kind) to activities aligned with EDCTP's goals. Third parties, including industry, product development partnerships, development organisations, and research institutions, also make cash or in-kind contributions to EDCTP calls. The table below indicates the type(s) of Horizon 2020 actions that could be used to address a priority.



HIV

Addressing gaps in progress toward the 90-90-90 targets (90% of people living with HIV knowing their status, 90% of HIV-positive people on antiretroviral treatment [ART], and 90% of people on ART virally supressed)[1] will help turn the HIV epidemic around but will require new products and tools and innovative implementation strategies. Current demographic trends in Africa foresee increasing numbers of young people at risk of HIV exposure and increasing numbers of adults living with chronic HIV disease at risk of co-morbidities as they age[2]. Furthermore, challenges with antiretroviral (ARV) drug resistance are ongoing. The 2019 strategic research agenda for HIV focuses primarily on trials of innovative biomedical HIV prevention tools, strategies to reduce ARV drug resistance, and product-focused implementation research. Understanding biological susceptibility and pathogenesis remains paramount. Following on the September 2017 Stakeholder meeting on co-morbidities and co-infections, the 2019 strategic research agenda for HIV includes co-infections with human papilloma virus (HPV), malaria, and neglected infectious diseases as well as research investigating the impact of the vaginal microbiome on product efficacy. Other priorities include treatment optimisation for adults, children, adolescents, and pregnant women; improved diagnostics; and strategies to address the sexual and reproductive health needs of women living with and at risk of HIV.

Topic	Description	Priority	EDCTP2-funded studies (grant code, title of study, acronym)	PSIAs (grant code, title of study)
Pathogen traits	Comparative pathogenesis of diverse HIV viral clades	D		
Disease profile	See epidemiology (topic 3) and pathogenesis (topic 4) below	D		
Epidemiology	HIV/HPV co-infections, particularly in women	A	TMA2015CDF-1032 The Epidemiology of human papillomavirus (HPV) and Associated Disease in HIV Positive Men in South Africa (TEHSA)	
	HIV and malaria co-infection in malaria endemic areas in all age groups	A		
	Description of causes of death associated with HIV infection	D		
	Other co-infections and co-morbidities in patients with HIV infection	B	TMA2017GSF-1965 The Role of Environmental Enteropathy on HIV-Associated Diabetes (REEHAD)	PSIA-2016-384 Comorbidities in adult HIV-infected patients on antiretroviral therapy in Tigray, Ethiopia, within CO-CASA study: a prospective observational cohort study
			TMA2017GSF-1962 Cardiometabolic Diseases Risk Evaluation and Reduction in African People Living with HIV Infection (CaDERAL)	
			TMA2018CDF-2371 The Epidemiology of Invasive Fungal Diseases in Uganda	
			TMA2018SF-2446 Characterisation of Kaposi's sarcoma-associated herpes virus (KSHV)-driven pathologies and disease outcome in Human immunodeficiency virus (HIV)-infected patients	

Pathogenesis/ host response / immune response	Improving understanding of HIV pathogenesis and host immune responses relevant for prevention and treatment.	A	TMA2016CDF-1582 Mucosal type I IFN desensitization and the risk of HIV acquisition (MIDAS)
			TMA2016CDF-1598 Inflammation, T Cell activation and Subclinical atherosclerosis in Treated HIV Infection (Kenya CVHIV)
			TMA2016CDF-1597 Epidemiology, Diagnosis algorithms, and prognostic role of Immunologic and Inflammatory Markers among HIV-2 infected individuals in West Africa (EDIIMark2)
			TMA2015CDF-982 Immunological Selection of Recombinants following HIV-1 Superinfection (ISoReS)
			TMA2017SF-1960 Effect of Pre-Exposure Prophylaxis (PrEP) on immune responses systemically and mucosally in healthy individuals in the CAPRISA 082 study- (PrEP Underlying Mucosal-immunity Before/After PUMBA) (PUMBA)
			TMA2017CDF-1928 Albuminuria Among Virally Suppressed HIV-infected Patients in Botswana: Longitudinal Changes, and Association with Inflammation and ACEI/ARB Use in a Clinical Setting (Albuminuria and ACEI/ARB among HIV-patients)
			TMA2017SF-1955 Identification of Novel HIV Reactivation Agents: Towards Building Translational HIV Cure Research Infrastructure in Ghana (H-CRIS)
			TMA2017CDF-1852 Investigation of the impact of inducible, replication-competent latent HIV-1 as an impediment to HIV/AIDS cure in the context of sustained viral suppression (Latent HIV-1, Viral Suppress and Hope for HIV Cure)
			TMA2018CDF-2366 Association of early immune responses with virological control in acute /early and following HIV-1 infection
			TMA2018SF-2447 Innate Immunological Mechanisms of Control and Factors Driving Inflammation in HIV Controllers from a high incidence setting in South Africa-Prospects for HIV Cure

	HIV susceptibility, the vaginal microbiome (inflammatory cytokines, prevotella bivia, gardnerella), and vaginal tissue tenofovir levels	A		
Diagnosis and tracking	Development of accessible and affordable HIV drug resistance testing methods Tracking HIV drug resistance to prevent and limit spread of antiretroviral resistance	A		PSIA-2014-658 NACCAP-2: Productizing Affordable Tests to Quality Monitor HIV Treatment in Africa. ARTA phase II
	The evaluation of novel diagnostic devices suitable for use in resource-limited settings	A		PSIA-2014-708 Cumulative Support to PDPs including DNDI, FIND, EVI, DVI
				PSIA-2014-658 NACCAP-2: Productizing Affordable Tests to Quality Monitor HIV Treatment in Africa. ARTA phase II
	HIV-associated opportunistic infections and co-morbidities in adults and children	B	DRIA2014-314 Integrating the diagnosis and management of HIV-associated central nervous system (CNS) infections into routine health services in low- and middle-income countries (LMICs) (DREAMM)	PSIA-2014-623 Doctoral and postdoctoral fellowships (FCT-PT)
			TMA2017GSF-1936 Diagnosis and treatment of non-communicable diseases and geriatric syndromes in the HIV aging population in sub-Saharan Africa. (Geriatric HIV cohort Africa)	
	ARV drug resistance in children	A	TMA2015SF-1037 Low frequent HIV drug resistant polymorphisms in infants born to HIV seropositive mothers: Implications on response to therapy (HIVDR)	
	Improve HIV diagnosis in infants born to HIV-positive mothers	A	RIA2016MC-1615 Neonatal HIV early infant diagnosis (EID) versus standard of care EID – Impact on inFant hEalth: a feasibility study of point-of care testing at birth versus at 6 weeks of age, on the uptake of ART and infant prophylaxis, and on rates of infant survival, morbidity, and retention in care. (LIFE study)	PSIA-2014-1931 Early diagnosis of HIV-1 in children born to HIV positive mothers: Assessment of Prevention of Mother-to-Child-Transmission of HIV
	Strategies for early detection of HIV infection in pregnancy through point of care (POC) repeat testing during antenatal care (ANC) to reduce MTCT and improve maternal health	A		PSIA-2014-596 Research and development projects (FCT-PT)
	Evaluation of combination tests for syphilis and HIV both, in pregnant women at ANC and non-pregnant adults	B		
Treatment	Evaluation of new simple and tolerable paediatric ARV formulations as well as dose optimisation studies (based on pharmacokinetics, pharmacodynamics, pharmacogenetics [PK/PD/PG]) in infants and children	A	TRIA2015-1078 Children with HIV in Africa – Pharmacokinetics and Acceptability of Simple antiretroviral regimens (CHAPAS-4)	PSIA2018-1691 Evaluation virologique chez les enfants et adolescents infectés par le VIH-1 sous deuxième ligne de traitement antirétroviral au Sénégal

Treatment optimisation based on PK/PD/PG of ART using existing drugs for the general adult population by sex, age, body weight, presence of co-infections, risk of drug interactions, etc. and for specific sub-populations such as pregnant and breastfeeding women, PWID (people who inject drugs), MSM (men who have sex with men), transgender people (interactions with hormone therapy), and older individuals with co-morbidities, etc.older individuals with co-morbidities, etc.	A	TMA2016SF-1508 Pharmacogenomics Research and Clinical Excellence in the Treatment of Infectious Diseases in African Populations (PRACE)	PSIA-2015-776 Development of a better tolerated and more robust second-line antiretroviral regimen for HIV infection.
		TMA2015CDF-1027 Evaluation of Treatment Response, Drug Resistance and HIV-1 Variability among Adolescents on First- and Second-Line Antiretroviral Therapy in Cameroon: The READY-Study (READY-Study)	
		TMA2016CDF-1566 Study of Pharmacogenetics of ARVs treatment outcomes in Mali, West Africa (SPATOMA)	
Treatment of HIV in people with neglected tropical disease (NTD) co-infections such as urogenital schistosomiasis and leishmaniasis.	A		
Investigating novel therapeutics and novel use of existing therapeutics (e.g. long-lasting formulations) to maximise adherence and prevent the evolution and impact of resistance	A	RIA2017MC-2005 BREATHER Plus: A randomised open-label 3-arm, 96-week trial evaluating the efficacy, safety and acceptability of weekends off dolutegravir-based antiretroviral therapy (ART) and monthly long-acting injectable ART compared to daily dolutegravir-based ART in virologically suppressed HIV-infected children and adolescents in sub-Saharan Africa (BREATHER Plus)	
Treatment of opportunistic infections and co-morbidities	B	TRIA2015-1092 High Dose AMBISOME on a Fluconazole Backbone for Cryptococcal Meningitis Induction Therapy in sub-Saharan Africa: A Randomised Controlled Non-Inferiority Trial (AMBITION-cm)	
		RIA2018CO-2512 VITamin D for AdoLescents with HIV to reduce musculoskeletal morbidity and ImmunopaThologY (VITALITY): an individually randomised, double-blinded placebo-controlled trial	
		RIA2018CO-2516 Improved flucytosine formulation for the treatment of meningitis in advanced HIV disease (5FC HIV-Crypto)	
Reducing short- and long-term ART-associated complications and toxicities, and their impact on adherence and ARV resistance.	A	TMA2015CDF-1002 Proximal tubular renal dysfunction among HIV patients on Tenofovir versus Tenofovir sparing regimen (TREND study)	

	ARVs and anti-tuberculosis drugs and dose optimisation studies to improve HIV-TB co- treatment	B	TMA2017SF-1981 Immune-mediated adverse drug reactions In African TB HIV endemic settings (IMARI-Africa)	
	ARVs and anti-malarial drugs and dose optimisation studies to improve HIV-malaria co-treatment	B		
	ARV and other medications during pregnancy and breastfeeding	A	RIA2017MC-2009 Safety and efficacy of Dolutegravir and EFV400 for pregnant and breast-feeding women: a randomized non-inferiority clinical trial (PREGART)	PSIA-2014-645 Prevention and fighting HIV/AIDS in resources limited countries-WOMEN'S AND CHILDREN HEALTH PROJECT (Progetto Salute della Donna e del Bambino-Progetto B) PILOT EVALUATION OF WHO NEW PMTC STRATEGIES IN RESSOURCE LIMITED SETTING
				PSIA-2014-639 GLOBAL HEALTH PROJECT-Fighting HIV/AIDS in AFRICA (Progetto Salute Globale-1) PREVENTION OF MOTHER TO CHILD TRANSMISSION
	ARV and anti-cancer drug dose optimization studies to improve treatment of HIV-associated malignancies	B		
	Drug-drug interactions in people with HIV co-infections and co-morbidities that present risk for adverse drug reactions and reduce treatment efficacy.	A		
Prevention	HIV pre-exposure prophylaxis using long-acting ARV formulated as injectables, implants, and vaginal rings for HIV prevention	B	SRIA2015-1061 CAPRISA 018: A randomised controlled trial to assess the safety, acceptability, and pharmacokinetics of a sustained-release tenofovir alafenamide sub-dermal implant for HIV prevention in women	PSIA-2014-692; PSIA-2014-604; PSIA-2016-391 Support to International Partnership on Microbicides (IPM)
			RIA2016MC-1616 Combined HIV African Prevention Study: On demand Truvada and F/TAF Pre-exposure and Post-exposure prophylaxis to protect adolescents from HIV (CHAPS)	PSIA-2015-788 CAPRISA 008: Open-Label Randomized Controlled Trial to Assess the Implementation Effectiveness and Safety of 1% Tenofovir Gel Provision through Family Planning Services in KwaZulu-Natal, South Africa
	Examining new prevention technologies including combination biomedical prevention and multipurpose prevention technologies to prevent both pregnancy and HIV	A		
	Large-scale trials of HIV vaccines that have demonstrated suitable level of immunogenicity in early phase trials	B	SRIA2015-1066 Globally Relevant AIDS Vaccine Europe-Africa Trials Partnership (GREAT)	PSIA-2014-691/PSIA-2015-862/ PSIA-2016-696 Support to International AIDS Vaccine Initiative (IAVI)
			RIA2016V-1644 A combination efficacy study in Africa of two DNA-MVA- or DNA- Env protein HIV-1 vaccine regimens with pre-exposure prophylaxis (PrEP) (PrEPVacc)	

	Studies of passive immunity strategies of antibody-mediated prevention (AMP) using promising broadly neutralizing antibodies as infusions or injections.	A	RIA2017S-2008 CAPRISA 012: Phase I/II trial of Subcutaneous Administration of Monoclonal Broadly neutralizing Antibodies (CAP012 SAMBA Trial) RIA2017MC-2021 Effectiveness, efficacy, and operational feasibility of passive transfer of VRC01-LS antibody to prevent intra-/postpartum HIV mother-to-child transmission during the breastfeeding period in HIV-exposed infants from Tanzania and Mozambique: a prospective, randomized, double-blinded placebo-controlled proof-of-concept trial. (Neo bnAb)
	Effectiveness of option B+: evaluation of adherence and impact	A	
	Prevention strategies for sexually transmitted infections, including vaccine-preventable infections such as HPV infection in women living with HIV	A	
Product-focused implementation research	Optimising HIV service delivery models, including those to increase uptake of HIV counselling and testing in equitable, sustainable, and ethical ways to reach the first 95 of the 95-95-95 targets[3].	B	EDCTP-CSA-2014-279 Translating Research into Practice (TRIP): Evaluating and Speeding up the adoption of an evidenced based innovative REMSTART package to reduce mortality in advanced stage HIV patients starting antiretroviral therapy in Tanzania (TRIP)
	Optimising integration of HIV/PMTCT and TB services; optimising integration of sexual and reproductive health services and HIV treatment services for women living with HIV (including family planning and cervical cancer screening and treatment); optimising HIV/PMTCT and sexual and reproductive health/family planning to identify HIV-positive women in late pregnancy or while breastfeeding and to support adherence to lifelong ART for mothers and timely diagnosis of infection in infants and children	B	EDCTP-CSA-2014-273 Improving HIV prevention and sexual and reproductive health care in high risk women in Rwanda using lessons learnt from previous Rinda Ubuzima projects (WISH) TMA2015CDF-1036 Tracing non-retained HIV-positive pregnant women and their babies (sTEPWIse) RIA2016MC-1617 Prevention of mother-to-child transmission of HIV-1: program evaluation and innovative rescue intervention integrated in the expanded program of immunization (PROMISE-EPI) TMA2017CDF-1906 Effects of preterm birth on HIV acquisition risk and antiretroviral prophylaxis safety in HIV-exposed infants in Botswana (PERHAPS) TMA2017CDF-1927 Understanding the determinants of the effectiveness of HIV control strategies targeting HIV-infected pregnant women in Mozambique (Preg_multidrug)

Implementation research for HIV prevention, treatment, and care and support for adolescents and youth	A	TMA2016CDF-1574 A prospective cohort study to assess the feasibility of enrolling and retaining adolescents at risk of HIV infection from hotspots in Kampala Uganda (FERDAR)	PSIA-2015-730 Early detection of HIV in children
		TMA2017CDF-1923 Feasibility and acceptability of HIV self-testing in adolescents and young people (FAST study)	
		CSA2018HS-2525 Universally accessible HIV Prevention Technologies for African girls and young women through Knowledge applied from behavioral Economics: A behavioural science research to determine factors that facilitate future uptake of HIV prevention products and Multi-purpose Prevention Technologies to prevent HIV and unwanted pregnancy in Sub-Saharan Africa	
Supporting implementation science research to stimulate and sustain declines in population-level HIV incidence, including through combination prevention trials that combine behavioural, structural, and biomedical interventions	A		
Optimising effective linkage to care and adherence to treatment	C	TMA2015CDF-972 Effect of reminder cues and tailored feedback on adherence to antiretroviral drug treatment among HIV-positive individuals in the Kilimanjaro region, Tanzania (REMIND)	PSIA-2014-790 Preparatory operational research on barriers and opportunities for increasing access to HIV prevention and care services among MARPs as an entry point for potential HIV prevention and care clinical trials
		TMA2016CDF-1602 Antiretroviral therapy Outcomes, Barriers and facilitators of Adherence among individuals initiating Treatment following Test and Start guidelines in an urban HIV clinic in Uganda (ABOUT)	PSIA-2014-789 PMTCT cohort Retention and adherence study
		TMA2016CDF-1548 Conditional economic incentives and motivational interviewing to improve adolescents' retention and adherence to antiretroviral therapy in south-east Nigeria: a cluster randomised trial (ARA)	
Innovative approaches to increase resilience in adolescent girls and young women and to increase their access to, choices of, uptake of, and adherence to existing prevention tools such as oral pre-exposure prophylaxis (PrEP) and to those in the pipeline when approved by regulators (e.g. antiretroviral vaginal rings) or when proven effective, such as antiretroviral drug implants and injectables for PrEP, monoclonal neutralising antibodies (by infusion, IM, SC), and multipurpose technology tools for HIV prevention and contraception (e.g. rings, implants) for which the regulatory pathway requires definition.	A	CSA2018HS-2525 Universally accessible HIV Prevention Technologies for African girls and young women through Knowledge applied from behavioral Economics: A behavioural science research to determine factors that facilitate future uptake of HIV prevention products and Multi-purpose Prevention Technologies to prevent HIV and unwanted pregnancy in Sub-Saharan Africa	

Critical infrastructure & human development needs	Strengthening research capacity to inform HIV control strategies	A	CSA2018HS-2518 Leveraging the HIV Platform for Hypertension Control in Uganda (INTEGRATED HIV/HTN)	PSIA-2014-690 NOURISH: Nutrition and Treatment Outcome: Development of a Ugandan – Irish HIV/Nutrition Research Cluster PSIA-2014-737 University of Ghana Research Fund for faculty
	Knowledge about sexuality and socio-behavioural and structural determinants of HIV risk to inform prevention strategies	B		
	mHealth and eHealth platforms for holistic, accessible and responsive medical services, including electronic medical record systems for confidential and secure clinical recordkeeping using unique identifiers to facilitate patient tracking and analysis, promote integration of patient care, and permit monitoring of disease epidemiology and treatment outcomes.	B		

Tuberculosis

Worldwide, TB is one of the top 10 causes of death and the leading cause from a single infectious agent (above HIV/AIDS). In 2017, TB caused an estimated 1.3 million deaths among people without HIV infection and there were an additional 300 000 deaths from TB among HIV-positive people[4]. TB is one of the main causes of death in sub-Saharan Africa, where HIV infection is one of the main risk factors for TB. Several clinical presentations of TB are priorities that could benefit from targeted interventions for early diagnosis, treatment, or prevention. These include TB/HIV co-infection, childhood TB, extrapulmonary TB, drug-resistant TB, sub-clinical TB, TB co-morbidity with other communicable diseases (CDs) and non-CDs (NCD), latent TB infection, and TB-related long-term pulmonary functional disability. TB diagnosis is generally sputum-based, which does not enable disease detection in many young children and patients with extra-pulmonary or disseminated forms of disease. There is still no cheap, rapid, and accurate point-of-care (POC) diagnostic test for TB . Efforts to shorten duration of treatment of both drug-susceptible and drug-resistant-tuberculosis have been, and remain, a priority. Further evaluation of a range of host-directed therapies that can shorten therapy, improve treatment outcomes (reduce mortality and lung damage; prevent long-term functional disability)[5] and act as adjuncts to WHO-recommended standard treatment regimens for drug-sensitive and drug-resistant TB is urgently needed. Potential drug-drug interactions with HIV treatment should be examined, given the high levels of HIV-TB co-infection. Research on both pathogen and host biomarkers for disease activity, response to treatment, relapse, and prognosis of TB, are continuing priorities.

Topic	Description	Priority	EDCTP2-funded studies (grant code, title of study, acronym)	PSIAs (grant code, title of study)
Pathogen traits	Evaluation of Mycobacterium tuberculosis strains' genomic differences in the species/lineages of the nine species of M. tuberculosis complex (MTBC) and their effect on the efficacy of distinct control tools in certain geographical areas.	C	TMA2017CDF-1885 The role of Mycobacterium tuberculosis compensatory mutations in metabolic fitness via the structure and function of mycolic acids (InformaTB)	
Disease profile	Identify and evaluate potential specific interventions against sub-clinical TB (diagnosis; treatment; prevention)[6].	B	TMA2015CDF-1012 The impact of pulmonary tuberculosis and other lower respiratory tract pathogens on lung function in young South African children (TB-Lung FACT)	
Epidemiology	Evaluation of drug-resistant TB in adults and children with and without concomitant HIV infection, focusing on a diagnostic or treatment product/regimen.	C	TMA2016CDF-1583 Mycobacterium tuberculosis Infection Rates Among Health Care Workers in a HIV Care and Treatment Center in Nigeria (M. tb Infection Rates among HCWs in HIV Clinics)	PSIA-2016-814 Improvement of the case management of Tuberculosis in the main prison of Brazzaville and preparation to Host directed therapies for tuberculosis clinical trials
			TMA2017SF-1959 Biostatistical Methods for Longitudinal Analysis of Burden of Lung Health and Tuberculosis in Africa (BioStat-LAB Africa)	PSIA-2017-1174 Epidemiology of Tuberculosis and a short course regimen(9months) protocol for the treatment of multidrug resistance-tuberculosis (TB-MDR) patients in Lambaréné, Gabon
			RIA2016S-1632 Tuberculosis Reduction through Expanded Antiretroviral Treatment and Screening for active TB (TREATS)	
			TMA2018CDF-2357 Insight into the Role of the Microbiome in Pulmonary tuberculosis in Kampala, Uganda (MTI-Plus)	

			TMA2018CDF-2363 Clinical application of whole genome sequencing in multidrug resistance tuberculosis patients in Tanzania (CWGSMDRT-TB)
			TMA2018CDF-2372 Optimizing the clinical utility of Whole Genome Sequencing to enhance Drug-Resistant Tuberculosis outcomes (Optim-TB)
			TMA2018SF-2462 Hotspots, households and hospitals: targeted drug-resistant tuberculosis case finding in Namibia (H3TB)
			TMA2018SF-2458 Deciphering the epidemiology and evolution of drug-resistant tuberculosis to inform policy (DEEDTB)
Pathogenesis/host response/ immune response	Evaluation of specific host response and host signatures (notably immune response and signatures) as predictors of susceptibility, protection, prognosis, and response to treatment[4].	C	TMA2015SF-1043 Novel biomarkers predictive of susceptibility and treatment response in patients with MDR-TB (DTB)
			TMA2016CDF-1546 Host-directed therapy: Myeloid derived suppressor cell ablation by phosphodiesterase inhibitor (MyTB)
			TMA2016SF-1535 Characterizing the spectrum of TB and Co-infection with HIV – the role of Th22 cells (CaTCH-22)
			TMA2017CDF-1905 NK and B cell determinants of immunity to *Mycobacterium tuberculosis* in humans (BethiNK TB)
			TMA2017SF-1951 Deciphering the immunological signatures of the TB spectrum from infection to disease (TB-SPEC)
			TMA2017CDF-1914 The longitudinal microbiome of South African tuberculosis patients, symptomatic culture-negative controls and healthy household contacts, and its association with treatment outcome (MOSAIC)
			SRIA2015-1065 Using Biomarkers to Predict TB Treatment Duration (Predict TB)
			TMA2015CDF-1052 Biomarker profile predicting unsuccessful treatment response in patients with MDR-TB (BTR-TB)

	Evaluation of diagnostic and prognostic pathogen and host biomarkers for the accurate identification of and differentiation between latent TB infection, sub-clinical disease, and active clinical TB disease (pulmonary TB and extrapulmonary TB), as well as prognostic biomarkers for the accurate prediction of TB risk in individuals with latent TB infection (LTBI) for prophylactic drug treatment[4].	A	DRIA2014-311 Evaluation of host biomarker-based point-of-care tests for targeted screening for active TB (ScreenTB)	
			RIA2018D-2509 Predicting the Future: Incipient Tuberculosis (PreFIT)	
			RIA2018D-2508 Early Risk Assessment in TB Contacts by new diagnoStic tEsts	
			TMA2018CDF-2374 Early comprehensive genetic drug susceptibility testing to guide treatment of rifampicin resistant tuberculosis (sECReT)	
Diagnosis and tracking	Evaluation of point-of-care diagnostic and prognostic products that are sensitive, specific, cheap, easy to use, yield a rapid result, and are applicable for the diagnosis of both drug-sensitive and drug-resistant TB. This will include existing and new diagnostics and prognostics in HIV-negative and HIV-positive adults and children[4,7].	B	DRIA2014-309 A one-stop shop for the same day diagnosis and management of TB and HIV (Stop TB/HIV at One)	PSIA-2014-708 Cumulative Support to PDPs including DNDI, FIND, EVI, DVI
			DRIA2014-326 Culture free diagnosis and follow-up of multidrug resistant tuberculosis patients (DIAMA)	PSIA-2017-1197 C-Tb
			TMA2015SF-1041 What is the feasibility, accuracy, and optimal manner in which next generation tests for tuberculosis can be used in high burden settings? (OPTIMAL DIAGNOSIS)	PSIA-2014-791 Evaluation of the impact of new tuberculosis diagnostics on patient health outcomes; an East Africa multi-country proposal
			RIA2016MC-1623 Rapid and accurate diagnosis of paediatric TB (RaPaed TB)	PSIA-2015-760 Improving diagnosis of TB in pregnant women
			RIA2018D-2493 Evaluation of the feasibility, accuracy, and effect of a rapid point-of-care serological triage test for active TB in high burden, HIV-endemic African settings: a multi-centre, parallel-group, randomised, controlled trial (SeroSelectTB)	PSIA-2015-806/ PSIA-2016-809 Comparative study of TB diagnostic tools (culture, genexpert, biomarkers) in children in Mali
			RIA2018D-2498 Community-based tuberculosis triage testing after symptom screening in hard-to-reach African populations: CAD4TB versus C-reactive protein (TB TRIAGE+)	
			RIA2018D-2499 Field evaluation of a point-of-care triage test for active tuberculosis [TriageTB]	
			RIA2018D-2509 Predicting the Future: Incipient Tuberculosis [PerFIT]	

			RIA2018D-2511 Evaluating a new stool based qPCR for diagnosis of tuberculosis in children and people living with HIV	
	Development of diagnostic tools for children, with accurate prediction of TB and overall mortality risk.	A	TMA2018SF-2470 Evaluation of new biomarker-based approaches for improving the diagnosis of childhood tuberculous meningitis [TBMBIOMARKERS]	
Treatment	Evaluating novel interventions using new TB drugs or formulations with new combination regimens to simplify treatment[5].	A	TRIA2015-1102 PanACEA, a drug development programme to shorten and simplify treatment of tuberculosis (PanACEA)	PSIA-2014-694 Support to TB Alliance
			RIA2017S-2012 Simplified Short Treatment for Tuberculosis (Simplici-TB)	PSIA-2015-741 Effectiveness And Tolerance Of Protocol Therapy Short 9 Months Of Treatment Of Multi Resistant Tuberculosis In Benin, Niger, Togo And Cameroon 2015- 2017
			RIA2017T-2030 Novel Clinical Candidates to Kill TB (CLICK-TB)	PSIA-2015-772 Evaluation of a short duration treatment regimen for MDR- TB patients in Gabon
	Evaluate treatment regimens using a range of adjunct 'host-directed therapies' (host-strengthening therapies) to shorten duration of therapy or improve outcomes.	A	TMA2018CDF-2351 Evaluation of alternative bacteriological measures of response to therapy during the initial 16-weeks of MDR-TB treatment (MDRTBTx-Monitor)	PSIA-2015-780 Clinical trials sites preparation for Africa-Europe HDT-NET for Host-directed therapies trials for reduction of duration of TB
				PSIA-2016-803 Clinical trials sites preparation for Africa-Europe HDT-NET for Host-directed therapies trials for reduction of duration of TB therapy and improving treatment outcomes of MDR-TB
				PSIA-2016-782 TB and MDR-TB and TB/HIV co-infection
				PSIA-2016-413 Study and evaluation of Host-Directed Therapies against Tuberculosis
	Improve treatment outcomes in patients with severe forms of TB or comorbidities and prevent long-term pulmonary and extra-pulmonary complications and other co-morbidity in adults and children with drug-sensitive and drug-resistant TB.	A	TMA2016CDF-1576 Evaluating the response to 4 and 6 month treatment of pulmonary tuberculosis by 18F-FDG PET/CT lung imaging (Evaluate 4mTB)	PSIA-2015-808 Tolerance and Efficacy of short treatment regimen in MDR-TB patients in Mali
			RIA2017T-2004 Preventing TB relapse and chronic lung disease: A proof-of-concept, double-blind, randomised, placebo-controlled trial to evaluate the safety and efficacy of arvostatin to reduce inflammation after TB treatment completion in HIV-infected and HIV-uninfected adults measured by FDG-PET/CT (StatinTB)	PSIA-2016-803 Clinical trials sites preparation for Africa-Europe HDT-NET for Host-directed therapies trials for reduction of duration of TB therapy and improving treatment outcomes of MDR-TB

			RIA2017T-2019 Intensified tuberculosis treatment to reduce the high mortality of tuberculous meningitis in HIV-infected and uninfected patients (INTENSE-TBM)	
			TMA2017GSF-1942 Impact of Diabetes on TB disease and Treatment Outcome in Ghana (TB-DM)	
	Pharmacokinetic drug interaction studies to determine optimal drug dosing and safety (especially in pregnancy, among children, and in the context of HIV coinfection).	A	RIA2016MC-1606 Vulnerable populatIon TUberculosis AntiretroviraL (VirTUAL)	
			TMA2016CDF-1580 Safety and Efficacy of High Dose Rifampicin in TB-HIV co-infected patients on Efavirenz-based Antiretroviral therapy (SAEFRIF)	
			TMA2017CDF-1876 Evaluation of Pharmacokinetics and Safety/Tolerability of Higher Doses of Rifampicin in Children with Newly Diagnosed, Uncomplicated Tuberculosis (HighRif-C)	
	Identify optimal combination of medicines and treatment regimen-design for TB patients (adults and children) with isoniazid-resistant, rifampicin-resistant, multidrug-resistant (MDR-TB), and extensively drug-resistant (XDR-TB).	A	TMA2015CDF-1018 Optimising linezolid use for drug-resistant tuberculosis in South Africa: the effects of linezolid exposure on toxicity, treatment response, and linezolid resistance (Linezolid for DR-TB in South Africa)	
			TMA2018SF-2467 The Individualized Multi-/Extensively Drug-Resistant Tuberculosis Treatment Strategy Study	
Prevention	Evaluation of new vaccines in adults and in children (benchmarked against BCG/BCG revaccination for overall mortality effects, where feasible). Evaluation of new or shorter chemoprophylactic TB drug regimens[5].	A	RIA2016V-1645 A multicenter Phase III double-blind, randomized, controlled study to evaluate the efficacy and safety of VPM1002 in comparison to BCG (priMe)	PSIA-2014-693/PSIA-2016-698 Support to European Vaccine Initiative (EVI)
			RIA2016V-1631 POR TB consortium; Phase 2 trial to determine efficacy of the multistage vaccine H56:IC31 for Prevention Of Recurrent TB disease (POR TB consortium) TMA2018SF-2467 The Individualized Multi-/Extensively Drug-Resistant Tuberculosis Treatment Strategy Study	PSIA-2014-652 Support to Aeras
			RIA2016V-1637 MTBVAC in Newborns: Phase 2a Dose-Defining Safety and Immunogenicity Study and Capacity Building to Support Vaccine Efficacy Trials in Tuberculosis-Endemic Regions of Sub-Saharan Africa (MTBVAC – Newborns)	PSIA2018-1697 SSI co-funding

			TMA2017CDF-1860 Strategies to optimize the Stability and Bio-activity of a Clinical Tuberculosis Vaccine (ID93-TBVaccine)	PSIA-2016-783 TB Vaccines Development for prevention/ recurrence, TB biomarker discovery& Therapeutic vaccines
			TMA2018CDF-2353 Neutrophils as effector cells in resistance to infection by *Mycobacterium tuberculosis* in HIV-infected persons (NeutroTB)	PSIA-2014-606; PSIA-2016-392; PSIA-2017-1237 Tuberculosis Vaccine Initiative (TBVI)
			RIA2018CO-2515 Determination of Adequate TUberculosis Regimen in Adults and adolescents hospitalised with HIV-associated severe immune suppression (CD4 ≤ 100 cells/µL) (DATURA)	
			RIA2018CO-2514 Randomised Controlled Trial of Preventive Treatment of Latent Tuberculosis Infection in Patients with Diabetes Mellitus (PROTID)	
Product-focused implementation research	Delivery methods and research on the use of diagnostics and drugs after they have been tested successfully and in a cost-effective manner. Including post-marketing surveillance for real-life overall mortality effects.	A	EDCTP-CSA-2014-283 Tuberculosis: Working to Empower the Nations' Diagnostic Effort (TWENDE)	
			CSA2016S-1627 PhArmaco Vigilance Africa (PAVIA)	
			RIA2017S-2007 CAP-TB: Close the Gap, Increase Access, Provide Adequate Therapy (CAP-TB)	
	Scale up and integration of HIV/TB prevention, contact screening and prevention, treatment, and services; and innovative use of existing and new strategies to prevent, diagnose, and manage TB, MDR-TB and TB/HIV co-infections.	A	TMA2016CDF-1570 An Innovative Collaboration Model Between the National TB Control Program and Informal Healthcare Providers to Detect Additional Cases of TB In Cameroon (ECIP)	
			CSA2016S-1608 Translation research into policy and practice: Scaling up Evidence Based Multiple focus Integrated Intensified TB Screening to End TB (EXIT-TB) in the East African region.	
			TMA2018SF-2472 Using short message service reminders and mobile money incentives to enhance linkage to care of presumptive tuberculosis patients in Uganda: a randomised controlled trial (mileage4tb)	
	Implementation research to optimize access, uptake, and adherence to TB treatment especially among (but not limited to) migrant populations, refugees, and people in humanitarian emergencies.	A		

Critical infrastructure & human development needs	Development and expansion of TB clinical trials sites.	A	TMA2016SF-1463 Research Capacity Strengthening Programme for Emerging and Re-emerging Infectious Diseases Control in Tanzania (REMODEL-TZ)	PSIA-2014-737 University of Ghana Research Fund for faculty PSIA-2016-782 TB and MDR-TB and TB/HIV co-infection
			TMA2018SF-2479 Career Strengthening for Improved Randomised Controlled Trials in Uganda (BuildRCTBCG)	PSIA-2016-783 TB Vaccines Development for prevention/ recurrence, TB biomarker discovery& Therapeutic vaccines

Lower Respiratory Tract Infections

Lower respiratory tract infections (LRTIs) caused by a range of pathogens in community or hospital settings are among the top four causes of mortality in children and adults globally. Pneumonia accounts for 16% of all deaths of children under 5 years old, killing an estimated 920,136 children in 2015. The incidence of severe pneumonia is higher in SSA (30% of the global burden of severe childhood pneumonia)[8,9,10] and it is the most common reason for adult hospitalisation in sub-Saharan Africa[11]. Co-morbidities (poor nutrition and HIV infection), environmental factors (exposure to indoor air pollution, biomass fuel, smoke exposure) and poor living conditions are among the main risk factors for pneumonia and severe pneumonia[12]. The report of PERCH study, a large multi-site case-control study of children aged 1-59 months admitted to hospital with severe pneumonia showed that viruses accounted for 61.4% of causes, while bacteria accounted for 27·3% and *Mycobacterium tuberculosis* for 5.9%, suggesting that viral pathogens may be more involved in aetiology of severe and fatal childhood pneumonia in sub-Saharan Africa and Asia than previously acknowledged[13]. Vaccines against *Streptococcus pneumonia* and *Haemophilus influenzae* type B, the top two causes of LRTI, are highly effective and recommended by WHO to be part of the routine immunization program since 2006. Vaccines against influenza virus are available and recommended in pregnancy but poorly used in LMICs and there is no vaccine against Respiratory Syncytial Virus (RSV), though several vaccines are under development[14]. RSV, which was the commonest pathogen identified in children with severe pneumonia, should be a key target of efforts to develop preventive interventions while bacterial pathogens for which vaccines already exist, but still account for high proportion of very severe and fatal pneumonia, should remain a target for intervention to improve diagnosis and prompt access to effective treatment. Further research to counter emerging threats from antibiotic-resistant bacteria in community-acquired or nosocomial LRTI in sub-Saharan African remains a key priority. Other key research priorities are the improvement of diagnosis of LRTI through evaluation of optimised clinical algorithms; development of biomarkers to differentiate LRTI from other diagnoses; evaluation of rapid multiplex platforms for diagnosis of bacteria, fungi, and viruses; and design of innovative imaging methods that are suitable to the conditions of health facilities of LMICs. Trials of shorter duration antibiotic treatment for community-acquired LRTI among adults and children (living with HIV and HIV-negative) remain top priority, along with evaluation of 'host-directed therapies' to strengthen host immunity and to improve treatment outcomes. Development of new vaccines, evaluation of the impact of recently introduced routine vaccines on the aetiology and severity of LRTI, and research on implementation models and on the scale-up of existing vaccines are priorities[12,15].

Topic	Description	Priority	EDCTP2-funded studies (grant code, title of study, acronym)	PSIAs (grant code, title of study)
Pathogen traits	To explore the traits of the following pathogens: • Neonates and children: Group B Streptococcus; *Respiratory Syncytial Virus (RSV)*; pneumococcus; cytomegalovirus; *Bordetella pertussis* for neonates • Adults: pneumococcus, *Haemophilus influenza*, *Klebsiella pneumoniae* • In patients with HIV infection: *Pneumocystis jirovecii*, fungal infections (e.g. *Aspergillus fumigatus*). In pregnant women: influenza and para influenza virus.	D		
	To document the emerging threats from antibiotic-resistant bacteria (extended spectrum beta-lactamase (ESBL)-producing *K. pneumoniae* and methicillin-resistant *S. aureus* (MRSA).	B		
Disease profile	To define the severity and outcome of LRTIs in: • Children with and without HIV infection • Neonates	A		
	To define the severity and outcome of LRTIs in: • Adults with and without HIV infection • Pregnant women • Elderly persons • Patients with other comorbidities.	B		

Epidemiology	To identify the risk factors of LRTI in: • Adults with and without HIV infection • Children with and without HIV infection • Neonates • Pregnant women • Patients with co-morbid diseases, e.g. diabetes mellitus, chronic obstructive pulmonary disease (COPD), and chronic renal and liver failure, who are likely to be infected with Gram-negative organisms such as *Pseudomonas aeruginosa*, *K. pneumoniae* and *Escherichia coli*.	D	PSIA2018-1690 Recherche du portage ultice du streptocoque du groupe B chez les femmes enceintes et étude de sensibilité des souches aux antibiotique
	To assess the incidence of community-acquired atypical pneumonia (there is uncertainty about the true incidence of so-called 'atypical infections' in patients with pneumonia in Africa. Infections with organisms such as *C. pneumoniae* and *M. pneumoniae* are cyclical) and tuberculosis associated pneumonia.	D	
	To estimate the burden of RSV in community deaths[16].	B	
	To develop adequate surveillance programs to better clarify the epidemiology, aetiology, antimicrobial susceptibility patterns, and the effectiveness of preventive and curative strategies in place against paediatric LRTIs.	B	TMA2015CDF-1033 Nasopharyngeal Microbiota in HIV Positive Children Presenting with Respiratory Disease (ALRTI)
	To assess the impact of early ART initiation on the occurrence of LRTI in patients living with HIV.	B	
	To assess the disease-specific and overall health impact of latest vaccines for prevention of LRTIs (type b Haemophilus influenzae, Bordetella pertussis, Streptococcus pneumoniae, RSV, and Influenza) especially in children, pregnant women, and immunosuppressed patients.	A	
Pathogenesis/host response / immune response	To study peripheral blood and lung immune responses in LRTI affecting adults, children (both living with HIV and HIV-negative).	C	
Diagnosis and tracking	To develop and evaluate more accurate clinical diagnostic and management algorithms including severity assessment tools and criteria for early treatment failure for LRTIs according to age groups, comorbidities, and severity[9].	A	
	Develop and evaluate clinical diagnostic algorithms for LRTI in immunocompromised infants and children; especially severely malnourished children.	A	
	To evaluate the latest multiplex diagnostic platforms for rapid diagnosis of bacterial, mycobacterial, viral, and fungal causes of LRTIs.	A	
	To develop and evaluate innovative specimen collection methods that are easy to perform at lower level health facilities and well-tolerated to improve the aetiologic diagnosis of LRTI in neonates, children, and adults.	A	

	To evaluate/optimise chest X-ray and new imaging technologies for diagnosis of LRTI (digitalized mobile X-ray, thermal imaging, computerized readers, portable ultrasound).	A	
	To evaluate new or existing host-biomarkers (clinical and laboratory), clinical algorithms and currently available diagnostic tests for determining: 1) severity of illness and prognosis, 2) need for hospitalisation, 3) decision to prescribe antibiotics, and 4) how to improve treatment outcomes (including overall survival) and management of co-morbidities.	B	TMA2018CDF-2360 Proteomic-based Etiological biomarkers of Acute pneumonia in Kenyan children (PEAK) TMA2018SF-2465 Management of Lower Respiratory Tract Infections in Sub-Saharan Africa, a Pragmatic Approach (LoRTISA study)
Treatment	To evaluate the efficacy of shorter duration antibiotic treatment regimens for severe and non-severe community acquired LRTI, in children and adults (including those immunocompromised)[17].	A	RIA2017MC-2023 Impact of duration of antibiotic therapy and of oral step-down to amoxicillin or co-amoxiclav on effectiveness, safety and selection of antimicrobial resistance in severe and very severe childhood community-acquired pneumonia (CAP): a randomised controlled trial (PediCAP Trial) (PediCAP)
	To evaluate simplified tools for management of hypoxemia for children with severe LRTI and intravenous fluid in resource limited settings.	A	RIA2016S-1636 Children Oxygen Administration Strategies Trial-Nutrition (COAST-Nutrition)
	To evaluate adjunct 'host-directed therapies' to improve treatment outcomes for LRTIs in HIV-positive adults and children and to prevent long term pulmonary functional disability.	B	
	To evaluate the optimal approach to initiate antimicrobial therapy choices, such as the need to provide early empirical cover for atypical mycobacterial and tuberculosis[9].	A	RIA2017MC-2013 Empirical treatment against cytomegalovirus and tuberculosis in severe pneumonia in HIV-infected infants: a randomized controlled clinical trial EMPIRICAL
	To evaluate the effectiveness of the empirical combination of antibacterial and potential antiviral agents for treating severe childhood pneumonia in sub-Saharan Africa.	C	
	To develop and evaluate upcoming new antiviral drugs against respiratory pathogens[10].	B	
Prevention	Chemoprophylactic prevention of LRTI in adults and children.	A	
	To assess the impact of RSV vaccination of pregnant women on the rates, outcomes, and aetiologies of LRTIs and on overall mortality/overall hospitalisation rates in pregnant women and in their offspring.	A	
	To evaluate novel vaccines for pneumococcus compared with existing PCV for their effect on LRTI and overall morbidity/mortality.	A	

	To evaluate the impact of group B streptococcus targeted vaccines in pregnant women on infant mortality and morbidity.	B	RIA2018V-2304 Prevention of invasive Group B Streptococcus disease in young infants: a pathway for the evaluation & licensure of an investigational maternal GBS vaccine (PREPARE)	
	To evaluate the non-specific effects of routine vaccines on LRTI and overall morbidity/mortality	A		
	To evaluate the effect of host epithelial barrier strengthening interventions such as prebiotics and probiotics on the risk of LRTI and on overall health.	A		
Product-focused implementation research	To optimize delivery and scaling-up of new vaccines (e.g. RSV) for LRTIs in partnership with other funders.	A		
	Post-marketing effectiveness and safety studies (including pharmacovigilance) and operational research to optimise cost-effective delivery and scaling-up of new diagnostics, drugs, and vaccines for LRTI.	A		
	To assess the integration of LRTI management with HIV/TB/malaria/diarrhoea treatments and services, including an evaluation of the effect of combining treatments.	A		
Critical infrastructure & human development needs	To support training of local laboratory scientists/staff identified as a critical need, as well as good laboratory collection of baseline data for LRTIs.	A		PSIA-2017-1185 Malaria Clinical Trial Platform management including staff salary equipment and reagent cost for malaria, meningitis, dengue tuberculosis and other NTD
	To enhance clinical diagnostic capacity for LRTIs, including point of care ultrasound, digital mobile X-ray to aid patient enrolment, and assessment of outcome in clinical trials.	A		
	Improved access to new rapid diagnostics for LRTIs, including host biomarkers to better guide treatment and antibiotic stewardship efforts for LTRIs	A		

Malaria

Sub-Saharan Africa (SSA) continues to be plagued by malaria, despite substantial success in reducing infection and mortality rates in most countries over the past two decades, through improved diagnosis, treatment, and prevention strategies. Since 2010, malaria incidence in WHO's African Region has decreased by 20%, but the decline has stalled since 2014[18]. Ninety one percent of the estimated 445,000 deaths from malaria globally occur in SSA, with the disease continuing to place an enormous burden on hospital and outpatient facilities, accounting for a high proportion of all presentations. Serious bottlenecks remain in providing full access to preventive interventions, diagnostic testing, and treatment. The greatest burden of disease affects children, pregnant women, and immune-compromised individuals. However, malaria also constitutes one of the most important preventable causes of morbidity and mortality in adolescents living in high transmission regions.

African populations suffer high burdens of other infectious diseases and many patients with malaria harbour other infections, including HIV and TB. Negative interactions between HIV and malaria co-infections have been described but the full extent of this requires further investigation[19]. Documenting the safety, efficacy, and malaria drug interactions in patients also being treated for HIV or TB is a priority. Malaria in pregnancy is a public health priority in endemic regions but new tools for the treatment and prevention of malaria in early pregnancy are missing. In parts of Africa, malaria elimination strategies are underway, including radical cure of both *P. falciparum* and *P. vivax* asymptomatic infections in the entire population as the cornerstone. Priority populations for malaria interventions include vulnerable people such as children, pregnant women, individuals living with HIV, and those with genetic haemoglobinopathies. Non-falciparum and mixed species malaria become increasingly important in elimination settings. However, current tools for diagnosis of such malarias are insufficient and evidence for the effectiveness of different treatment strategies is largely absent. Sensitive methods for the rapid diagnosis of asymptomatic malaria infections are required because, increasingly, parasites are being identified with deletion of the histidine-rich proteins leading to false-negative results of HRP2 rapid diagnostic tests (RDTs)[20]. A number of antimalarial drugs have been developed, but the ever-present potential for development of resistance underscores the need for new highly efficacious drugs with adequate safety profiles. In addition, new antimalarial drugs with different modes of action are needed for malaria chemoprevention in the most vulnerable populations. Vector control has played a major role in reducing malaria burden over the past two decades, however, it is hampered now by increasing insecticide resistance. Although research on new insecticides and ways to delay the onset of resistance are urgent priorities[21], this falls outside the remit of EDCTP. The first malaria vaccine has now entered pilot implementation studies, but its efficacy is modest and relatively short-lasting. The development and evaluation of more effective malaria vaccines will be key to both improved malaria control and to malaria elimination. It is timely to build on the EDCTP1 investments that supported phase II clinical trials of candidate malaria vaccines and enhanced capacity to conduct trials now to evaluate the current most promising vaccine candidates, including sporozoite, blood stage, and transmission blocking vaccines and combinations of vaccines.

Topic	Description	Priority	EDCTP2-funded studies (grant code, title of study, acronym)	PSIAs (grant code, title of study)
Pathogen traits	Identification of risk factors for severe disease, especially in children and pregnant women, including host, parasite, and environmental factors.	D		PSIA-2015-818 Pilot Study: evaluation of allergy-associated inflammatory responses as components of clinical manifestations of malaria.
Disease profile	Evaluation of the contribution of asymptomatic malaria for disease transmission and as an impediment to elimination.	B		PSIA-2015-842 Population based approach to malaria research and control (ICEMR)
Epidemiology	Evaluation of simple methodologies for monitoring levels of malaria transmission and for measuring the impact of control strategies on transmission, including focal treatment strategies in relation to malaria elimination.	B	TMA2016SF-1514 Strengthening Malaria Epidemiological, Pathophysiological and Intervention Studies in Highly Endemic Eastern Uganda (MEPIE study)	PSIA-2014-1930 Surveillance of malaria in sentinels' sites in the country
				PSIA-2015-842 Population based approach to malaria research and control (ICEMR)

				PSIA-2015-773 Antimalarial drug resistance in South East of Gabon
				PSIA-2015-836 Study under the topic: effectiveness of strategies and controls against malaria in pregnant women and children under five years in the region of the Far North
	Evaluation of simple ways of monitoring of drug resistance and assessing the impact of such resistance on disease burden and transmission.	A	TMA2015CDF-973 Determinants and prevalence of parasite resistance among pregnant women receiving Intermittent Preventive Treatment with Sulphadoxine-Pyrimethamine (IPTp-SP) in a malaria endemic community (IPTp-SP resistance in Nigeria)	PSIA-2015-762 Artemisinin efficacy and resistance monitoring in border towns in Zambia
			TMA2018CDF-2398 Genetic profiling of drug resistance and population structure of plasmodium falciparum using high-throughput next generation sequencing (GRIPS-NGS)	PSIA-2017-1173 Anti malarial drugs resistances markers surveillance in rural areas of Gabon
	Defining optimal indicators for surveillance of malaria risk and burden, through measures in vectors and human hosts. Establishing surrogate measures of protection for vector control products.	B		
Pathogenesis/host response/ immune response	Determinants of host-parasite interaction and natural acquisition of immunity and its loss. Evaluation of biomarkers of protection for malaria.	C	TMA2015SF-1001 Harnessing parasite diversity and naturally acquired protective immunity against *Plasmodium falciparum* malaria for the development of highly effective vaccines (SMART)	
			TMA2016SF-1513 Determining Correlates of Naturally Acquired Pre-Erythrocytic Immunity to *Plasmodium falciparum* malaria in an Experimental Human Challenge Model (CoNAIPS)	
			TMA2017CDF-1892 Understanding the biology of *Plasmodium vivax* and *Plasmodium ovale* for the development of a field-based anti-hypnozoite drug screening model (HypnoBio)	
			TMA2018CDF-2385 Macrophage Polarization in Placental Malaria Pathogenesis (MPiMP)	

Diagnosis and tracking	Evaluation of novel point of care diagnostic tests, including those for detection of P. vivax hypnozoites, and G6PD deficiency.	A	TMA2016CDF-1605 PSOP24-377: An infectious bite marker for sensitive malaria detection and population level surveillance (PSOP24-377)	PSIA-2014-708 Cumulative Support to PDPs including DNDI, FIND, EVI, DVI
			TMA2018CDF-2397 Operational feasibility, impact of additional screening using highly-sensitives Rapid Diagnostic Tests combined with high coverage of IPTp-SP on placental malaria and low birth weight (ASSER Malaria)	PSIA-2015-742 Operational Study On The Use Of Diagnostic Rapid Test
			RIA2018D-2496 Phase 3 evaluation of an innovative simple molecular test for the diagnosis of malaria in different endemic and health settings in sub-Sahara Africa (DIAGMAL)	PSIA-2016-785 Field validation of a multi-lateral point-of-care assay for differential diagnosis of 5 febrile illnesses including Malaria and Ebola
	Innovative use of new or existing diagnostic technologies for malaria control and elimination efforts.	A	TMA2018SF-2468 Mobile nucleic acid testing of asymptomatic Plasmodium infections for malaria elimination (ASYMALE)	PSIA-2014-623 Doctoral and postdoctoral fellowships (FCT-PT)
Treatment	Safety and efficacy testing of new drugs, including single dose treatments and optimisation of schedules for existing drugs, including evaluation of interactions between antimalarials and other drugs, including ARVs and anti-TB drugs (especially amongst children and pregnant women).	A	TMA2016CDF-1555 Single low-dose primaquine efficacy and safety for treatment of uncomplicated *Plasmodium falciparum* malaria based on cytochrome P450 2D6 activity in Bagamoyo district, Tanzania (ESSLDPQ P4502D6)	PSIA-2014-695; PSIA-2014-605; PSIA-2016-394; PSIA-2017-1238 Support to Medicines for Malaria Venture (MMV)
			RIA2017MC-2022 Clinical evaluation of AntimalarialS tri-therapy with +Atovaquone-Proguanil (AP) for treatment of uncomplicated in African children (ASAAP)	PSIA-2014-792 A multi-country, multi-site evaluation of the effectiveness of artemisinin combination therapy in East Africa
			RIA2017MC-2025 Efficacy and Safety of a newly registered Artemisinin-Based Combination (Pyronaridine-Artesunate – PYRAMAX®) for the treatment of uncomplicated malaria in African pregnant women (PYRAPREG)	PSIA-2015-761 Safety, Efficacy , tolerability and acceptability of IPTp-Euratesim compared to IPTp SP
			RIA2017T-2015 Phase II multicenter clinical trial of a Single-Day Regimen of two dose Ferroquine combination for the treatment of malaria (SINDOFO)	PSIA-2016-811 Safety and efficacy of AS-PYR, DHA-PQP compared to AL in real-life conditions in West Africa
			RIA2017T-2018 A phase 2 and 3 clinical trial program to assess safety, efficacy and transmission blocking properties of the new anti-malarial KAF156 combined with a new formulation of lumefantrine in children and adults with uncomplicated *Plasmodium* sp. Malaria in West and Central Africa (WANECAM – II)	

			TMA2017SF-1943 Optimizing Malaria Treatment for HIV-Malaria co-infected Individuals by Addressing Drug Interactions between Artemisinin-based Combination Therapies and Antiretroviral Drugs (OPTIMAL)	
			TMA2017CDF-1897 Impact of standard antiretroviral therapy on the pharmacokinetic profile and placental penetration of piperaquine when administered as dihydroartemisinin-piperaquine for intermittent preventive treatment of malaria among pregnant women in Malawi (PENETRATE)	
			RIA2018SD-2306 Portfolio approach to developing the next generation of malaria treatments for Africa (PAMAFRICA)	
	Evaluating the true burden of disease due to non-falciparum malaria and improving the management of non-falciparum and mixed species malaria.	B		
	Improving the management of moderately severe malaria in African children and adolescents.	A		
	Evaluation of novel malaria control strategies using drugs and/or vaccines, including Mass Drug Administration (MDA) for malaria elimination or control.	A	TMA2018CDF-2402 Determining the impact of scaling up mass testing, treatment and tracking on malaria prevalence among children in the Pakro sub district of Ghana (DetI-MTTT)	PSIA-2014-756 Mass drug administration of dihydroartemisinin piperaquine in Southern province
			CSA2018HS-2522 Malaria mass and focal drug administration to advance malaria elimination in Mozambique: accelerating programmatic implementation and policy translation (ADAM)	PSIA-2015-843 Reactive household-based self-administered treatment against residual malaria transmission (RHOST)
Prevention	Evaluation of novel drugs and strategies for malaria chemoprevention in young children and pregnant women (especially through existing contacts with health services (e.g. routine vaccination)).	A	TRIA2015-1076 IPTp with dihydroartemisinin-piperaquine and azithromycin for malaria, sexually transmitted and reproductive tract infections in pregnancy in high sulphadoxine-pyrimethamine resistance areas in Kenya, Malawi, and Tanzania (IMPROVE study)	PSIA-2014-693/PSIA-2016-698 Support to European Vaccine Initiative (EVI)
			TRIA2015-1076 b IPTp with dihydroartemisinin-piperaquine and azithromycin for malaria, sexually transmitted and reproductive tract infections in HIV-infected pregnant women in Kenya and Malawi: a multi-centre 3-arm placebo-controlled trial (IMPROVE-2)	PSIA-2014-757 Daily cotrimoxazole prophylaxis for prevention of malaria in pregnancy

		RIA2016MC-1613 Improving maternal and infant health by reducing malaria risks in African women: evaluation of the safety and efficacy of dihydroartemisinin-piperaquine for intermittent preventive treatment of malaria in HIV-infected pregnant women (MAMAH study)	PSIA-2015-844 Monitoring the safety, coverage, efficacy and impact of Seasonal Malaria Chemoprevention programmes
		TMA2016CDF-1584 Enhancing Training and Research for the Control of Malaria among African Mothers (ETRAM)	
		TMA2018CDF-2343 Impact of Seasonal Malaria Chemoprevention on the build-up of protective immunity and the protection against clinical malaria in Burkina Faso (ISCHEMIC)	
		TMA2018CDF-2365 Assessment of a combined strategy of seasonal malaria chemoprevention + nutrients and Vitamin A-Zinc supplementation to tackle malaria and malnutrition in Burkina Faso (SMC-NUT)	
		CSA2018HS-2520 Optimizing the impact of Seasonal Malaria Chemoprevention: improving delivery and building capacity for evaluation (OPT-SMC)	
		CSA2018HS-2521 Revitalisation of intermittent preventive treatment of malaria in pregnancy in Kenya (Revive IPTp)	
Evaluation of new strategies to prevent and treat malaria in early pregnancy.	A		
Evaluation of strategies to prevent, diagnose, and treat malaria in adolescents (e.g. as part of school-based health interventions).	A		
Evaluation of the role of drug-based vector control in current malaria control strategies.	B		
Evaluation of vaccines for prevention, including those targeting different populations such as infants and pregnant women, and of transmission-blocking vaccines.	A	RIA2016V-1649 Multi-Stage Malaria Vaccine Consortium: field efficacy testing of a malaria vaccine targeting all four stages of the parasite's life-cycle (MMVC)	PSIA-2014-708 Cumulative Support to PDPs including DNDI, FIND, EVI, DVI
		RIA2018SV-2311 Rapid evaluation of Plasmodium falciparum Transmission Blocking Vaccine (PfTBV) candidates through enhanced African Resource Centers (ARC) for integration into malaria control and elimination (PfTBV)	PSIA-2014-786 Evaluation of the efficacy of a vaccine diet "ChAd63-ChAd63-MVA ME-TRAP 'against Plasmodium falciparum by a strategy of prime-boost vaccination

			RIA2018SV-2310 A multilateral initiative to foster the clinical development of effective malaria vaccine candidates in Africa (MIMVaC-Africa)	PSIA-2015-850 Phase II trial of PfSPZ Vaccine Age de-escalation in Tanzanian adults and children
			TMA2018SF-2475 Adaptation of blood-stage CHMI for evaluation of transmission blocking malaria interventions in endemic countries (Blood-CHMI Trans)	PSIA-2014-846 Phase I trial of PfSPZ Vaccine in Tanzanian adults
				PSIA-2016-810 Phase 2 PfSPZ study with the targeted high dose in phase 1
				PSIA-2014-718 Impact of Clinical Research on Health System and Care Services
				PSIA-2017-1226 JEAI MAHEVA
Product-focused implementation research	Evaluation of novel implementation approaches for new and existing interventions.	B	EDCTP-CSA-2014-276 Maximising the public health impact of interventions to control malaria in pregnancy through the translation of EDCTP-funded evidence-based global policies to country level policies and plans (IMPP-ACT)	
			TMA2017CDF-1903 Impact of RTS,S/AS01 vaccine and insecticide treated bednets on neurobehavioural impairment and school participation in children from rural Kenya (Mal-Brain study)	
			TMA2018SF-2471 Research Capacity Building by DHA-PQ SMC Clinical Trial in school aged children in Mali (RCB-DHAPQ-SMC)	
	Improved strategies for scale-up of access to drugs, vaccines, and diagnostics and optimized strategies for the use of current malaria control tools in regions of highest malaria burden	A	EDCTP-CSA-2014-282 Improving the impact of existing Malaria Products – ACTs (IMPACT)	
			TMA2017CDF-1878 Monitoring safety of single-low dose primaquine co-administered with AL in routine healthcare practices: addressing potential implementation challenges and policy options for effective roll out (PRIMAQUINE ROLL OUT)	
			CSA2018HS-2522 Malaria mass and focal drug administration to advance malaria elimination in Mozambique: accelerating programmatic implementation and policy translation [ADAM]	

	Evaluation of the feasibility and cost-effectiveness of improved information systems for optimising malaria treatment strategies, including monitoring and evaluation of the coverage of interventions and for the prevention of drug stock-outs.	B		
Critical infrastructure & human development needs	Development of infrastructure for conduct of Phase I to Phase IV trials of malaria interventions and for the evaluation of new vector control tools.	B	TMA2015SF-998 Malaria Research and Capacity building for field trials in Tanzania (MaReCa)	PSIA-2014-597 Malaria Capacity Development Consortium (MCDC) PSIA-2017-1185 Malaria Clinical Trial Platform management including staff salary equipment and reagent cost for malaria, meningitis, dengue tuberculosis and other NTD PSIA-2015-729 Training of 4 PhD in malaria basic and clinical research PSIA-2015-728 Malaria Clinical Trial Platform management including staff salary equipment and reagent cost for malaria, meningitis and tuberculosis PSIA-2016-813 Strengthening networking of malaria scientists for malaria vaccine trials through the development of an IT communication platform PSIA-2014-660 Capacity building: Studies of parasitic infections in Gabon and Ghana PSIA-2014-637 Strengthen MRTC (Malaria Training Research Center) capacities for prevention and treatment of malaria
	Development of infrastructure to support epidemiological studies and assessment of transmission reduction potential of new malaria interventions including vector control, diagnostics, drugs, and vaccines.	D		

Neglected Infectious Diseases (NIDs)

WHO's list of neglected tropical diseases includes 20 diseases caused by different pathogens that have diverse manifestations, life cycles, and methods of transmission[22]. One sixth of the world's population suffers from one or more NIDs with 50% of those affected living in sub-Saharan Africa. Many of these diseases are avoidable or treatable. More precise tools for diagnosis, better treatment regimens, novel drugs, and enhanced awareness are needed to make progress in the control and elimination of these diseases. EDCTPs remit covers a sub-set of diseases from this list: Buruli ulcer, dengue and chikungunya, dracunculiasis (guinea-worm disease), echinococcosis, foodborne trematodiases, human African trypanosomiasis (sleeping sickness), leishmaniases, leprosy (Hansen disease), lymphatic filariasis, mycetoma, onchocerciasis (river blindness), rabies, schistosomiasis, soil-transmitted helminthiases, taeniasis/cysticercosis, trachoma, and yaws. A research priority is understanding the consequences of NID co-infection with malaria, TB, or HIV infection and NID in the context of non-communicable diseases (NCDs). Development of drugs, diagnostics, and vaccines is a priority, along with improved understanding of the consequences of co-infection and co-morbidity. Because many NID persist due to fragile local health systems, programmes to strengthen them by building better infrastructure for good clinical and regulatory practice are required.

Topic	Description	Priority	EDCTP2-funded studies (grant code, title of study, acronym)	PSIAs (grant code, title of study)
Pathogen traits	NIDs include viral, bacterial, fungal, protozoal and helminth infections with diverse manifestations, life cycles and methods of transmission. They include: Buruli ulcer, dengue and chikungunya, dracunculiasis (guinea-worm disease), echinococcosis, foodborne trematodiases, human African trypanosomiasis (sleeping sickness), leishmaniases, leprosy (Hansen disease), lymphatic filariasis, mycetoma, onchocerciasis (river blindness), rabies, schistosomiasis, soil-transmitted helminthiases, taeniasis/cysticercosis, trachoma, and yaws.	C	TMA2018CDF-2370 Hybridization as a driver for the spread of schistosomiasis: an integrative approach to evaluate the invasive capacity of schistosome hybrids under praziquantel pressure (SEN_HYBRID_INVASION)	
Disease profile		D		
Epidemiology		A		PSIA-2014-642 Prevalence and incidence of dengue infection in Tanzania Coastal and Lake Regions SN.2014.PS.07 Evaluation of Lymphatic Filariasis in Zones where by Distributions Ivermectin is administrated to fight against onchocerciasis SN.2014.PS.06 Entomological assessment of Onchocerciasis in the former endemic regions of Tambacounda, Kolda and Kédougou (Senegal)
Pathogenesis/host response/ immune response	Diverse mechanisms of pathogenesis and immunity. Epidemiological studies provide a foundation for clinical studies.	B	TMA2016CDF-1571 Identification of host regulators of tissue fibroproliferative pathology in schistosomiasis-diseased children in Africa (Maquisard)	

			TMA2016CDF-1561 Impact of secondary bacterial infection in the development of filarial lymphedema among Ghanaian patients (SecBILE)	
			TMA2017GSF-1956 Contribution of intestinal parasite infections in the risk of developing cardio-metabolic diseases in rural and urban areas of Gabon: a pilot study (ParCam)	
Diagnosis and tracking	Evaluation of diagnostic/biomarkers, including for treatment response, and products to be used in population surveillance & monitoring for control, elimination, or eradication programmes.	A	DRIA2014-308 Evaluation of an antibody detecting point-of-care test for the diagnosis of *Taenia solium* taeniasis and (neuro) cysticercosis in communities and primary care settings of highly endemic, resource-poor areas in Tanzania and Zambia, including training of - and technology transfer to the Regional Reference Laboratory and health centres (SOLID)	PSIA-2014-708/PSIA-2014-651 Cumulative Support to PDPs including DNDI, FIND, EVI, DVI
			DRIA2014-306 Diagnostic tools for human African trypanosomiasis elimination and clinical trials (DiTECT-HAT)	PSIA-2014-758 Loop Mediated Isothermal Amplification (LAMP) for HAT Good Clinical Laboratory Practice
			TMA2015CDF-979 Rapid detection of *Mycobaterium ulcerans* infection by recombinase polymerase amplification (BU-RPA)	PSIA-2016-766 Leprosy case finding through existing and new diagnostics
			TMA2015CDF-995 Urinary Cytokine ELISA: A tool for Assessing Urinary Tract Pathology in *Schistosoma haematobium* infections (UCE)	PSIA-2016-785 Field validation of a multi-lateral point-of-care assay for differential diagnosis of 5 febrile illnesses including Malaria and Ebola
			TMA2016SF-1437 Evaluation of the LAMP & db-PCR-NALFIA for the Diagnosis and/or as Test-of-Cure in Patients with Visceral Leishmaniasis in Ethiopia (EvaLAMP & db-NALFIA)	
			RIA2016MC-1626 Fast and reliable easy-to-use-diagnostics for eliminating Bilharzia in young children and mothers (FREEBILY)	
			TMA2017CDF-1887 Clinical evaluation of novel plasma biomarkers for stage diagnosis among sleeping sickness patients in Uganda (CaNPSTS)	
			RIA2018D-2495 Clinical evaluation of a Loop-mediated isothermal amplification test for *Treponema pallidum* pertenue: A Diagnostic tool to support Yaws Eradication (LAMP4YAWS)	

Treatments	Evaluation of novel drugs, drug combinations, immuno-chemotherapy, and formulations for treatment (in particular for Buruli ulcer, dengue, mycetoma and the filariases).	A	RIA2016S-1635 Towards an adapted, safe, effective combination treatment for African visceral leishmaniasis (Kala Azar) and improved diagnostic tools (Afri-KA-DIA)	PSIA-2014-708 Cumulative Support to PDPs including DNDI, FIND, EVI, DVI
			RIA2016S-1641 Phase III clinical trials and registration of a new praziquantel orally disintegrating tablet formulation suitable for preschool-aged children with schistosomiasis (PZQ4PSAC)	PSIA-2014-602; PSIA-2016-393; PSIA-2017-1239 Drugs for Neglected Diseases initiative (DNDi)
			TMA2016SF-1509 Evaluation of a nitric oxide generating dressing (EDX) to improve management of Buruli ulcer disease (BuruliNox)	
			RIA2017NCT-1843 Moxidectin for accelerating onchocerciasis elimination: A paediatric dose-finding study, a phase 3b trial comparing efficacy and safety of annual and biannual moxidectin or ivermectin treatment and mathematical modelling of moxidectin and ivermectin based elimination strategies to support country policy decisions (MoxiMultiDoseMod)	
			RIA2017NCT-1845 Towards the interruption of transmission of soil-transmitted helminths: Clinical research development of a fixed-dose co-formulation of ivermectin and albendazole (STOP)	
			RIA2017NCT-1846 Towards an arsenic-free oral treatment for human African trypanosomiasis due to Tb rhodesiense as a tool for disease elimination (HAT-R-ACC)	
			TMA2018SF-2451 Alternative treatment strategies using anti-wolbachial drugs to accelerate elimination of onchocerciasis and lymphatic filariasis (ASTAWOL)	
			TMA2018CDF-2345 Optimization of praziquantel therapy for Schistosoma mansoni infection in preschool-aged children in Ethiopia (PrazOpt)	

Prevention	Evaluation of safety and efficacy of candidate vaccines (e.g. Buruli ulcer, dengue, leishmaniasis, leprosy, rabies, schistosomiasis, and soil-transmitted helminths (STH)).	A	RIA2016V-1640 Clinical development of a therapeutic vaccine for prevention of post kala azar dermal leishmaniasis (PREV_PKDL)	PSIA-2014-693/PSIA-2016-698 Support to European Vaccine Initiative (EVI)
	Strengthen preventive chemotherapy and transmission control, used in MDA (mass drug administration) and MSAT (mass screen and treatment), of STHs, filariases, and trachoma through evaluation of drug combinations, formulations, and treatment regimens.	B		PSIA-2014-657 Sabin Vaccine Institute (for the Human Hookworm Vaccine Initiative (HHVI))
Product-focused implementation research	Evaluating different approaches to intervention, ranging from novel treatments, MDA, vaccines, and diagnostics for both (i) improved treatment and (ii) disease elimination / control at population level.	A	TMA2015CDF-976 Cluster randomized community-based trial of annual versus biannual single-dose Ivermectin plus Albendazole against *Wuchereria bancrofti* infection in human and mosquito populations (Twice yearly treatment for the control of LF)	
			RIA2017NIM-1839 Chemoprophylaxis for leprosy: comparing the effectiveness and feasibility of a skin camp intervention to a health centre based intervention. An implementation trial in Mozambique, Ethiopia and Tanzania (PEP4LEP)	
			RIA2017NIM-1842 Impact of increased praziquantel frequency on childhood fibrosis in persistent schistosomiasis morbidity hotspots (FibroScHot)	
			RIA2017NIM-1847 Post ExpOsure Prophylaxis for LEprosy in the Comoros and Madagascar (PEOPLE)	
			CSA2018HS-2526 Capacity development to facilitate the delivery and uptake of Fexinidazole for the elimination of Human African Trypanosomiasis (FEX-g-HAT)	
	Optimisation and integration of the management of co-endemic NIDs (e.g. co-endemicity of lymphatic filariasis and onchocerciasis with loiasis); evaluation of the different disease burdens (regional versus localised); and effect of MDA including drug delivery, uptake, compliance and adherence, and strategies for accessing treatment especially during the endgame phase for poverty-related diseases targeted for elimination.	B		
Critical infrastructure & human development needs	MDA in populations across sub-Saharan Africa for helminth and trachoma infections that will require development/ strengthening of surveillance and monitoring infrastructure, along with training of staff for pharmacovigilance and recognition of changing patterns of drug susceptibility.	B		

Emerging and re-emerging Infectious diseases with epidemic potential

The outbreak of Ebola Virus Disease (EVD) in Guinea, Liberia, and Sierra Leone in 2014 had a devastating effect in those countries, causing over 10,000 deaths from EVD and many more than this through the disruption of health systems for several years. Attempts were made during the epidemic to develop and evaluate vaccines, treatments, and diagnostics for EVD, but these were hampered by weak systems and capacity was not in place to carry out these activities on a very rapid timescale[23]. It is vital that capacity be developed to undertake rapid evaluation of interventions in clinical trials when future outbreaks occur of emerging or re-emerging diseases. In parallel, strengthening surveillance systems to detect such outbreaks at an early stage, and strengthening laboratory systems to rapidly confirm diagnoses, are of high priority. Assembling background clinical and epidemiological data now on diseases, such as Lassa Fever, that are currently prevalent and have epidemic potential, will aid in the planning of clinical trials of new interventions, such as vaccines and treatments, as these are developed.

Topic	Description	Priority	EDCTP2-funded studies (grant code, title of study, acronym)	PSIAs (grant code, title of study)
Pathogen traits	Pathogens with epidemic potential in sub-Saharan Africa. • Obtaining baseline data on emerging and re-emerging pathogens, including incidence, prevalence, risk factors, trends with time and antimicrobial resistance • Creating national and regional databases in existing local surveillance systems for emerging and re-emerging pathogens	A		
Disease profile	No defined priorities. Priorities will be developed when a major outbreak occurs.	-		
Epidemiology	Epidemiological studies of Lassa fever and Rift Valley Fever to identify risk factors for infection and areas of high infection incidence/prevalence that might be suitable for Phase 2/3 vaccine trials.	A	Funds committed to a joint call with CEPI for Phase 2b/3 studies of Lassa vaccines	
	Epidemiological studies of priority pathogens on the WHO list needing urgent R&D attention (not all of which have been identified in sub-Saharan Africa) and collecting surveillance data on disease burden of these pathogens, where applicable, as a foundation for conducting future trials. WHO priority pathogens include: Arenaviral haemorrhagic fevers (including Lassa Fever); Crimean Congo Haemorrhagic Fever; Filoviral diseases (including Ebola and Marburg), Middle East Respiratory Syndrome Coronavirus (MERS-CoV), other highly pathogenic coronaviral diseases (such as Severe Acute Respiratory Syndrome (SARS)), Nipah, and related henipaviral diseases; and Severe Fever with Thrombocytopenia Syndrome.	B	TMA2017CDF-1865 Emerging and Re-emerging arboviral Infections in Nairobi, Kenya (ERAIN)	
Pathogenesis/host response/ immune response	No defined priorities. Priorities will be developed when a major outbreak occurs.			

Diagnosis and tracking	Developing, evaluating, and deploying novel diagnostics and strengthening laboratory systems at country and regional levels, especially at the point-of-care and point-of-need sites for WHO priority pathogens (see above). This is to enable accurate and timely collection and analysis of information, along with laboratory systems capable of safely and accurately detecting all major dangerous pathogens with minimal risk to laboratory and other staff.	A	TMA2016CDF-1545 Receiver Operator Characterization of Novel EBOV/MARV-GP Epitopes using 2014-2015 Sierra Leonian Ebola Patient-Samples at the NICD BSL-IV (EBOV-RDT-ROC)	PSIA-2014-708 Cumulative Support to PDPs including DNDI, FIND, EVI, DVI
			RIA2018EF-2081 Biochemical Adjustments of native EBOV Glycoprotein in Patient Sample to Unmask target-Epitopes for Rapid Diagnostic Testing (AdjustEBOVGP-Dx)	PSIA-2016-785 Field validation of a multi-lateral point-of-care assay for differential diagnosis of 5 febrile illnesses including Malaria and Ebola
	Aetiological studies of severe non-malarial febrile illnesses, especially in children, to identify emerging infections and to improve treatment strategies, including rationalising the use of antimicrobial treatments and the development and evaluation of low-cost point of care rapid diagnostics.	A	RIA2018EF-2089 Mobile point of care diagnostic testing for Ebola virus disease in DRC (MobEBO-DRC)	
Treatments	Trials of new and improved treatments for Lassa Fever. Several treatments are under development for a range of emerging pathogens. These will require evaluation in the future when outbreaks occur.	A		
Prevention	Vaccines: Lassa Fever, Avian Influenza, Ebola Virus Disease, Yellow Fever.	A	RIA2016V-1633 Non-inferiority of fractional-doses trial for yellow-fever-vaccine (NIFTY)	PSIA-2016-715 Defeating Ebola Virus Disease (EVD) in West Africa: Clinical evaluation (phase I) of an Ebola vaccine (VSV-deltaG-ZEBOV-GP) and tools for follow ups
			RIA2017S-2014 The Partnership for Research on Ebola Vaccinations-extended follow-UP and clinical research capacity build-UP (PREVAC-UP)	PSIA-2016-907 Evaluation of Ebola vaccine safety and efficacy in a prefecture of Guinea
Product-focused implementation research	Preparing for phase 2/3 trials of Lassa vaccines	A		
Critical infrastructure & human development needs	Promotion and development of national, regional, and pan-African capacities and monitoring systems that can identify emerging and re-emerging infectious disease threats through early warning and pro-active surveillance, enabling rapid response to emerging infectious diseases threats.	A	CSA-Ebola-2015-360 Building research capacity in clinical management of infectious diseases at two main adult government hospitals in Freetown, Sierra Leone. (ID-Clinical Capacity),	
			CSA-Ebola-2015-353 Enhancing capacity for Phase 1 clinical trials in Uganda (Capa-CT)	
			CSA-Ebola-2015-337 Enhancing individual and institutional infectious disease outbreaks response capacities of healthcare professionals to mitigate infectious emergencies in the Northern Uganda region (ENDORSE)	

			CSA-Ebola-2015-355 Institutional capacity development for multi-disciplinary health research to support the health system rebuilding phase in Sierra Leone (RECAP-SL)	
			CSA-Ebola-2015-363 Vaccine trials and deployment towards sustainability of Ebola Virus Diseases control (SECC)	
			CSA-Ebola-2015-334 Strengthening laboratory capacities in the St. Joseph's Catholic Hospital (Monrovia) for clinical trials on infectious diseases (SELeCT)	
			RIA2018EF-2082 Epidemic preparedness and risk assessment for Ebola Virus Disease outbreaks in the Republic of Congo (EPIRISK-Ebov)	
	Development of regional clinical trial capacity for the rapid conduct of GCP-compliant Phase 1, 2 and 3 trials of new vaccines and other interventions against emerging pathogens, including mobile laboratories.	A	RIA2016E-1612 African coaLition for Epidemic Research, Response and Training (ALERRT)	PSIA-2017-1185 Malaria Clinical Trial Platform management including staff salary equipment and reagent cost for malaria, meningitis, dengue tuberculosis and other NTD
			RIA2016E-1609 Pan-African Network For Rapid Research, Response, Relief and Preparedness for Infectious Diseases Epidemics (PANDORA-ID-NET)	
			RIA2018EF-2083 Leveraging capacity for early phase clinical trials for filoviruses in Uganda (CAPA-CT II)	
			RIA2018EF-2087 Prise en charge améliorée de Maladie à Virus Ebola en situation d'urgence en République Démocratique du Congo : du protocole MEURI aux essais randomisés contrôlés (PEAU-EBOV-RDC)	

Diarrhoeal diseases

In 2016 diarrhoea was the eighth leading cause of deaths globally (estimated 1.7 million deaths) and the fifth leading cause of death among children younger than five years[24]. Although the number of deaths due to diarrhoea decreased by an estimated 20% between 2005 and 2015, disease burden remains high with an estimated 499,000 deaths in children under five and is highest in sub-Saharan Africa and south Asia[25]. Rotavirus is the leading cause of diarrhoeal deaths among children younger than five years, accounting for an estimated 128,515 deaths in this age group in 2016[24]. Global diarrhoea mortality among individuals older than 5 years was dominated by Shigella. Vibrio cholerae (cholera) was the third leading cause of diarrhoea mortality among all ages.

New vaccines are urgently needed as are innovative strategies to optimize and deploy available vaccines for the control of these conditions. Notably, the aetiology of severe diarrhoeal diseases in children below five in low-income countries (LICs) corresponds to a limited set of pathogenic microorganisms encompassing rotavirus, Shigella, ST-producing enterotoxic E. coli (ETEC), Cryptosporidium; Campylobacter, and V. cholerae. Increasing rollout of the oral rotavirus vaccine has led to a substantial decrease in diarrhoeal disease incidence in LICs, particularly in sub-Saharan Africa, underscoring the impact that vaccines can have against diarrhoeal disease. Shigella, ETEC, and Cryptosporidium are, in particular, priority targets for vaccine development. Shigella and ETEC may be considered alone or in the form of a combined vaccine. A candidate Cryptosporidium vaccine is further down the development pipeline. There is also a need for accelerated development or repurposing of efficient drugs. With several oral and parenteral vaccine candidates against Shigella and ETEC having successfully been evaluated in phase 1 studies in the North, priority should be given to proceeding with phase 2 studies in endemic zones with well characterised disease burdens and trial capacity. In addition, further centres with good epidemiological surveillance of the relevant diseases are needed.

Topic	Description	Priority	EDCTP2-funded studies (grant code, title of study, acronym)	PSIAs (grant code, title of study)
Pathogen traits	Rotavirus, Shigella, ETEC (ST and/or LT), Cryptosporidium, and Norovirus.	C		
Intestinal ecology	Microbiome, pathogens, and malnutrition.	D		PSIA-2014-623 Doctoral and postdoctoral fellowships (FCT-PT)
Epidemiology	Collecting surveillance data on burden of diarrhoeal diseases and pathogens as a foundation for conducting future vaccine trials (in areas where clinical studies will be conducted).	C		PSIA-2014-718 Impact of Clinical Research on Health System and Care Services
Pathogenesis/host response/ immune response	Understanding oral vaccine effectiveness by examining mechanisms of host susceptibility to vaccine strains: histo/ blood group antigens, gut microbiome, effect of chronic/ repeated diarrhoeal episodes, and paediatric environmental enteropathy.	C	TMA2016CDF-1550 Immunogenicity to cholera vaccine within a population at risk in Zambia: mapping the kinetics of immune responses over time (ChoVaxim)	
	Improving immunogenicity of parenteral vaccines in infants and improving the development of good mucosal responses upon parenteral immunisation, Improving /combining routes and modes of immunization and defining/optimizing immuno-monitoring assays and correlates of protection (i.e. B cell memory).	A		
Diagnosis and tracking	Developing point-of-care, multiplexed diagnostic tools allowing quick and reliable detection and diagnostic methods to be used in clinical trials and transferring this knowledge to laboratories in sub-Saharan Africa.	B		

Treatments	Testing of candidate molecules against Cryptosporidiosis, including drug repurposing, as cases occurring in non-immunocompromised patients are on average refractory to current treatments.	A	
Prevention	Testing available vaccine candidates (phase 1 – validated) against the most prevalent diarrhoeal pathogens (e.g. Rotavirus, Cryptosporidium, enterotoxigenic Escherichia coli producing heat-stable toxin, Shigella, and against Vibrio cholerae).[26]	A	RIA2017S-2024 Field studies of an oral whole cell ETEC vaccine candidate in African toddlers and children: Assess efficacy, and set parameters for pivotal Phase 3 trials (ETEC Vaccine Efficacy) RIA2018V-2309 First ETEC vaccine (ETEC, ETVAX) RIA2018V-2308 Early clinical development of an oral Shigella vaccine through phase II study in Africa (ShigOraVax)
	Improving effectiveness of existing rotavirus vaccines and/or developing better rotavirus vaccine candidates (in combination with other diarrhoeal diseases vaccines).	A	
Product-focused implementation research	Global implementation of current rotavirus vaccines.	D	TMA2016SF-1511 A randomized controlled trial of two versus three doses of Rotarix™ vaccine for boosting and longevity of vaccine immune responses in Zambia (ROVAS-2)
	Evaluating the immunogenicity of currently available enteric vaccine candidates in endemic zones.	B	RIA2017S-2027 Effect of a novel typhoid conjugate vaccine in Africa: a multicenter study in Ghana and the Democratic Republic of the Congo (THECA)
	Implementation research to explore innovative interventions or strategies to optimize the public health impact of available vaccines against diarrhoeal diseases (especially rotavirus and cholera vaccines).	A	
Critical infrastructure & human development needs	Community programs to reduce child morbidity and mortality through integrated community case management programs where diarrhoeal diseases are treated with zinc.	D	
	Selection and capacity strengthening of sites with epidemiological competence and experience in clinical trials.	A	
	Improved sentinel/ surveillance networks for diarrhoeal disease surveillance within and across regions.	D	

Ethics, Regulatory and Pharmacovigilance

Country capacity to undertake ethics review and oversight for clinical trials is crucial to realising rigorous and credible research. Capacity for regulation of clinical trials has been built over the years, especially in Africa, however progress and efficiency vary from one country to the next. The process to harmonise regulatory guidelines and standards has been initiated at continental (African Union) and sub-regional (regional economic communities) levels.

Research priority should be given to country-level efforts specifically to ensure an enabling environment (adequate laws and legislations for health research) in order to harness potential continental and sub regional accords. Furthermore, key funding priorities include further strengthening the capacity of the regional centres of regulatory excellence to meet international standards and building the capacity of Research Ethics Committees and Regulatory Authorities in as many countries as possible. Supporting operationalisation of harmonisation processes at continental and subcontinental level is also important.

Topic	Description	Priority	EDCTP2-funded studies (grant code, title of study, acronym)	PSIAs (grant code, title of study)
Research ethics capacity development	To train REC members in scientific and ethics review and to establish/strengthen RECs – both national and regional with a focus on clinical trial and social science research.	A	**East Africa** CSA2015ERC-873, Improving ethical review process in Sudan through capacity building of National Regulatory Authorities (Enhancing Ethics in Sudan) CSA2015ERC-863, Consortium for clinical research regulation and ethics capacity development in Uganda (CREDU) CSA2016ERC-1418, HATUA - Enabling Compliance and Building Capacity And Community For Clinical Research In Kenya (HATUA – KENYA) CSA2016ERC-1432 Streamlining Ethics review process and Regulatory framework in Tanzania (SMERT) CSA2016ERC-1417, Strengthening the Capacity of the National Research and Ethics Review Committee and the National Regulatory Authority for Clinical Trials in Ethiopia (SteRN) CSA2017ERC-1857, Strengthening Research Ethics Review and Oversight in Kenya (STReK) CSA2018ERC-2318, Strengthening Community Structures in Clinical Research to Improve Oversight Role of National Ethics Regulatory Bodies in Uganda (SCINE-U) CSA2018ERC-2315, Scaling up of capacity of Research Ethics Committees in Uganda (SCRECU)	PSIA-2014-797 Annual National Research Ethics Conference (ANREC) and a planned forum for the chairpersons of Institutional Ethics Committees PSIA-2014-796 On-site basic research ethics training PSIA-2015-794 The 7th Annual National Research Ethics Conference (ANREC) and a planned forum for the chairpersons of Institutional Ethics Committees PSIA-2016-838 Study under the topic: Elaboration of a draft law on the regulation of ethics and bioethics PSIA-2016-839 Capacity building of members of ethics committee & research officers at central level on good clinical practice and protection of research participants PSIA-2016-801 The 8th Annual National Research Ethics Conference (ANREC) and a planned forum for the chairpersons of Research Ethics Committees

			Central Africa CSA2017ERC-1911, Strengthening the regulatory framework to upgrade ethical review of clinical research and drugs safety monitoring in Cameroon (BREEDSAFCA) CSA2018ERC-2317, Building the Regulatory and Ethics Capacities of Rwanda (BRECOR)
			Southern Africa CSA2016ERC-1423, Strengthening Bioethics Committees in Lusophone African Region (LusoAfro-BioEthics) (Angola, Cape Verde, Guinea Bissau, Mozambique) CSA2016ERC-1414, Biomedical Ethics and Regulatory Capacity Building Partnership for Portuguese-Speaking African Countries (BERC-Luso) (Angola, Cape Verde, Mozambique) CSA2017ERC-1904, Building Capacity for Research Ethics and Regulation in Zambia (BUCARERZ) CSA2018ERC-2336, Zimbabwe Ethics and Regulatory Capacity Project (ZERCaP) CSA2018ERC-2316, Enhancing the Regulatory and Ethics Capacities in Swaziland (ERECIS) (Eswatini)
			West Africa CSA2015ERC-880, Renforcement de l'Ethique des Essais Cliniques en Afrique de l'Ouest (REECAO) (Mali) CSA2015ERC-872, Coast to coast: Transcontinental ethics partnership (C2C-TEP) (Ethiopia, The Gambia, Ghana) CSA2016ERC-1422, AFRica Ethics Excellence NETwork (AFREENET) (Benin, Cote d'Ivoire, Guinea) CSA2016ERC-1416, Deepening Research Ethics in Nigeria Project (DREIN) CSA2017ERC-1917, Enhancing Togo's ethical review and regulatory competencies for health research (ERUDIT) CSA2017ERC-1925, Upgrading National ethics review systems and regulatory bodies in Senegal (SEN-ETHICS) CSA2018ERC-2330, Strengthening Ethics and Regulatory Capacity in Sierra Leone (SERCLe) CSA2018ERC-2314, Building Capacities in Gender Mainstreaming for Ethics Committee Members from Senegal to West Africa (BCA-WA-ETHICS) CSA2018ERC-2334, Strengthening the Regulatory and Ethics Capacity in Ghana (STREC-Ghana)
Research integrity office establishment	To prevent and/or mitigate scientific misconduct, ensure that a Research Integrity Office exists at institutions conducting EDCTP-funded research.	A	

Regulatory Capacity Development and Pharmacovigilance	To build capacity in regulatory review and strengthening regulatory bodies To enhancing pharmacovigilance and surveillance	A	TMA2016CDF-1563, Vaccines and Medicines utilisation and safety monitoring system in a Health and Demographic Surveillance System, Uganda (VXMedSSurv) CSA2016S-1618, Pharmacovigilance infrastructure and post-marketing surveillance system capacity building for regional medicine regulatory harmonization in East Africa (PROFORMA) (Ethiopia, Kenya, Rwanda, Tanzania) CSA2017ERC-1910, Competence-based Fellowship for African Medicines Reviewers and Regulatory Science Professionals (Reg. Science-Fellows) CSA2015ERC-876, East Africa pharmacovigilance initiative (EAPI) (Kenya) CSA2018ERC-2319, A European-African network for strengthening the regulatory capacity for clinical research and pharmacovigilance in Central Africa: implementation of harmonized procedures, efficient guidelines and training programs (Africlinique) (Republic of Congo, Cameroon) CSA2018ERC-2332, Strengthening pharmacovigilance and regulatory capacities in four Southern African countries (SPaRCS) (Eswatini, Namibia, South Africa, Zimbabwe CSA2016ERC-1420, Improved Governance and Research Capacities in Diagnostics for Infectious Diseases of the Liberian Medicines and Health Products Regulatory Authority (IGORCADIA) CSA2015ERC-868, Developing LMHRA capacity to effectively exercise its regulatory mandate in clinical trials and health research in Liberia (Lib-Regul-Trials)
Accreditation of RECs in Africa	To ensure standardisation of high quality, efficient ethics review throughout Africa.	D	
Developing and/or strengthening research ethics networks in Africa	To encourage communication, knowledge sharing and advocacy in Africa	B	
Establishment of Animal Ethics Committees in Africa	To ensure that locally relevant ethical research is conducted on appropriate animal models to precede clinical trials in Africa.	A	
Building Biobanking review capacity in Africa	To ensure that research (including clinical trials) linked to the biobanks currently under development in Africa are reviewed with attention to Material and Data Transfer Agreements.	A	

Antimicrobial resistance (AMR)

Antimicrobial resistance (AMR) is a global crisis that threatens a century of progress in health and achievement of the Sustainable Development Goals. Drug-resistant diseases are estimated to cause 700,000 deaths globally a year, including 230,000 deaths from MDR-TB. There are indications that deaths due to AMR could increase to 10 million globally per year and cost up to USD 100 million by 2050[27]. In sub-Saharan Africa, understanding of the issues related to AMR and its magnitude are hampered by limited surveillance of AMR and inadequate data on the true extent of the problems. Despite the limited laboratory capacity to monitor AMR, available data suggest that the African region shares the worldwide trend of increasing drug resistance. AMR frequently occurs in microorganisms that are likely to be transmitted in the community such as organisms causing pneumonia, diarrhoea, TB, sexually transmitted infections (STI), and malaria. Drug resistance has complicated clinical management and, dramatically increased the costs of treatment and control of TB and malaria and, reduced the gains against childhood dysentery and pneumonia[28].

Detection of resistance and monitoring its spread requires appropriate laboratory-based surveillance, improved access to diagnostic laboratories, improved surveillance of the emergence of drug resistance, better regulation, and better education of the public, clinicians, prescribers, and veterinarians. Lack of simple, inexpensive, and rapid diagnostic tests for febrile illnesses other than malaria leads to inappropriate antibiotic use contributing to antimicrobial resistance. New tests to differentiate bacterial from non-bacterial infections are needed. However, most available biomarker tests are not currently evaluated for use in LMICs, limiting our knowledge of the performance of these in settings with high prevalence of infectious and poverty-related diseases such as malaria, HIV, malnutrition, and intestinal parasites[28]. A coordinated effort will be crucial to address the threat posed by AMR, given that it derives from behaviours across human and animal health. This will include development of new antibiotics, improvement to water, sanitation, and hygiene and, establishing the role of vaccines using a One Health approach.

Topic	Description	Priority	EDCTP2-funded studies (grant code, title of study, acronym)	PSIAs (grant code, title of study)
Scoping	Mapping of AMR activities: A systematic analysis of public and private organizations' investments in AMR research by EU commission, EU member countries, Africa, Welcome Trust, etc., including current EDCTP AMR grants by disease area to determine EDCTP's comparative advantage in addressing AMR research priorities.	A		
Diagnosis	Improved diagnostics for detection of AMR.	A		
Epidemiology*	Development of enhanced regional surveillance and R&D for AMR, including DRTB in children, following scoping to determine EDCTP's niche. .	A		
Role of vaccines	Increased vaccination coverage for demonstrable impact on AMR	A		

Immunisation: vaccine coverage, sequencing, indicators

Immunisation prevents illness and disability from vaccine preventable diseases (VPDs). An estimated 2 to 3 million deaths are averted annually by vaccination and an additional 1.5 million deaths could be avoided if global immunization coverage improves. Although uptake of new and underused vaccines is increasing, global vaccination coverage has remained steady at 85% over the past few years, short of the target of at least 90% of children being fully vaccinated[29]. Coverage in sub-Saharan African countries has stagnated at 70%. The reasons for low vaccination coverage among children in sub-Saharan Africa, which is causing disproportionate rates of morbidity and mortality due to VPDs, are multi-factorial and may differ between and within countries. They include persistent vaccine stock-outs and lack of sustainability of resources for laboratory facilities, personnel, and logistics; the challenges of assembling reliable data for planning and coverage; and vaccine hesitancy, a global health threat. WHO estimates that illness and deaths due to VPD cost sub-Saharan Africa US$13 billion every year.

Pragmatic and innovative approaches are required to address the immediate root causes of low vaccination coverage in sub-Saharan Africa. Among potential approaches to low coverage that require investigation include the use of drones for delivering vaccines to hard-to-reach areas, cold chain innovations such as solar-powered refrigerators, community-based strategies to address socio-cultural barriers, and leadership training for supply managers[30]. Implementation research is needed to determine how best to increase vaccine access, affordability, awareness, acceptance, and vaccination to raise low-level coverage to the minimum recommended target coverage of 90%[31]. The potential for vaccines to have broader non-specific effects on the immune system that may have survival benefits requires further exploration[32].

Topic	Description	Priority	EDCTP2-funded studies (grant code, title of study, acronym)	PSIAs (grant code, title of study)
Scoping	Mapping of vaccination coverage, development of tools to identify the factors underlying sub-optimal vaccination coverage, including immediate barriers, structural determinants, and drivers of low vaccination coverage.	A		
Implementation science	Innovative country-specific vaccination implementation research aimed at demonstrating increased vaccination coverage at National Programme level over time. Studies of impact of changes in delivery such as modifications to vaccine wastage rules.	A	CSA2018HS-2528 Building Capacity to address Implementation challenges for Sustainable Access and Delivery of New Vaccines in Ghana (SAVING)	
Evaluation	Monitoring and evaluation to demonstrate the impact of vaccination, including studies at population level of the effects on disease-specific mortality and on all-cause child mortality using novel indicators such as coverage of BCG within the first month, proportion receiving measles vaccine after diphtheria-pertussis-tetanus vaccine.	B		

Grants covering multiple (disease) areas

EDCTP2-funded studies (grant code, title of study, acronym)
TMA2016CDF-1595 Immune responses in rural to urban gradient: identifying geographical footprints of the immune system to improve vaccine development (Geographical differences in the immune response)
RIA2017MC-2029 A cluster randomised trial to evaluate the effectiveness of household alcohol-based handrub for the prevention of sepsis, diarrhoea and pneumonia in Ugandan infants (BabyGel)
CANTAM2 Central Africa clinical research Network – Cantam2 Venture http://www.cantam.org/
EACCR2 Eastern Africa Consortium for Clinical Research 2 https://eaccr.org/
TESA II Trials of Excellence in Southern Africa II http://www.tesanoe.org/
WANETAM West African Network for TB Aids and malaria

Endnotes

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