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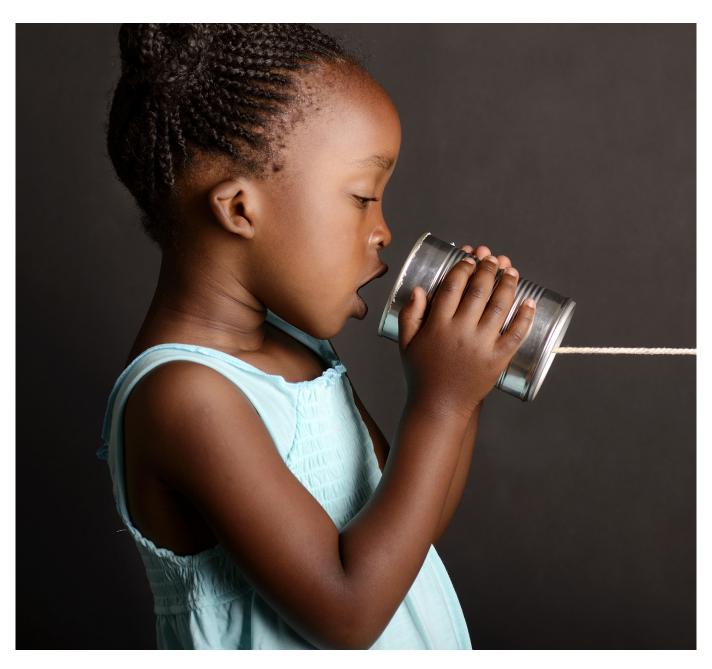
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We are the result of our hard work.

Our passion for what we do makes us
pioneers in our sector.

The Wits Health Consortium (Pty) Ltd (WHC) is a private, wholly owned company of the University of the Witwatersrand, Johannesburg (Wits). WHC was established as a result of an initiative from the Faculty of Health Sciences which proposed the company in order to unlock commercial opportunities that would provide additional sources of revenue for the Faculty and its Departments. Council approved the Faculty's proposal in October 1997 and the Company was registered in 1998.

All academic endeavors are directed, managed and controlled through the University structures with WHC research active staff joint appointed with the University conducting research, managing donorfunded activities, clinical trials and pursuing entrepreneurial innovation in health.

WHC operates a Shared Services Centre (SSC) and several key subsidiary businesses.

The Wits Health Consortium (WHC) was formed in 1998 as an entity through which the Faculty of Health Sciences is able to undertake third stream income activities. This is done while supporting academic research and the management of donor funding for research as well as related activities in the medical and health sciences industry. We have numerous research entities that we service and they operate in South Africa, across the African continent, in the US as well as Europe.

We are the enabling environment for an entrepreneurial approach to academia. We perform this role through our Shared Services Centre (SSC), which employs over 170 skilled staff. By doing what we do well, we free up our internationally renowned academics and researchers to do what they do best we enable them to pursue specialist research in their respective fields of expertise.

This report provides an overview of our operations and highlights the success of our research units and their achievements during 2016.

WHC Shared Support Centre (SSC): These are entities are in support of WHC academic activities and the Faculty of Health Sciences strategy

We operate a SSC to support research activities and provide the following support:

- Financial Administration
- Contract and Legal Services
- IT Solutions
- Human Resource Management
- Training and Development
- Payroll Services
- Research Ethics
- Clinical Trials
- Grant Management
- Internal Audits
- Continuing Professional Development

### • Speer IT Services and Solutions:

Software, IT systems, network connectivity and cloud storage and management solutions

### • Integrated Health Delivery Network:

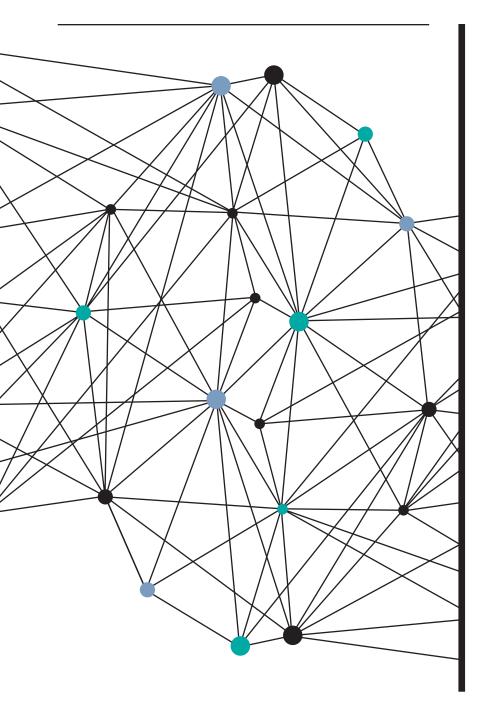
Self-funding clinical health centres and medical teaching platforms that offer affordable and quality healthcare

### • Academic Advance:

Good Clinical Practice courses and training, conducted in line with CPD requirements for the Health Professions Council of South Africa

### • Ukwenza Print and Graphics Studio:

Graphic and web design, print and multi-media production and research data collection and design



2016

# FINANCIAL OVERVIEW

Our financial overview gives us the opportunity to provide a view of the financial position of Wits Health Consortium.

### WITS HEALTH CONSORTIUM PROPRIETARY LIMITED

STATEMENT OF PROFIT OR LOSS AND OTHER COMPREHENSIVE INCOME For years 2016 and 2015

	2016	2015
	R	R
Surplus before operating expenses	1,573,710,183	1,119,368,517
Expenses	1,569,938,702	1,114,999,307
Personnel costs	917,041,451	669,782,248
Consultants	99,205,904	25,401,748
Depreciation	29,884,500	23,439,580
Operational costs	444,939,393	342,897,899
Travel costs	64,705,781	42,231,367
Training costs	14,161,673	11,246,465
Surplus before net finance income	3,771,481	4,369,210
Net finance income	39,849,607	26,559,464
Surplus before income tax	43,621,088	30,928,674
Income tax expense	92,374	115,282
Surplus for the year	43,528,714	30,813,392
•		
Attributable to		
CORE	15,370,117	9,759,875
Syndicates - Restricted	-	-
Syndicates - Unrestricted	28,158,597	21,053,517
Dividend declared to the University of Witwatersrand, Johannesburg	6,800,000	5,600,000

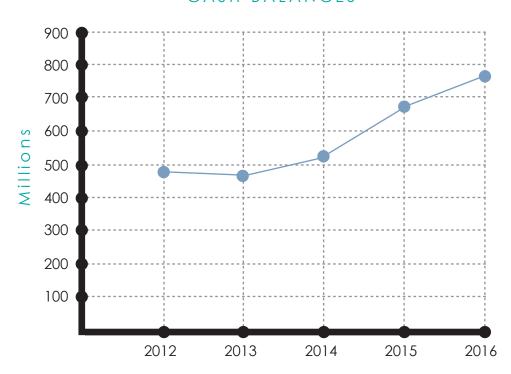
### WITS HEALTH CONSORTIUM PROPRIETARY LIMITED

STATEMENTS OF FINANCIAL POSITION For years 2016 and 2015

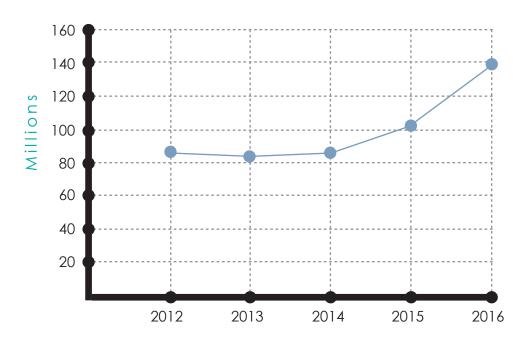
	2016	2015
	R	R
ASSETS		
Non-current assets		
Property, plant and equipment	138,016,083	101,981,483
Goodwill	485,608	485,608
Deferred tax	53,107	-
	138,554,798	102,467,091
Current assets		
Inventory	1,352,733	738,014
Trade and other receivables	238,123,374	187,521,513
Tax receivable	111,088	89,903
Cash and cash equivalents	770,413,738	666,316,694
	1,010,000,933	854,666,124
Total Assets	1,148,555,731	957,133,215
EQUITY AND LIABILITIES		
Equity		
Share capital	100	100
Accumulated reserves	351,755,113	315,026,399
	351,755,213	315,026,499
Liabilities		
Non-current liabilities		
Borrowings	1,654,334	2,148,958
Deferred income	1,267,503	5,069,892
Deferred tax	-	222
	2,921,837	7,219,072

	2016	2015
	R	R
<u>Current liabilities</u>		
Borrowings	502,544	464,526
Deferred income	3,802,390	3,802,390
Trade and other payables	185,686,678	165,065,141
Income received in advance	597,962,591	460,525,793
Unallocated receipts	5,924,478	5,029,794
	793,878,681	634,887,644
Total Liabilities	796,800,518	642,106,716
Total equity and liabilities	1,148,555,731	957,133,215

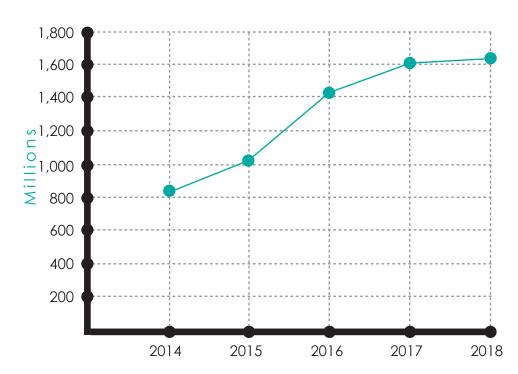
### CASH BALANCES



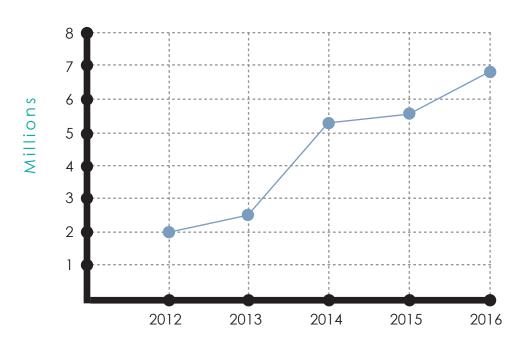
### PROPERTY, PLANT AND EQUIPMENT



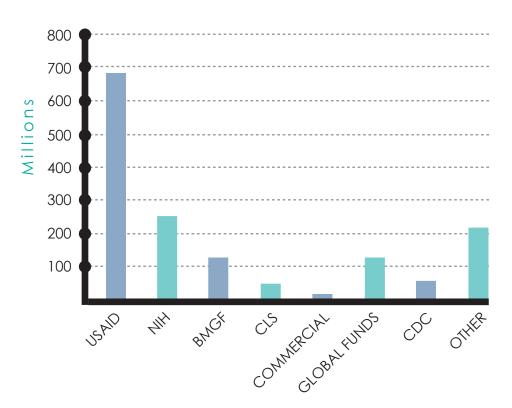
### INCOME GROWTH PROJECTIONS



### DIVIDEND DECLARATIONS



### INCOME PER DONOR



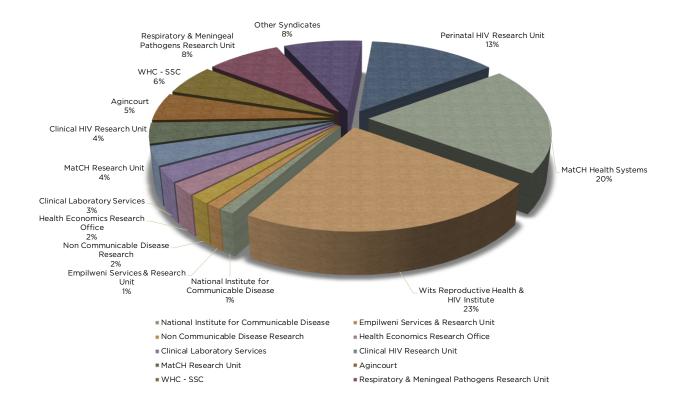
### 2016 HUMAN RESOURCE OVERVIEW

### JOINT APPOINTMENTS

EE STS (All)

Division	Headcount
Clinical HIV Research Unit	8
Health Economics Research Office	20
Johannesburg Oncology	1
MatCH Research Unit	7
MatCH Health Systems	3
Non Communicable Disease Research	1
Perinatal HIV Research Unit	28
Respiratory & Meningeal Pathogens Research Unit	13
Rural Health Advocacy Project	1
Sbimb-H3ABionet	1
Wits Reproductive Health & HIV Institute	45
Grand Total	128

Joint Appointment Title	Headcount
Associate Researcher	30
Lecturer	4
Researcher	74
Senior Researcher	13
Associate Professor	5
Visiting Professor	1
Professor (Chair / Personal)	1
Grand Total	132



### 2016 HUMAN RESOURCE OVERVIEW CONT.

SYNDICATES	DECEMBER 2016 HEADCOUNTS	
National Institute for Communicable Disease	36	
Empilweni Services & Research Unit	38	
Non Communicable Disease Research	53	
Health Economics Research Office	72	
Clinical Laboratory Services	87	
Clinical HIV Research Unit	115	
MatCH Research Unit	126	
Agincourt	170	
WHC - SSC	185	
Respiratory & Meningeal Pathogens Research Unit	254	
Other Syndicates	269	
Perinatal HIV Research Unit	439	
MatCH Health Systems	653	
Wits Reproductive Health & HIV Institute	760	
Total	3257	



### Vision, Mission and Values

**Our Vision** is to be a valued strategic partner of Faculty, recognised for the additional resources, commercial / business expertise and supplementary income we are able to make available to it.

**Our Mission** is to support the teaching, research and public health service mission of Faculty; either through the provision of commercial and administrative support for income-generating activities ancillary to the main objectives of Faculty (namely teaching, research, and the provision of medical services), or by directly engaging in teaching, research, medical service or other related activities which are complementary to the main objectives of Faculty.

#### **Our Values:**

**S**tewardship - We recognize our role as stewards of the Faculty's assets by managing our resources responsibly, effectively, and efficiently.

Employees - We are committed to the success of our employees, as they are our most valuable resource, and so provide them opportunities for development, growth and personal success.

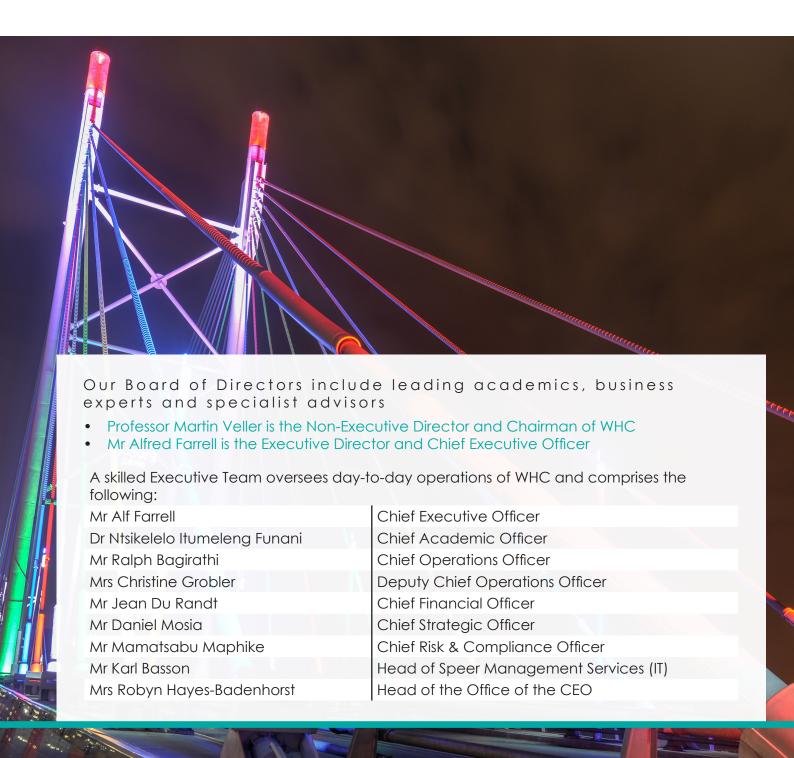
Respect - We are courteous, conscientious and respectful in our dealings with our customers, employees, Faculty and the communities where we work.

Variety - We embrace different viewpoints and support mutually beneficial partnerships among a diverse mix of individuals, departments, institutions, and community groups. We also embrace the wide and varied range of activities that we undertake in achieving our Vision and Mission.

Integrity - We conduct ourselves in a fair, ethical and honest manner. We strive to make all decisions in the best interests of our customers, employees, Faculty and the communities where we work. We are accountable and answerable for our actions.

Customer Service We value innovative, timely, efficient, solution-oriented, cost-effective services and systems. We are committed to achieving the highest levels of customer satisfaction achievable, given the resources at our disposal.

Entrepreneurship - We foster a culture where entrepreneurship and prudent risk taking are encouraged, where the entrepreneur is able to benefit as a partner in their venture.



WHC has a highly-respected Board of Directors, selected for their internationally recognized academic excellence and management experience.

Responsible for overseeing all governance, internal controls, risk management, financial management and human resource services that WHC provides to its research units and to the University of the Witwatersrand.



Non-Executive Director and Chairman Professor Martin Veller MB BCh, FCS (SA), M Med (Surg)

Professor Veller is Dean of the Faculty of Health Sciences at the University of the Witwatersrand and a Professor in the University's Department of Surgery. He is an expert in Vascular Surgery with extensive academic, research and teaching experience. Professor Veller also serves on the Board of Directors of the Wits Donald Gordon Medical Centre. He has trained at the University of Witwatersrand and at St. Mary's hospital at London's Imperial College



Executive Director and Chief Executive Officer

Mr Alfred Farrell B Comm, B Compt (Honours), CA (SA)

Mr Farrell is a skilled financial and accounting manager with many years of experience in senior financial management positions at companies such as the Automobile Association of South Africa, Interleisure and the Premier Group. Prior to joining WHC in 2002, Alf held the position of Chief Financial Officer for BDFM Publishers (Pty) Ltd.

Mr Farrell has steered Wits Health Consortium with invaluable insights gained through his successful career. Since joining Wits Health Consortium Mr Farrell has directed its portfolio of development and research programmes, managed through the Shared Service Centre, and has ensured the growth of Wits Health Consortium has been combined with high standards of delivery. Under Mr. Farrell's tenure the total income of Wits Health Consortium has grown from R150 million in 2002 to over R1.8billion in 2016



### Mr Desmond Arnold CA (SA), FCMA, AMP (Wharton)

Mr Arnold is a highly-skilled accountant and has held numerous financial positions in some of South Africa's leading corporates. He is a past President of the South African Institute of Chartered Accountants (SAICA) and was awarded honorary life membership in recognition of his services to the accounting profession. Mr Arnold is Chairman of the WHC Audit Committee and is also a member of the WHC Risk Committee. He is also a Trustee of the Absa Pension Fund.



### Dr Rachel Chikwamba MBA, PhD (Genetics)

Dr Chikwamba is responsible for strategic alliances and communication and is an expert in scientific and industrial research. Her research has focused on metabolic engineering for nutrition and pharmaceutical applications. She has studied in the US and Australia and was an Honorary Research Fellow at St George's Hospital at the University of London. She has also taught post-graduate classes at the University of Pretoria.



Mr Prakash Desai B Comm, B Compt (Honours), CA (SA)

With many years of experience and skill in senior management roles, Mr Desai supports WHC in areas such as risk, audit, strategy and investment. He is currently Chief Executive Officer at Afrifocus Securities and worked as a former Group Chief Executive and Group Finance Director at Avusa. Prior to this, he was a Non-Executive Director at M-net Supersport Ltd and at Caxton Publishers and Printers Ltd.



Professor Mkhululi Lukhele MB BCh, M Med (Orthopaedics), FCS (SA)

Professor Lukhele heads up the School of Clinical Medicine at the University of the Witwatersrand's Faculty of Health Sciences. He has published widely and has specialised in orthopaedic research, including areas such as spinal cord injuries and spinal tuberculosis in HIV patients. Professor Lukhele has participated in various multi-national clinical trial studies and is Academic Head of the Wits University Division of Orthopaedics.



Professor Johnny Mahlangu MB BCh, M Med (Haem), FCPath (SA) (Haem) (Clin Haem)

Professor Mahlangu is Head of the University of the Witwatersrand's School of Pathology and Head of the Haematology Diagnostic Section in the Department of Molecular Medicine and Haematology. He has peer reviewed many journal publications and international congress presentations. He also sits on the editorial boards of various haemophilia treatment guideline committees and participates in multi-national clinical trials.



Dr Tshepo Motsepe MB BCh; MA (Public Health)

Dr Motsepe is a KwaZulu-Natal and Harvard University graduate. She has worked in private medical practice locally and abroad and has developed specialist knowledge in several fields, including family health, refugee health and HIV. She was Deputy Director of the Chris Hani Baragwanath Hospital in Johannesburg and Ch airperson of the Health Accreditation Committee for the Gauteng Provincial Government.



### Associate Professor Maria Papathanasopoulos

Professor Papathanasopoulos is an established scientist who has built an exceptional reputation in the infectious diseases, bioinformatics, and virology fields. She has established world class laboratories that conduct innovative research on HIV-1 drug discovery, and vaccine designs that are recognised at a national, regional and international level. In the last eight years she has completed research for the South African Strategic Health Innovation Platform, the South African HIV/AIDS Research and Innovation Platform, the National Research Foundation, the International AIDS Vaccine Initiative Innovation Fund, the Carnegie Foundation, the Poliomyelitis Research Foundation and several others.



Professor Helen Rees GCOB, OBE, MBBChir, MA (CANTAB), MRCGP, DCH, DRCOG, RCOG FP Instructor

Professor Rees is Executive Director of the Wits Reproductive Health and HIV Institute. Her specialist area focuses on HIV and Reproductive Health and she has published extensively in these fields. She has been internationally recognised for her expertise and for her contribution both nationally and internationally to research and medical advances in these areas.



Professor Zeblon Vilakazi PhD (Physics)

Professor Vilakazi is Deputy Vice-Chancellor of Research and Post-Graduate Affairs at the University of the Witwatersrand. His research interests include computational physics and heavy-ion collisions at high energies and his work saw him nominated as a Young Global Leader by the World Economic Forum in 2010. He is globally recognised for his expert knowledge in physics and nuclear research.



### Mr Mahomed Salim Ismail (Mac) Gani

Mac Gani is an independent consultant with a distinguished career in accounting and financial management. He spent two years working in London for an auditing firm and has gained valuable experience locally working his way up to being a partner in a leading accounting firm as well as a financial executive leader. He has also developed a special interest in higher education and health services.

### Sub-Committees

## The following Sub-committees have been established to assist the Board to perform its duties.

- Audit and Risk Committee
- Remuneration Committee
- Strategy and Investment Committee
- Academic Oversight Committee
- Social and Ethics Committee (incorporating Sustainability Committee)
- Directors' Affairs Committee







# Professor Helen Rees Executive Director of the Wits Reproductive Health and HIV Institute

### Head Office Contact Details:

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### Wits Reproductive Health Institute

The Wits Reproductive Health and HIV Institute (Wits RHI) aims to tackle Africa's health challenges through science and innovation. It is acclaimed for its pioneering research, innovating services and providing evidence-based policy development and advocacy. Its areas of expertise cover HIV, Sexual and Reproductive Health and Vaccine Preventable Diseases.

Who we are: Wits RHI is part of the Faculty of Health Sciences of the University of the Witwatersrand and the largest research institute within the university. It is committed to developing and conducting relevant research, and providing technical assistance and capacity building that is geared to informing policy development and evidence-based programmes. We push boundaries with innovation in health services by using a multipronged approach to improve health outcomes and influence policy. This ranges from generating evidence related to health issues, to testing and evaluating interventions, translating evidence into policy.

Strategy in 2016: We continued to grow our research footprint in our three key focus areas, namely HIV, Sexual and Reproductive Health and Vaccine Preventable Diseases. We consolidated our leadership in the fields of HIV prevention and treatment, completing several globally significant trials. We also launched several new research initiatives on HIV treatment optimisation for adults and children.

Wits RHI has developed a significant portfolio of HIV treatment optimisation work with the aim of developing safer, more robust and less expensive antiretroviral therapy (ART) regimens. This reduction in costs will help improve health outcomes as more and more people access ART

Key developments in 2016:

Wits RHI began implementing the OPTIMIZE project, a rigorous clinical trial that will potentially yield a new first-line regimen with the potential to transform healthcare for HIV-positive people. This will operate in tandem with an engagement programme that incorporates communities, clinicians and regulators. If successful, OPTIMIZE will be better tolerated, allowing for improved durability through better adherence.

Wits RHI was awarded USAID-UNITAID funding for ADVANCE, a study that falls under OPTIMIZE and will compare newer drugs in the first line ARV regimen to standard of care.

We continued with three robust United States President's Emergency Plan for AIDS Relief (PEPFAR) programmes with a strong implementation science focus, aimed at strengthening care for sex workers and truck drivers, adolescents and the youth. These programmes are aimed at supporting districts to achieve their goals for HIV testing, initiation of treatment and viral suppression at 12 months after treatment initiation as laid out by UNAIDS.

Regarding new developments in HIV prevention, technologies continued to be developed including Pre-Exposure Prophylaxis (PrEP). We presented and published the results of our Microbicide Trials Network ASPIRE dapivirine ring trial. Open-label extension studies now follow while registration of this product is pending.

We also initiated enrolment into the

exciting HPTN 081 trial of the safety and efficacy of VRC01 monoclonal antibodies for the prevention of HIV.

Furthermore, 2016 was an important year for launching several programmes operating at the policy, facility and end-user level to demonstrate how best to deliver PrEP in South Africa to sex workers, adolescent girls and young women. Wits RHI actively contributed to PrEP guidelines and training and engaged in technical working groups to advise the Department of Health.

We were central to the success of the launch of the National Sex Worker programme by the South African National AIDS Council, which included PrEP delivery. Wits RHI staff also supported the national She Conquers campaign, aimed at reducing HIV incidence in adolescent girls and young women. An important addition to our work has been the inclusion of research around prevention of gender-based violence within these HIV programmes. Results from this work will be known in the next two years.

A study to explore strategies to eliminate mother to child transmission of HIV (EMTCT) was launched in 2016. Known as the Mother-Infant Pairs Study, this prospective cohort study will provide important data on HIV incidence and risk factors for new HIV infections in mothers and infants, explore ART use in pregnancy and post-partum and explore the potential for male involvement in these programmes.

On a global level, the ECHO study was launched in several countries. Aimed at quantifying whether there is an excess risk of HIV infection in women who use injectable contraception compared with other forms of contraception, this study will provide important and possibly definitive data to address this question.

Wits RHI staff engaged with national policy makers on the finalisation of a cervical cancer prevention strategy, and contributed at a global level to policy initiatives around the development of vaccines for sexually transmitted infections.

Wits RHI staff extended their work on Sexual and Reproductive Health and the interface with Vaccine Preventable Diseases by initiating several studies on vaccination of pregnant women and or/infants.

The Institute will participate in a phase III study to determine the immunogenicity and safety of a Respiratory Syncytial Virus (RSV) F Nanoparticle vaccine with aluminum in healthy third trimester pregnant women (RSV-M-301).

We will also participate in a phase 1/11 double bind, randomised, placebocontrolled descending-age, dose escalation study to examine the safety, tolerability and immunogenicity of the trivalent P2-VP8 subunit rotavirus vaccine in healthy South African adults, toddlers and infants.

Wits RHI is working with the Respiratory and Meningeal Pathogens Research Unit (RMPRU) to lead the development of the African Local Initiative for Vaccinology Expertise (ALIVE) consortium, which will strengthen vaccinology research capacity in the region, and address a region-specific Vaccine Preventable Disease agenda across the spectrum, ranging from vaccine discovery to vaccine.

ALIVE secured a grant from the Bill & Melinda Gates Foundation for start-up activities and was recently awarded a grant by the National Research Foundation as a Wits University Flagship Project.

Other achievements: In 2016, Wits RHI had 67 grants totalling over R400m under management. Of this, 33% of

research grants were investigator driven.

Wits RHI staff published 83 papers in ISI accredited journals. This was achieved with a staff of 45 joint appointments, while 15% are classified as research active. The organisation has a robust postgraduate support programme with 17 PhD candidates affiliated to it.

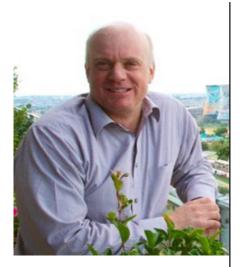
In 2016 Wits RHI had a staff complement of 748. A significant proportion of staff are female, and attention is given to ensuring the development and representation of historically disadvantaged groups in leadership and management positions.

Our contribution to policy continued to gain local and global recognition in 2016. Our staff were invited to present at conferences, to contribute to conference committees, and to provide expert guidance on policy and programme development. Sixty presentations were made across a range of platforms, including 56 oral presentations.

Also, 58 abstract-driven presentations including 16 oral presentations, 20 poster presentations and 22 poster exhibitions were made at international conferences.

Apart from its research output, Wits RHI continued to provide expert guidance on policy and programme development. The Institute played a key role in the development of the Prevention of Mother To Child Transmission of HIV National Guidelines.





### Dr Neil Martinson Executive Director of the Wits Perinatal HIV Research Unit

### Head Office Contact Details:

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Web: www.phru.co.za

## Wits Perinatal HIV Research Institute

The Perinatal HIV Research Unit (PHRU), celebrating 21 years of research excellence, aims to improve life through research. PHRU's research scope spans HIV and TB prevention and its treatment.

Who we are: The PHRU is a large clinical research unit with diverse capacity to conduct a range of observational and clinical trial research. We are a Unit of the University of the Witwatersrand. Although our primary research site remains Soweto, after 20 years, we have three research sites in Limpopo, one in Botshabelo, in the Free State, and a large site in Matlosana (around Klerksdorp) in North West Province. We are expanding capacity at these sites to conduct clinical research into the HIV and TB epidemics

Our External Mission is to conduct community-partnered, ethical, innovative and multi-disciplinary research that influences knowledge and policy.

Our Internal Mission is to develop passionate, caring and empowered researchers to work in the health development sector.

Research in 2016: PHRU continued having an impact on clinical research. In 2016, we published over 52 manuscripts in international peerreviewed publications. We were awarded several new grants and continued and expanded others. HIV vaccine research has been a particular focus and in 2016 PHRU both prepared for and recruited to several important clinical HIV vaccine trials.

Moreover, we planned to expand PHRU capacity to recruit at two separate vaccine research sites in Soweto.

We continue to conduct adult, pediatric and adolescent HIV and TB research and in 2016, we were awarded The NIH Division of AIDS clinical research site (CRS) status in Matlosan, building on our exisiting CRS's in Soweto.

We continued to recruit into four US Government-funded cluster randomized trails assessing earlier diagnosis of TB in household contacts of TB cases and HIV-infected pregnant women.

In addition to numerous investigatordriven and publicly-funded clinical trials, PHRU also conducts clinical trials for pharma. PHRU has established important behavioural and social science research. We continue to advocate for research access and the provision of care to key communities.

Strategy in 2016: Our focus was on increasing the number of publications that our investigators authored and also to increase and diversify grant income. Indeed in 2016, PHRU staffers co-authored 54 publications.

In 2016, PHRU continued to participate in Community Advisory Boards (CABs) alongside traditional healers, religious leaders, social workers, police officers, LGBTIs and NGOs participating in CABS in Soweto and Matlosana.

Research was conducted for the IMPAACT network (International Maternal Pediatric Adolescent AIDS Clinical Trials) and the ACTG (AIDS Clinical Trials Group).

PHRU teams also worked on the HPTN programme (HIV Prevention Trials Network) and the HVTN (HIV Vaccine Trials Network).

Ground-breaking study in 2016: We launched the first-ever HIV vaccine efficacy study. This will establish whether an experimental vaccine regimen safely prevents HIV infection among South African adults. The study, called HVTN 702, involves a new version of the only HIV vaccine candidate ever shown to provide some protection against the virus. HVTN 702 aims to enroll 5,400 men and women, making it the largest and most advanced HIV vaccine clinical trial to take place in South Africa. The Soweto CTU sites will be enrolling participants into this historic study.

Clinical research in 2016: PHRU recruited or followed up participants in approximately 45 active studies, including clinical research sites in Limpopo, North West and Free State Provinces. These studies included a diverse range of participants such as pregnant woman, HIV-infected children, HIV exposed uninfected adolescents and adults – both HIV infected and HIV seronegative.

Mentorships in 2016: In the year under review, PHRU continued with important mentorship and academic research training. We had the following mentorships:

- 5 PhD candidates
- 9 Masters students
- 4 NRF National Research Foundation Interns
- 1 SHAPe Scholars
- 2 HPTN International Scholars
- We hosted five graduate students from the John Hopkins University Center for Global Health

Facilities in 2016: PHRU continued to enjoy a well-established, world class research facility.

This includes a series of research clinics and counselling centres, a pharmacy, a laboratory, a data management centre, a training centre and administrative offices — each located at the Chris Hani Baragwanath Hospital.

Staffing in 2016: In 2016 PHRU remained a growing research unit with more than 400 employees on staff. The PRHU team is led by Dr Neil Martinson.

#### Funding in 2016:

We continued to collaborate with funders worldwide including NIH, US Government's CDC, the Global Fund to fight AIDS, TB and Malaria, the Aurum Health Institute, WHRI, SAMRC, UKMRC, Right to Care and SFH/PSI.





Professor Ian Sanne Division Head of CHRU and HE2RO

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# Wits Clinical HIV Research Unit & the Health Economics and Epidemiology Research Office

The Wits Clinical HIV Research Unit (CHRU) and the Health Economics and Epidemiology Research Office (HE2RO) aim to deliver excellence and quality clinical research, services and support. CHRU is based in Johannesburg at the Helen Joseph Hospital and HE2RO's headquarters are in Parktown, Johannesburg. Satellite sites operate at the Sizwe Hospital in Sandringham in Johannesburg and in Durban at the King Dinuzulu Hospital Complex.

Who we are: The Clinical HIV Research Unit (CHRU) is part of the University of the Witwatersrand's Faculty of Health Sciences.

As an internationally recognised research and technical assistance unit, the CHRU delivers clinical, epidemiologic and health economic research services. The unit also ensures that research information is invested at operational level for the prevention, treatment and management of HIV and associated diseases.

Where we operate: CHRU is located at the Themba Lethu Clinic in the Helen Joseph Hospital. We are one of the largest HIV and TB clinics in South Africa.

Staffing in 2016: In the year under review, the CHRU expanded its team and employed more than 90 staff.

Research in 2016: Staff continued to work on important studies initiated previously, including the A5338 study and several other Pharma trials.

During 2016, CHRU completed the A5290 study. Another achievement was the A5300 feasibility study, conducted at CHRU. This vital study will pave the way forward for the Phoenix Study, which aims to look at prophylaxis for MDR-TB in household contacts.

We are now well-positioned to conduct more TB trials. Shorter TB treatment is a key aim and, during 2016, CHRU embarked on two treatment-shortening studies, namely the A5349/TBTC study 31 for drug-sensitive TB and the STREAM 2 study, which is looking at optimising and shortening MDR treatment.

Noteworthy is the NIX trial that was conducted at the Sizwe hospital. This study is exploring the use of a shortened oral treatment regimen for XDR TB. Preliminary results look promising for the treatment of a disease with a very high mortality rate.

Other trials included the REPRIEVE, A5288 and MHAVE studies. The START study, originally planned to end in December 2016 was extended for another year. The last patient visit for the A5282 study was conducted in 2016.

Strategy in 2016: The unit aligned itself with the current international trend of focusing on drug sensitive and drug resistant TB trials.

Key developments in 2016: During the year, we completed important building renovations at our site, including a state of the art air filter system for our new TB clinic.

Future plans: The chemotherapy infusion unit is currently being used for the A5263 (Kaposi Sarcoma) study. Going forward, this facility could be used for monoclonal antibody infusion studies as more of these types of studies are being planned internationally.

We successfully applied for two grants-with the TB sequel consortium and with the PANACEA consortium respectively and are preparing for these studies to begin in 2017. The TB study concerns pathogenesis and risk factors of long-term sequelae of pulmonary TB defining individual outcomes and public health impact. The PANACEA trial involves a STEP trial looking a novel new TB agents and treatment shortening regimens.

We will also be collaborating with the Aurum institute in a TB Study looking at host directed therapies added to a Rifabutin based TB treatment regimen. The site is also planning on starting a commercial study with long acting Anti-Retroviral agents.

Publications in 2016: CHRU actively published research in leading journals. CHRU and HE2RO staff published 51 articles during 2016.

Mentorships in 2016: The unit continued to attract quality post graduate students. In the year under review, three Masters students and five PhD students continued with their degrees, with ongoing supervision from senior staff.

#### Grants submitted and pending in 2016:

Grants relate to a variety of important research and service support. These include clinical trials to address the highest priorities in HIV/AIDS research, scientific and laboratory management, the delivery of technical assistance to the South African Department of Health for HIV/AIDS diagnosis and treatment and research into, MDR-TB and XDR-TB and TB.

HE2RO 2016 synopsis: Significant achievements were made during the year under review, including the following:

- In collaboration with the National Department of Health, the World Bank and Boston University, HE2RO implemented a large evaluation of the National Adherence Guidelines for Chronic Diseases in South Africa.
- The study will assess the impact of a subset of national adherence guidelines for interventions on HIV patients' outcomes at public sector clinics. The study will also estimate costs of interventions and describe the cascade of care for TB, hypertension and diabetes in these state clinics.
- To this end, four field teams have been established in Gauteng, North West, Limpopo and KwaZulu-Natal to collect data from 24 sites.
- The study uses a randomised evaluation design to compare health facilities where the interventions have been rolled out with facilities where they have not.
- During 2016, 3324 patients were enrolled to the HIV cohorts (96% of study target) and a further 2997 patients were enrolled to the TB, Hypertension, Diabetes cohort. Information has been disseminated and shared with the Department of Health.
- In 2016, HE2RO completed data collection and preliminary analysis of a mixed-methods study conducted at an urban, public-sector HIV clinic in a tertiary hospital in Johannes burg. This analysis aimed describe 10-year treatment outcomes of patients initiated at the start of South Africa's National ART programme in 2004.
- This included a 10-year outcomes analysis of electronic medical

- records captured using TherapyEdge-HIV and 24 indepth interviews with patients who initiated ART between April 2004 and March 2005. Final analysis and results will be disseminated in 2017.
- HE2RO published a chapter in the 2015/16 South African Health Review discussing the barriers and facilitators South Africa faces on its journey to achieving universal access to sexual and reproductive health services nationally.
- HE2RO presented results on the impact of Xpert MTB/RIF testing on treatment delays among persons diagnosed with drug resistant TB at the Union World Conference on Lung Health in Liverpool.
- HE2RO received recognition for an abstract on poorer health-related quality of life among patients with drug-resistant TB. Tembeka Sineke was awarded 'Best Oral Presentation' at the Public Health Association of South Africa (PHASA) Conference in 2016.
- HE2RO also represented the Wits Health Consortium large research entities on the FHS FRC.



Health Economics and Epidemiology Research Office

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# Wits Maternal, Adolescent and Child Health Systems

The Wits Maternal, Adolescent and Child Health (MAtCH) Systems is committed to supporting the implementation of sustainable public-sector health services, with a focus on maternal, adolescent and child health, HIV and TB prevention, treatment and care.

Who we are: Maternal, Adolescent and Child Health (MatCH) Systems is a South African donor-funded organization based in Durban in KwaZulu-Natal.

We are a division of the Wits Health Consortium, with oversight by the School of Public Health.

MatCH has extensive experience in public health, primary healthcare and service delivery. We have a multidisciplinary group of senior academic staff, reflecting expertise in medical science, epidemiology, public health, child health, behavioural science, gender, HIV and TB.

Maternal, new-born and child health research, including HIV and infant feeding, is a key focus area of our work, led by Professor Jerry Coovadia, who is the Director of Health Systems at MatCH. He has been at the forefront of this field of work for many years. He is also actively involved in the development of WHO and National standards, and the implementation in South Africa of breastfeeding policies, which have had a positive impact on child health.

Where we operate: MatCH has a long history of working in KwaZulu-Natal to support public sector sexual and reproductive health; maternal, child and adolescent health; and HIV and TB services.

Our geographic reach: In addition to our head office operations in Durban, South Africa, MatCH's has satellite offices in Overport, Mayville and at the KwaZulu-Natal Children's Hospital.

We also have offices in Mtubatuba in Umkhanyakude and some of our teams are based in the eThekwini district office, at eThekwini municipality offices and at the Provincial Department of Health in Pietermaritzburg.

MatCH has project staff in Harry Gwala and Nongoma.

In 2016 we continued with our international expansion under the EQUIP project, and had offices in Port au Prince in Haiti, Accra in Ghana and in Dar es Salaam. Tanzania.

EQUIP is a consortium of partners with extensive experience and technical expertise providing comprehensive high-quality HIV service delivery, innovating new approaches to service delivery, scaling viral load technology and analysing cost and outcome data to optimize HIV programmes.

Our approach: MatCH's approach is to support the South African Government to roll out national programmes, including the National Core Quality Standards, the Global Plan of Action on PMTCT, Primary Health Care Reengineering strategy and community Caregiver programmes.

MatCH implemented a WHO/South African National Department of Health Pregnancy Registry pilot project in May 2013 and this remained an ongoing focus area in 2016. The objectives of the project include the following:

- To collect information about maternal health and medicines exposure during pregnancy
- To establish a national sentinel surveillance system for major birth defects and still births
- To routinely provide information and evidence to policymakers, health care providers and other stakeholders on the association between maternal health indicators, antenatal care indicators and the use of specific medicines during pregnancy.

Staffing in 2016: By the end of the year under review, MatCH had a staff complement of 655 people, with 17 staff actively involved in research.

Programmes in 2016: MatCH's portfolio of HIV treatment and prevention programmes continued to expand and 2016 saw the extension of our PEPFAR grant, funded via USAID. This is being used to strengthen the District Response for Better HIV/TB Patient Outcomes in the eThekwini and Umkhanyakude districts in KwaZulu-Natal.

MatCH's adolescent, girls and young women portfolio included DREAMS funding in 2016 for facility level interventions in two high prevalence districts in KwaZulu-Natal.

The ELMA Philanthropies funded Unfinished Business project in eThekwini and Umkhanyakude focused on addressing the treatment needs of adolescents and children is also ongoing.

In 2016 MatCH continued to play an important role in KwaZulu-Natal's

medical male circumcision programme. MatCH started the programme with the KwaZulu-Natal Department of Health in the province in 2010. MatCH has a contract to implement Medical Male Circumcision Services in four districts in KwaZulu-Natal. MatCH has circumcised over 140,000 males since the start of the programme.

MatCH continued to conduct training on a wide range of HIV and sexual and reproductive health topics. Since 2009 we have trained over 15,000 healthcare providers in KwaZulu-Natal. Key training programmes have included HCT/PICT; ARV treatment guidelines; NIMART, medical male circumcision, family planning, male and female condom promotion and provision.

All our training materials are in line with South African National and Provincial guidelines and policies and are planned and scheduled with the Department of Health (DOH).

In 2016 MatCH was successful in bidding for a five-year Centre for Disease Control grant for Programmatic Implementation and Technical Assistance (TA) for HIV/AIDS and Tuberculosis (TB) Prevention, Care, and Treatment Services throughout the Health System in South Africa.

This is under the President's Emergency Plan for AIDS Relief (PEPFAR) of 2016.

Under this five-year grant, MatCH supports community-based HIV testing and evidence-based prevention programmes in the Harry Gwala, eThekwini and Umgungundlovu districts in KwaZulu-Natal.

The grant also includes evaluation of the implementation of community-based HIV care and treatment interventions in three provinces in South Africa, namely

KwaZulu-Natal, North West and Eastern Cape.

Research activities in 2016: Numerous research activities and positive outcomes were achieved in 2016, including the following:

- An evaluation of the MomConnect Project at 51 facilities in two districts
- A pregnancy registry study to prospectively collect information about maternal health and medicines exposure during pregnancy
- A study to establish a national sentinel surveillance system for major birth defects and still births
- Operations/Implementation Science research on HIV/TB
- Operations/Implementation Science research on Adolescents, Girls & Young Women
- A review of routine data and service delivery data for medical male circumcision in four districts in KwaZulu-Natal

Community training and service in 2016: In the year under review, MatCH provided technical assistance to National, Provincial and District Departments of Health. These focused mainly on improved HIV/TB and MCWH clinical outcomes.

We continued to participate in important forums such as the National DOH Task Force for STI, HIV and AIDS Prevention, the National Health Research Committee, WHO Strategic and Technical Advisory Committee and the KZN Children's Hospital Steering Committee.





Professor Jennifer Smit Executive Director MRU

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### MRU (MatCH Research Unit)

MRU (Maternal, Adolescent and Child Health Research Unit) aims to answer priority questions that will translate into improving sexual and reproductive health outcomes through expanding access to appropriate and acceptable contraceptive, HIV prevention and related health technologies and services.

Who we are: MRU is affiliated to the University of the Witwatersrand's Faculty of Health Sciences, the School of Clinical Medicine and to the Department of Obstetrics and Gynaecology. In 2016 we were awarded Unit status.

Our mission: We aim to achieve the following:

- Conduct innovative research that informs policy and programmes
- Conduct research that supports the development of new technologies on sexual and reproductive health, HIV and related diseases
- Engage the community in service delivery and research

MRU is based in Durban and our team consists of highly skilled research, clinical, laboratory, community, data and administrative staff from a wide range of backgrounds including clinical, behavioural and social science.

Research publications in 2016: In 2016, MRU published 13 articles in peer-reviewed journals. Four of these were from a recently completed sex worker health service intervention project, called the "Diagonal Interventions to Fast Forward Enhanced Reproductive Health" (DIFFER) project, funded by the EU.

The project tested the hypothesis that combining vertical Sexual and Reproductive Health (SRH) interventions with horizontal strengthening of health systems for SRH, within existing health facilities, is synergistic, feasible, and likely to be more effective and cost-effective

than providing them separately.

Other publications focused on our core research areas including contraception, HIV prevention, safer conception and other areas of sexual and reproductive health.

Grant awards in 2016: In the year under review, MRU successfully applied for and was awarded several grants through collaborations and self-initiated grant applications. One self-initiated grant was awarded from over 800 applicants globally.

We have recently learned of two successful NIH applications that were submitted with collaborators in 2016.

New research scope in 2016: In 2016, we moved into a new area of research - Pre-exposure prophylaxis (PrEP) for HIV Prevention The first of these groundbreaking studies At MRU Is being carried out in collaboration with Harvard University and the Massachusetts General Hospital in Boston. This five-year NIH grant was awarded for the "PrEP Safer Conception for Women study" which will be offering PrEP as part of a safer conception package.

A second study is being planned with the Eastern Virginia Medical School (EVMS)/ CONRAD, USA which will be focusing on different branding approaches to PrEP delivery.

During 2016, our microbicide research trials continued at the MRU Edendale Research Site with the completion of the Phase III Dapivirine Ring Microbicide Trial -IPM 027. MRU started the IPM 032, a Phase IIIb follow-on trial to IPM 027. This is designed as an open-label clinical trial to collect additional safety data and to establish adherence to ring use. This study uses the Dapivirine Vaginal Ring in healthy, HIV-negative women who were enrolled in the Phase III ring trial IPM 027.

Complementary socio-behavioural data collection is also underway to collect information around adherence in microbicide trials.

Government initiatives in 2016: MRU continued to provide support to the Provincial and National Departments of Health (DoH) (SRH) in policy and programme issues in the area of Sexual and Reproductive Health. In line with this, Professor Smit and Dr Beksinska provided editorial and technical support for the development of a KwaZulu-Natal (KZN) DoH Contraception Counselling Tool for Healthcare Providers.

Professor Smit and Dr Beksinska led the contraception section of The Reproductive Health Chapter for the special edition of the national yearly South African Publication: The District Health Barometer, submitted in November 2016.

Research in 2016: In the year under review, we continued research around testing the performance, integrity and acceptability of new female condom prototypes.

The National SA Female Condom (FC) Evaluation project, funded by USAID, completed data collection in 2016, and disseminations have been conducted nationally and in every province. The FC project was a comprehensive mixedmethod study to identify strategies to enhance the FC's acceptability, and

strengthen the national FC program's effectiveness and efficiency.

AIDS Conference 2016: MRU played a high-profile role at the International AIDS conference held in Durban in July 2016. Professor Smit was an invited oral speaker in a satellite session on hormonal contraception and HIV, and Deputy Executive Director, Zonke Mabude participated in the International Programme for Microbicides' satellite session.

We presented 11 posters and contributed two papers to a special edition of the African Journal of Reproductive Health, which was launched at this conference. We disseminated a policy brief, on the introduction of the SILCS diaphragm in South Africa, in collaboration with PATH, and hosted a stall promoting female condoms. This conference was also used as an opportunity by MRU to network with established and new collaborators.

Pivotal research in 2016: MRU engaged in pivotal research conducted with vulnerable populations, including youth, sex workers and recreational ARV users

A key focus was on areas such as contraception, fertility choices for HIV positive and negative women and men (in collaboration with Harvard and the Massachusetts General Hospital).

We also conducted formative research to determine views and opinions of a new device "the Smart Diaphragm" designed to detect early signs of preterm birth (in collaboration with Perinatal Services at UCSFs Foetal Treatment Center).

In our post-partum depression programme we aim to decrease depression and increase adherence to HIV and SRH care for HIV-

infected mothers. In this research we collaborated with HEARD at the University of KwaZulu- Natal, as well as with Harvard University

Our menstrual management programme conducted an acceptability study of menstrual cups to high risk women. We entered the planning phase of a new intervention which will introduce menstrual cups in up to 10 higher education institutions in KwaZulu-Natal. This project is being funded by the DREAMS Innovation Challenge initiative.

### Training and capacity building in 2016:

MRU focused on capacity building and training of researchers locally, regionally and internationally during 2016.

We are supervising four PhD candidates (one in Uganda), and one Masters study being supervised by MRU researchers.

During 2016, MRU hosted students from the London School of Hygiene and Tropical Medicine (UK), from the University of British Columbia (Canada), from Berkley University (US), from the University of Washington (US), and from the University of KwaZulu-Natal in South Africa.





# Professor Shabir Madhi Executive Director of the Wits MRC Respiratory & Meningeal Pathogens Research Unit & DST/NRF SARCHI Chair: Vaccine Preventable Diseases

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# Wits Respiratory and Meningeal Pathogens Research Unit

The Wits MRC Respiratory & Meningeal Pathogens Research Unit (RMPRU) aims to conduct epidemiological, clinical and basic science research into respiratory and meningeal infections. The unit seeks to improve the diagnosis, management and prevention of these diseases.

Who we are: The RMPRU is focused on research aimed at reducing morbidity and mortality from common bacterial and respiratory viral pathogens. More specifically, we prioritize research on vaccine preventable disease that are major contributors to under-5 childhood mortality. Furthermore, we have established ourselves to being at the forefront of research aimed at vaccination of pregnant women, too protect the mother, her fetus and young infant from vaccine preventable diseases.

Global leadership: RMPRU internationally recognized for the role it has played in the clinical development of live saving vaccines such as rotavirus vaccine and pneumococcal conjugate vaccine. Furthermore, it has been at the fore of vaccine studies aimed at pregnant women, including reporting on the first placebocontrolled randomized trial of influenza vaccine in pregnant women It has also undertaken the first studies of an investigational multi-component Group B streptococcus conjugate vaccine in pregnant women; a portfolio of research that is ongoing-including discovery research on other potential GBS vaccine epitopes. This is pertinent to Africa and South Africa, which has reported the highest incidence of invasive GBS disease globally. The unit also does important work on vaccines and their impact on Vaccine Preventable Diseases (VPDs).

Our mission: RMPRU conducts epidemiological, clinical and basic science research on vaccine preventable disease aimed at enhancing the health and survival of African children.

Research in 2016: In the year under review, the Prof Madhi and his colleagues published 42 publications, including multiple publications in the highest-ranking infectious diseases journals. The Research Chair was a senior author on many of these publications and much of the research which was based on outputs of postgraduate students under his supervision.

Rotavirus Vaccine Studies: The Unit. under Dr Michelle Groome, undertook the first study on a sub-unit rotavirus vaccine, which is being developed as a possible improvement to the current live attenuated rotavirus vaccine. the clinical development of which also was spearheaded in Africa at RMPRU. These results were published in Lancet Infectious Diseases. Since the introduction of rotavirus vaccine into the South African public immunization program, it has been estimated to prevent 3000 fewer diarrhea related deaths in South Africa each year, as well as approximately 39,000 fewer hospitalizations.

Pneumococcal vaccine studies: The Unit continues undertaking studies on prevention of pneumococcal disease through vaccination with the pneumococcal conjugate vaccine.

This includes the work of two PhD students, which has investigated the direct and indirect benefits of vaccination. Included in this are studies which as shown that since South Africa introduced PCV into its public immunization program, based on evidence generated by RMPRU, annually more than 300 children lives are saved and there are approximately 125,000 fewer pneumonia hospitalizations in children, compared to prior to vaccine introduction.

Group B streptococcus Studies: The Chair has also developed a strong research agenda in the field of Group B streptococcus disease. Included among these were the first studies to show the association between immune mediators and risk of recto-vaginal GBS acquisition during pregnancy, as well as studies on correlates of protection against invasive GBS disease in Africa. Furthermore, the first study of a trivalent GBS conjugate vaccine in pregnant

women was also published by the Chair

in Lancet Infectious Diseases in 2016.

Stillbirths & Infant Mortality: Studies by the Chair have established GBS to be an important contributing cause to not only neonatal death, but also stillbirths in South African women. These studies will be important in informing the design for future vaccines aimed at immunization of pregnant women to improve their birth outcomes and prevent invasive disease in their young infants.

### Child Health & Mortality Prevention:

Following on from R119 million in grants received in 2015, one of the largest grants received from the Bill and Melinda Gates Foundation in 2016 was for the Child Health and Mortality Prevention Surveillance (CHAMPS) study.

The Chair is the South African Principal Investigator on the multi-center

Child Health and Mortality Program Surveillance (CHAMPS) study which aims at undertaking minimal invasive tissue sampling to better ascertain the causes of stillbirths and under-5 mortality in high mortality stings.

The CHAMPS program evolved.

The RMPRU championed the piloting of MITS, through a pilot study between 2015 and 2016, which contributed to the Bill and Melinda Gates Foundation committing funding to the CHAMPS program.

The Chair and his staff also had the privilege of hosting Mr Bill Gates and his media crew to the unit in 2016 for a visit that involved presentations, discussions and a demonstration of a MITS procedure.

Vaccinology in 2016: The RMPRU together with the NICD was also the host of the first advanced vaccinology course in Africa (Afro- ADVAC 2016), which was ten days long and took place in Muldersdrift, South Africa. The course involved presentations and workshops led by international and local experts in the field of vaccinology and immunology.

Delegates from 32 African and Asian LMICs participated in this course, which is planned to be hosted biennially.

Capacity building in 2016: The Unit continued to attract talented academics and supervised several key research initiatives.

Grant awards in 2016: The Unit was the recipient of many grants during the year under review. Substantial grants came from the following foundations and organizations: under review. Substantial grants came from the following foundations and organizations:

Grant funded research:

- The Bill and Melinda Gates Foundation
- GlaxoSmithKline
- Murdoch Children's Research Institute
- John Hopkins University
- CDC Foundation
- SAMRC
- Emory University
- The University of Virginia
- NIH
- Partners Healthcare System
- Minervax

Clinical trial related research:

- Sanofi Pasteur
- Icon
- Pfizer
- Quintiles Clindepharm (Pty)
- Glaxosmithkline
- Triclinium/Novavax





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### Wits Medical Entomology Research Group

The Wits Medical Entomology Research Group investigates the transmission of Malaria in African mosquito populations and is affiliated to the Wits Research Institute for Malaria.

Who we are: The Medical Entemology Research Group is affiliated to the Wits Research Institute for Malaria. The team consists of over two dozen academics, specializing in areas such as pathology, tropical medicine, chemistry, pharmacology and clinical medicine. Our team is made up of leading researchers, professors and academic lecturers.

Capacity building in 2016: The unit had four post-doctoral fellows registered in the year under review, along with the following post-graduate students:

- Internal Medicine: Two Masters students
- Chemistry: Six Masters students and one PhD student
- Pharmacology: Nine Honours students, ten Masters students, one doctorate and one PhD student respectively
- Parasitology: Two Masters students and three PhD students
- Entomology: Seven Masters students and five PhD students

Publications in 2016: The unit published in several journals. In the combined fields of Entomology, Parasitology and Tropical Medicine, the top 25% of journals have impact factors (IF) above 2.00. In Pharmacology and Pharmacy, it is 3.3 and above.

We published 14 Entemology papers, five parasitology papers, three pharmacology papers and seven epidemiology papers.

Awards & Recognition in 2016: Our Unit head, Professor Maureen Coetzee was awarded the following:

- Certificate of Distinction (at the ICE meeting in the US, Council for International Congresses of Entomology).
- Finalist in the Standard Bank Top Women Awards (Science category) in Johannesburg, South Africa.
- Appointed Member of the Malaria Policy Advisory Committee of the WHO Global Malaria Programme.

Professor Basil Brooke was appointed:

 WHO representative for the UNEP DDT Expert Group, 2016-2019.

Prof Immo Kleinschmidt was appointed:

- Member of the WHO Vector Control Advisory Group, 2016-2018
- WHO representative for the UNEP DDT Expert Group, 2016-2019

Prof Colin Menezes was appointed:

 Academic Head of the Department of Internal Medicine, School of Clinical Medicine.

D. Liebenberg was awarded:

 Best student poster: Wits Faculty of Health Sciences Research Day.

N. Jansen van Vuuren and RL van Zyl won:

 First prize for Best Toxicology Poster at the All Africa Congress on Pharmacology and Pharmacy, in South Africa, 2016

#### Research Highlights in 2016:

The unit covered the following topics through various research reports in the year under review:

#### Entomology:

- Targeted IRS
- Vector-parasite infection study
- Sterile Insect Technique project
- The Akirin project
- International Centre of Excellence in Malaria Research (ICEMR) study
- Study of alternative vector control methods
- Effects of oxidative stress, blood ingestion and environmental contaminants on life history parameters and insecticide resistance in malaria vector mosquitoes
- Study of malaria vector surveillance techniques
- Namibia targeted parasite elimination (TPE) and reactive vector control (RAVC) trial.
- Other projects aimed at understanding insecticide resistance, malaria vector physiology and other important phenotypes of epidemiological significance in malaria vectors

#### Parasitology:

- Research to screen and evaluate the activity of compounds against Plasmodium falciparum gametocytes
- Several other collaborative research projects on fundamental aspects of parasite biology

#### Research projects at the NICD:

- A serology study
- A clinical trial

A molecular study

# School of Animal, Plant & Environmental Sciences:

 Professor Markus investigated quiescent primate malaria parasites and relapsing malaria

#### Pharmacology:

- Evaluation of the antimalarial activity of several synthetic or naturally derived compounds
- South African species of liverworts were investigated for antimalarial activity and anticancer activity
- Professors Menezes, van Zyl and Karstaedt did a clinical study assessing the clinical and pharmacological dynamics between the malaria parasite and its human host
- Professors van Zyl, Menezes, and Karstaedt did a clinical study examining the retrospective outcomes and cost analysis of antimalarial treatment in HIVinfected patients in a tertiary hospital setting in Soweto, South Africa

#### Chemistry:

- Synthesis and characterization of spirooxindole derivatives as potential antimalarial agents.
- Synthesis of antiplasmodial spiroindolone analogues
- Synthesis and modification of antiplasmodial antifolates.
- Synthesis and evaluation of antimalarial agents as inhibitors of Plasmodium falciparum calciumdependent protein kinases

#### Internal Medicine:

 Collaboration with Pharmacology and Molecular Medicine and Haematology looking at Malaria at Chris Hani Baragwanath Academic Hospital – a study assessing the clinical and pharmacological dynamics between the malaria parasite and its human host, including a cost analysis of antimalarial treatment in HIVinfected patients

Grant awards in 2016: The Unit received a wide distribution of grant awards, including the following:

NIH, MRC, DFID, Wellcome Trust, Bill & Melinda Gates, Foundation, International Atomic Energy Agency, CDC, NHLS, FRC, NRF and the Claude Leon Foundation.





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## Medical Research Council / Wits Rural Public Health and Health Transitions Research Unit

The Medical Research Council / Wits Rural Public Health and Health Transitions Research Unit (Agincourt) aims to better understand the dynamics of health, population and social transitions in rural South and Southern Africa in order to mount a more effective public health, public sector and social response. We support advanced research training and develop systems to render data more widely available.

Who we are: The MRC/Wits Rural Public Health and Health Transitions Research Unit (the MRC/Wits-Agincourt Unit) is located in rural northeast South Africa, close to the Mozambique border.

The unit includes the Agincourt health and socio-demographic surveillance system (HDSS) as a longitudinal research platform established in 1992.

It also includes PRICELESS (Priority Cost-Effective Lessons for Systems Strengthening) as a sub-project.

**PRICELESS** studies, students and publications have, to-date. been included as sub-sections of our annual entity report. However, as PRICELESS activities have greatly expanded in recent years, they are therefore reported on separately in this Annual Review.

The role of academics: Our research entity differs from many others given that we are located in a fully-funded research centre situated in a very remote setting. Our site is in a resourceconstrained rural area that has limited infrastructure, some 500 kilometers from the University of the Witwatersrand.

Given the scale of advanced population-based involved R&D. academics devote major time to complex field science and research management. This is vital to generating necessary evidence and high-quality data.

Publications in 2016: During the year under review, the MRC/Wits-Agincourt Unit produced 77 peer reviewed publications and commentaries, of which 10 were solely PRICELESS publications.

Capacity building in 2016: During the year under review, four Masters students graduated, with a further 7 Masters students currently enrolled. In 2016, five PhD students graduates, with an additional 10 individuals currently enrolled and under the supervision of unit professors. A further two PRICELESS PhD students are currently enrolled with the University.

#### Research highlights in 2016:

The Unit provides a critical, and worldleading, population-based research platform that supports a programme of work to elucidate causal pathways and test interventions that address national priorities, but with a regional orientation. A life-course perspective serves as the framework for much of the Unit's research. This programme advanced supports research training and develops systems to render data more widely available.

#### Longitudinal Health:

Extending and harmonizing health and sociodemographic surveillance systems: Championed by Professor Collinson, the South African Department of Science and Technology has funded SAPRIN (South African Population Research Infrastructure Network of Health and Sociodemographic Surveillance Sites). Providing R99 million over the first 3 years, the NRI seeks to harmonize data collection and methodology and then extend the existing 3 South African HDSS sites (Agincourt, Africa Health Research Institute and Dikgale) to an additional 4 sites (3 urban, 1 rural), providing greater representation of the country.

Migration, urbanization and health in a transitional setting: With colleagues from Brown University in the US, Professor Collinson received a National Institutes of Health 5-year grant. will examine how This study migration and urbanisation impact the health of populations.

# 2. Child & Adolescent Health & Development:

 Understanding the risk profile of young women's male partners in rural South Africa:

Utilizing young women from the Swa Koteka trial that concluded in 2015, this study aims to deter-mine the sexual risk behavioural profile of their male partners.

This study will establish the HIV prevalence, viral load and ART of these male partners to better understand young women's actual and perceived HIV risk.

Piloting a complex community intervention to improve adolescent health - The Ntshembo (Hope) Trial Sub-Saharan Africa has the fastest growing adolescent population. In addition to having high rates of underweight and early childhood growth faltering, this population also has rapidly increasing rates overweight and obesity, particularly among adolescent girls. This study is funded pilot a complex intervention that

introduces community-based adolescent-focused health workers (AHWs) to deliver a structured programme to adolescents (14-19 years) to improve their nutritional status in rural South African villages, and to model the cost-effectiveness of such an intervention.

#### Adult Health and Aging

Innovative language controlled tablet-based cognitive test: Building on results from the Health and Aging in Africa: Longitudinal Studies in an INDEPTH community (HAALSI) completed in 2015, and with funding from the National Institute of Aging (NIH, USA), this study assesses the validity of the novel Oxford tablet-based cognitive screening measures in relation to a more traditional psychometric battery of tests found in the Health Cognitive Ageing Project (HCAP).

This project serves as the flagship study of the cognition work underway in Agincourt.

Prevalence, characterisation and response to chronic kidney disease in an urban and rural setting in South Africa This study will be the first in South Africa to characterise the burden of chronic kidney disease (CKD), develop an accurate method for estimating kidney function and investigate risk factors for CKD. It is intended that the findings will inform an affordable, integrated public health policy for CKD within the broader framework of noncommunicable disease NCD).

#### 4. Public Engagement

 Verbal Autopsy with Participatory Action Research (VAPAR):
 Developingapeople-centredhealth systems research methodology The overall aim of this study is to expand the knowledge base by applying a people-centred health systems research method in a process connected to the health system.

- Public engagement in priority setting for health active involvement of the public in the decisionmaking activities of health policy
   The study will engage the public to involve those affected in the development of a policy.
- A study of community engagement in Agincourt longitudinal health and socio-demographic research: This 3-year study is investigating the multiple and complex effects of participating in longitudinal health and socio-demographic surveillance (HDSS) over more than two decades, on community members, community leaders and service providers in a rural South African community.

#### 5. Multi-centre collaborative work:

#### ABACUS

This study, part of an INDEPTH
Network collaboration, is an
observational study to compare
community-based antibiotic
access and consumption practices
across communities.





Adjunct Professor Ashraf Coovadia Director

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## Empilweni Services and Research Unit

The Empilweni Services and Research Unit (ESRU) seeks to be a welcoming, nurturing, goal oriented organisation that generates and uses scientific evidence for quality care to make a difference in the lives of mothers, children and their families.

Who we are: The Empilweni Services and Research Unit (ESRU) is affiliated to Paediatrics and Child Health at the Rahima Moosa Mother and Child Hospital in Johannesburg.

Our mission: We are committed to helping each other live! Our Vision Statement is 'Working together towards discoveries for global impact for parents and children'.

Our staff: Our team comprises clinicians and scientists, actively involved in research. The team is led by Professor Ashraf Coovadia from the Department of Paediatrics and Child Health at the University of the Witwatersrand.

Key highlights in 2016: We moved into a new office at the Rahima Moosa Mother and Child Hospital. Our new building – the Nkanyezi Building (Zulu name meaning star) – was officially opened during the year under review.

Publications in 2016: ESRU staff published widely in the year under review, with 27 journal articles published. Topics included the following disciplines:

- Immunology
- Infectious diseases
- Child health / Pediatrics
- Perinatology
- Epidemiology
- Public health
- Medicine

Capacity building in 2016: ESRU supervised many post-graduate students, with 14 students registered for Masters degrees and three students enrolled for PhD studies.

Donor funding in 2016: ESRU was fortunate to receive financial support from a range of donor organisations and foundations, including the following:

- National Institute of Child Health and Human Development
- Pepfar
- Pharma
- tIdEA Consortium

#### Clinical trials in 2016: CHANGES

The Childhood HAART alterations in Normal Growth, Genes and aGing Evaluation Study. This prospective observational cohort study has enrolled I 600 perinatally HIV-infected children across two sites – ESRU, based at Rahima Moosa Mother and Child Hospital, and PHRU, based at Chris Hani Baragwanath Hospital. 300 HIV uninfected control children (sibling/household controls) have also been enrolled.

Participants are reviewed at six monthly intervals at which time blood sampling, detailed clinical data collection and specific targeted investigations are carried out.

A portion of these children have also been enrolled in the Bone sub-study which is investigating HIV-related deficits in childhood bone mass accrual. Disruption of bone accrual can compromise adult peak bone mass and increase the risk of later life osteoporosis and fracture.

The site previously reported lower bone mineral content among South African HIV-infected children who initiated treatment early in life and have excellent virologic control. Markers of

inflammation and bone turnover are examined in conjunction with measures of bone mass from whole body DXA and pQCT scans.

#### Clinical trials in 2016: Birth Testing

HIV-exposed neonates identified at delivery had blood sampled for laboratory-based HIV PCR testing.

A sample for concurrent POC testing (Xpert® HIV- 1 Qual) was collected and performed by trained staff.

POC testing coverage, performance and time to result receipt were compared to laboratory-based testing. The Cepheid POC test identified 100% of HIV-infected neonates and repeating the test eliminated any false positives.

Sampling enough blood to allow a rerun (an extra  $\pm 100$ ul) reduced the error rate significantly.

POC HIV testing requires additional staff resources and a system to identify HIV-exposed neonates, test and provide results timeously.

POC test results allowed earlier ART initiation, but return of results in our setting remained similar because we actively traced discharged HIV-infected neonates.

#### Clinical Trials in 2016: LEOPARD

Dr Renate Strehlau reported preliminary results from the LEOPARD Study (Latency and Early neOnatal Provision of Anti-Retroviral Drugs) at the 9th international workshop on HIV Pediatrics, examining virological dynamics in HIV-infected infants following very early antiretroviral treatment.

Initiation of very early ART in primary HIV infection may alter the pathogenesis of HIV. Rapid decline in viral load is postulated as being the first step along

the pathway by which early treatment of primary infection may lead to remission.

At the time of reporting the study had enrolled 75 birth-identified HIV-infected infants. When divided into groups according to time of ART initiation 33 initiated ART <48 hrs after birth, 22 within 48 hrs -7 days and 20 more than 8 days after birth. Three children died and three had no follow-up results.

As per South African DOH guidelines, all new born infants were started on zidovudine, lamivudine and nevirapine. Lopinavir/ritonavir replaced nevirapine in the treatment regimen when it was deemed safe for the drug change to occur.

Results showed subtle differences virological response between those treated <48 hours after birth vs. slightly later. ART initiation and treatment adherence was found to be strongly influenced by clinical and social factors and this complicates result interpretation. The investigators concluded that more sensitive virological markers may be required to discern whether very early ART influences the likelihood of viral remission





Mr Suliman Minty CEO

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# Wits Pathology and Clinical Laboratory Services

The Wits Pathology and Clinical Laboratory Services' (CLS's) vision is to be the leading provider of clinical pathology services globally.

Who we are: CLS is a division of the Wits Health Consortium and is affiliated to the School of Pathology at the University of the Witwatersrand's Health Sciences Faculty.

#### Our Mission: Clinical Trials

- Deliver expert clinical trial services through cutting-edge laboratory technology and promote lasting relationships with clients and academia.
- To strengthen laboratory resources by training all cadres of laboratory personnel and build capacity to conduct research in South Africa and Sub-Saharan Africa.

#### Our Mission: Wits Pathology

- Deliver actionable results to clinicians ensuring timely patient care.
- To enhance efficiency, productivity and quality to become the pathology provider of choice for academic private health care

Our Values: Our core values include Professionalism, Excellence, Expertise Passion and Innovation.

What we do: Clinical Laboratory Services (CLS) was originally established in 2000 as a joint venture between the NHLS and WHC. Its strategic objective was to create a vehicle to deliver expert clinical trials and to reinvest profits into the Wits School of Pathology. Through market-leading laboratory technology and well-established relationships, CLS supports the teaching and research activities of the Wits School of Pathology. Services include

the provision of laboratory services, diagnostics, research, advice and data management. Our services are provided in line with Good Laboratory Clinical Practice (GCLP)standards.

#### Accreditation & Affiliation:

CLS has the following:

- South African National Accreditation Society (SANAS) 15189 accreditation, since 2000.
- British Group: QUALOGY for (GCLP)
- DAIDS monitored through FHI (formerly PPD)
- Quality management through: CAP, RCPA, UKNEQAS, NHLS
- The CLS repository is both International Transport (IATA) and Laboratory Data Management System (LDMS) certified.

Our services: CLS has three laboratories. Our main laboratory is based in Braamfontein Johannesburg. It provides a complete profile of clinical pathology tests and has access to refer specialized tests to the School of Pathology including CD4, HIV viral load testing, HIV genotyping testing, specialized Microbiology as well as Histopathology and Cytology.

Our two satellite laboratories, located in Cape Town and Durban, are equipped to function as a class II facility. As such they have the capacity to isolate peripheral blood mononuclear cells (PBMC).

Collaboration: Several close collaborations have been established with a number of research and clinical trial networks including:

- Clinical Trial Networks
  - Adult AIDS Clinical Trials Group (ACTG) (NIH funded)
  - Pediatric AIDS Clinical Trial Group (IMPAACT) (NIH funded)
  - HIV Prevention Trial Network (HPTN).

Support functions: Clinical laboratory activities performed by CLS include:

- Laboratory support for Clinical Trials (Phase I-III: including Grant Funded Projects and Pharmaceutical Trials)
- Training and Capacity Building in Clinical Laboratories in Africa
- Accreditation and audit support for laboratories
- Clinical Research (Non-Trial Academic)
- Prevalence Testing for Infectious Diseases
- Specialist Diagnostic and Monitoring Testing for Patients
- The CLS group has more than 10 years' experience in laboratory- based infectious disease diagnostics and research, laboratory support services, GCLP training and implementation
- We offer a full profile of clinical pathology assays and other specialized tests
- Additional expertise includes TB diagnostics, biomaterials storage, PBMC processing, logistics, sample management, quality assurance and training.
- CLS has excellent management and quality assurance plans.
- The group is familiar with and utilizes a variety of International external quality assessment schemes.
- CLS has provided laboratory support for over 900 clinical trials of varying size.
- CLS understands the needs of clinical investigators as well as the laboratory contribution required to support good clinical practice.

- Staffing: Our teams of professionals include pathologists, technical experts, project managers of clinical trials and project support staff.
- A team of specialized pathologists from the Wits University School of Pathology is available for consultation and troubleshooting when required.
- CLS has a comprehensive team of senior technical staff, both on site and also in the in laboratories, at the Johannesburg hospital complex and at the School of Pathology. They can provide advice and support when required. Staff is well versed with requirements for laboratory accreditation and the principles of Good Laboratory Practice.
- CLS also has a dedicated Clinical Trials team with project managers and co-ordinators that assist with study set-up, maintenance, trouble shooting and communication with clinical sites and the laboratory.
- Currently at CLS we have a team of support projects managers involved in the CLS lab support program. They are essentially involved from the initiation of studies through to study completion. They ensure that testing is conducted in accordance with GCLP standards.

The Transplant Team: The Donald Gordon Medical Centre offers super specialty medicine such as Oncology, Hepatology, Orthopaedics, Transplantation, Surgery and Nephrology.

Wits Pathology is an integral part of the Transplant Team.

Rotation of senior registrars exposes the registrars to new elements in medicine, preparing our Wits Graduates to the needs of the private pathology market.

Wits Pathology was involved in the first

Pancreas after Kidney (PAK) transplant in Johannesburg.

Recently, the first pediatric Related Liver Transplants (mother to child) were performed.

The academic Transplant division, headed by Professor Britz and Professor Botha, is in line with international standards and adheres to the International criteria.

Wits Pathology, together with the Immuno Haematology Department of the University of Witwatersrand, are amongst the leaders in Virtual Cross Matching for renal transplants.





#### Professor Wendy Stevens Unit Head

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# Department of Molecular Medicine and Haematology

Department of Molecular Medicine and Haematology at the University of the Witwatersrand and the National Health Laboratory Service (NHLS), the largest haematology department in South Africa.

#### Who we are:

Professor Stevens is currently Professor and Head of the Department of Molecular Medicine and Haematology at the University of the Witwatersrand and the National Health Laboratory Service (NHLS), the largest haematology department in South Africa. Her personal research efforts have been largely focussed in HIV for the past 15 years and this can be supported by over 250 peer reviewed publications and as many conference presentations. She has contributed significantly to the development of capacity for affordable, accessible HIV diagnosis and monitoring in South Africa and over 100 centres in sub-Saharan Africa. Research activities have included the expansion of early infant diagnosis of HIV, affordable viral load, CD4 and investigation of HIV drug resistance. In 2006, she received an award from the National department of Science and Technology for her contribution to the development of laboratory capacity in Southern Africa. This work has only been possible due to the collective efforts of a group of very senior talented researchers.

In 2013/4, this team won the NHLS awards for innovation, service excellence and the Best NHLS laboratory. Since November 2010, Professor Stevens has been appointed head of National Priority Programs at the National Health Laboratory Service focusing on laboratory efforts related to HIV, TB and other opportunistic

infections. More recently her time has been spent planning and ensuring the implementation of the National GeneXpert Program (207 laboratories), including all quality assurance and connectivity solutions. The verification and EQA panels using dried culture spots has resulted in several national innovation awards and in May 2015, the African Prize for innovation for the greatest social impact. This led to the only faculty of health Sciences spin-off company, Smartspot. Her team has recently worked on expanding these programs to incorporate vulnerable populations such as the Correctional Services, peri-mining communities and children. She is also involved in developing the National HIV drug resistance strategy, the National POCT policy, the Cervical Cancer implementation plan, strategies within the National TB and HIV Think-Tanks and the antimicrobial resistance strategy working group. This group receives significant funding from the Global fund, CDC, USAID, Bill and Melinda Gates foundation, MRC, NRF, amongst others. The group are intimately involved with expert opinion supporting policy development through organizations such as the WHO, CDC and ASLM.

#### Staff:

The departmental members have a long history of contributing to the mandate of the Wits Health Consortium through which most of the division's grants funded programs are managed. Professor Stevens was one of the four

founding members of the organization and has worked in different capacities over the last 15 years within the organization. The department has high profile researchers who generate an extraordinary amount of research and contribute not only to major grant income but conduct important public health research and policy. In addition, the group provides significant laboratory support for other major syndicates under the WHC banner including Right to Care, WHRI, PHRU through which joint programs are solicited and implemented. A notable one being the large Equip grant (USAID funded) which is providing support for viral load scale up in over 17 countries.

(Innovation: Laboratory Engineered Accelerated Diagnostics). This will be a flagship program within the region for driving a culture of innovation in the entire laboratory value chain, including the clinic-laboratory interface.

#### Grants:

A total of more than 70 grants are currently managed through WHC, with leading departmental researchers including Drs Carmona and Mayne, Professors' Scott, Glencross, Mahlangu, Arbuthnot, Coetzer and Papathanasopoulos, to name a few key members. There is a strong focus on priority high burden diseases in South Africa and the region. The number of peer-reviewed publications from the department over the past 5 years exceeds 500. A key strategic program that has been initiated and managed recently include the H3A Africa biorepository. The department has also just taken over the Clinical Laboratory service (CLS) which is being transformed into a state-of the art laboratory for research and development of new laboratory assays and laboratory systems.

In addition, this year an award was received from the BMGF to establish an African Innovation network with the Wits faculty of Health Sciences (through WHC), the hub through which activities and new programs are directed. The program is called iLead

## The Wits Clinical Research Unit

The Wits Clinical Research (WCR) Unit is a clinical research site management organization. We operate as a business unit in the Integrated Health Delivery Network Division of the Wits Health Consortium.

#### Who we are:

We are a clinical research site management operation.

#### What we do:

WCR provides and independently manages clinical research sites, primarily in support of Wits-related academic hospitals, including the Charlotte Maxexe Johannesburg Academic Hospital, the Wits Donald Gordon Medical Centre and the Chris Hani Baragwanath Hospital. This large geographical coverage, along with an extensive patient database, and passionate recruiters at academic and government hospitals, day hospitals and local physicians, ensure for successful patient enrolment in the studies at WCR.

#### Our sites:

Each site provides comprehensive site facilities including doctor consultations, consulting rooms, treatment rooms, procedure facilities, laminar flow pharmacies, laboratories, study coordinators and support staff. We rent our facilities, purchase our consumables and employ our own professional staff, including doctors and pharmacists.

#### Our aim:

Our aim is to benefit key stakeholders, including the following:

Private and public patients: We
 offer patients an opportunity
 to participate in clinical trials,
 providing them with quality care
 and free treatment and disease
 management costs, as these are
 covered by our trials

## Healthcare funders & medical insurers:

We generate savings for health care funders of trial patients (such as medical aids and health departments) by covering the cost of the relevant investigations, treatment and management of trial conditions for patients

#### Investigators:

We generate publications and associated financial benefits for individual investigators and, where relevant, their academic departments.

#### Patient referrals:

We receive patient referrals for participation in clinical trials from both the private and public sectors.

#### Areas of expertise:

WCR has worked with many pharmaceutical companies and contract research organisations.

Our units have proven expertise conducting phase II-IV studies in the following fields:

- Cardiology
- Cardiovascular risk factors:
- Hypertension
  - o Smoking cessation
  - o Obesity
  - o Hypercholesterolemia
  - o Diabetes
- Endocrinology
- Rheumatology
- Oncology
- Infectious diseases
- Acute medicine and ICU
- Respiratory
- Nephrology

- Gastroenterology
- General surgery
- Vascular surgery
- Urology
- General medicine
- Vaccines
- Paediatric trials

#### Standards / Procedures:

Adherence to Good Clinical Practice Guidelines (ICH GCP) and South African Guidelines is first and foremost at WCR, and site Standard Operating Procedures reflect this commitment.

#### Charlotte Maxexe Contacts:

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# Wits Development Enterprise Division

The Wits Development Enterprise Division (WDED) is a multidisciplinary division focusing on development projects in the health and related sectors.

#### Who we are:

The Wits Development Enterprise Division (WDED) is a division of the Wits Health Consortium undertaking development projects.

Our key focus area is TIMS (TB in the Mining Sector in Southern Africa) but other priorities also include HIV, malaria, immunisation, nutrition and Occupational Health and Safety.

#### Our key funders:

Our main funders include international financing organizations, governments and grant income.

The TIMS grant is funded by the Global Fund. This grant enables us to run the TIMS programme in order to reduce the TB burden in the mining sector in 10 southern African countries.

#### What we do:

Our work is focused on having a positive impact on policy development. This includes the harmonisation of policy and legislation for TB in the mining sectoracross the 10 participating countries as well as supporting the expansion of health and safety services in southern Africa.

#### TIMS:

TB in the Mining Sector in Southern Africa (TIMS) is our core programme. TIMS operates in 10 southern African countries including, Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe.

The goal of the TIMS programme is to significantly decrease the incidence of TB in the mining sector. TIMS is an innovative multi-stakeholder programme focuses on creating a regionally coordinated response to the issue of tuberculosis and related illnesses in mineworkers, ex-mineworkers, their families and communities.

The stakeholders in all 10 countries include both the public and private sectors as well as labour and trade unions; civil society and development agencies.

#### Our teams:

Our teams consist of a combination of academic and non-academic specialists working across the southern African region. All projects follow a robust project management approach via a structured Project Management Office.

#### Our research:

Important research and participation in key events in the past year included the following:

- Co-hosting the Smart Investments in Health: Mining as a Catalyst for Building Sustainable Communities meeting
- Attending the Lung
   Function Conference in Accra
- Submitting four abstracts to the World Conference on Lung Health.
- Submitting four abstracts to the World Conference on Lung Health.

#### Future plans:

Looking ahead, our core aims and targets include leveraging additional funding to support TIMS (from both donors and the private sector). We also plan to expand business development in our areas of specialisation as well as packaging robust health sector consultancy offerings.

#### Head Office contacts:

www.timssa.co.za

24 St Andrew's Road Parktown Johannesburg Tel: 011 274 9200 Email: tims@witshealth.co.za Web:





#### Batho Pele Breast Unit

The Batho Pele Breast Unit operates from the Chris Hani Baragwanath Hospital in Soweto. This unit is dedicated to the treatment of all breast-related diseases, especially cancer. We have no waiting list and we offer the following services:

- A specialist consultant-driven service
- Prompt assessment and diagnostic procedures
- A multidiscipline approach to ensure the best care for all patients
- Specialised expertise in oncoplastic breast conserving surgery
- Personalised follow up
- Commitment to training of both undergraduate and post-graduate doctors and nursing staff

For more information please visit our website: www.bathopelebreastunit.co.za or call (011) 933 0341/8052/8804

### Wits Enterprise

Wits Enterprise is a wholly-owned subsidiary of the University of the Witwatersrand. We are mandated to facilitate University activity in the areas of contract research and consulting support, short course training, intellectual property management and technology transfer.

The University's Technology Transfer Office is operated by Wits Enterprise and is the place where all inventions arising from research are disclosed to ensure beneficial management of the University's intellectual property. Wits Enterprise offices are situated in the PDH on East Campus.

For more information please visit our website: www.witsenterprise.co.za

## Early Grade Reading Study II

The Early Grade Reading Study II is an expanded, randomized control trial of promising approaches to improving the teaching of reading in English as a First Additional Language.

Our focus is primarily on Grades 1 to 3 in disadvantaged schools. The EGRS II study is a collaboration between the Department of Basic Education and the University of the Witwatersrand.

EGRS II is currently being evaluated in 150 primary schools in two districts of Mpumalanga and will continue until 2019. Funding for this study has been provided by USAID.

Professor Brahm Fleisch, Education Director, is the Principal Investigator of the Early Grade Reading Study II

For more information please telephone 011 717 3094 or email Brahm.Fleisch@wits.ac.za

### **WDGMC** Transplant Unit

The Wits Donald Gordon Medical Centre's (WDGMC's) Transplant Unit is a leading centre in liver, kidney and simultaneous kidney-pancreas transplantation. Professor Jean Botha and Professor Russell Britz lead the unit and have performed many pioneering transplant surgeries. The unit seeks to transform the South African organ transplant landscape.

Currently, this is the only Transplant Unit doing living donor liver transplantation and pancreatic transplantation in Southern Africa. In striving to promote and develop the discipline of organ transplantation in South Africa, the Unit is able to successfully transplant solid organs in both children and adults.

Professor Ernest Song, an Associate Professor of Internal Medicine, supports the unit through continued academic and research interests in liver disease, particularly viral hepatitis and liver transplantation, with a focus on factors which could potentially promote graft tolerance. Professor Song was closely involved in the establishment of the Liver Transplant Program at the Wits Donald Gordon Medical Centre from its inception in 2004.

The unit is affiliated to the School of Clinical Medicine and the Department Internal Medicine-Hepatology

For more information please visit our website: www.dgmc.co.za/highly-specialised-unit/transplant or telephone 011 488 3627/3890.

## The Rural Health Advocacy Project

The Rural Health Advocacy Project (RHAP) is affiliated to the Wits Centre for Rural Health in the Department of Family Medicine. The Project advocates for equitable access to quality healthcare for rural communities across South Africa.

Informed by the voices of rural healthcare workers and communities on the ground, partner organisations, stakeholders and researchers, RHAP uses its urban-based access to decision-makers to conduct advocacy, generate debate, monitor implementation of health policies in rural areas, support pro-equity government interventions, and influence decision-making that is in tune with rural realities.

While small in size, RHAP is large in reach through its innovative programmes and strategic partnerships and networks across the country.

The RHAP focuses primarily on issues affecting access and equity within the primary healthcare context, ranging from access to healthcare workers in rural areas to adequate budgets and rural-friendly policies.

The RHAP was founded in 2009 by the Wits Centre for Rural Health and the Rural Doctors Association of Southern Africa, who remain among RHAP's core partner organisations to date.

For more information please visit our website: www.rhap.org.za or telephone 011 880 0995 Extension 118

#### **CBTBR**

The Centre for Excellence for Biomedical TB Research (CBTBR) falls under the University of the Witwatersrand's Department of Molecular Medicine and Haematology.

Tuberculosis (TB) is not a scourge of the past but a resurgence has been observed world-wide. TB can also occur in the context of poor socio-economic conditions as an HIV co-infection. In addition, with growing drug-resistance in TB, a better understanding of the disease is needed.

The CBTBR is actively involved in many aspects of this endeavour. The WITS node of CBTBR, under Professor Kana, partners with The University of Cape Town and The University of Stellenbosch to investigate the microbiology of the bacteria that cause the disease - Mycobacterium tuberculosis - along with their disease manifestations in humans.

The CBTBR WITS Node has a particular interest in the following areas:

- Electron Flux
- DNA Repair
- Peptidoglycan
- Cryptic Bacteria in Patients

## **WCR-Lipids**

The WCR-Lipids Unit is affiliated to the Department of Medicine in the Faculty of Health Sciences at the University of the Witwatersrand. Our focus of WCR-Lipids includes the epidemiological, clinical and biochemical aspects of common diseases affecting lipid, and glucose metabolism in the different ethnic groups of Southern Africa. These include familial hypercholesterolaemia and other dyslipidaemias, insulin resistance, diabetes mellitus as well as other related metabolic disorders.

The Unit is well recognized both nationally and internationally its work on familial hypercholesterolaemia, and has one of the largest cohorts, if not the largest cohort, of homozygous FH patients in the world. The Unit has contributed, and continues to contribute, to the management of these patients.

Although only a small Unit, the Unit has been involved in over 40 clinical trials with novel lipid-modifying agents over the past 25 years. The Unit continues to research novel therapies such as antisense apo B-100 and PCSK9-inhibitor monoclonal antibody therapy and more recently siRNA PCSK9-inhibitor therapy, Inclisiran, in this patient group.

For more information please call (011) 488 3538/643 2935	



# Message from CEO Mr Alfred Farrell

Wits Health Consortium (WHC) is an entity which is wholly owned by the University of Witswatersrand (Johannesburg) operated for the benefit of its Faculty of Health Sciences. WHC is available for use by the Faculty as an entity through which it is able to undertake third-stream activities related to its academic duties. WHC is proud that our heads of divisions have chosen WHC as the entity in which to house their divisions.



Message from the Dean: Faculty of Health Sciences Prof. Martin Veller

The University of the Witwatersrand aims to be a leading research-intensive university, with a reputation for relevance. While we are rooted within Africa, with a strong sense of the continent's developmental challenges, our research also addresses the "grand challenges" of the world. The Faculty of Health Sciences, in particular, is dedicated to contributing positively to the most basic of human rights: the health and well-being of people in general, but with specific focus on the most vulnerable populations in our society. Effective delivery of appropriate healthcare interventions are the result of excellence in teaching as well as learning and we are particularly proud of our postgraduate training programmes that are helping to develop a robust research pipeline that can contribute tour knowledge economy.

