The 2016 AIDS by numbers report from UNAIDS makes clear that substantial progress has been made in tackling the AIDS epidemic. However, significant challenges are still to be faced in order to end the epidemic by 2030. In 2015 there were 2.1 million new HIV infections, leading to a total of 36.7 million people living with HIV.

Although effective antiretroviral therapy (ART) is now available, optimised treatment regimens and formulations are required for key groups, such as children, pregnant women, and adults with co-infections and co-morbidities.

Multiple challenges in HIV management need to be addressed, from timely diagnosis and initiation of ART to retention in care. Given the availability of therapeutic options, high priority is set on product-focused implementation research to increase access to evidence-based interventions.

As the number of new HIV cases remains stubbornly high, there is also an urgent need to assess innovative methods of prevention, including microbicidal products, ARV-based interventions and, ultimately, HIV vaccines.

Since the start of the second programme in December 2014, EDCTP has supported 14 projects for HIV research amounting to approximately €38 million in grants. The portfolio includes projects that focus on the treatment and diagnosis of HIV in patients, including with coinfections.

**Funding of HIV research (2014-2016)**

Developing a new HIV prevention device for young women in Africa

The CAPRISA 018 project, led by Professor Salim S. Abdool Karim (Centre for the Aids Programme of Research in South Africa (CAPRISA)), aims to develop a new safe and effective prevention technology for young women in Africa to prevent HIV infection. This phase I/II trial in South Africa will test the safety, acceptability and pharmacokinetics (PK), as well as obtain a preliminary estimate of efficacy, of a novel PrEP formulation, a 6-monthly tenofovir alafenamide (TAF) subdermal implant for HIV prevention. The project will first assess the safety and determine the optimal dosing of the TAF implant in 40 women. It will then assess the implant in 490 at-risk women to further investigate safety and determine a preliminary estimate of efficacy. The project’s approach is to improve and efficiently advance this medical intervention.
to phase III testing and product registration within 5 years. This implant could change the course of the HIV epidemic by offering young women who are unable to negotiate safer sex or adhere to current PrEP regimens a safe woman-controlled HIV prevention option.

Second-line treatment for children

The CHAPAS-4 project, led by Dr Mutsa Bwakura-Dangarembizi (University of Zimbabwe), is a multi-centre phase III randomised trial to improve second-line treatment in HIV-infected children. Whilst HIV-infected children respond well to treatment, the number of children failing first-line treatment and needing to switch to second-line treatment will inevitably increase. Therefore, the CHAPAS-4 trial will optimise second-line treatment in terms of specific new antiretroviral drugs/formulations (including dolutegravir, tenofovir-alafenamide (TAF) and co-formulated atazanavir/ritonavir (ATV/r)) to maximise long-term health gains.

Evaluating a promising vaccine to end HIV

The GREAT project, led by Dr Tomáš Hanke (University of Oxford, UK), is a multi-centre phase IIa study to assess the safety and immunogenicity of a second generation of conserved mosaic tHIVconsV vaccines. The trial will evaluate feasibility, develop infrastructure and prepare research teams, communities and regulatory agencies for a large HIV vaccine efficacy trial. Populations at risk of HIV infection will be enrolled in this trial. These comprise fishing communities around Lake Victoria in Uganda, male and female sex workers and men-who-have-sex-with-men in Kenya, as well as female sex workers in Zambia.

HIV-associated infections

The DREAMM project, led by Dr Angela Loyse (St. George’s University of London, UK), is a multi-centre study that aims to evaluate a semi-quantitative cryptococcal antigen lateral flow assay (CrAg LFA) developed by the Pasteur Institute, France. This test will identify at diagnosis HIV patients with cryptococcal meningitis with high CrAg titres. These patients may benefit from a more aggressive or prolonged antifungal therapy. CrAg LFA testing is embedded within an algorithm that strengthens health systems for patients with HIV-associated central nervous system (CNS) infection. It aims to reduce time to diagnostic tests such as lumbar puncture, as well as the time to the patient starting effective treatments.

The AMBITION project, led by Dr Joseph Jarvis (London School of Hygiene & Tropical Medicine, UK), is a multi-centre phase-III trial to determine whether short-course high-dose liposomal amphotericin (L-AmB, Ambisome) is as effective as 14-day amphotericin B-based therapy in averting all-cause mortality in HIV-associated cryptococcal meningitis. The project aims to recruit 850 patients at 6 African partner-sites, making this the largest HIV-associated cryptococcal meningitis trial ever conducted. A novel short-course highly effective and safer L-AmB treatment regimen for cryptococcal meningitis would transform the management of late-stage HIV and will markedly improve outcomes in HIV programmes in Africa.

HIV/TB co-infection

The Stop TB/HIV at One, led by Professor Luis Cuevas (Liverpool School of Tropical Medicine, United Kingdom) aims to develop rapid diagnostic approaches for tuberculosis (TB) that facilitate the initiation of appropriate treatment the same day of consultation. The project will evaluate simple, rapid diagnostic tools for TB that are emerging. It will also evaluate combinations of diagnostics that maximise the sensitivity and specificity to accurately diagnose TB within a health systems context. The goal is not only evaluate the diagnostic performance of the test, but also the impact on patient outcomes, and within real-life government settings with diagnostics employed in field conditions.