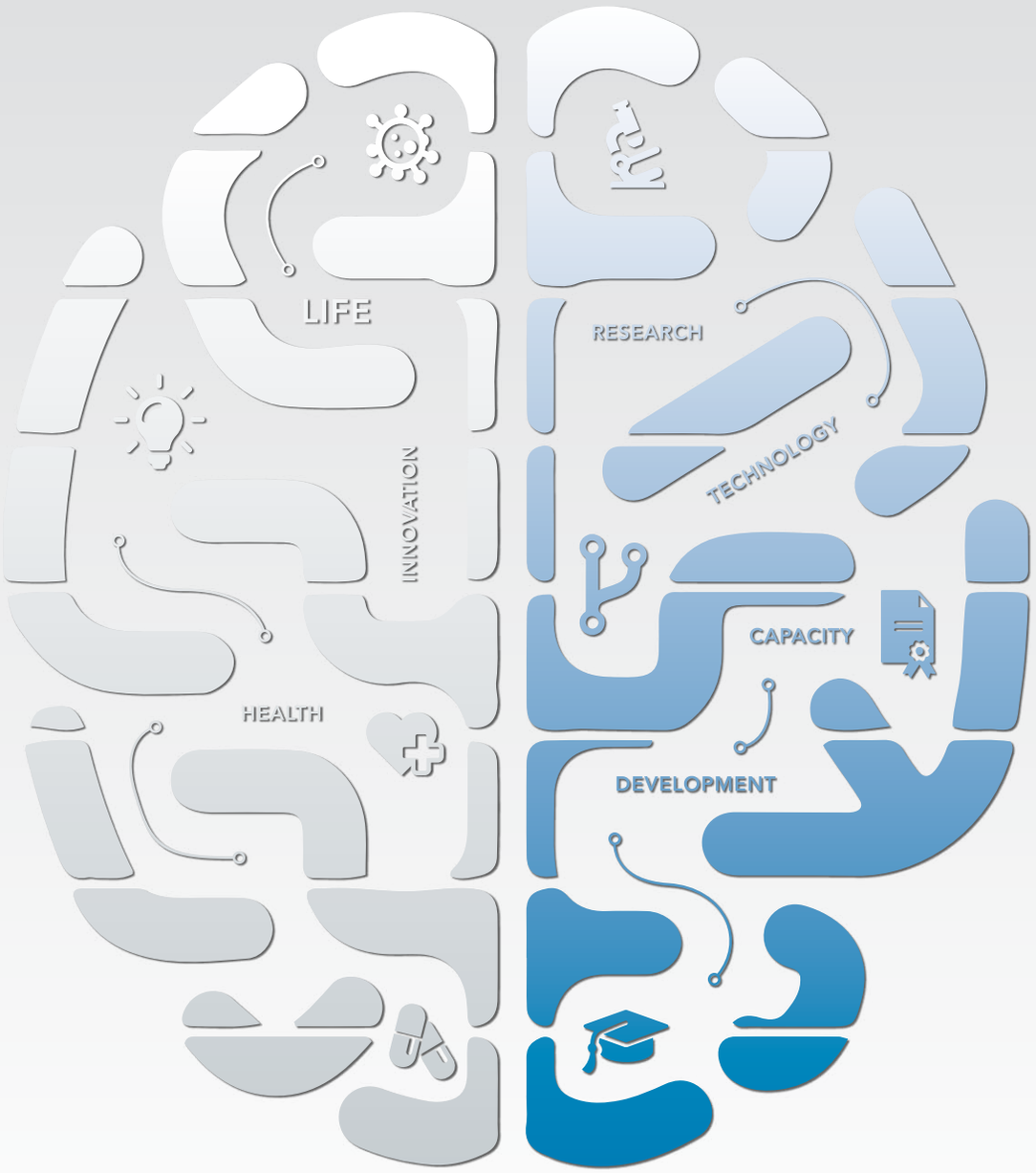
ANNUAL REPORT
2016 2017



saMRC
advancinglife

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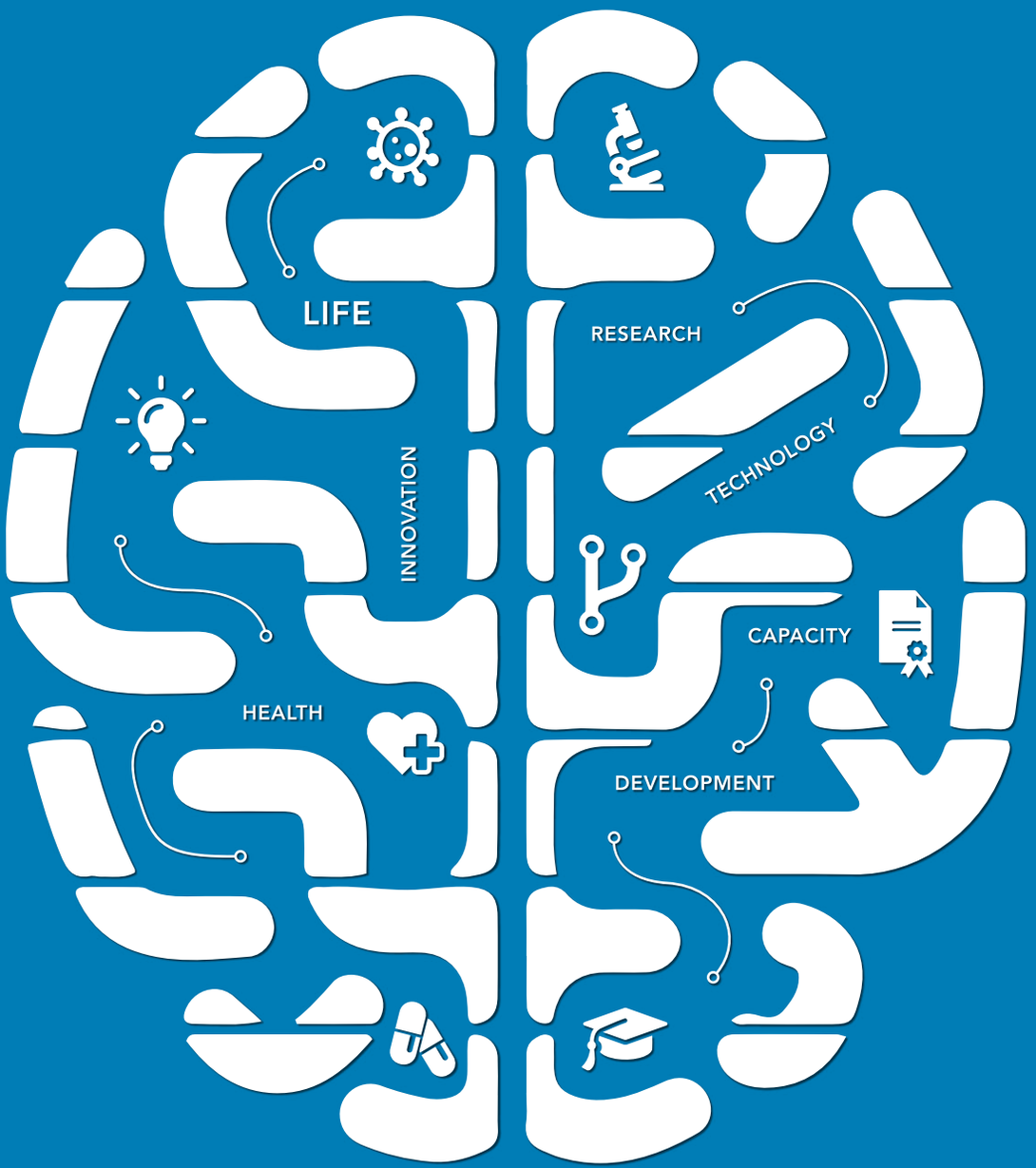

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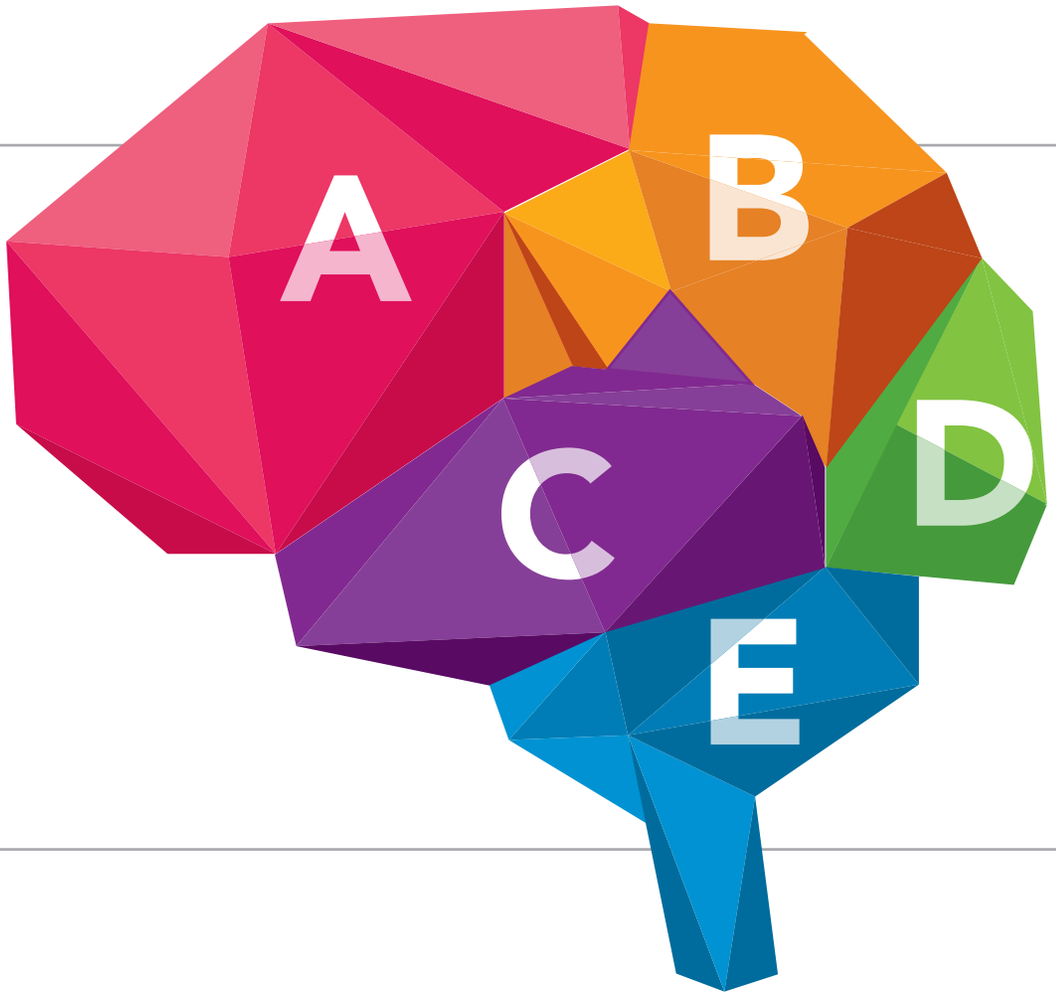

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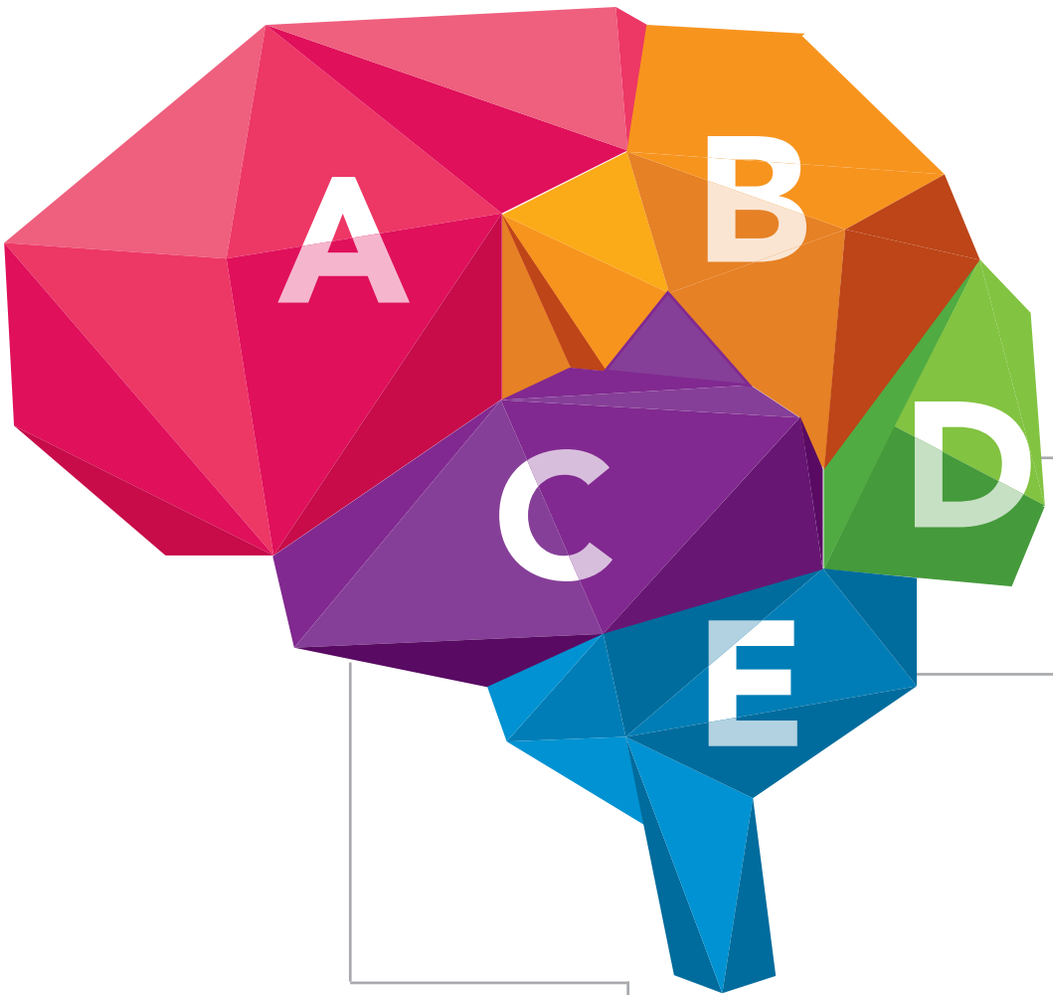

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FOREWORD BY THE BOARD

CHAIRPERSON

The concept of *advancing life* is entrenched in the global health context, gives impetus to the strategic goals of the SAMRC and is informed by a people focused school of thought to change the lives of the people we serve. The SAMRC focuses on delivering responsive medical research to help fulfil the National Department of Health's promise of a *long and healthy life for all South Africans*.

I am grateful for the opportunity to reflect on the year under review about the South African Medical Research Council's strategic achievements, as the country's premier health research organisation.

The concept of *advancing life* is entrenched in the global health context, gives impetus to the strategic goals of the South African Medical Research Council (SAMRC) and is informed by a people focused school of thought to change the lives of the people we serve. The SAMRC focuses on delivering responsive medical research to help fulfil the National Department of Health's promise of a long and healthy life for all South Africans.

Globally, health is seen as a means to an end, enabling people to lead an individually, socially and economically productive life. The Board is confident that the SAMRC has invested where it matters, to deliver on local responsive medical research and innovation that will respond to the disease profile of our country and contribute to the global conversation of health challenges.

The SAMRC proudly boasts five consecutive clean audits that have been as a direct result of the organisation's leadership to define strategies that are responsive to and in keeping with the principles of sound corporate governance. It is very clear that the organisation comprehends the importance of managing public and investor funds within the prescribed legislative frameworks and with due regard to delivering responsive medical research.

The SAMRC is on a trajectory to foster strategic academic partnerships, investing in the next generation of scientists and transforming the medical research landscape of our country. Funding and conducting responsive medical research is an economic and social imperative.

The leadership of the SAMRC must be commended for their results driven interventions to transform the organisation at various levels. A Transformation Plan is being used to address employment equity, capacity building, the profile of the research funding streams and progress succession planning through interventions such as a newly introduced Deputy Director Programme. A diverse workforce is paramount to an organisation reflective of our country. The Board, in the 2016/17 reporting period, approved budgetary adjustments to embolden the on-going efforts to develop scientific capacity and transformation of the pipeline of researchers. Furthermore in view of the constricted fiscal environment for the next three years, the Board supports the management to exert tight control on administrative costs without compromising on the centrality of scientific excellence.

In addition, a strategic decision was concluded to prioritise intramural research to maximise the impact on Sustainable Development Goals, which will entail restructuring of the Executive Management Committee.

I would like to express my gratitude and appreciation to the people of South Africa who have afforded us the opportunity to serve as the nation's institution for improving their quality of life. The trust in us to deliver on this duty is most humbling and inspires us further to deliver pioneering and responsive medical research.

I would like to thank Honourable Minister Motsoaledi and the Department of Health for supporting the SAMRC, in helping us to build a healthier nation. Congratulations to the SAMRC leadership, staff and all key stakeholders who continue to walk this path of discovery to change lives.

The The President of the SAMRC, Professor Glenda Gray's trajectory has included a strategic informed approach to funding the burden of disease, the stabilisation of funding, strong scientific leadership, translation of scientific findings at health care facilities, and greater community buy-in on the value of the SAMRC.

The Board congratulates the President, for being selected as one of 2017's Most Influential people by Time Magazine. Lastly, let me thank my colleagues who serve on the current Board.

Sincerely
PROFESSOR MIKE SATHEKGE
Board Chairperson

BREAKING NEW GROUND IN RESEARCH & DEVELOPMENT

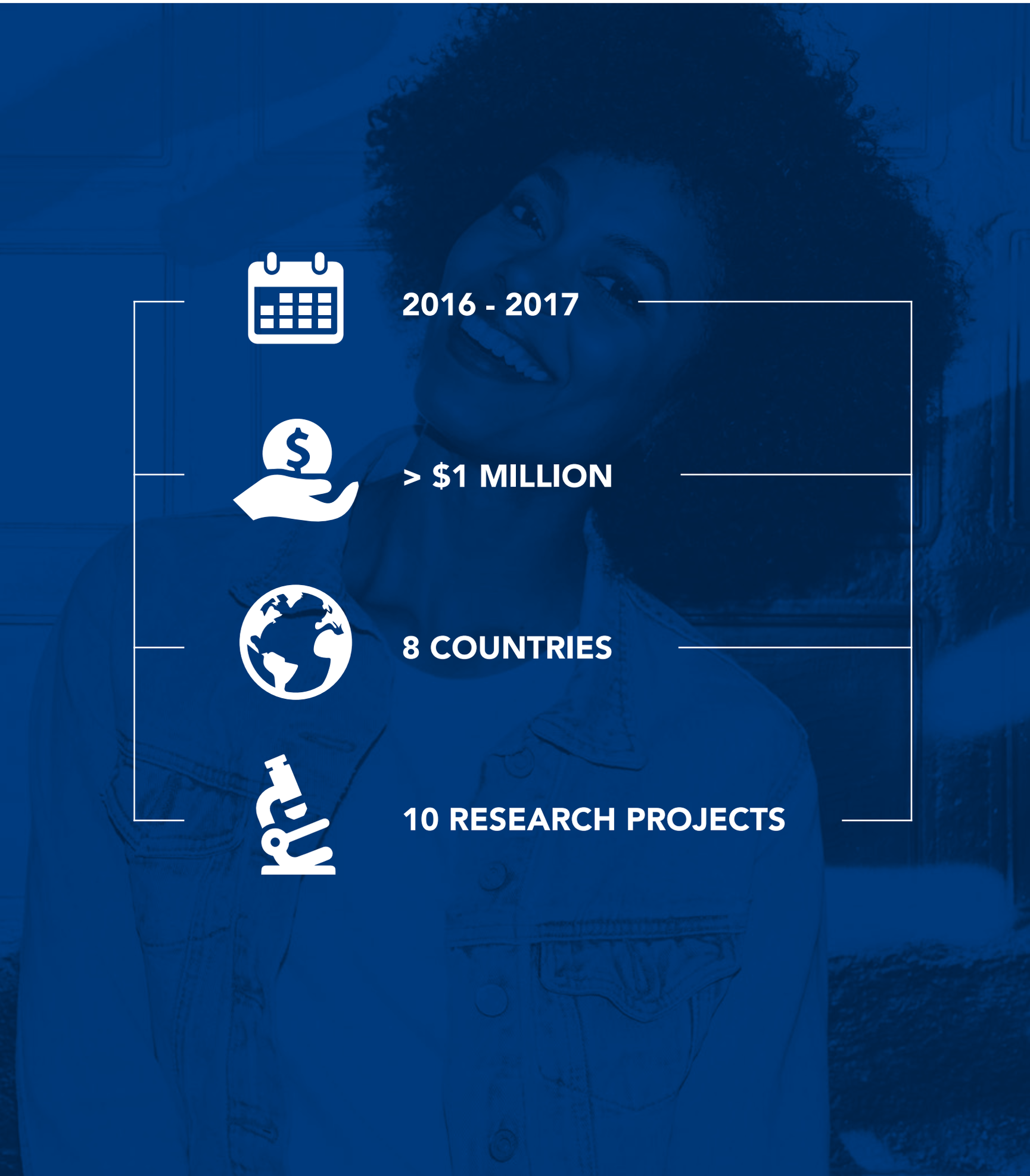
With more than 5000 members, the Sexual Violence Research Initiative (SVRI) is a global network that promotes research on violence against women and girls in low and middle income countries to influence policy and practice. The SVRI supports research by gathering and sharing information, funding research, holding an international Forum every two years, and building capacity through various workshops and events.

To build evidence for the prevention of gender-based violence in low and middle income countries, the SVRI established the SVRI Grant in 2014 to fund innovative research focusing on sexual and intimate partner violence in low and middle income countries. The Grant's success has led the SVRI to partner with the World Bank Group in 2016 on the Development Marketplace for innovation on gender-based violence prevention and response. Grants of around $100,000 up to two years in length are awarded on an annual basis.

There is increased awareness among policymakers, funders and other partners that evidence is needed to inform their work. We must build on this opportunity by providing effective, practical solutions based on rigorous evidence to ensure women and children are able to live their lives free from violence and oppression. The SVRI WBG Development Marketplace Awards is an important strategy to achieve this.

During 2016-2017 the SVRI awarded more than $1 million to 10 research projects in eight countries across the globe, including Nicaragua, DRC, Uganda, South Africa, Bangladesh, Moldova, Kenya and Brazil. All projects use rigorous methods, focusing on issues identified as priority by experts in the field. Issues covered include school based IPV prevention programmes, parenting interventions, the intersections of violence against women and children, cash transfers, sexual harassment and public transport, and violence and mental health. All projects are working to find innovative solutions to prevent gender based violence.

For more information on SVRI Grant and SVRI WBG Development Marketplace Awards visit: http://www.svri.org/what-we-do/research-support/svri-grant



2016 - 2017

> $1 MILLION

8 COUNTRIES

10 RESEARCH PROJECTS

FOREWORD BY OUR CEO & PRESIDENT

We experienced a 2016/17 financial year characterised by greater synergy, increased momentum in our scientific output, delivery on annual targets, and sound financial management. These accomplishments are as a direct result of the effective leadership of our Executive Team coupled with the commitment and passion of our entire organisation to find scientific pathways to improve the quality of life of the people we serve.

We appreciate every strategic relationship we have forged, new research curiously explored and evidence based science solutions discovered that lead us closer to a healthier and more productive country.

When we measure our scientific productivity, we have an idea of our country's economic wealth and human development. The potential of science to progress the socio-economic health of a country is limitless.

The period under review confirmed the South African Medical Research Council (SAMRC) as a going concern. We have and will continue to strategically respond to the constricting economic environment in order to deliver high impact medical research and honour our local and international collaborative commitments to advance the research and development agenda. I am pleased to report that the SAMRC over the last three financial periods incurred, of its annual budget, an average of 20.5% for administration costs. Our new target for the 2017/18 financial period is to incur administrative costs at 20% and below of the total budget spent.

I am pleased to share that the SAMRC delivered the following key strategic highlights during the period under review:

- Established a Scientific Advisory Board to advise the President and the Board on our research strategy in the intramural programmes.
- In excess of R270 million was invested in medical research, innovation and research programmes to respond to the disease burden of our country.
- Our Mid-career Scientist Programme was launched and focuses on developing the next generation of science leaders.
- Advanced the transformation agenda of the SAMRC by introducing a Deputy Director Programme that aims, amongst others, to progress female scientists into management positions and give effect to a strategic succession plan.
- Continued to address the issues of transformation in our extramural science programme.
- Invested further resources into capacity development.

We are proud to report that our new strategies aimed at changing the funding profile of research has been successful. The figures below reflect how the funding profile of the Self-Initiated Research (SIR) Grant scheme changed for the indicated periods. The SIR grant is the largest set of grant awards of the SAMRC where approximately 45 new 3-year awards are made annually.

IN 2012 OUR FIGURES REVEALED THE FOLLOWING:

White 72% Indian 11% African 11% Coloured 5%

IN 2013 OUR FIGURES REVEALED THE FOLLOWING:

White 83% Indian 0% African 10% Coloured 7%

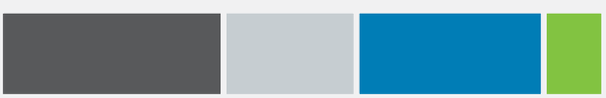
IN 2014 OUR FIGURES REVEALED THE FOLLOWING:

White 48% Indian 15% African 33% Coloured 4%

IN 2015 OUR FIGURES REVEALED THE FOLLOWING:

White 34%. Indian 12% African 27% Coloured 27%

IN 2016 OUR FIGURES REVEALED THE FOLLOWING:



White 37% Indian 22% African 31% Coloured 10%

As our country's leading medical research council, we are aligned with the national agenda to build a more inclusive, economically progressive and representative society. Our transformation agenda is integral to our strategic objective of promoting scientific excellence and the growth of science.

We continue to fund research based on local development priorities, while focusing efforts on the development of scientific capacity and the diversity in the pipeline of researchers.

Health solutions can only be possible if there is funding to carry out scalable research projects with verifiable results. We have stabilised funding, which has grown year-on-year and have ensured that we deliver through a strategically informed approach to funding the burden of disease. Our strong scientific leadership is complemented by a strong focus on translation of scientific findings into the clinic for better health outcomes.

I have been inspired by increased citizen agency and positive discourse around the importance of science. Worldwide, scientists, government representatives and civil society organisations took to the streets to March for Science. I was proud to see how young scientists made their voices heard, advocating for a shift in perception, that science is not a luxury but rather that science is critical to social development.

I am inspired by the commitment of our teams both those involved in delivering evidence based medical research and our business support staff who make our work possible. The SAMRC has continued the process of getting scientists in the intramural programme NRF rated, and are proud to host three A rated scientists in the intramural domain and fund five A rated scientists extramurally. At the heart of our duty to our country are the people we serve who allow us to conduct responsive medical research in their communities. We are sincerely grateful that you give of your time and share information that allows our teams to better understand the burden of disease profiles we are faced with.

Sincerely yours

PROFESSOR GLENDA E. GRAY

President & CEO: South African Medical Research Council

BREAKING NEW GROUND IN RESEARCH & DEVELOPMENT

NEW GENE DISCOVERED: SUDDEN CARDIAC DEATH

Medical researchers, through a global collaboration, have identified a new gene that is a major cause of sudden death among young people and athletes. The gene, called CDH2, causes Arrhythmogenic Right Ventricle Cardiomyopathy (ARVC), a genetic disorder that predisposes young people to cardiac arrest. According to country estimates, sudden cardiac death claims the lives of more than five young South Africans per day. In ARVC, the heart muscle tissue is replaced by fatty and fibrous tissue.

This process encourages the development of an abnormal heart rhythm (cardiac arrhythmias) such as rapid heart rhythm or rapid and erratic heart rhythm (ventricular fibrillation), that causes loss of consciousness and cardiac arrest. In the case of ventricular fibrillation, without a ready device to shock the heart, it causes sudden death in a few minutes. The importance of the discovery is twofold, on the one hand it helps to clarify the genetic mechanisms underlying ARVC, contributing to a more complete identification of the disease genes involved in cardiomyopathy. On the other hand, it makes possible the early detection of many unsuspecting people who are affected by ARVC.

"This is probably the biggest breakthrough in South African cardiology since Dr Chris Barnard's first heart transplant," says Professor Bongani Mayosi, Dean of the Faculty of Health Sciences at the University of Cape Town. "This discovery is a first in the world - on our soil - and will permit the diagnosis and possible targeted treatment of heart muscle disease in the future."

**This research was funded through the Self-Initiated Research Grant managed by the Grants, Innovation & Product Development (GIPD) Division.

GENERAL INFORMATION

OUR STRATEGIC ENVIRONMENT

South Africa faces a quadruple burden of disease of four colliding epidemics. In general, the trends in the number of deaths and the trends in age-standardised death rates (ASDR) are similar for each of the four broad causes of death. For the non-communicable diseases, there is an increasing trend in numbers over the whole period and a decreasing trend in age-standardised death rates from 2003.

The trends for communicable diseases combined with maternal causes, perinatal conditions and nutritional deficiencies, remained stable between 1997 and 2009, decreasing slightly thereafter. The trend in HIV/AIDS and TB increased between 1997 and 2006, where it peaked at 687 deaths per 100,000 population and then decreased steadily each subsequent year.

Age-standardised injury death rates decreased over the period. In 2012, non-communicable diseases accounted for the highest proportion, 43.4% of deaths, followed by HIV/AIDS and TB with 33.6%, communicable disease combined with maternal causes, perinatal conditions and nutritional deficiencies with 13.5% and injuries causing 9.6% of all deaths.

QUADRUPLE BURDEN OF DISEASE IN SOUTH AFRICA

Maternal, newborn & child health

~1%
of global burden

2-3x
> average for comparable countries

HIV/AIDS & TB

17%
of HIV burden

23x
> global average

5%
of TB burden

7x
> global average

Non-communicable diseases

<1%
of global burden

2-3x
> average for developing countries

Violence & injury

1.3%
of global burden of injuries

2x
> global average for injuries

5x
> global average for homicide

Source: Lancet Series

SAMRC responds to the burden of disease by conducting studies that provide the country with accurate information related to dominant diseases that cause death in South Africa. The Burden of Disease Research Unit launched its second National Burden of Disease study, which indicates the updated morality trends in South Africa.

"...the average life expectancy in South Africa now exceeds 63 years..."

During the 2016/17 reporting period, the SAMRC's Burden of Disease Research Unit (BoD) Research Unit produced the fifth report based on the Rapid Mortality Surveillance (RMS) system. The report provides timely empirical estimates of the mortality-based high-level indicators for Outputs 1 and 2 of the health-related targets of the Negotiated Service Delivery Agreement (NSDA) and progress towards the targets of the Medium Term Strategic Framework (MTSF) up to 2015.

Estimates of the neonatal mortality rate (NMR) and the maternal mortality ratio (MMR) cannot, however, be obtained from this source. The NMR up to 2015 is based on adjusted data from the District Health Information System (DHIS) and the MMR on adjusted data from cause-of-death data from Stats SA up to 2014.

The report shows that **the average life expectancy in South Africa now exceeds 63 years**, having increased by more than nine years since the low in 2005. The increase in life expectancy is due to a drop in the levels of child mortality as well as young adult mortality. While the increase appears to be on track to meet the MTSF target for 2019, compared to earlier years, the increase in life expectancy has slowed down. The level of infant and under-five mortality rate has declined slightly over the year to 27 and 37 per 1 000 live births in 2015, respectively, while the neonatal mortality rate remained at 12 per 1 000 live births. The maternal mortality ratio peaked in 2009 and has declined to 154 per 100 000 live births in 2014, little changed since 2013.

Effort to reduce maternal and child mortality further will be needed if the MTSF targets are to be met by 2019. The increase in the ratio of the number of deaths from the National Population Register (NPR) to the cause-of-death numbers suggest that deaths are being missed in the cause-of-death data, particularly in the most recent years, and it is important that this issue should not be ignored any longer. There is still a need to develop a methodology to provide estimates of sub-national trends for the provinces and health districts.

The South African Medical Research Council (SAMRC) was established in 1969, and has an obligation to fund and conduct medical research. The SAMRC's mandate is guided by the SAMRC Act, and it also invests financial and human resources into medical research that could lead to drug or vaccine discovery, affordable diagnostics and devices that beneficially impact the well-being of South Africans.

OUR VISION

Building a healthy nation through research and innovation.

OUR MISSION

To improve the nation's health and quality of life by conducting and funding relevant and responsive health research, development, innovation and research translation.

OUR MANDATE

The mandate of the South African Medical Research Council, in terms of the MRC Act 58, 1991 (as amended), is to improve the health and quality of life of South Africans. This needs to be realised through research, development and technology transfer.

OUR ORGANISATIONAL VALUES

The key values of the SAMRC and the keywords relating to each value are the following:

PIONEERING

We push the boundaries between the known and the unknown to further our knowledge of human existence.

COLLABORATIVE

We celebrate the capacity of collective minds toward a common goal.

EXCELLENCE

We strive for distinction in everything we do.

The scope of the SAMRC's research includes basic laboratory investigations, clinical research and public health studies. Research at the SAMRC focuses on the following top 10 causes of death in South Africa:

SECOND NATIONAL BURDEN OF DISEASE STUDY

CAUSE OF DEATH	1997 DEATHS	1997 %	2012 DEATHS	2012 %
HIV/AIDS	60,336	14.5	153,661	29.1
CEREBROVASCULAR DISEASE	31,472	7.6	39,830	7.5
LOWER RESPIRATORY INFECTION	21,908	5.3	25,977	4.9
ISCHEMIC HEART DISEASE	23,813	5.7	24,969	4.7
HYPERTENSIVE HEART DISEASE	15,771	3.8	18,755	3.6
TUBERCULOSIS	26,344	6.3	23,817	4.5
DIARRHOEAL DISEASES	18,737	4.5	16,349	3.1
INTERPERSONAL VIOLENCE	30,569	7.3	18,741	3.5
DIABETES MELLITUS	11,321	2.7	18,894	3.6
ROAD INJURIES	15,159	3.6	17,597	3.3
TOP 10 CAUSES TOTAL DEATHS	255,429 416,209	61.9 100	358,589 528,946	67.8 100

To assist with delivering on this vital mandate, the organisation is led by the National Department of Health, and works with other key stakeholders such as the Department of Science and Technology, South African and international science councils, medical schools, universities, research institutions and international collaborators.

***The statistics on the leading causes of death in South Africa as reported by the SAMRC vary to those presented by Stats South Africa. The reason for the variance is explained in the next paragraph.*

Stats SA causes of death statistics are based on information provided on the death notifications registered with the Department of Home Affairs. This is information is often deficient because doctors do not always provide full details about the cause. The cause information is sometimes provided by a headman and some deaths are not registered. SAMRC Burden of Disease Research Unit conducts intensive analyses of data to estimate the true pattern of the underlying causes of death and finds that AIDS is the leading cause of death in South Africa.

BREAKING NEW GROUND IN RESEARCH & DEVELOPMENT

SOUTH AFRICAN TUBERCULOSIS BIOINFORMATICS INITIATIVE

A South African Bioinformatics platform that supports ongoing host and bacterial systems biology approaches that are conducted not only by the lead PI's of Stellenbosch University (SUN) and the Institute of Infectious Diseases and Molecular Medicine (IIDMM) of UCT, but also by researchers throughout South Africa in the field of tuberculosis.

Scientists and clinical researchers at SUN and at the IIDMM of UCT are world leaders in the discovery and evaluation of new vaccination, new diagnostics and new chemotherapeutic strategies for TB. A major focus of groups led by Profs. Walzl and Scriba (previously led by Prof Hanekom) is biomarkers for tuberculosis. These include studies aimed at defining correlates (biomarkers) of risk of TB disease, correlates of vaccine-induced protection against TB disease, and correlates of different responses to therapy, including failed therapy and relapse.

This project is aimed at the establishment of a South African Bioinformatics platform that supports ongoing host and bacterial systems biology approaches that are conducted not only by the Walzl group, but also by researchers throughout South Africa in the field of tuberculosis. World-class systems biology capacity, and in particular the bioinformatic component of this field, is currently lacking in South Africa, and is compromising local progress in science.

**This research was funded through the Strategic Health Innovation Partnerships (SHIP) managed by the Grants, Innovation & Product Development (GIPD) Division.

TRANSFORMING OUR
ORGANISATION

SAMRC'S TRANSFORMATION PLAN

As a leading health research institution in South Africa, SAMRC recognises that the local and global environment in which we operate, and the factors that influence the demand for our services, are in a state of continual change. The organisation must be responsive to change and proactively seek to embrace challenges and improve the organisation, communities and ourselves continually.

The Transformation Plan is committed to advancing transformation within the SAMRC but also to extend its focus externally into extramural units where possible. A limited critical mass in medical and health research has been identified. Therefore, the transformation of scientists, particularly at the Specialist Scientist level and above, are the key targets of this Transformation Plan. Internal capacity development will be managed to increase intramural scientific critical mass.

The SAMRC specifically proposes the following actions:

Augmentation of doctoral and postdoctoral researchers

Within the SAMRC units, there are 26 masters and doctoral students enrolled in internship programmes. This represents the start of the research pipeline into the SAMRC. A new programme, the SAMRC's intramural National Health Research programme, will be implemented from 2018-2021 to attract top talent for either (i) enrolment for doctoral degrees or (ii) employment as postdoctoral researchers. The target is an additional 20-25 researchers funded for four years and assigned to an intra- or extra-mural unit. About R4 million per annum will be ring-fenced, from the Research Capacity Development Division's budget, for the intramural National Health Research programme from 2018-2021. Each scholarship will be valued at R350 000 (n= 20).

Optimisation of posts

1. All vacant posts and the posts of employees older than 62 years of age will be reallocated to a central pot and, through open competition and peer review, will be allocated to units to meet transformation objectives.
2. There will be no conversion of posts from Specialist Scientist and up to more junior levels given the low critical mass at Senior Researcher levels and overall.
3. All baseline posts in units that are or become vacant will require EMC approval for units to retain those posts.
4. NRF ratings for all intramural scientists will continue.
5. Continue the process of employing Deputy Directors.

Competitive intramural funding programme

1. Competitive funding will be made available for intramural units. Research grants will be made available as seed funding to intramural researchers in 2018.
2. Baseline funding will be preserved given the tight fiscal constraints. Contract funding and underspent funds may be utilised where necessary.
3. To build intramural science, a transdisciplinary approach will be utilised with peer feedback and support.
4. The indirect costs from external grants will be utilised to fund transdisciplinary research up to the value of 1% of the indirect costs of the grant.

Implementation plan and timelines for 2017-2021

1. Implement Deputy Director's programme across all units in order of priority; increase from 4 to 10.
2. Increase the 10 Chief Specialist Scientists to 15 Chief Specialist Scientists (average of 1 per year).
3. Increase the 10 Senior Specialist Scientists to 15 Senior Specialist Scientists.
4. Increase the 26 Specialist Scientists to 31 Specialist Scientists.
5. Employ 20 doctoral and postdoctoral researchers.
6. A research translation strategy needs to be developed and implemented.
7. A disability and access in the workplace audit to be conducted.

PROFESSIONAL TRANSFORMATION & SUCCESSION

NATIONAL RESEARCH FOUNDATION RATING

The National Research Foundation (NRF) rating system is a key driver in the NRF's aim to build a globally competitive science system in South Africa. It is a valuable tool for benchmarking the quality of our researchers against the best in the world. NRF ratings are allocated based on a researcher's recent research outputs and impact as perceived by international peer reviewers. The rating system encourages researchers to publish high quality outputs in high impact journals/outlets. Rated researchers as supervisors will impart cutting-edge skills to the next generation of researchers.

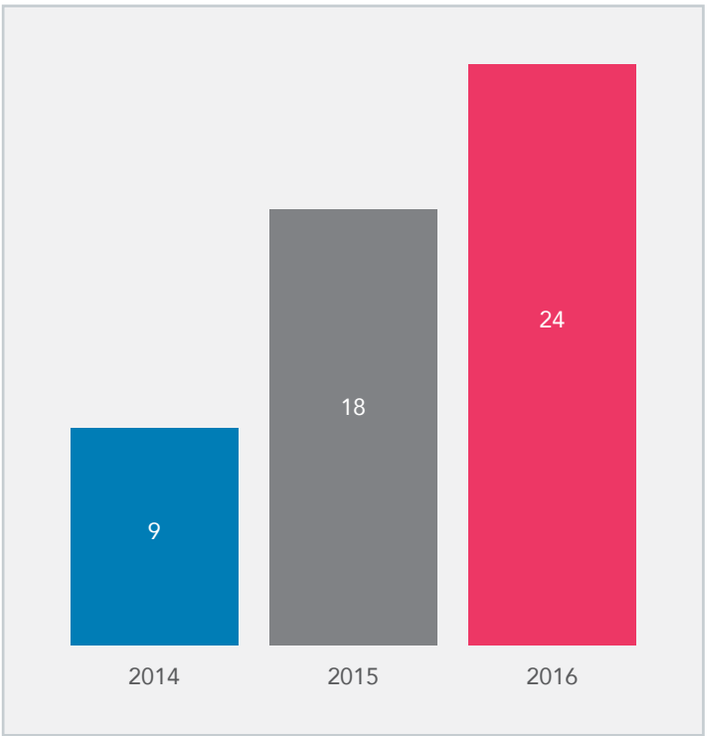
The rating of individuals is based primarily on the quality and impact of their research outputs over the past eight years, taking into consideration the evaluation made by local and international peers. It identifies researchers who count among the leaders in their fields of expertise and gives recognition to those who constantly produce high quality research outputs. Several South African universities use the outcomes of the NRF evaluation and rating process to position themselves as research-intensive institutions, while others provide incentives for their staff members to acquire and maintain a rating and give special recognition to top-rated researchers.
(Reference: NRF website)

The ratings that are awarded fall within the following categories:

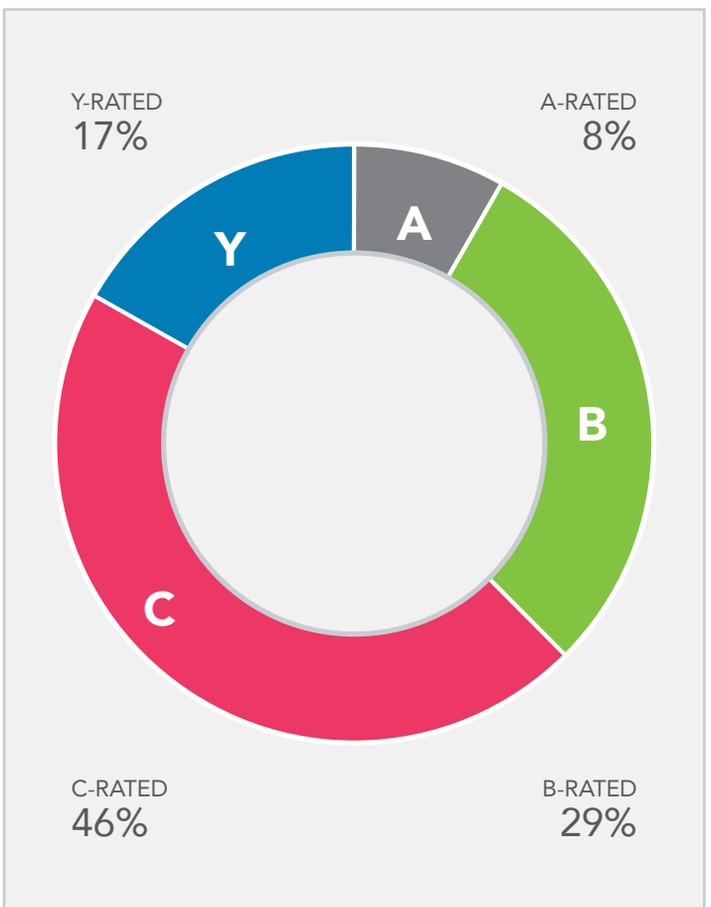
A	LEADING INTERNATIONAL RESEARCHERS
B	INTERNATIONALLY ACCLAIMED RESEARCHERS
C	ESTABLISHED RESEARCHERS
P	PRESTIGIOUS AWARDS
Y	PROMISING YOUNG RESEARCHERS

The SAMRC in 2014 focused on an organisational-wide programme to encourage scientists to be rated by the NRF. The SAMRC proudly boasts 24 NRF rated scientists.

GRAPH 1: Growth of NRF Rated SAMRC Scientists



GRAPH 2: NRF Rated SAMRC Scientists



SUCCESSION

The SAMRC has escalated transformation and succession to one of the highest priorities in its strategic plan. The organisation needs to prepare for the replacement of Unit Directors due to either retirement, natural attrition or active strategies, which support transformation. Furthermore, the current career progression strategy of the SAMRC has not enabled a seamless progression to leadership levels within the organisation including to Unit Director positions when those become vacant. As a result, Deputy Director positions have been introduced as a way to support the transformation strategy into leadership positions within the SAMRC.

Deputy Director appointments were made in 2016 in the following research units:

- Gender and Health Research Unit
- Health Systems Research Unit
- Alcohol Tobacco and Other Drug Research Unit; and
- Violence Injury and Peace Research Unit.

The following research units will be engaged in the 2017/18 financial period with the aim to finalise appointments after due recruitment and selection processes have been followed:

- HIV Prevention Research Unit
- Biomedical Research and Innovation Platform
- Burden of Disease Research Unit

FINANCIAL TRANSFORMATION

STRATEGIC FISCAL TRANSFORMATION

The SAMRC in consideration of a constricted financial environment employed strategies that have resulted in the following achievements:

4 CLEAN AUDITS

ACHIEVEMENT
SAMRC boasts four consecutive clean audits.

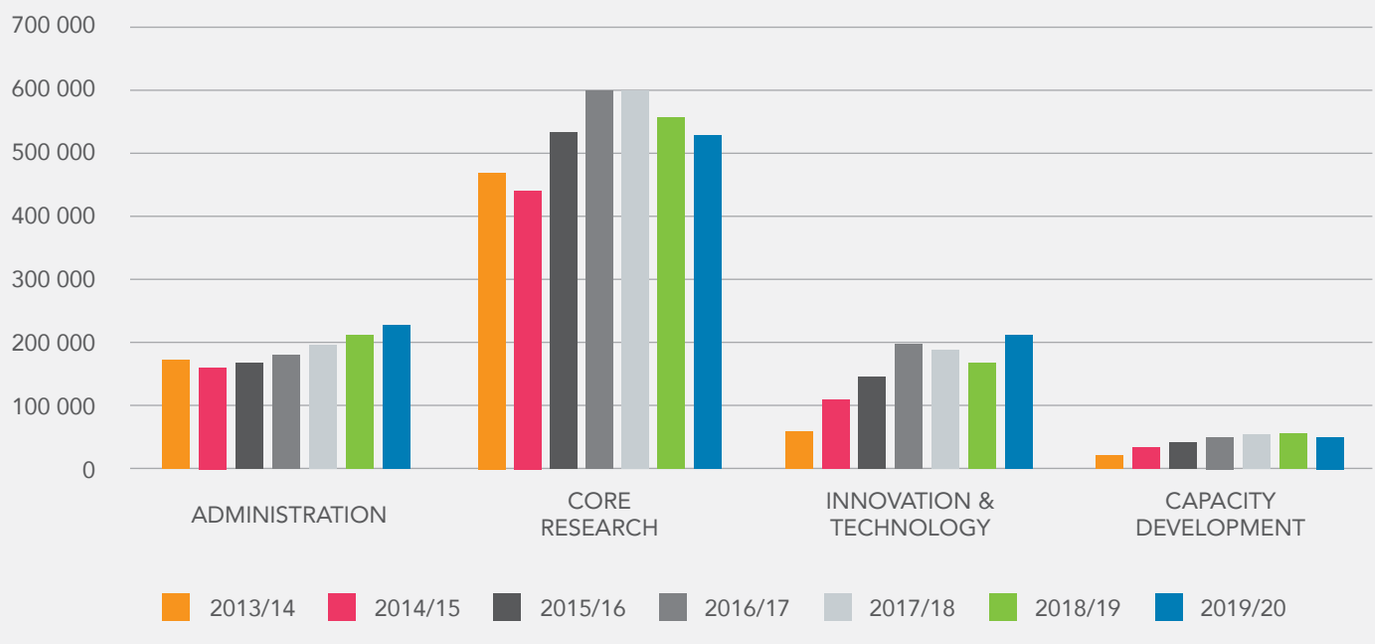
20.5% ADMINISTRATION BUDGET

ACHIEVEMENT
Over the past three years the administration budget was 20.5% of the total budget.

TARGET **20%**

TARGET
The aim, over the MTEF period, is to bring the administration budget to 20% and below of the total SAMRC budget.

BUDGET TRENDS



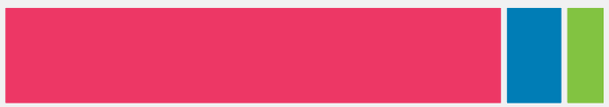
TRANSFORMING OUR RESEARCH FUNDING STREAMS

In 2012, the SIR grants were skewed with most grants awarded to White candidates (73%), with African candidates only securing 11% of the grants. Another systemic issue was that established researchers were competing with emerging researchers. By separating the researchers according to their level of experience, and by taking cognizance of the historical under-resourcing of selected universities, new SIR guidelines were applied when awarding the grants. In 2015, we now show that SIR grants were awarded to 34% White and 27% African candidates.

IN 2012 OUR FIGURES REVEALED THE FOLLOWING:

White 72% Indian 11% African 11% Coloured 5%

IN 2013 OUR FIGURES REVEALED THE FOLLOWING:



White 83% Indian 0% African 10% Coloured 7%

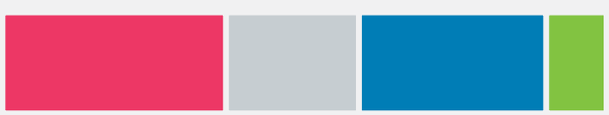
IN 2014 OUR FIGURES REVEALED THE FOLLOWING:

White 48% Indian 15% African 33% Coloured 4%

IN 2015 OUR FIGURES REVEALED THE FOLLOWING:

White 34%. Indian 12% African 27% Coloured 27%

IN 2016 OUR FIGURES REVEALED THE FOLLOWING:



White 37% Indian 22% African 31% Coloured 10%

TRANSFORMING CAPACITY DEVELOPMENT

MID-CAREER SCIENTIST PROGRAMME

The South African Medical Research Council (SAMRC) has established a funding opportunity known as the Mid-Career Scientist Programme that is a strategic research initiative aimed at supporting scientists within research nodes. The project is aimed at developing promising mid-career scientists to facilitate their retention in the public sector in areas of strategic interest to both the National Department of Health and the SAMRC. To fast track mid-career scientists and transition them into independent researchers who will become equipped to write their own grants and thereby secure their own salary and research support. As a result, this will showcase the SAMRC-selected universities partnership.

Mid-Career Scientist by Gender, Race and Institution 2016/17 Financial Year

	GENDER	RACE	INSTITUTION
Prof Khumalo	Female	Black	UCT
Prof Mokwena	Female	Black	SMU
Prof Gamieldien	Male	Black	UWC

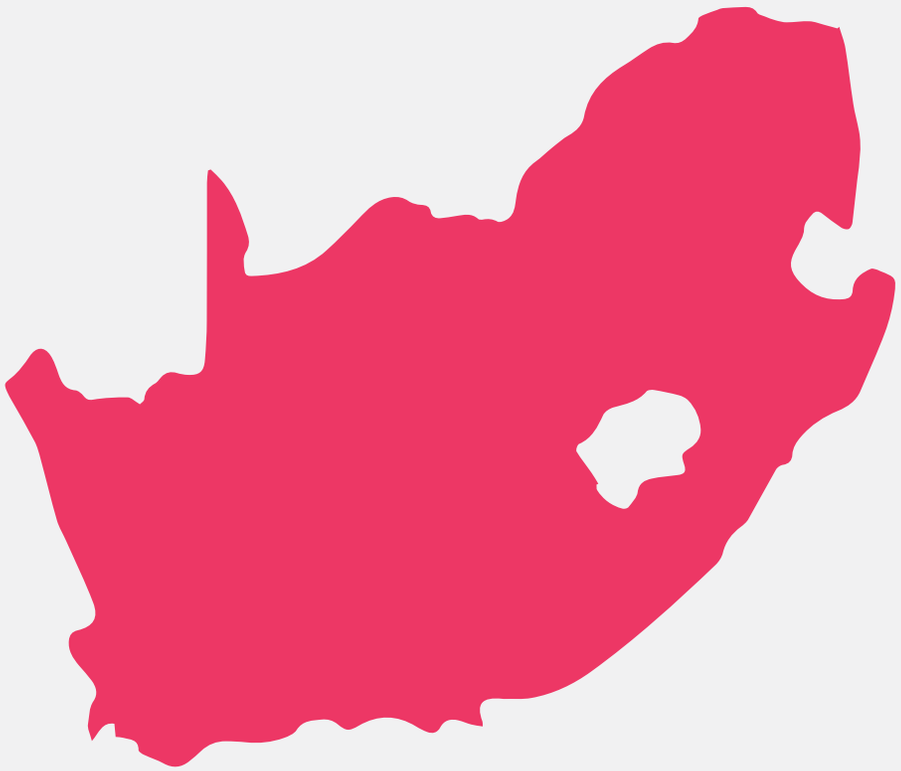
SAMRC RESEARCH STRENGTHENING AND CAPACITY DEVELOPMENT

The SAMRC recognises the importance of national collaborative biomedical research to advance science and expand biomedical knowledge. The aim of working with identified institutions is to strengthen research initiatives and develop enhanced research capacity at previously resource constrained institutions.

The research strengthening and capacity-building funding opportunity will equip and capacitate identified institutions to conduct excellent multidisciplinary research to address some of the key questions that could impact on lowering the burden of disease in South Africa.

Identified universities benefiting from the Programme:

1. University of Fort Hare
2. University of Limpopo
3. University of Venda
4. University of Walter Sisulu
5. University of Zululand
6. University of the Western Cape
7. Mangosuthu University of Technology
8. Sefako Makgatho Health Sciences University



8 MILLION INVESTED

IN 8 PREVIOUSLY RESOURCE CONSTRAINED UNIVERSITIES

"The research strengthening and capacity-building funding opportunity will equip and capacitate identified institutions to conduct excellent multidisciplinary research to address some of the key questions that could impact on lowering the burden of disease in South Africa."

TRANSFORMING STRATEGIC COLLABORATIONS, PUBLIC-PRIVATE PARTNERSHIPS & AGREEMENTS

COLLABORATING WITH AFRICAN COUNTRIES

SENEGAL

In March 2016, the South African Minister of Science and Technology (DST), Naledi Pandor, and the Senegalese Minister of Higher Education, Science and Technology, Mary Teun Niane, met and endorsed a three-year joint Plan of Action to implement the Science, Technology and Innovation Bilateral Agreement between the two countries.

A a follow up to the above meeting and at the request of DST, the SAMRC convened a workshop on 29 June 2016 in Pretoria with participants from Senegal led by Prof Cheikh Bécaye Gaye, Director-General: Ministry of Higher Education and Research, Senegal and eminent South African experts with the goal to undertake joint research and innovation projects in areas that are health research priorities in both countries.

The goal and objectives of the cooperation will be supported financially (seed funding) by the respective governments from their allocations of US $250k per country for eight thematic areas. It is estimated that approx. $50k – $100k will be set aside for health-related research projects. A concept paper for collaboration was drafted by the SAMRC and an expert workshop with representatives from SA and Senegal was held in Senegal in June 2017 to further this collaboration.

SUDAN

Following the first Joint Committee meeting on scientific cooperation between the Department of Science and Technology (DST), SA and the Ministry of Science and Communication, Sudan in 2015, DST invited the SAMRC to be the lead SA agency to drive the collaboration in the area of biotechnology. To this end, the SAMRC arranged two workshops between SA and Sudanese researchers to progress the cooperation and an agreement between the DST and SAMRC was signed in 2016. In terms of this agreement, DST is providing funding to the SAMRC amounting to R1 million over two years to implement and fund activities undertaken in SA towards joint SA-Sudan projects.

Following the last meeting of SA and Sudanese researchers in March 2017 in Pretoria, a SA proposal for joint projects was submitted to the DST. The proposal outlines the SA consortium organisations that will participate in the joint projects, proposed activities and timelines, milestones and deliverables. We are awaiting approval from the Sudanese counterparts to roll out the projects in both countries.

RWANDA

The SAMRC has an important partnership with the Rwanda Men's Resource Centre and the Rwanda Women's Network and Care Rwanda to assist these organisations to develop the evidence-based violence against women prevention intervention, Indashiykirwa, and to evaluate the programme they are delivering in communities. This work in being undertaken over four years under the framework of the research and innovation programme of work, funded by the United Kingdom Government's Department of International Development (DFID), in 13 countries of Africa, the Middle East and Asia to generate knowledge on What Works to Prevent Violence Against Women and Girls? The partnership has involved considerable engagement with the Rwandan Government's Ministry of Gender and Family Promotion and work to deepen understanding of how to interpret findings of research on violence against women.

This initiative is currently also funding prevention programming research on violence against women and girls in Ghana, Kenya and Zambia, as well as several countries in Asia including India. There are also two large intervention evaluations in South Africa, one in Diepsloot and one in informal settlements around Durban. The What Works Global Programme represents a large foreign investment of over £18 million (R300 million). The Programme an important indicator of South Africa's world-leading position in violence against women research, demonstrating that we can reach out to other countries, share our expertise and build meaningful South-South partnerships and collaborations.

GLOBAL COUNTRY COLLABORATIONS

CANADA

The SAMRC entered into a three-year collaboration with the Canadian Institute on Health Research in Canada to participate in the Healthy Life Trajectories Initiative (HeLTI) aimed at establishing a 5-10 year cohort to study interventions to prevent non-communicable diseases, particularly childhood obesity. Other countries committed to the initiative are China and India. One joint SA-Canada project is being funded through the initiative.

- Building Knowledge and a foundation for Healthy Life trajectories: BUKHALI Trial

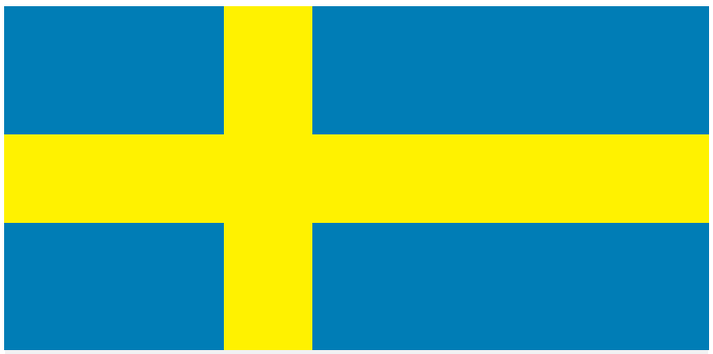
INDIA

In 2015 the SAMRC hosted a visiting party of scientists and government officials from India to establish joint research priorities in HIV and TB. The agreed priorities were included in a Request for Applications that was completed in late 2016 on behalf of the SAMRC, the DST, The Department of Science and Technology of India and the Indian Department of Biotechnology. Three projects were selected for funding, along with four additional projects in South Africa focusing on capacity development.

- Novel serum based biomarkers for diagnosis of TB and treatment monitoring in HIV-infected and uninfected children: "Detect TB Kids"
- Biomarkers for treatment response and disease recurrence in tuberculosis disease
- Combination biomarkers for early diagnosis of tuberculosis
- A cell wall deficient Mycobacterium tuberculosis platform for metabolic drug target discovery and development

STRATEGIC RELATIONS & CAPACITY BUILDING

During March 2017, the SAMRC President led a delegation that visited the Indian Council of Medical Research (ICMR) in New Delhi and the National Aids Research Institute in Pune. The aim was to discuss mechanisms to strengthen research capacity and contextualise the HIV landscape in India and South Africa. Through increasing collaboration and support, and bilateral agreements, the SAMRC has advanced health research on HIV/TB, NCD, MCH, road injuries, and so on. This meeting was an opportunity for both parties to learn from each other's success and failures. India has a large talent pool and there is a need to harness researchers with imagination and the ability to generate new knowledge with the necessary resources. The meeting highlighted the potential advantages of this unique South-South research collaboration. In addition to research on common protocols, the collaboration could leverage funds from global funders jointly for grand health research challenges. The SAMRC and ICMR have a draft MoU in place to underpin future collaborative activities between the parties.



SWEDEN

The SAMRC and the Swedish Research Council for Health, Working Life & Welfare (FORTE) Forte signed a Memorandum of Understanding (MoU) in August 2015 to expand collaboration between South African and Swedish scientists under the auspices of the framework of the agreement on cooperation in the fields of Science, Technology, and Innovation between the Government of the Republic of South Africa and the Government of the Kingdom of Sweden.

Pursuant to this MoU a joint workshop of SA and Swedish scientists was held at the SAMRC in 2015 and a call for joint SA and Swedish projects was published in 2016. Six joint projects are currently being funded over three years with funding amounting to R1 million per year from the SAMRC for SA researchers and matching funding from Forte for Swedish researchers. A further five joint projects will be funded in 2017 with funding of R400,000 per project per year from the SAMRC for SA researchers and matching funding from Forte for Swedish researchers over a two year period.

The following awards were made:

- Promoting institutional collaboration between Sweden and South Africa in the support of interventions that improve accessibility and uptake of sexual and reproductive health services, including services for HIV prevention and treatment among men
- An evaluation of how the South African eHealth strategy can be supported through the use of an Electronic Health Record System
- Resolving the role of health care system factors for care gaps in adolescents with complex chronic conditions: An international, multilevel study
- Intersections of rurality and gender in relation to violence against girls and young women: An urgent matter in relation to health inequalities in South Africa and Sweden
- Re-engineering the health system for South African traditional health care
- A study of the feasibility of the introduction of a Swedish HPV test for the management and prevention of cervical disease in the Eastern Cape
- Challenges of adherence to antiretroviral therapy among adolescents born with HIV in the Nelson Mandela Bay Municipality
- Inequalities in health
- Effectiveness of mobile health applications in primary health care
- Health Systems and Health Systems Policies
- Strengthening Health Systems for Maternal & Child Care in the Limpopo Province: A Multisectoral Approach
- SMU Pharmacovigilance Centre
- Preventative Chemotherapy Neglected Tropical Diseases (NTD) Mapping

CANCER RESEARCH STRATEGY MEETING

The prevalence of NCDs is rising rapidly in South Africa and the rest of Africa. Cancer is predicted to be an increasingly important cause of morbidity and mortality, and hence there is an urgent need to focus cancer research in the country. One in six South African men and one in seven South African women will get cancer during their lives. The country is ranked 50th on the World Cancer Research Fund's list of countries with the highest cancer prevalence rates and a recent study published in the Lancet1 predicts that South Africa could see an increase of 78% in the number of cancer cases by 2030. This burden will continue to rise unless we act decisively.

To this end, the SAMRC, in collaboration with its global partners in cancer research (the Chinese Academy of Medical Sciences, World Health Organization and the National Cancer Institute of the National Institutes of Health), hosted National Cancer Research Strategy Meeting to identify a cancer strategy for South Africa. The meeting took place at the SAMRC Conference Centre in Cape Town, South Africa, over two days.

The aim of the meeting was to start the conversation and thinking around developing a proposed strategy for South Africa. The proposed strategy will focus on the key mandates of research, innovation and capacity development as vital strategic tools for building the capacity needed to combat and defeat cancer in South Africa. Implementing these key essentials will require new strategies and perspectives, requiring partnerships with local and international policy makers, scientists, clinicians and the media.

EXPANDING THE FOOTPRINT OF RESEARCH & DEVELOPMENT FOR IMPACT

The SAMRC is supporting various research capacity development projects at Walter Sisulu University aimed at increasing the research quality and intensity of the university and gearing the Eastern Cape region for broader participation in the clinical research agenda, particularly in the area of HIV.

- Population based surveys for HIV in Eastern Cape Accident and emergency departments
- SAMRC-WSU Research Capacity Development Programme
- Bridging funding for the Nelson Mandela Academic Hospital Clinical Research Unit

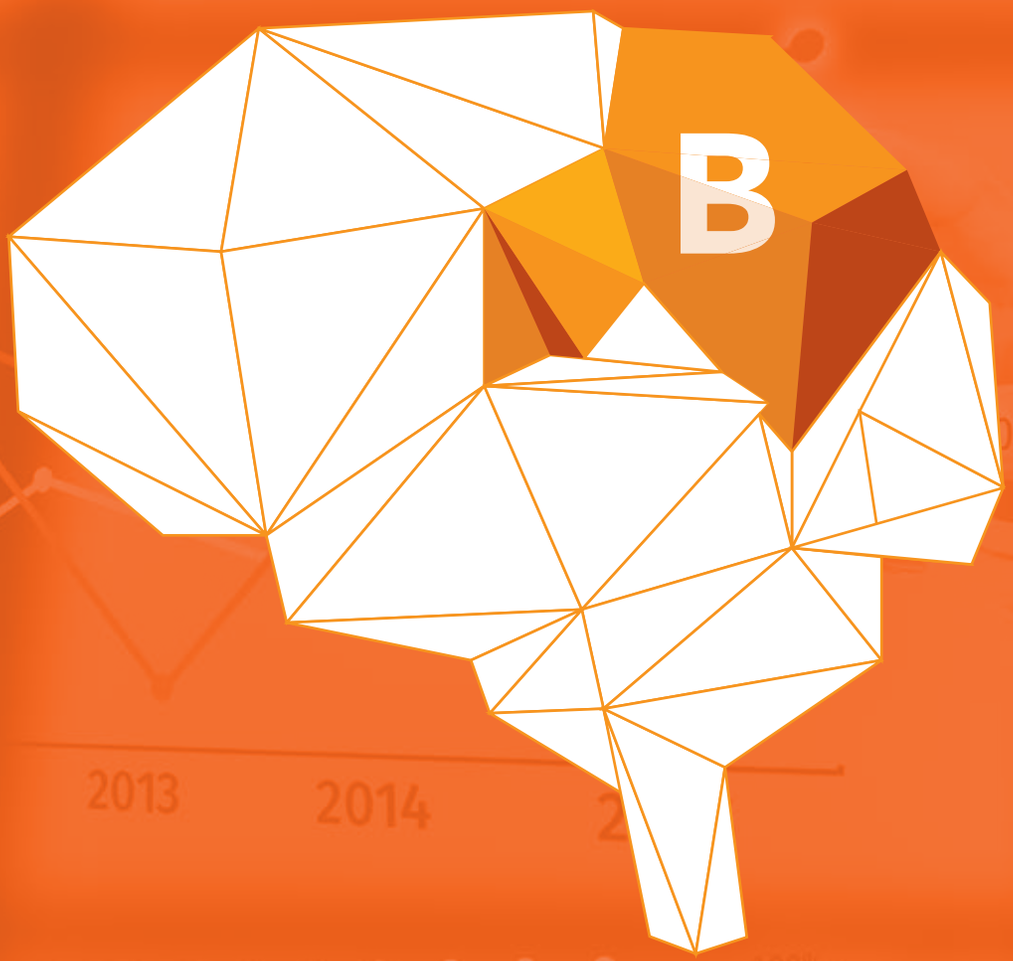
BREAKING NEW GROUND IN RESEARCH & DEVELOPMENT

THE PRODUCTION & CHARACTERISATION OF CAP256-VRC26 MONOCLONAL IN PLANTS

The promise of broadly neutralising monoclonal antibodies (BNAbs) against HIV-1 in reducing viral loads in HIV infected individuals and preventing HIV infection in non-human primates has been demonstrated by several research groups and clinical trials to demonstrate efficacy in humans are underway. A key limitation of using antibodies for prevention or therapy is the cost of production. Mammalian cell based production approaches of mAbs have significantly lowered costs of antibody manufacturing and increased scale, but costs remain prohibitive and these systems have several limitations. Plant-based expression systems, on the other hand, are fast, inexpensive and scalable and are gaining momentum as bona fide sources of functional biopharmaceuticals.

A family of BNAbs known as the CAP256-VRC26 lineage with significant potency and breadth, particularly against sub-type C viruses, has been isolated by researchers in South Africa and the USA and one member of the lineage has been selected to move into clinical trials. With the purpose of addressing long-term and affordable supply of effective monoclonal antibodies for use in the clinic, SHIP has been funding a project at the CSIR on the use of low cost, plant based expression technologies to produce members of the CAP256-VRC26 lineage. An initial proof of concept study demonstrated that two CAP256 mAbs could be successfully expressed in and purified from Nicotiana benthamiana plants; however, their in vitro potency was slightly lower than that of mAbs produced in mammalian cells, presumably due to differences in post-translational modification (PTM). Phase 2 of the project has recently been completed and demonstrated that an increase in potency of the plant produced mAb can be achieved by co-expressing the antibodies with the required PTM enzyme, which resulted in correct sulphation of the antibody at the antigen binding site.

**This research was funded through the Strategic Health Innovation Partnerships (SHIP) managed by the Grants, Innovation & Product Development (GIPD) Division.



PERFORMANCE INFORMATION

STATEMENT OF RESPONSIBILITY

FOR PERFOMANCE FOR THE YEAR ENDED 31 MARCH 2017

The President is responsible for the preparation of the South African Medical Research Council's performance information and for the judgements made in this information.

The President is responsible for establishing and implementing a system of internal controls designed to provide reasonable assurance as to the integrity and reliability of performance information.

In my opinion, the performance information fairly reflects the actual achievements against planned objectives, indicators and targets as per the Strategic and Annual Performance Plan of the South African Medical Research Council for the financial year ended 31 March 2017. The South African Medical Research Council's performance information for the year ended 31 March 2017 has been examined by external auditors and their report is presented on pages 139 - 142.

The performance information of the South African Medical Research Council is set out on pages 38 - 39 and has been approved by the Board.

PROFESSOR GLENDA E. GRAY
President & Chief Executive Officer
South African Medical Research Council
31 March 2017

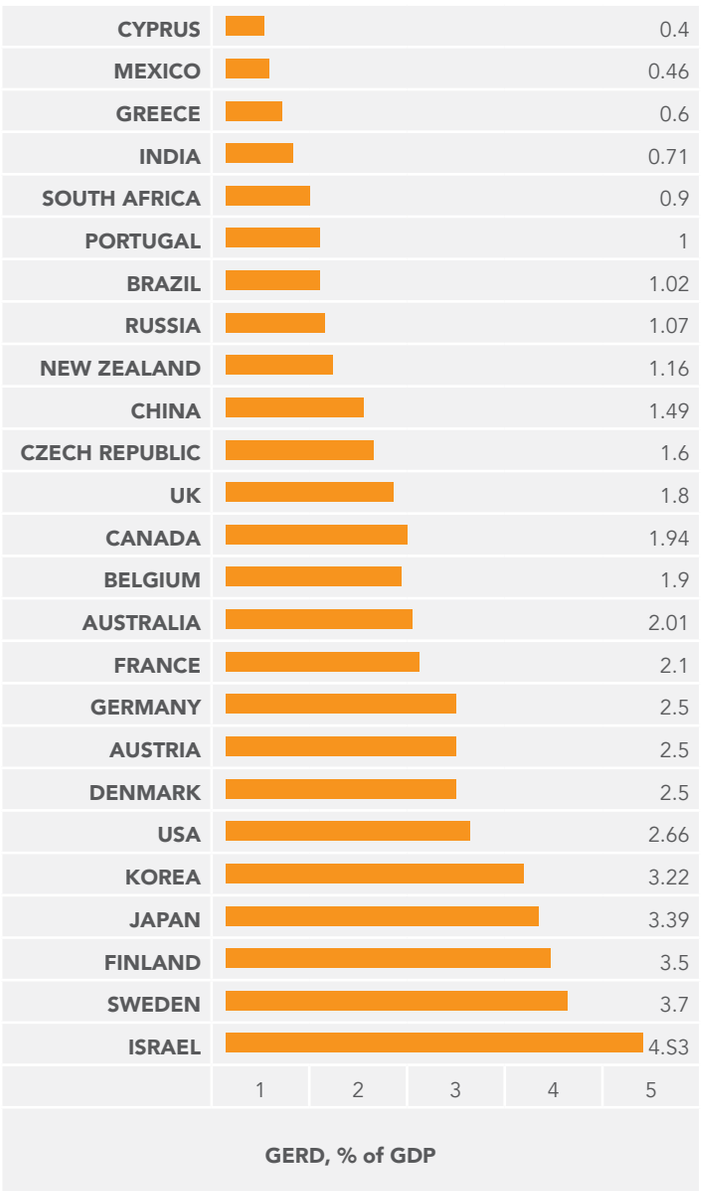
STRATEGIC OUTCOME ORIENTATED
GOALS

The SAMRC has **four strategic goals** that are aligned with the four outputs of the health sector NSDA that contribute to outcome 2 "A long and healthy life for all South Africans". The SAMRC's mandate will be reviewed occasionally and goals will be aligned accordingly.

STRATEGIC GOAL 1	Administer health research effectively and efficiently in South Africa
GOAL STATEMENT	Strengthening of financial processes towards an unqualified audit opinion from the Auditor General
STRATEGIC OBJECTIVES	1.1. To ensure good governance, effective administration, an unqualified audit and compliance with government regulations 1.2. To promote the organisation's administrative efficiency to maximise the funds available for research
OBJECTIVE STATEMENT	To strengthen financial management, monitoring and evaluation
BASELINE (2015-16)	Improved financial management at all levels within the SAMRC and an unqualified audit
INDICATOR/S	1.1. Compliance with legislative prescripts, reflected in the final audit report relating to the processes and systems of the SAMRC 1.2. Percentage (%) of the 2016/17 SAMRC total budget spent on salaries and operations of all corporate administrative functions

For gross expenditure on R&D (GERD) to have impact, 2% is the threshold. The BRIC nations GERD are in a narrow range of 0.71 – 1.49%. South Africa is lagging with only 0.9% GERD. South Africa therefore needs to spend at least 2% GERD to contribute to economic development.

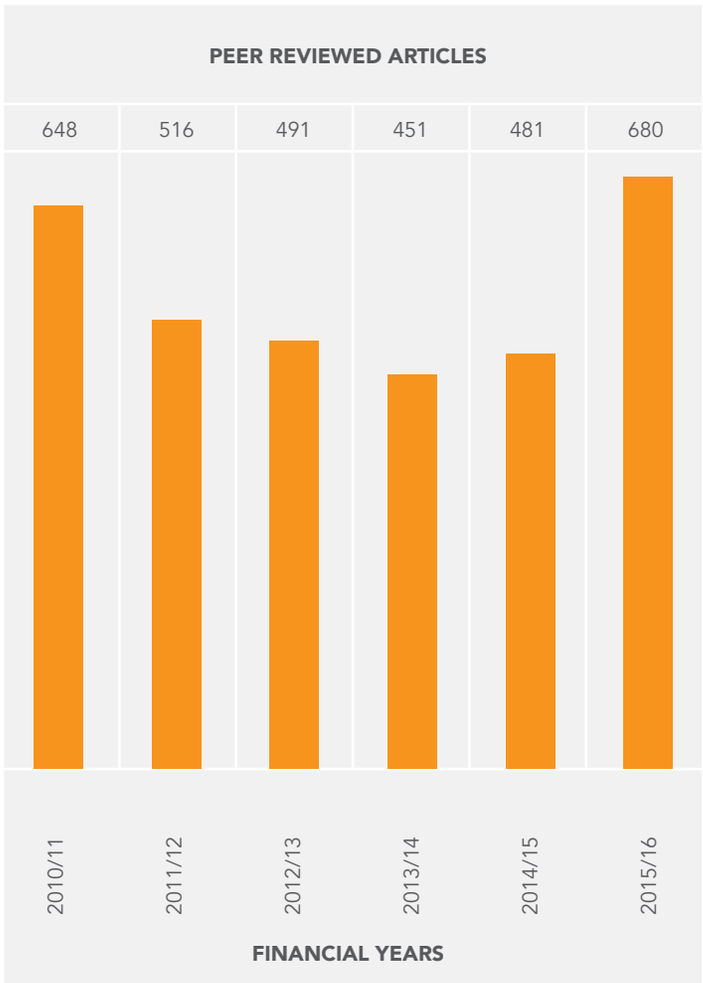
GLOBAL GROSS EXPENDITURE ON R&D



STRATEGIC GOAL 2	**Lead the generation of new knowledge and facilitate its translation into policies and practices to improve health**
GOAL STATEMENT	Promote the improvement of health and quality of life (prevention of ill health, improvements in public health and treatment) in South Africa through research
STRATEGIC OBJECTIVES	2.1 To produce and disseminate new scientific findings and knowledge on health 2.2 To promote scientific excellence and the reputation of South African health research 2.3 To provide leadership in the generation of new knowledge in health 2.4 To facilitate the translation of SAMRC research findings into health policies and practices 2.5 To provide funding for the conduct of health research
OBJECTIVE STATEMENT	Number of indexed journal articles published during the year to create and disseminate new quality knowledge through research with expert endorsement from specialists in the field
BASELINE (2015-16)	2.1 450 2.2 115 *2.3 12 2.4 165 2.5 4 2.6 110
INDICATOR/S	2.1 Number of peer reviewed articles with a SAMRC affiliated author that are published in ISI journals during the reporting period 2.2 Number of peer reviewed articles published in ISI journals with acknowledgement of SAMRC support during the reporting period 2.3 Number of published indexed high impact factor journal articles with a SAMRC affiliated author 2.4 Number of ISI journal articles where the first author is affiliated to the SAMRC during the reporting period 2.5 Number of new policies and guidelines that reference SAMRC research during the reporting period 2.6 Number of research grants awarded by the SAMRC during the reporting period

Pre-revitalisation, the number of peer reviewed articles published started to diminish, which further declined during revitalisation reaching a low of 451 in 2013/14. However, post-revitalisation the number of articles increased from 481 to 680. This demonstrates the improved performance of the SAMRC in its key indicator.

PEER REVIEWED ARTICLES, 2010 - 2016

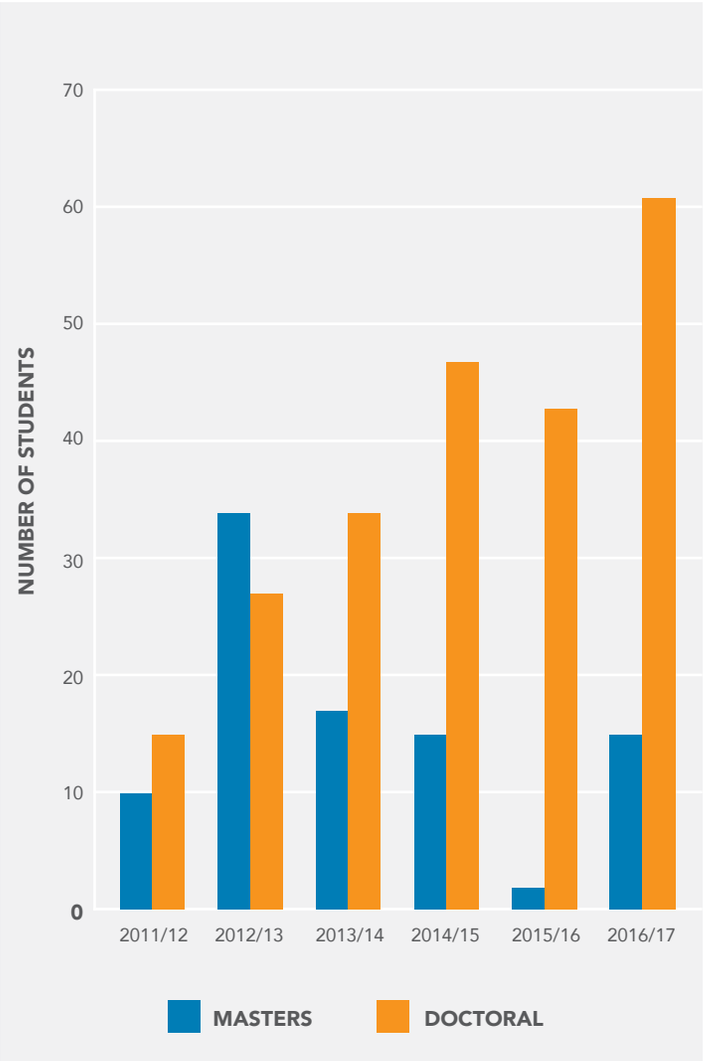


STRATEGIC GOAL 3	Support innovation and technology development to improve health
GOAL STATEMENT	Promote the improvement of health and quality of life (prevention of ill health, improvements in public health and treatment) in South Africa through innovation, technology development and transfer
STRATEGIC OBJECTIVE	3. To provide funding for health research innovation and technology development
OBJECTIVE STATEMENT	Number of innovations to promote the improvement of health and quality of life in the country through innovation, technology development and transfer (innovation projects supported, invention disclosures, patents filed and licences concluded) developed in the year
BASELINE (2015-16)	3.1 Thirty (30) innovation and technology developments 3.2 New indicator
INDICATOR/S	3.1 Number of innovation and technology projects funded by the SAMRC to develop new diagnostics, devices, vaccines and therapeutics 3.2 Number of new diagnostics, devices, vaccines and therapeutics developed during the reporting period

The Grants, Innovation and Product Development (GIPD) Division is responsible for all external grant and platform funding of the SAMRC. GIPD is also responsible for driving and managing commercialisation of both within and outside the SAMRC. Embedded in GIPD is the Strategic Health Innovation Partnerships (SHIP) that is instrumental in catalysing increased investment in innovation and product development-focused programmes and with a major increase levered at international co-funding.

The role of SHIP is to focus on multi-disciplinary translational research and product development aimed at developing new:

STRATEGIC GOAL 4	Build capacity for the long-term sustainability of the country's health research
GOAL STATEMENT	To provide research support in the broad field of health research, describing original research initiated by a researcher at a recognised research institution and creating and maintaining collaborative research initiatives in collaboration with research programmes. The guiding elements for each initiative/project are: Long-term and sustainable; focused; strong corrective action; public-private partnerships; Africa-centric perspective; Innovation; Operationally – best business practices; technology infrastructure
STRATEGIC OBJECTIVES	4 To enhance the long-term sustainability of health research in South Africa by providing funding for the next generation of health researchers
OBJECTIVE STATEMENT	Study bursaries, scholarships and fellowships are awarded to students towards a postgraduate degree in health research
BASELINE (2015-16)	Sixty five (65) bursaries/scholarships/fellowships New indicator
INDICATOR	4.1 Number of SAMRC bursaries, scholarships and fellowships provided for postgraduate study at masters, doctoral and postdoctoral levels 4.2 Number of masters and doctoral students graduated during the reporting period



Funding and supporting the graduation masters and doctoral candidates is the fourth strategic goal. There was a shift post-revitilisation to increase the funding of doctoral students relative to masters students. Enrolled masters students were 10 in 2011/12 and 15 in 2016/17. However, the doctoral students enrolled were 15 in 2011/12 to 61 in 2016/17 reflecting the SAMRC's commitment to growing the next generation of doctoral scientists.

BREAKING NEW GROUND IN RESEARCH & DEVELOPMENT

UMBIFLOW

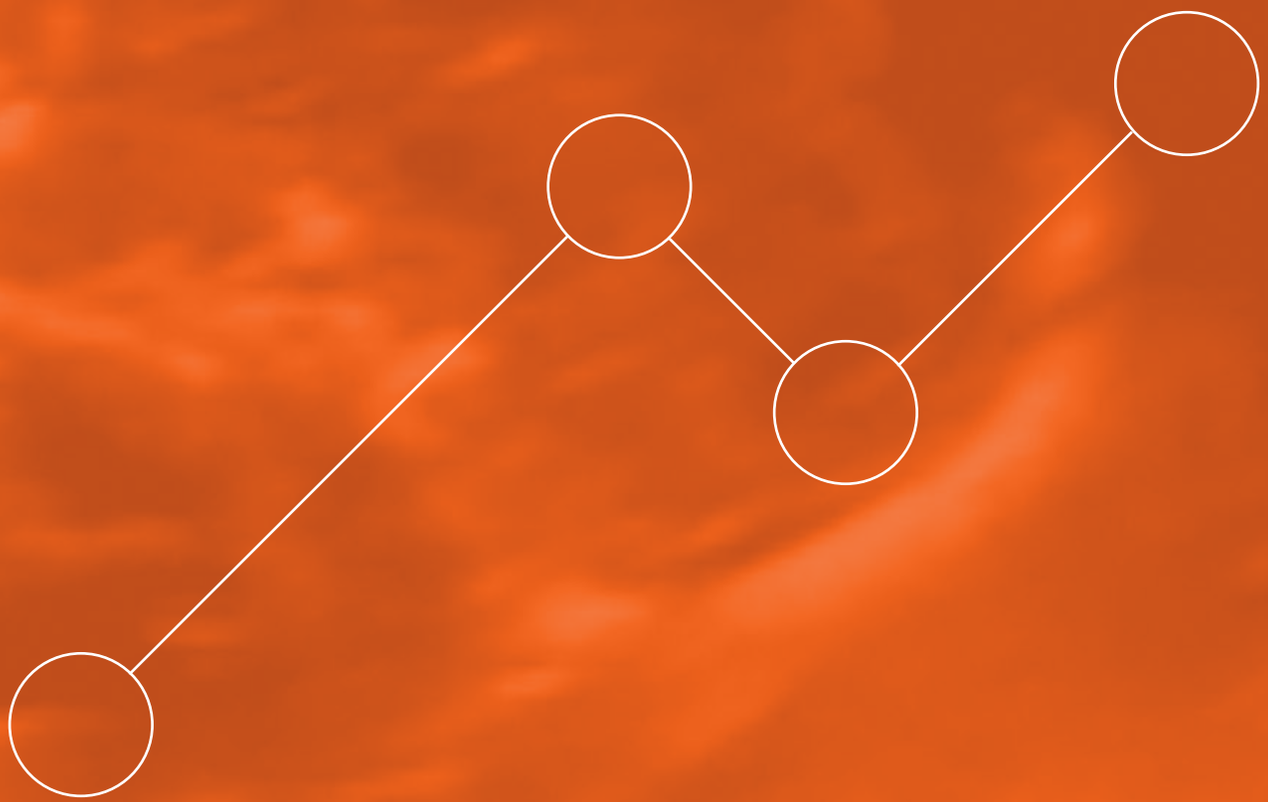
A number of years ago the SAMRC and the Council for Scientific and Industrial Research (CSIR) jointly developed a continuous wave Doppler apparatus, known as Umbiflow, consisting of a hand-held proprietary Doppler probe (transducer) with USB cable that connects to any windows-based notebook on which necessary software is installed. The Umbiflow is used to measure the resistance index (RI) in the umbilical cord and plot it against the gestational age, giving a single reading that can be used to determine the level of risk of the pregnancy. The technology can be adopted and operated by nurses and midwives at the primary health care centre level.

Studies in the Western Cape on the use of Umbiflow for umbilical artery Doppler in patients suspected of reduced symphysis fundal (height) growth demonstrated a 48% reduction in patients requiring referral to a more specialised level of care and that up to 9% of late bookers had abnormal Doppler and smaller babies that would not have been detected by SF only. A study currently underway in community health centres and clinics in Mamelodi township involves screening of low risk women between 28 and 32 weeks' gestation using Umbiflow. Women having a raised Umbiflow test are referred to a special high risk clinic at Mamelodi Hospital and receive a standard protocol of management. Preliminary results from this study have demonstrated a prevalence of raised RI in this group of 12.8% and Absent and diastolic flow (AEDF) of 1.2%. This is around ten times that recorded in low risk pregnant women in high income countries. The women with raised RIs were actively managed and the perinatal mortality rate in the Umbiflow group was significantly lower than the perinatal mortality rate of women who attended antenatal care and did not have an Umbiflow test. This study is now being expanded to nine other regions in South Africa as well as additional countries in sub-Saharan Africa and India with the support of the Department of Health and the WHO.

**The outcome of this project is as a result of the Global Health Innovation Accelerator (GHIA), managed by the Grants, Innovation & Product Development (GIPD) Division.

STRATEGIC OBJECTIVES, PERFORMANCE INDICATORS, PLANNED TARGETS & ACTUAL

ACHIEVEMENTS



STRATEGIC OBJECTIVES, PERFORMANCE INDICATORS, PLANNED TARGETS & ACTUAL ACHIEVEMENTS

SOUTH AFRICAN MEDICAL RESEARCH COUNCIL 2016/17 FINAL ANNUAL PERFORMANCE REPORT

STRATEGIC GOAL	STRATEGIC OBJECTIVE	INDICATOR NO.	PROGRAMME PERFORMANCE INDICATOR	SP TARGET	REPORTING PERIOD: 2016/17 PERFORMANCE TARGET	
Administer health research effectively and efficiently in South Africa	To ensure good governance, effective administration and compliance with government regulations	1,1	Compliance with legislative prescripts, reflected in the final audit report relating to the processes and systems of the SAMRC	Unqualified Target	Unqualified Target	
	To promote the organisation's administrative efficiency to maximise the funds available for research	1,2	Percentage (%) of the 2016/17 SAMRC total budget spent on salaries and operations of all corporate administrative functions	20%	20%	
Lead the generation of new knowledge and facilitate its translation into policies and practices to improve health	To produce and disseminate new scientific findings and knowledge on health	2,1	Number of peer reviewed articles with a SAMRC affiliated author that are published in ISI journals during the reporting period	3150	500	
		2,2	Number of peer reviewed articles published in ISI journals with acknowledgement of SAMRC support during the reporting period	825	130	
	To promote scientific excellence and the reputation of South African health research	2,3	Number of published indexed high impact factor journal articles with a SAMRC affiliated author	*90	550	
	To provide leadership in the generation of new knowledge in health	2,4	Number of ISI journal articles where the first author is affiliated to the SAMRC during the reporting period	1035	170	
	To facilitate the translation of SAMRC research findings into health policies and practices	2,5	Number of new policies and guidelines that reference SAMRC research	27	4	
	To provide funding for the conduct of health research	2,6	Number of research grants awarded by the SAMRC	750	120	
Support innovation and technology development to improve health	To provide funding for health research innovation and technology development	3,1	Number of innovation and technology projects funded by the SAMRC to develop new diagnostics, devices, vaccines and therapeutics	180	30	
		3,2	Number of new diagnostics, devices, vaccines and therapeutics developed during the reporting period	New Indicator	2	
Build capacity for the long-term sustainability of the country's health research	To enhance the long-term sustainability of health research in South Africa by providing funding for the next generation of health researchers	4,1	Number of SAMRC bursaries/scholarships/ fellowships provided for postgraduate study at masters, doctoral and postdoctoral levels	435	70	
		4,2	Number of masters and doctoral students graduated during the reporting period	New Indicator	50	

	FREQUENCY	FINAL 16/17 PERFORMANCE	VARIANCE
	Annual	Unqualified Audit	
	Annual	18%	The target for this indicator was set too conservative. Corrective Action: The SAMRC will take the 2016/17 performance as a baseline for the 2017/18 financial year.
	Quarterly	660	The target for this indicator was set too conservative considering the amendment to the indicator description as approved by the National Department of Health (NDoH). Corrective Action: The SAMRC took into account the quarterly performance and amended the targets in the 2017/18 Annual Performance Plan. This request was submitted to NDoH and approved by the Minister on 21 November 2016.
	Quarterly	135	The SAMRC took into account the quarterly performance and amended the targets in the 2017/18 Annual Performance Plan. This requested was submitted to NDoH and approved by the Minister on 21 November 2016.
	Quarterly	605	The target for this indicator was set too conservative considering that now all articles published in impact factor journals are taken into account rather than only considering articles published in journals with an impact factor higher than 5. Corrective Action: The SAMRC took into account the quarterly performance and amended the targets in the 2017/18 Annual Performance Plan. This request was submitted to NDoH and approved by the Minister on 21 November 2016.
	Quarterly	415	The SAMRC encourages its researchers to be more competitive and publish internationally to benchmark themselves against the world. To ensure that a quality journal is published, a rigorous review process is followed that accounts for the production of a good quality journal article. This is to ensure that the SAMRC consistently produces outputs that are included in international publications, and which lead to high impact within the science community. This accounts for the variance in the production of journal articles produced as originally envisaged. Corrective Action: The SAMRC took into account the quarterly performance and amended the targets in the 2017/18 Annual Performance Plan. This request was submitted to NDoH and approved by the Minister on 21 November 2016.
	Bi-Annual	4	
	Annual	147	The target for this indicator was set too conservative. Corrective Action: The SAMRC took into account the quarterly performance and amended the targets in the 2017/18 Annual Performance Plan.
	Annual	56	The target for this indicator was set too conservative. Corrective Action: The SAMRC took into account the quarterly performance to set a more realistic target for the 2017/18 financial year.
	Annual	2	
	Annual	156	There were more bursaries, scholarships and fellowships provided for post-graduate study as antitipated. Corrective action: The SAMRC will, going forward, set a more realistic target for bursaries,/scholarships/fellowships.
	Annual	69	The performance target was well exceeded. Unit Directors and managers were proactive in supporting, supervising, funding and developing their staff, our future leaders. This will be encouraged in future. The other indicators were not negatively impacted by the over-achievement of this target.

SAMRC'S RESEARCH PROFILE

The research conducted at the SAMRC is based on six research programmes. The programmes and units constitute four of the Negotiated Service Delivery Agreement (NSDA) mandated by the Ministry of Health. SAMRC research units constitute intramural and extramural entities including self-initiated funded projects and capacity development initiatives. Intramural Research Units (IRU) are based at the SAMRC campuses and the scientists are directly employed by the organisation. Extramural Research Units (ERU) enable scientists based at tertiary institutions to conduct research funded by the SAMRC.

The research programmes and units are specified in the table below.

RESEARCH PROGRAMMES	RESEARCH UNITS
HEALTH PROMOTION AND DISEASE PREVENTION **NSDA 1: INCREASING LIFE EXPECTANCY**	• Alcohol, Tobacco and Other Drug Research Unit (IRU) • Anxiety and Stress Disorders Research Unit (ERU) • Non-Communicable Diseases Research Unit (IRU) • Environment and Health Research Unit (IRU) • Rural Public Health and Health Transition Research Unit (ERU) • Violence, Injury and Peace Research Unit (IRU) • Hypertension and Cardiovascular Disease Research Unit (ERU) • Microbial Water Quality Monitoring Research Unit (ERU) • Risk and Resilience in Mental Disorders (ERU)
MATERNAL, CHILD AND WOMEN'S HEALTH **NSDA 2: DECREASING MATERNAL AND CHILD MORTALITY**	• Gender and Health Research Unit (IRU) • Maternal and Infant Health Care Strategies Research Unit (ERU) • Development Pathways Research Unit (ERU) • Child and Adolescent Lung Health (ERU)
HIV, AIDS, TB AND OTHER COMMUNICABLE DISEASES **NSDA 3: COMBATING HIV AND AIDS, AND DECREASING THE BURDEN OF DISEASE FROM TB**	• HIV Prevention Research Unit (IRU) • Centre for Tuberculosis Research Unit (IRU) • Molecular Mycobacteriology Research Unit (ERU) • Respiratory and Meningeal Pathogens Research Unit (ERU) • Diarrhoeal Pathogens (ERU)
HEALTH SYSTEMS STRENGTHENING **NSDA 4: STRENGTHENING HEALTH SYSTEM EFFECTIVENESS**	• Burden of Disease Research Unit (IRU) • Biostatistics Research Unit (IRU) • South African Cochrane Centre (IRU) • Health Systems Research Unit (IRU) • HIV-TB Pathogenesis and Treatment Research Unit (ERU) • Health Services to Systems Research Unit (ERU)
PUBLIC HEALTH INNOVATION	• Drug Discovery and Development Research Unit (ERU) • Primate Unit and Delft Animal Centre (IRU) • The Biomedical Research and Innovation Platform (IRU) • Herbal Drugs Research Unit (ERU)
BIOMEDICAL RESEARCH	• Bioinformatics Capacity Development Research Unit (ERU) • Immunology of Infectious Diseases Research Unit (ERU) • Stem Cell Research and Therapy Unit (ERU) • Antiviral Gene Therapy Research Unit (ERU) • Human Genetics (ERU)

SAMRC:
FUNDING MEDICAL INNOVATION & RESPONSIVE MEDICAL RESEARCH
SPECIFIC GRANT FUNDING SCHEMES

INVESTING IN INNOVATION & TECHNOLOGY

The Grants, Innovation and Product Development Division (GIPD) is responsible for external grant and platform funding of the SAMRC, which includes oversight of more than 200 grants ranging from SAMRC-specific grant funding to collaborative grant funding with local and international partners to address the burden of disease in South Africa and to foster collaboration both on the African continent and beyond. GIPD is also responsible for leading and managing innovation, with the goal of commercialisation of SAMRC funded innovation.

Total value of funding allocated to research and innovation during the 2016/17 reporting period**

- *R149, 284,627.09 (GIPD projects including SHIP, Newton and Strategic projects)*
- *R51, 927,429.42 (SRI projects)*
- *R44, 775,000.00 (NIH collaboration)*
- *R25, 000,000 (SIR)*

Notable activities of the 2016/ 17 financial year include:

DRUG DISCOVERY: Entering into a funding agreement with the DST to manage the SA-Sudan collaboration in respect of drug development from natural products.

DRUG DISCOVERY AND DEVELOPMENT: Establishing an MoA with Drugs for Neglected Diseases Initiative (DNDi), in particular, the GARDP (Global Antimicrobial R&D Partnership).

INFANT AND CHILD HEALTH: Partnering with Grand Challenges Africa, hosted by the African Academy of Science, to collaborate to support research and innovation in Africa to address the challenges in maternal, newborn and child health facing sub-Saharan Africa.

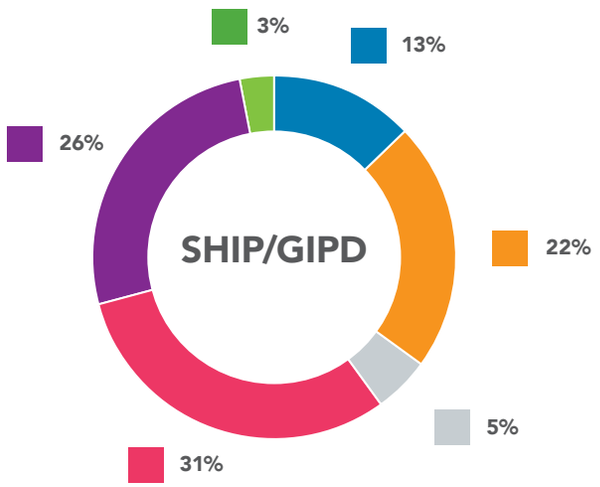
BIG DATA: In partnering with The Square Kilometre Array (SKA) and DARA at University of Leeds through the Newton Fund to host a unique big data summer school.

INFANT AND CHILD HEALTH INNOVATION: Being awarded a 3-year grant from the BMGF to build and expand the Global Health Innovation Accelerator (GHIA), a partnership between the SAMRC and PATH to drive the development and implementation of new health technologies.

POPULATION HEALTH: Establishing an agreement with the Department of Science and Technology to host the South African Population Research Infrastructure Network.

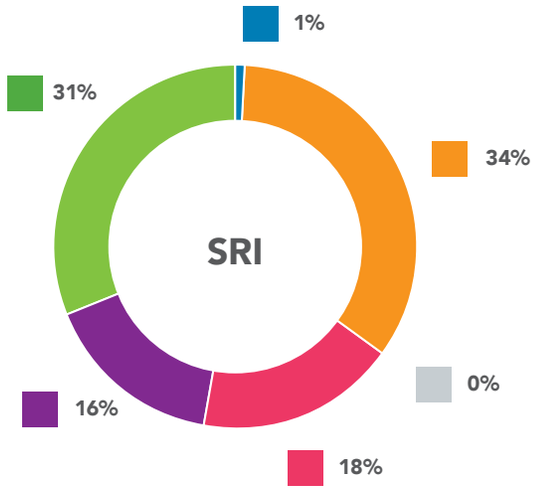
SHIP/GIPD DISBURSEMENTS PER PRIORITY AREA

2016/2017



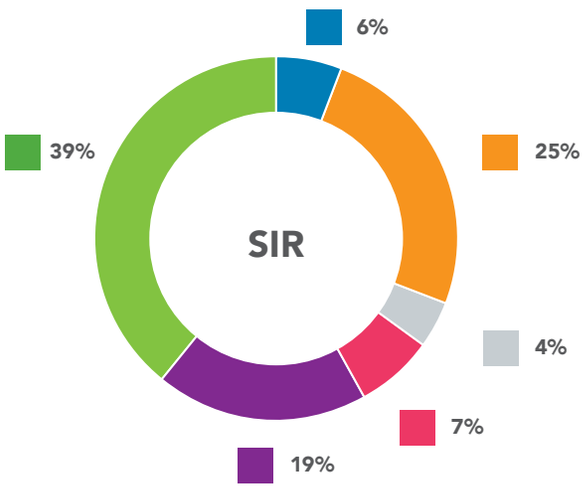
SRI DISBURSEMENTS PER PRIORITY AREA

2016/2017



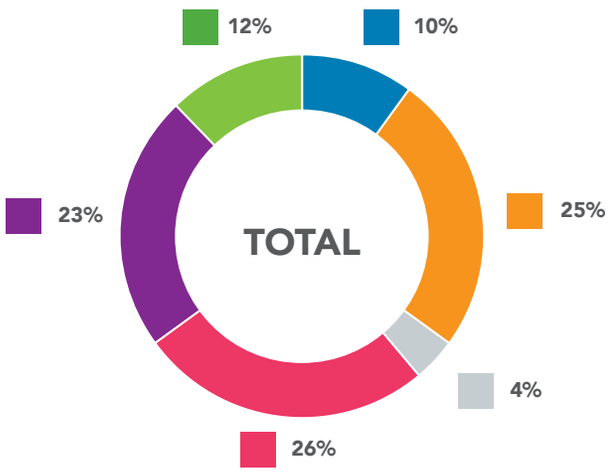
SIR DISBURSEMENTS PER PRIORITY AREA

2016/2017



TOTAL DISBURSEMENTS PER PRIORITY AREA

2016/2017



MHC NCD MALARIA TB HIV OTHER

**Definitions

SHIP – Strategic Health Innovation Partnerships
GIPD – Grants, Innovation and Product Development
SRI – Strategic Research Initiatives
SIR – Self-Initiated Research Grants
NIH – National Institutes of Health
MCH – Maternal & child health
HIV – Human immunodeficiency syndrome
NCD – Non-communicable diseases
TB – Tuberculosis

SELF-INITIATED RESEARCH GRANTS (SIR)

For more than a decade the SAMRC has supported these competitive investigator-initiated research projects, with approximately 45 new three year awards being made each year. These are small awards specifically targeting early stage investigators and mid-career investigators to establish their careers while conducting nationally relevant science. The priority areas are diverse ranging from the most prevalent non communicable diseases, through to communicable diseases, health systems, clinical research, social science, mental health, genomics, traditional medicine, environmental research, water quality, and several major breakthroughs have been initiated from this grant mechanism.

Medical researchers, having received funding from the SAMRC through the SIR grant, identified a new gene that is a major cause of sudden death among young people and athletes. The gene, called CDH2, causes Arrhythmogenic Right Ventricle Cardiomyopathy (ARVC), a genetic disorder that predisposes young people to cardiac arrest.

> *"This is probably the biggest breakthrough in South African cardiology since Dr Chris Barnard's first heart transplant," says* ***Professor Bongani Mayosi****, Dean of the Faculty of Health Sciences at the University of Cape Town. "This discovery is a first in the world - on our soil - and will permit the diagnosis and possible targeted treatment of heart muscle disease in the future."*

The following priority areas have been funded:

- Traditional medicine and drug discovery
- Cancer
- Environmental health
- Genomics and proteomics
- HIV/AIDS
- Health biotechnology
- Health systems
- Malaria
- Maternal, infant and child health
- Mental health
- Non-communicable diseases
- Nutrition
- Tuberculosis

PRIORITY AREA: Traditional medicine and drug discovery

- Design, Synthesis and Biological Evaluation of Dendrimer-Supported Transition Metal Complexes as Macromolecular Antibacterial/ Antimalarial Agents
- Developing new technologies for the targeted delivery of therapeutic RNAs
- Dodonaea angustifolia derived phytochemicals and corresponding nanocomposites in oral applications
- Harnessing herb-drug interactions for enhanced delivery of anti-malaria and anti-HIV drugs
- Identification of novel irreversible kinase inhibitors using a fragment "click" chemistry approach
- In vitro and in vivo interactive efficacies between African fever reducing plants and existing antimicrobials incorporating the use of metal nanoparticles
- Marine Drug Discovery
- Modelling of carbohydrate antigen structures to improve conjugate vaccine development
- Novel therapeutics from South African macrofungi

PRIORITY AREA: Cancer

- An investigation into genetic variation in South African breast cancer patients using genome sequencing
- An investigation into the role of punicic acid (PA) in the prevention of doxorubicin-induced toxicity and chemoresistance in a mouse xenograft model
- Bioluminescence Imaging Probes for Cancer Research
- Design and development of assays for the detection disease biomarkers
- Identification of protein co-factors that mediate the oncogenic functions of the transcription factors TBX 2 and TBX 3 with the view to revealing targets for anti-cancer drug discovery
- Intratumoral androgen metabolism: A target for the treatment and prevention of castration resistant prostate cancer
- Mutational analysis of susceptibility loci in the RET and other gene promoters in congenital neuronal dysganglionosis in African populations
- Preparation and In Vitro Analysis of Novel Polymeric Multi-Drug Delivery Systems
- Progestins and breast cancer development: Significance of steroid receptor crosstalk
- Rational Design of Glycoenzyme ST3Gal-I inhibitors and their Targeted Delivery for Blocking Metastatic Pathways in Breast Cancer Tumours
- Retinoblastoma binding protein 6 (RBBP6) as an Antitumor agent in early cancer development
- Three dimensional cell culture systems as models for multidrug-resistance in cancer

PRIORITY AREA: Environmental health

- A prospective cohort study: Examining the impact of pesticide exposure on the reproductive health in pregnant women and the neurobehavioural health of their offspring in South Africa
- Race and postgraduate medical education in South Africa: Throughput, success rates and organisational culture
- Understanding the effect of lifestyle, diet and geographic location on the gut microbiota
- Womens' Health: Investigating the Use of Skin Lighteners in Africa

PRIORITY AREA: Genomics and proteomics

- Interaction of FOXP proteins with a core binding sequence in the DISC1 promoter. The impact of heterodimerisation on DNA binding dynamics
- Pharmacogenomics of the solute carrier transporters
- Whole-Exome sequencing to detect mutations in autosomal recessive non syndromic hearing loss in Africans

PRIORITY AREA: HIV/AIDS

- Causes of Excess Mortality in HIV-infected Adults Commencing ART with Cryptococcal Antigenaemia: A Post-Mortem Study
- Characteristics of incident HIV among pregnant women in urban South Africa. A sub-study of Incident HIV and Related Sexual Behaviour Study
- Diffusion Tensor Imaging and Neurocognitive study in Cape Town Adolescent Antiretroviral Cohort (CTAAC)
- Early functional decline in adults living with HIV/AIDS
- Frequency, mechanisms, management and outcomes of diffuse myocardial fibrosis in HIV-associated cardiovascular disease
- HIV/AIDS Genomics and Pharmacogenomics
- Identification of primary (acute) HIV-1 infections in an HIV hyperendemic setting
- Impact of immune-driven mutations in HIV-1 RT-integrase on viral fitness and disease progression
- Impact of the Duffy-null trait and neutropenia on NK cell maturation and function in chronic HIV-1 infection
- Neurocognitive and neuroimaging effects of heavy episodic drinking in HIV
- Non-pharmacological interventions for reducing pain in people with HIV: a multicenter randomised controlled trial
- Novel methods for detecting and minimising chronic cardiovascular metabolic, respiratory, renal and bone disease in HIV-infected children treated with antiretroviral therapy in southern Africa
- Pharmacokinetic interactions between Efavirenz and Isoniazid and the effect of genetic slow metabolizer status on Efavirenz-related toxicities in patients initiating Isoniazid preventive therapy
- Prevalence and mechanisms of sleep disturbances in South African HIV-infected patients and controls
- Probiotics to treat bacterial vaginosis and reduce HIV infection risk in South African women
- RNA-directed transcriptional gene silencing (TGS) of HIV-1: Sustained suppression of viral and host co-factor promoter elements
- Structural characterisation of highly mutated, clinically derived HIV-1 subtype C protease
- The interaction between BST-2/tetherin and HIV-1 Vpu as a novel target for HIV intervention
- The onset of cardio-metabolic complications in a South African HIV-positive population
- The role of inflammation and the metabolic syndrome in promoting the morbidity of accelerated aging in a South African HIV-infected community-based cohort

PRIORITY AREA: Health biotechnology

- Apoptosis and pathogenicity modulations in Candida albicans by Eugenol-tosylate and its Congeners
- Characterisation of the genetic and enzymatic variation in the glycine conjugation pathway

PRIORITY AREA: Health systems

- Computer Aided Diagnosis for WHO Standardised Chest X-Ray Interpretation in Children
- Design and Prototype Development of a Novel Shoulder Implant Used In Total Shoulder Arthroplasty – Considering Dual Curvature Gleno-Humeral Articulation
- Exploration of the Service Centres for Older Persons in South Africa
- Prevalence of antibiotic-resistant bacteria and antibiotic-resistance genes in treated effluent of urban wastewater treatment plants and receiving aquatic milieu: Implications on Public Health Systems
- Signing deaf children and professional medical sign language interpreters: developing appropriate ethical and research methodologies, the first steps towards determining the need for services
- The implementation of a validated evidence based physiotherapy protocol for the management of patients in a surgical intensive care unit: A controlled before-after clinical trial
- Tracer study towards a framework for the improvement of the quality of undergraduate nursing programmes in Higher Education Institutions

PRIORITY AREA: Infectious diseases

- Antimicrobial peptides as anti-infective/ sepsis agents
- Hepatitis B virus in health care workers from Gauteng and Mpumalanga provinces, South Africa
- Human papillomavirus (HPV) awareness and investigation of HPV prevalence in high school learners in the Eastern Cape Province
- Investigating the innate immune response in Pneumocystis pneumonia
- Investigation of bat-associated paramyxoviruses with zoonotic potential from South Africa
- Molecular epidemiology of Respiratory Syncytial Virus strains associated with respiratory illness in rural and peri-urban communities of Mpumalanga and North-West provinces of South Africa
- Molecular systematics and epidemiology of hookworms
- Neurodevelopmental and Immunological Epidemiology of Group B Streptococcus in South African children
- The Epidemiology of Human T-lymphotropic virus type 1 (HTLV-1) infection in SA, HTLV-1 integration, HTLV-1-associated infective dermatitis (IDH) and the risk of adult T cell leukaemia/lymphoma (ATLL)

PRIORITY AREA: Malaria

- A double-blind, randomised placebo controlled trial to investigate the efficacy, safety and tolerability of adding a single low primaquine dose to artemether-lumefantrine for treatment of uncomplicated Plasmodium falciparum malaria in Mpumalanga
- Analysis of clinical isolates for the prioritisation of malaria transmission blocking drug development

- Aptamer based diagnostics for HIV (CD4) and malaria at the cellular level
- Design, synthesis and biological evaluation of novel azaartemisinin derivatives
- Disruption of the paternal epigenome due to pesticide exposure in a malaria area
- Investigation and optimisation of dibemequine antimalarials
- Reactivity and allerginicity of benzoquinone derivatives

PRIORITY AREA: Maternal, infant and child health

- Apolipoprotein-1 profiles in pre-eclamptic and HIV positive Black South African women of Zulu origin
- Follow up of high risk neonates to two years of age in a developing country
- Genome-wide gene expression analysis in black South African women who develop gestational diabetes mellitus
- Investigation of Viral Respiratory Pathogens in Cases of Sudden Unexpected Death in Infants (SUDI) in the Tygerberg Medico-legal Laboratory in the Western Cape
- Maternal and Child Mental Health: a prospective study
- South African Food sensitisation and Food Allergy (SAFFA) study
- The effect of maternal nicotine exposure during gestation and lactation on lung development in the offspring and the long term effect on respiratory health
- The effect of maternal nicotine exposure on aging of the heart and aorta
- Vitamin D, parathyroid hormone and pregnancy outcomes

PRIORITY AREA: Mental health

- Delineation of the genetic causes of complex epilepsies in South African paediatric patients
- Detecting infection in patients with Alzheimer's disease
- Epigenetics of Autism Spectrum Disorder
- Evaluation of the underlying neuro-pharmacological mechanisms and behavioural effects of efavirenz in rats, as compared to known drugs of abuse
- Genetic contributions to posttraumatic stress disorder in the Drakenstein Child Health Study
- Ibogaine and its effects on sleep, hemispheric symmetry and autonomic tone
- Investigating the neuropsychological and neuroimaging outcomes of multiple concussions and/or sub concussive head injuries among adolescent rugby players in South Africa
- Investigation of the relationship between disrupted sleep, memory impairment, and affective dysregulation in PTSD
- Longitudinal neurodevelopmental outcomes of infants exposed to alcohol and correlation with early neuroimaging in a birth cohort
- Modeling neuroinflammation in schizophrenia: a magnetic resonance imaging and cytokine study
- Structure activity relationships of xanthine analogs at the adenosine A1 receptor
- Targeting the 37 kDa/67 kDa laminin receptor for Alzheimer's Disease treatment
- The clinical and genetic profile of Huntington disease like 2 (HDL2) in South Africa
- The role of TGF-ß1 in the development of Ophthalmoplegia in Myasthenia Gravis patients of African ancestry
- Determination of the prevalence of illicit drugs in fatally injured drivers in Pretoria, South Africa
- Revealing and targeting the metabolic cost of Alzheimer's disease – A FRET, super-resolution and correlative light-electron microscopy approach

PRIORITY AREA: Non-communicable diseases

- A whole exome sequencing study of familial cardiomyopathies
- African Surgical Outcomes Study (ASOS)
- Assessment of bone integrity and health in type 2 diabetes using a rat model (Zucker Fatty Rat)
- Cardiometabolic aspects of psoriasis and psoriatic arthritis
- Computational modelling of single cell mechanics for non-communicable and infectious diseases
- Controlled non-viral RNAi delivery for myocardial infarction therapy
- Genetics and Autonomic Determinants of Sudden Death in South African Founder Families with Inherited Cardiomyopathy
- Identifying active plant extracts against diabesity - combining chromatographic fingerprint analysis with biological assays
- Investigating the cardioprotective effects of ghrelin in a chronic model of doxorubicin-induced cardiotoxicity
- Investigation of the genetic aetiology of Black sub-Saharan African patients with Parkinson's disease using high-throughput next-generation sequencing approaches
- New drug targets for combatting non-communicable diseases
- Paediatric and Adult African Spirometry II: A determination of spirometry reference equations in South African children and adults.
- Patient-specific 3D bone mineral density distribution from DXA images using statistical appearance models
- Prospective investigation of the haemostatic profile of black South Africans: the PURE study
- Relationship between Central Aortic Blood Pressure imputed from simple clinical measures and atherosclerosis in groups of African ancestry in South Africa
- Serum circulating miRNA profiling for identification of potential markers of diabetic nephropathy in black type 2 diabetic South Africans
- Terpenoids: Their role in alleviating the symptoms of obesity
- The Role of Blood Pressure and Insulin Resistance in the Transition From Obesity-associated Left Ventricular Hypertrophy to Dysfunction in a Community of African Ancestry
- The role of erythrocytes and platelets in iron overload diseases
- The role of novel adipokines in cardiovascular risk and its stratification amongst African black and white patients with rheumatoid arthritis
- Urinary proteomic biomarkers in arterial stiffness – African-PREDICT

PRIORITY AREA: Nutrition

- Addressing some elements of a comprehensive salt reduction strategy to ensure successful implementation of such a strategy in South Africa
- Vigilance for undeclared adulterants and contaminants in Dietary Supplements

PRIORITY AREA: Tuberculosis

- Biomarkers for treatment response and disease recurrence in pulmonary and extrapulmonary tuberculosis disease
- Characterisation of FtsEX, a protein complex required by Mycobacterium tuberculosis to survive the host immune system
- Combination biomarkers for early diagnosis of tuberculosis
- Design and synthesis of anti-tuberculosis peptidomimetics
- Genomics study of anti-tuberculosis drug-induced hypersensitivity reactions
- Impact of drug exposure on treatment outcomes using moxifloxacin and rifampin containing drug regimens in drug susceptible recurrent tuberculosis
- Kanamycin induced ototoxicity in patients with MDR-TB and the otoprotective effect of N-Acetlycysteine
- Mycobacterium tuberculosis infection of neurons and its immune regulatory potential on T cells
- Novel serum based biomarkers for diagnosis of TB and treatment monitoring in HIV-infected and uninfected children: “Detect TB Kids”
- Using energy targeting drugs to rewire Mycobacterium tuberculosis metabolism inside biofilms

STRATEGIC HEALTH INNOVATION PARTNERSHIPS (SHIP)

SHIP is now a well-established division within the SAMRC, having been incorporated into the Grants, Innovation and Product Development (GIPD) Division. Formed as a partnership between the Department of Science and Technology (DST) and the SAMRC in April 2013, the work of SHIP has been instrumental in catalysing increased investment in innovation and product development-focused programmes and with a major increase in leveraged international co-funding. The role of SHIP is to focus on multidisciplinary translational research and product development aimed at developing new:

- Diagnostics and medical devices
- Vaccines
- Platforms
- Drugs for Africa

With more than 40 projects, funding is provided in the areas of HIV, TB, Maternal and Child Health, Malaria, Precision medicine and Non-Communicable Diseases.

PRIORITY AREA: Drug projects

- Malaria drug discovery consortium - UCT, UP, CSIR, Wits, NHLS
- TB drug discovery consortium – UCT, AHRI, SUN
- TB child and adolescent multi-drug resistant preventive therapy trial (TB CHAMP) - Phase III Trial
- Development of a better-tolerated and more robust second-line antiretroviral regiment for HIV infection

PRIORITY AREA: Vaccine projects

- Assessing the quality of cellular responses to the RV144/HVTN 097 and HVTN 100 vaccine regimens
- Vaccine-mediated effects on immunological, viral and clinical factors in HIV breakthrough infections
- National Strategic Framework for Stakeholder Engagement in HIV Prevention Research South Africa
- Novel HIV vaccine candidates for South Africa
- A novel dual animal pre-clinical platform: Accelerating HIV vaccine product development in South Africa
- The production and characterisation of CAP256-VRC26 monoclonal antibodies in plants
- South African Tuberculosis Bioinformatics Initiative (SATBBI) - in support of systems biology approaches to tuberculosis biomarker research

PRIORITY AREA: Diagnostics, mHealth and Medical Devices

- Diabetes screening diagnostic
- HIVSmart! Transition to scale
- A GIFT (Genital Inflammation Test) for HIV prevention
- PHC 101 clinical guide app
- Digitisation of adult primary care guidelines – Primary Healthcare Guidelines
- Targeting the abnormal MicroRNA and splicing signatures in HIV-associated cancers
- A handheld, low cost aptamer-based Surface Enhanced Raman Scattering biosensor FOR TB diagnosis
- A non-sputum-orientated ultra-sensitive point of care diagnostic device for TB using a lateral flow assay couples to an electrochemical readout (TB-PROTEC)
- A case series of patients with postpartum haemorrhage due to atonic uteruses managed by using the SINAPI uterine balloon tamponade (UBT)
- Differential diagnosis of five febrile illnesses (including EBOLA on a multi-lateral flow point-of-care assay
- Molecular epidemiology of Ebola virus disease in West Africa and the development of diagnostic capacity
- Tshwane Khulelwe Project: An integrated ICT-enabled community-orientated antenatal care study with Doppler ultrasound (Umbiflow) assessment
- Molecular epidemiology of Ebola virus disease in West Africa and the development of diagnostic capacity

PRIORITY AREA: Genetics and Precision medicine

- Establishment of technology platforms in support of future Precision Medicine Applications in South Africa
- Development of a clinical exome sequencing solution and its application to diabetes mellitus and related disorders
- Increasing the capacity of the Seq2Res HIV drug resistance testing pipeline to facilitate the implementation of high-throughput, cost-effective HIV resistance genotyping in South Africa and other resource-limited setting
- Enabling low-cost TB drug resistance testing and surveillance through the implementation of an easy to use, cloud-based next generation sequencing analysis pipeline
- Development of a clinically applicable diagnostic test kit and pharmacogenomics algorithm for breast cancer

COLLABORATIVE PROGRAMMES

The Grants, Innovation and Product Development (GIPD) Division also manages several collaborative programmes that include:

- Grand Challenges South Africa
- Bill & Melinda Gates Foundation (BMGF) Grant
- Anglo American Platinum
- The SAMRC Innovate UK joint call
- South Africa – India joint call in TB and HIV

GRAND CHALLENGES SOUTH AFRICA

The SHIP Grand Challenges programme is partnered with the Grand Challenges programme of the Gates Foundation and partners in Canada, Brazil, India, US and Grand Challenges Africa. The focus is on Maternal and Child Health – essentially the last trimester and the first 28 days of life. The portfolio includes four projects.

- Development and validation of a sensitive, specific, one-time blood test for gestational diabetes
- Development and validation of progesterone impregnated cervical pessary with strain gauge sensors and linked electronic application to detect ongoing cervical shortening and dilation and improve prevention and prediction of preterm birth
- Advancing a protein-to-creatinine rapid test for determining proteinuria status as an onset indicator of preeclampsia/eclampsia
- Integrating a package of home-based early childhood interventions into existing community health work protocols in South Africa: A cluster randomised trial

BILL & MELINDA GATES FOUNDATION (BMGF) GRANT

The SAMRC, DST and the BMGF entered into a pioneering partnership in 2014 to focus on TB and HIV vaccine research to enable local scientists to develop novel innovative approaches to combat these diseases. The portfolio currently consists of six projects.

- Defining the functional αβ and Y9δ2 T cell responses associated with protective TB immunity
- Systems immunology of ID93 vaccine-induced protection against recurrent TB disease
- A human lung-orientated approach to correlates of risk in tuberculosis - The TB-HART study
- Blood signature of recent tuberculosis infection or re-infection
- Broad neutralising HIV antibodies, adjuvants and immunogens
- HIV-1 positive South African elite and long term controllers: viral and host targets for HIV functional cure strategies

ANGLO AMERICAN PLATINUM

The SAMRC entered into a partnership in 2014 with Anglo American Platinum to fund projects for beneficiation of platinum group metals. Calls were focused on funding medical device and drug projects where platinum group metals were key components in the innovations. Two projects were selected in the medical device area, both with private sector partners.

- Anitmonia: Differential diagnosis of viral versus bacterial pneumonia using a CD-shaped point-of-care (POC) platform
- Balloon aortic Valvuloplasty (BAV) catheter

SOUTH AFRICA – INDIA JOINT CALL IN TB & HIV

In 2015 the SAMRC hosted a visiting party of scientists and government officials from India to establish joint research projects in HIV and TB. The agreed priorities were included in a Request for Applications that was completed in late 2016 on behalf of the SAMRC, the DST, The Department of Science and technology of India and the Indian Department of Biotechnology. Three projects were selected for funding, along with an additional four project in South Africa focusing on capacity development.

- Novel serum based biomarkers for diagnosis of TB and treatment monitoring in HIV-infected and uninfected children: "Detect TB Kids
- Biomarkers for treatment response and disease recurrence in tuberculosis disease
- Combination biomarkers for early diagnosis of Tuberculosis
- A cell wall deficient Mycobacterium tuberculosis platform for metabolic drug target discovery and development
- The SAMRC is supporting various research capacity development projects at Walter Sisulu University aimed at increasing the research quality and intensity of the university and gearing the Eastern Cape region for broader participation in the clinical research agenda, particularly in the area of HIV.
- Population based surveys for HIV in Eastern Cape Accident and emergency departments
- SAMRC-WSU Research Capacity Development Programme
- Bridging funding for the Nelson Mandela Academic Hospital Clinical Research Unit

STRATEGIC RESEARCH INITIATIVES (SRI)

The following key partnership programmes are managed:

- The SAMRC flagship programme
- The SAMRC Intramural Research Fund Grants
- The SAMRC – NIH Collaboration

THE SAMRC FLAGSHIP PROGRAMME

National Treasury, in its Medium Term Expenditure Framework (MTEF) allocations for the period 2013/14 to 2015/16, made available additional funds to the SAMRC under its Economic Competitiveness and Support Package to support the rejuvenation of medical research in South Africa. The funds for these three-year flagship projects are specifically designated for high impact inter-disciplinary research projects and includes funds for research equipment, infrastructure, students and scientific staff at universities and SAMRC intramural units. There are two categories of funding, via, Category 1 (R16.5 million over three years) and Category 2 (R8.25 million over three years). Six Category 1 projects and 11 Category 2 projects were funded.

- Progressive research on risk factors of type 2 diabetes and cardiovascular diseases in South Africa (VMH Study)
- Development to the Clinical Phase of Oxidant and Redox Drug Combinations for Treatment of Malaria, TB and Related Diseases (MALTB REDOX)
- Integration of bioassay capacity, target identification and multidisciplinary research for the discovery of drug lead compounds (CCBRU-RU)
- High energy X-ray Beam Advanced Radiation Dosimetry and Verification (HARD)
- Comprehensive Bacterial Analytical Toolkit for Tuberculosis Research (COMBAT-TB)
- Investigation of the Management of Pericarditis Trial II: A Randomised Comparison of Complete Percutaneous Pericardiocentesis plus Interferon Gamma Testing Versus Empiric Treatment Without Pericardiocentesis in Suspected Tuberculous Pericarditis (IMPI 2 Trial)
- Understanding the SHARED ROOTS of Neuropsychiatric Disorders and Modifiable Risk Factors for Cardiovascular Disease (Shared Roots)
- Tuberculosis Transmission: Host, Bacterium and Environment (CCAMP)
- A multi-disciplinary approach to understand the causes and consequences of HIV transmission and drug resistance in hyper-epidemic setting in rural South Africa (HIVEPI)
- Evaluating a new drug regimen for patients with drug-resistant TB – a randomised controlled trial (NExT study)
- Stem cell research and therapy – addressing South Africa's disease burden (Stem cells)
- Antiviral properties of HIV vaccine-elicited antibodies (VacAb)
- Effectiveness of an alcohol-focused intervention in improving adherence to antiretroviral therapy (ART) and HIV treatment outcomes (AlcoholHIV)
- 2nd South African Comparative Risk Assessment (SA CRA2)
- Improving TB diagnosis and treatment through basic, applied and health systems research (BAR-TB)
- The impact of rape in women on HIV acquisition and retention linkages to care: a longitudinal study (RICE)
- South African Guidelines Evaluation Project (SAGE)
- CCHHSA (Climate Change, Heat and Health in South Africa)
- A multi-staged multi-disciplinary health care approach in reducing maternal morbidity and mortality rates in a selected district in KwaZulu-Natal (MH1)

THE SAMRC INTRAMURAL RESEARCH FUND GRANTS

The SAMRC made available an amount of R5 million in the 2016/17 financial year to fund projects within the intramural domain i.e., SAMRC intramural research units, research and/or innovation platforms and offices of malaria, TB, HIV/AIDS collaborating centres. There were three categories of funding and projects were awarded.

- A health economic evaluation of scaling-up HIV care coverage among children and adolescents in South Africa: An examination of efficiency, equity, providers and household costs, supply and demand factors, and quality of life and care
- Geo-spatial mapping of cardiovascular co-morbidities in South Africa: A novel approach to assess disease burden, hotspots and resource allocation
- Investigating the novel markers of cardio-metabolic and renal diseases risk in the Cardiovascular Risk in Black
- South Africans (CRIBSA) Study
- The Social Anatomy of Public Protests in Gauteng Province
- Evaluation of availability and quality of morbidity data in routine health information systems (RHISs) in hospitals in National Health Insurance pilot districts
- Lead exposure and cognitive impairment in the older people living in communities located near mine tailing dumps in Johannesburg.
- Influence of Natural Products on Bioavailability and Metabolism of Hormonal Contraceptives: Implication for Unintended Pregnancy in HIV/AIDS Women
- Environmental Health Hazards of the Traditional Medicine Trade
- Brief Intervention reducing Alcohol and Drug Use and Risk Behaviours in Adolescent Learners in Cape Town, South Africa: A feasibility study
- Biomarker profile predicting the risk of developing diabetic cardiomyopathy
- Feasibility and Acceptability of Dried Blood Spots and Hair Sampling for Measuring Antiretroviral Therapy Concentrations Amongst Hazardous/Harmful Alcohol Users
- Eliminating Residual Malaria transmission in KwaZulu-Natal Through Winter Larviciding
- Epigenetic modulation during obesity and insulin resistance

THE SAMRC – NIH COLLABORATION

The SAMRC and the National Institutes of Health (NIH), US, have two major research collaborations:

(1) Providing matching funding of $40 million in total over five years for projects in HIV/AIDS, TB and HIV related malignancies. There are three funding mechanisms, viz, R01, R21 and U01. Thirty one projects are being funded at present.

(2) Providing co-funding for the TB Research: Regional Prospective Observational Research for Tuberculosis in the Republic of South Africa (RePORT SA). Five TB Report sites have been funded under this programme.

- Altered immune-endocrine axis in type 2 diabetes and tuberculosis risk
- Timing of establishment of the HIV latent reservoir in subtype C infected women
- Analysis of National Lab Database to evaluate the HIV treatment rollout in South Africa
- Immune mediators associated with HPV clearance as predictors of HIV acquisition
- Pharmacometric optimisation of second line drugs for MDR tuberculosis treatment
- Optimising and operationalising paediatric drug-resistant tuberculosis treatment
- Combination treatment for protection against HIV1 and pregnancy
- Screening for atherosclerotic vascular disease in HIV-infected children
- Using Information to Align Services and Link and Retain Men in the HIV Cascade
- A study of transmission risk behaviour in a clinical population of adolescents with perinatally-acquired HIV in Soweto, South Africa
- Enhanced STI management to reduce genital inflammation and HIV risk
- Diversity of CD4+ Th subsets in TB immunity - Impact of HIV infection
- Integrin a4b7 as a predictor of HIV acquisition and pathogenesis
- Drug permeation and activity in Mycobacterium tuberculosis infected macrophages
- Fate of M. tuberculosis Antibiotic Survivors
- Combining Xpert and GIS to identify areas of high tuberculosis transmission
- Mechanisms of altered immune responses in HIV exposed infants
- Linking high-risk young women to HIV prevention and care for comorbid conditions
- Risk assessment of HIV infected to HIV infected transplantation in SA
- CAPRISA HIV-1 neutralising antibodies: Harnessing ontogeny for immunogen design
- Inflammatory determinants of disease severity and treatment outcome in TB patients
- Innovations in HIV testing to enhance care for young women and their partners
- Hormone induced mucosal susceptibility and HIV risk in South African adolescents
- Characterising HIV-1 diversity, evolution, and integration sites in children initiating ART in early infection
- The coding genome of HIV-associated plasmablastic lymphomas in South Africa
- Replisome dynamics in M. tuberculosis linking persistence to genetic resistance
- HIV's Effects on Breast Cancer Treatment and Outcomes in South Africa
- Design and delivery of combination HIV prevention in young South African women
- Congenital CMV infection in the era of Option B in South Africa
- Origin and Lineage of Differentiation of Kaposi's Sarcoma
- Identifying sources of HIV infection in adolescent girls in rural South Africa
- Regional Prospective Observational Research in Tuberculosis (RePORT)-South Africa, Durban
- Highly sensitive cartridge-based nucleic acid amplification testing for the diagnosis of pulmonary tuberculosis in children
- TB in hot and cold spots in South Africa: researching index cases and their households:
- A South Africa - Hopkins TB collaboration (The SoHoT Collaboration)
- The COR Dynamics Sub-study: A sub-study of The Correlate of Risk Targeted Intervention Study (CORTIS) to evaluate the dynamics of a qRT-PCR based transcriptomic signature of TB disease risk
- Quantifying infectiousness of undiagnosed tuberculosis cases and the impact of enhanced community-based active case finding strategy using novel diagnostic tools – a randomised controlled trial-XACT 2

FORTE SAMRC COLLABORATION

The SAMRC entered into an agreement with the Swedish Research Council for Health, Working Life and Welfare (Forte) in 2015 under the scientific cooperation agreement between SA and Sweden. Following a workshop between SA and Swedish participants, an RFA for joint projects seeking to address inequalities in Health was published in Jan 2016. There are 3 categories of funding and at present, 6 category 1 projects (R1 million per year for 3 years) and 5 category 3 projects (R200k for 1 year) are funded. Recipients of category 3 funding are eligible to apply for additional funding of R400k per year over 2 years.

- Promoting institutional collaboration between Sweden and South Africa in the support of interventions that improve accessibility and uptake of sexual and reproductive health services, including services for HIV prevention and treatment among men
- An evaluation of how the South African eHealth strategy can be supported through the use of an Electronic Health Record System
- Resolving the role of health care system factors for care gaps in adolescents with complex chronic conditions: An international, multilevel study
- Intersections of rurality and gender in relation to violence against girls and young women: An urgent matter in relation to health inequalities in South Africa and Sweden
- Re-engineering the health care system for South African traditional healthcare
- A study of the feasibility of the introduction of a Swedish HPV test for the management and prevention of cervical disease in the Eastern Cape
- Challenges of adherence to antiretroviral therapy among adolescents born with HIV in the Nelson Mandela Bay Municipality
- Inequalities in health
- Effectiveness of Mobile health applications in primary health care
- Health Systems and Health Systems Policies
- Strengthening Health Systems for Maternal & Child Care in Limpopo Province: A Multisectoral Approach
- SMU Pharmacovigilance Centre
- Preventative Chemotherapy Neglected Tropical Diseases (NTD) Mapping

THE SAMRC – UK NEWTON FUND COLLABORATION

In October 2014 the Minister of Science and Technology signed a South African and UK collaborative agreement with the British Government's Newton Fund programme. The SAMRC and the UKMRC were actioned to set up collaborative programmes in health. The SAMRC announced the first of three open calls as part of a collaboration with the UK Medical Research Council. Under the umbrella of the Newton Fund, the goal of the joint research programme will be to promote collaboration between South African, African and British scientists. The first call focused on Non-Communicable Diseases (NCD) in Africa, partnering with GlaxoSmithKline (GSK). Seven projects were chosen through an open call and peer review process. The total fund available is approximately R90 million over 3 years.

NON-COMMUNICABLE DISEASES (PARTNERSHIP WITH GLAXOSMITHKLINE)

The call was specifically looking for proposals that target NCDs of high prevalence in Africa. As NCDs begin to impact on morbidity and mortality in Africa, there is an opportunity for public and private sector partners to work together to share develop scientific expertise in this area. The key aspect of the projects will be on translational research that will integrate basic laboratory-based research, clinical research, and population-based research, with the long-term aim of improving scientific understanding of the unique attributes of NCDs in African populations.

- African cardiomyopathy and myocarditis registry programme: The IMHOTEP study
- Improving timely diagnosis of symptomatic breast and cervical cancer in sub-Saharan Africa
- Genomic analysis of African oesophageal squamous cell carcinoma
- EVOLVING RISK FACTORS for CANCERS in AFRICAN POPULATIONS: Lifestyle, infection, genetic susceptibility and cancer in South Africa: development of research capacity and an evidence base for cancer control
- Prevalence, characterisation and response to chronic kidney disease in South Africa
- Determinants of type 2 diabetes mellitus (T2D) risk in middle-aged black South African (SA) men and women: dissecting the role of sex hormones, inflammation and glucocorticoids
- African Prospective study on the Early Detection and Identification of Cardiovascular Disease and HyperTension (A-PREDICT)
- Decrypting the relationship between epigenetics and type 2 diabetes in sub-Saharan Africa
- Targeting the abnormal MicroRNA and Splicing Signatures in HIV-associated cancers

TB IMPLEMENTATION SCIENCE

The second SAMRC and UKMRC focused Newton call addressed tuberculosis implementation science. The R70 million funding will support Tuberculosis (TB) control implementation science research. Six projects were selected for funding to specifically address the challenges of understanding the challenges with the implementation to TB controls in South Africa.

- Improving TB outcomes by modifying lifestyle behaviours through a brief motivational intervention (PROLIFE)
- A household cluster randomised trial of active case finding for HIV and TB, preventive treatment against TB, and ART initiation to prevent TB disease and transmission (The HomeACF Study)
- Addressing challenges in scaling up TB and HIV treatment integration in public health settings in South Africa
- Optimising the efficiency of household contact tracing for TB control in South Africa
- Application of novel strategies in district-level TB hotspots to reduce pre-treatment loss to follow-up and improve successful patient outcomes of microbiologically confirmed TB
- Technology supported systems for rapid impact on TB control

ANTIMICROBIAL RESISTANCE

The Third SAMRC and UKMRC grant focused on funding seed grants to address the challenges of antimicrobial resistance in Africa by investing in projects that address novel approaches for surveillance, point of care diagnosis and new drugs with novel mechanisms of action. Six awards were made under this call.

- E – AMR: ICT Solutions for Real – Time Electronic Monitoring of Antimicrobial Use and Resistance in the one Health Approach
- Smart surveillance towards malaria elimination in Mpumalanga, South Africa: novel approaches for mapping antimalarial resistance
- Developing the Next Generation of β-lactamase Inhibitors and Monobactam Antibiotics.
- Enhancing Appropriate Antimicrobial use via mHealth and other techniques in the Republic of South Africa (ENAABLES Project) - Application for part 3 in humans - New technology innovations to improve surveillance and use of antimicrobials
- Using whole genome sequencing to develop Antimicrobial Microbial Resistance Reference Facility for One Health in South Africa
- A new look at an old disease: underexplored chemical space as a source of novel compounds active against multidrug-resistant M. tuberculosis

STRATEGIC PROJECTS

The SAMRC received several unsolicited project proposals during 2015/16. EMC considered these proposals and awarded funding for several of these projects from unspent funds in the 2015/16 financial year.

- SMU Pharmacovigilance Centre
- Preventative Chemotherapy Neglected Tropical Diseases (NTD) Mapping
- The evidence for contraceptive options and HIV outcomes (ECHO)
- Development of a single dose malaria cure of Artemether-Lumefantrine through a nano-based drug delivery system
- GARDP (Global Antimicrobial R&D Partnership)
- Is there a genetic predisposition to death and disability after moderate-severe hypoxic ischemic encephalopathy (HIE) in cooled infants? A genome-wide association study in a South African cohort

THE SOUTH AFRICAN AIDS VACCINE INITIATIVE (SAAVI)

SAAVI funding is used for a variety of activities that complement and contribute to developing an HIV vaccine: and includes support for the SAMRC's participation in the P5 partnership (support for immunology assays and the NeMACRU site); support for research on vaccine mediated effects of immunological, viral and clinical factors in HIV breakthrough infections in South Africa; research capacity development at the Walter Sisulu University, an HIV prevalence study in the Eastern Cape in collaboration with the NIH and Johns Hopkins University; as well as a national stakeholder engagement on community preparedness for HIV prevention research.

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BREAKING NEW GROUND IN RESEARCH & DEVELOPMENT

POX-PROTEIN PUBLIC-PRIVATE PARTNERSHIP (P5)

The SAMRC is one of a number of international partners in the Pox-Protein Public-Private Partnership (P5). Other partners include the Bill & Melinda Gates Foundation, the US National Institutes of Health, Sanofi Pasteur, GlaxoSmithKline, the HIV Vaccine Trials Network and the US Military HIV Research Program. The P5 was established to build on the success of the RV144 trial and to develop pox-protein HIV vaccines with the potential for broad public health impact through an extensive clinical and research programme. The SAMRC's contribution to the P5 is on a variety of fronts.

The SAMRC is providing support to the Cape Town HVTN Immunology Laboratory to conduct immunology assays for the HVTN 097 Trial, capacity development and, more recently, for research aimed at assessing the quality of cellular responses to the RV144/HVTN 097 and HVTN 100 vaccine regimens. A further contribution is funding and capacity development support provided to the Nelson Mandela Academic Hospital Clinical Research Unit at Walter Sisulu University in Mthatha. The SAMRC is working with the HVTN to prepare the site for participation in HIV vaccine trials.

The SAMRC also participates on the P5 Global Access Committee (GAC), which has been convened to guide the development of a vaccine Access Plan aimed at developing a clear, feasible and broadly supported roadmap to guide successful deployment of a safe and efficacious vaccine to priority populations in South Africa. The GAC has to date focused on two major work streams: 1) public health impact modelling of the P5 HIV vaccine regimen under various scenarios and in different populations in South Africa to determine the impact of the vaccine on HIV incidence and to inform the case for investment by elucidating the cost-effectiveness of the vaccine; and 2) stakeholder engagement to gather perspectives and considerations that will shape the modelling effort and long-term public health strategy. The SAMRC's participation on the P5 GAC provides a key link to local stakeholders and knowledge of the local context.

SAMRC STRATEGIC RESEARCH

PROGRAMMES

GROWING THE KNOWLEDGE ECONOMY OF OUR COUNTRY

PROGRAMME 1:
HEALTH PROMOTION & DISEASE PREVENTION

PURPOSE OF THE PROGRAMME

To conduct research using a life course approach to healthy lifestyles, early diagnosis, and cost-effective prevention and management of diseases through health promotion.

UNITS THAT CONSTITUTE THIS PROGRAMME

- Alcohol, Tobacco and Other Drug Research Unit
- Anxiety and Stress Disorders Research Unit
- Non-Communicable Diseases Research Unit
- Environment and Health Research Unit
- Rural Public Health and Health Transition Research Unit
- SAMRC-UNISA Violence, Injury and Peace Research Unit
- Hypertension and Cardiovascular Disease Research Unit
- Microbial Water Quality Monitoring Research Unit
- Risk and Resilience in Mental Disorders

PROGRAMME STRATEGIC OBJECTIVES

- To contribute towards the body of evidence by gaining a better understanding of how factors such as nutrition, physical activity, mental health, healthy behaviours, environment and stress factors affect life expectancy
- To be a leader in scientific research by contributing to new knowledge in the area of health promotion and disease prevention
- To train and mentor high-quality postgraduate students and postdoctoral fellows who are able to compete in the science, health and/or education sectors locally and abroad to advance the cause of health promotion and disease prevention
- To assist the National Cancer Registry in producing cancer surveillance statistics and cancer trend reports
- To translate research results into health and education policy, the practice of health care professionals, and the configuration of health and education systems
- To develop interventions that affect and address poor nutrition, lack of physical activity, excessive alcohol intake, and risky sexual behaviours
- To add to evidence-based interventions that look into factors affecting life expectancy
- To train and educate health-care staff and community members to manage, control and reduce the incidence of NCDs

UNIT NAME:
ALCOHOL TOBACCO AND OTHER DRUG RESEARCH UNIT

NAME OF UNIT DIRECTOR:
Charles Parry

Number of publications for the period 2016/17:	**30**
Number of publications published in journals with impact factor greater than 5:	**3**
Number of policy briefs produced:	**1**
Number of collaborative research projects completed in the reporting period:	**0**
Number of post graduate students receiving supervision under your unit:	**19***

* (8 Masters, 8 PhD, and 3 postdocs)

STRATEGIC PURPOSE OF UNIT

Alcohol, tobacco and other drug (ATOD), including both illicit drugs and over-the-counter and prescription medications used non-medically, continue to be major risk factors for death and disability in South Africa, with alcohol use and smoking ranked 5th and 6th, respectively, as leading risk factors for death and disability in 2015 in South Africa. The burden is particularly great for various communicable and non-communicable diseases, mental disorders, and intentional and unintentional injuries. To inform the development of evidence-based interventions, we need to understand the drivers of the problems associated with ATOD use and causal pathways and the effective elements of commonly used interventions to address ATOD problems and how best to implement these interventions in increasingly complex health and social service environments.

Our purpose, simply stated, is to generate knowledge and propose policy and other interventions that will lead to a reduction in ATOD use and the associated burden experienced by users, others and the broader society. During 2016/17 Unit staff were involved in more than 15 research projects covering 5 areas: infectious diseases (Area 1), non-communicable diseases (Area 2), maternal/neonatal and adolescent health (Area 3), violence and injury (Area 4), and systems strengthening and policy impact (Area 5).

STRATEGIC REVIEW OF THE REPORTING PERIOD

Focusing on the larger projects, in Area 1 we completed formative work related to our SAMRC Flagship project on 'Alcohol and HIV', assessing the efficacy of an intervention to reduce alcohol consumption and improve medication adherence and other HIV treatment outcomes in People Living with HIV and AIDS (PLWHA). We found that three brief versions of the Alcohol Use Disorders Identification Test (AUDIT) may be appropriate substitutes for the full AUDIT for screening for excessive alcohol use in HIV clinics, thereby making it much easier in practice to undertake alcohol screening in such settings given time and other constraints. We also demonstrated that our brief motivational interviewing and problem solving intervention was acceptable to HIV patients and showed promise for reducing use of alcohol as a coping mechanism.

Evaluations of HIV prevention interventions among female commercial sex workers (CSWs) in Durban and men who have sex with men (MSM) in Pretoria reported generally positive findings. For example, for MSM, reductions in the use of some drugs in general and during sex and greater engagement in safer sexual practices was found, and for CSWs, we demonstrated a decrease in the number of sexual partners, the number of times they engaged in vaginal sex and use of alcohol and illicit drugs. In Area 2 papers were published on research into the perspectives of general practitioners and addiction treatment providers on codeine misuse and dependence and into best practices and innovations for reducing codeine misuse and dependence.

Innovations centre on better monitoring of medicines using real time reporting; pseudo customer visits to audit pharmacists' intervention at point of sale and performance feedback; use of mHealth technology; and better training for general practitioners, dentists and addiction treatment providers.

In Area 3 we collaborated with colleagues at Stellenbosch University and the Universities of New Mexico and North Carolina. Papers published from this collaboration highlighted the very high burden of Fetal Alcohol Spectrum Disorders (FASD) in certain rural areas of the Western Cape (17%-23% of grade 1 learners) and indicated that mothers who drank postpartum and breastfed were six times more likely to have a child with FASD than breastfeeding mothers who abstained from alcohol while breastfeeding.

In Area 4 we collaborated with RTI International and demonstrated that almost half of our sample of young women who had experiences of violence tested positive for HIV, of which almost one in five were newly diagnosed. Women who reported methamphetamine use were more likely to be newly diagnosed with HIV. Finally, regarding Area 5, treatment demand data from our South African Community Epidemiology Network on Drug Use (SACENDU), which has now been in operation for 21 years, shows that across the nine provinces for both primary and secondary substance of abuse, 44% of patients are admitted due to problems related to cannabis use, 32% for alcohol-related problems, 17% for crystal methamphetamine use and 13% for heroin use. In this area, we also piloted two models for delivering counselling for common mental disorders (including alcohol use) in primary health care clinics, and demonstrated that both these approaches show promise for reducing alcohol and depression among chronic disease patients.

In this area we also starting mining data collected as part of the South African arm of the International Alcohol Control Study which was conducted in Tshwane among drinkers. Over half of adult drinkers were found to be 'heavy drinkers', and persons who drank their primary beverage from above average-sized containers at their primary location had almost eight times the odds of heavy drinking as compared to persons who drank from average-sized containers. Public support for a range of alcohol policies was for the most part well above 50% and could be one lever to getting a number of proposed alcohol control measures implemented in South Africa.

Two new research collaborations were signed in 2016/17. First, a Service Agreement with Sefako Makgatho Health Sciences University (SMU) where Unit staff are collaborating on a project entitled "Improving TB outcomes by modifying life-style behaviours through a brief motivational intervention (PROLIFE)," which is funded by the SAMRC with funds received from the South African National Department of Health, and the UK MRC (Newton Fund). We also signed an agreement with Boston Medical Centre which our NIAID R01 titled: "The impact of alcohol consumption on TB treatment outcomes (TRUST Project)."

MAJOR RESEARCH PROJECTS		
PROJECT /RESEARCH TITLE	**FUNDER**	**PRINCIPAL INVESTIGATOR**
The impact of alcohol consumption on TB treatment outcomes (TRUST Project)	National Institute of Allergy and Infectious Diseases (NIH)	Bronwyn Myers

CONTACT DETAILS

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UNIT NAME:
ENVIRONMENT & HEALTH RESEARCH UNIT

NAME OF UNIT DIRECTOR:
Angela Mathee

Number of publications for the period 2016/17:	20*
Number of publications published in journals with impact factor greater than 5:	0
Number of policy briefs produced:	0
Number of collaborative research projects completed in the reporting period:	2
Number of post graduate students receiving supervision under your unit:	25**

*17 journal articles and 3 book chapters

**14 PhD and 11 Masters

STRATEGIC PURPOSE OF UNIT

Environmental factors are responsible for around one quarter of the global burden of disease. In South Africa, key environmental hazards to health include air, water and soil pollution from industries, mining operations and vehicular emissions. For people living in informal settlements, or in under-developed settings, the main environmental hazards to health include inadequate housing, poor quality (or insufficient quantities of) water, ineffective systems for removing solid waste and waste- or storm-water, and polluted indoor or ambient air from the use of polluting fuels for daily cooking, space heating and boiling of water for bathing. The majority of people in South Africa now live in cities, and going forward, the health of the nation will increasingly be dominated by the health of its urban population.

The concentration of large proportions of the population in urban settings presents an opportunity for efficiency and scale in the provision of housing and services essential for the creation of healthy communities. However, rapid influx into cities, especially where unmatched by the delivery of housing and environmental health services, may lead to areas of concentrated poverty and ill health, especially in inner city areas and on city margins. The changing global climate, associated with an increase in the frequency and intensity of adverse weather events (such as the severe drought and deadly heat waves in South Africa in recent years) poses increased environmental risks to everyone's health.

However, risks are elevated among people living in poverty, whose housing may be located on high risk land (such as steeply sloping or dolomitic areas), be poorly designed or insufficiently secure for adequate protection against severe weather. In general, the changing climate, unless appropriate adaptive measures are implemented, is expected to exacerbate many of the health hazards already faced by communities in poverty and settings of under-development.

The SAMRC's Environment & Health Research Unit manages three programmes of research on selected environmental factors that impact on the health of the South African population. The first relates to public exposure to toxic metals such as lead, mercury arsenic, cadmium and uranium. In this regard studies have been undertaken in the general population and high risk groups (such as children and pregnant women), and in diverse settings, for example mining towns, subsistence fishing villages, around coal-fired power stations, industrial zones and shooting ranges. In Johannesburg and Port Elizabeth we are monitoring the living conditions and health status of people living in settings of urban poverty. With South Africa being a high-risk area for certain ramifications of climate change, we are conducting research on two key areas: heat and sun exposure.

LEAD EXPOSURE IN SHOOTING RANGES

In the past year, work on a study of exposure to lead among people making use of private shooting (or firing) ranges was completed. Users of shooting ranges and archery (control group) ranges were interviewed using a pre-structured questionnaire, and their blood lead measurements were taken. The results provided strong evidence that the use of shooting ranges, especially those with poor infrastructure, where range cleaning practices were sub-optimal and where hygiene facilities were absent, increased the risk of elevated blood lead levels. For example, the average blood lead level in users of the shooting ranges in the study was four times higher than that in the control group of archers. Blood lead levels in archers ranged from 2 to 12 µg/dl (the median level was 2) and 23% had blood lead levels > 5 µg/dl. In users of shooting ranges on the other hand, blood lead levels ranged from 2 to 60 µg/dl (the median level was 9.3) and 84% had blood lead levels > 5 µg/dl. Case studies on two shooting range workers indicated especially high blood lead levels in this group.

Scientists in the E&HRU have published two papers on the study results, and the Department of Labour has consequently decided to place the concern of elevated worker exposure to lead in shooting ranges higher up on their agenda, with a nation-wide awareness campaign and series of site inspections being amongst their planned activities for 2017. The study findings were received with particular interest by the South African Police Service, who joined an SAMRC working group (including the National Department of Health) to develop a lead hazard education campaign for police officers who regularly train at shooting ranges. The campaign is currently being rolled out to police and public shooting ranges across the country.

MINING AND HEALTH

There has long been a high level of concern about exposure to toxic substances among members of communities located in close proximity to mining operations and mine tailings dumps, especially in the light of mining being a fundamental pillar of the South African economy. In the past year a team of E&HRU scientists (Tanya Haman, Professor Nisha Naicker and Professor Angela Mathee) has been collecting data to determine the

levels of exposure to toxic metals (including lead, mercury, arsenic and uranium) and radon in communities living at three different distances from a large gold mine tailings dump in the Soweto area. The study involved the collection of samples of garden soil, indoor dust and domestic water, as well as blood and urine samples to determine the toxic metal content 1) within 500 metres, 2-3 kilometres away, and 3) around 5 kilometres away from the mine dump. Radon monitors were also installed in each study house to determine the risk of indoor radon exposure. Study participants, which included both adults and children, were asked about, amongst other factors, their socio-economic and health status, and their history of possible exposure to the metals of interest. Children also completed tests of cognitive development and behaviour.

While some of the laboratory measurements are yet to be completed, and analysis of the data set is still at an early stage, preliminary examination indicates that most of the participants have levels of arsenic, lead and uranium in their urine and blood that are within international guideline levels. The results do indicate however, that those living closest to the mine tailings dump have significantly elevated body burdens of certain metals, relative to their counterparts living further away. Should these findings be confirmed on completion of the analyses, they would hold implications for planning decisions on settlement development in relation to mining operations in the country.

HEAT AND PUBLIC HEALTH

As the global climate changes, South Africa is expected to experience a rise in average temperature that exceeds the international average. With warmer summer temperatures, and possibly an increase in the frequency of heat waves, personal and public protection measures against heat and excess sun exposure, especially for vulnerable groups, will be increasingly important to prevent ill health and discomfort. Children spend the hottest part of most days of the week at school, and are directly exposed to the sun during breaks and outdoor activities.

Outdoor workers, for example road construction workers, may need to perform hard labour in the direct sun, placing them at risk of dehydration, heat exhaustion, heat stroke or sunburn, and an inevitable reduction in their productivity or ability to work. During hot weather the elderly, as well as people with pre-existing ill health conditions, are particularly vulnerable to excess mortality. Poor people, who may be living in housing with limited ability to protect occupants against temperature extremes, especially in the hottest and most humid parts of the country (for example in the Northern Cape, KwaZulu-Natal and Limpopo provinces), also rank amongst the most vulnerable groups.

The E&HRU is undertaking a suite of research projects aimed at investigating sun and heat-related health risks in vulnerable South African groups, and evaluating protective or adaptive interventions. For example:

- a weather-health early warning system is being evaluated in the Limpopo province,
- a study on classroom heat exposure is being undertaken in the Eastern Province,
- a study on heat in clinic waiting rooms has been completed in the Limpopo Province,
- interventions to improve thermal comfort in low cost housing in the Northern Cape is in the planning phase, and
- a formative study on the impact of exposure to the sun on vaccine efficacy has been completed in Giyani (Limpopo Province).

The Unit has also worked with the National Department of Health to develop much needed public education materials on what can be done to keep children and the elderly in particular, safe during very hot weather.

MAJOR RESEARCH PROJECTS

PROJECT /RESEARCH TITLE	FUNDER	PRINCIPAL INVESTIGATOR
Lifetime lead exposure and dementia in the elderly	SAMRC	Nisha Naicker
Environmental and occupational health status of workers in traditional medicine markets	SAMRC	Renee Street
Assessment of heat vulnerability in high risk South African towns, schools, housing settlements and clinics	SAMRC	Caradee Wright

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UNIT NAME:
HYPERTENSION AND CARDIOVASCULAR DISEASE RESEARCH UNIT

NAME OF UNIT DIRECTOR:
Aletta Schutte

Number of publications for the period 2016/17:	**40**
Number of publications published in journals with impact factor greater than 5:	**16**
Number of policy briefs produced:	**-**
Number of collaborative research projects completed in the reporting period:	**5**
Number of post graduate students receiving supervision under your unit:	**23**

STRATEGIC PURPOSE OF UNIT
Globally the prevalence of raised blood pressure and related cardiovascular diseases occur more frequently in populations of African ancestry. This is particularly relevant to South Africa, where hypertension is more often present at younger ages and rapidly progress towards adverse outcomes, such as stroke. It is therefore a critical public health imperative to address the growing incidence of hypertension, not only in the elderly but specifically in younger individuals through population-based as well as biomedical individualised approaches. Our research encapsulates this approach by performing different prospective studies using advanced biomarkers and cardiovascular assessment techniques to better understand the pathophysiological underpinnings of early cardiovascular disease development. Only by understanding these processes will we be able to instigate more successful hypertension prevention programmes in Africa.

STRATEGIC REVIEW OF THE REPORTING PERIOD
The first 10-year longitudinal data from the South African PURE study is now available and are being analysed to establish predictors for cardiovascular outcome and all-cause mortality. This is done in conjunction with the international PURE coordinators, McMaster University in Canada.

New initiatives during this period include: The introduction of new biomarker analyses, including proteomics and metabolomics, within young adults included in the African-PREDICT study, which will comprise the full sample of 1200 participants by end of 2017. These novel analyses will be linked to detailed cardiovascular phenotypes contributing to understanding early disease development. This is done in collaboration with scientists from the University of Glasgow, and the National Institute of Aging, USA.

Another new initiative included the planning phases of the new EndoAfrica study which will include HIV-infected patients and controls where endothelial function will be monitored over three years to determine the vascular effects of antiretroviral treatment. This is to be done in collaboration with scientists from the University of Stellenbosch, Walter Sisulu University and the University of Graz.

MAJOR RESEARCH PROJECTS		
PROJECT /RESEARCH TITLE	**FUNDER**	**PRINCIPAL INVESTIGATOR**
African-PREDICT study: Advanced biomarker study [proteomic, RAAS fingerprint, multiplex analyses]	Newton Fund (UK MRC/SAMRC/ GSK)	AE Schutte
EndoAfrica study: studying the nexus between HIV infection and vascular endothelial function	SA Department of Science and Technology (along with European Union Funding)	CMT Fourie

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UNIT NAME:
SAMRC–UNISA VIOLENCE, INJURY AND PEACE RESEARCH UNIT

NAME OF UNIT DIRECTOR:
Mohamed Seedat

Number of publications for the period 2016/17:	**22***
Number of publications published in journals with impact factor greater than 5:	**0**
Number of policy briefs produced:	**1**
Number of collaborative research projects completed in the reporting period:	**3**
Number of post graduate students receiving supervision under your unit:	**27****

*16 ISI and 6 Others
**20 PhD and 7 Masters

STRATEGIC PURPOSE OF UNIT
South Africa's burden of mortality and morbidity from violence and injury is disproportionate and a key contributor to South Africa's quadruple burden of disease. The extent of physical disability, and psychological traumatisation as a result of violence and injuries is widespread, with an estimated 3.5 million people reported to annually seek health care. The Violence, Injury and Peace Research Unit or VIPRU is a collaboration between the University of South Africa's Institute for Social and Health Sciences and the South African Medical Research Council.

VIPRU's mandate is to improve the population's health status and quality of life through research and advocacy, aimed at promoting safety and peace through the prevention of death, disability and suffering arising from violence and injury. The unit is committed to data-driven prevention initiatives and transferable solutions for priority injury and violence issues that include safety and peace promotion. It is focused on critically-orientated, public-health research that centres its programmes on the prevention of violence and priority injuries, including those due to traffic incidents and burns.

STRATEGIC REVIEW OF THE REPORTING PERIOD
In 2016, VIPRU continued its critically-orientated, public health research, consolidated its transdisciplinary approach to safety and peace promotion, and centered its programmes around prevention studies. The VIPRU research groups are organised around three research areas, each with a range of key projects. These are: (1) the methodological and technological innovations required to support prevention, (2) determinant-based interventions that work to prevent violence and injury, and (3) the institutional, social and policy environments supportive of science-based prevention.

This research is directed at the promotion of safe demonstration communities in South Africa and elsewhere on the African continent. VIPRU in 2016 continued to promote their safe communities philosophy, especially through its intervention research, in particular three flagship research suites: a) Child Safety, Peace and Health: A Multi-Injury and Multi-System Intervention; b) Positive forms of Masculinity, Community Assets and Interpersonal Violence Prevention; and c) Preventing Violence through Hope and Change. The interventions developed are directed at the reduction of key risks and the building of resilience in impoverished communities and vulnerable groups.

In 2016, a number of new projects were initiated, including an analysis of the social anatomy of public protests in Gauteng, in response to the often violent escalations in community protests; the development of safe energy solutions, to counter the associated health and immediate and longer term safety threats faced by energy impoverished communities; and the development of a visual documentary to support paediatric psychosocial recovery from burns, particularly after discharge.

MAJOR RESEARCH PROJECTS		
PROJECT /RESEARCH TITLE	**FUNDER**	**PRINCIPAL INVESTIGATOR**
Social Anatomy of (non) Violent Protests	SAMRC	Mohamed Seedat
Community Energization: Sustainable Energy for All	SAMRC/Unisa	David Kimemia
Strengthening Paediatric Psychosocial Recovery From Burns	National Research Foundation	Ashley van Niekerk

CONTACT DETAILS
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UNIT NAME:
MICROBIAL WATER QUALITY MONITORING CENTRE

NAME OF UNIT DIRECTOR:
Al Okoh

Number of publications for the period 2016/17:	**30**
Number of publications published in journals with impact factor greater than 5:	**0**
Number of policy briefs produced:	**0**
Number of collaborative research projects completed in the reporting period:	**3**
Number of post graduate students receiving supervision under your unit:	**57***

*There are 6 active professors and 5 postdocs in the unit, whose students benefit from SAMRC funding.

STRATEGIC PURPOSE OF UNIT

The SAMRC Microbial Water Quality Monitoring Centre at the University of Fort Hare strives to be a highly profitable Centre of excellence for the development of the next generation of microbial water resource specialists and to be primus inter pares in proffering solutions to the myriad of water quality challenges in South Africa and beyond.

This mandate is driven by the serious problem of shortage of skilled manpower in the water and sanitation sectors especially amongst previously disadvantaged demographic groups in South Africa, and our research is mainly directed at finding solutions to this reality through primarily addressing the myriad of challenges in the water and sanitation sector in the Eastern Cape Province (ECP) within the overarching aim of our research initiatives which is "evaluating some key emerging challenges in microbial water quality and safety as a vehicle for skills and capacity development in water science especially amongst the previously disadvantaged demographic groups in the Province."

MAJOR RESEARCH PROJECTS		
PROJECT /RESEARCH TITLE	**FUNDER**	**PRINCIPAL INVESTIGATOR**
Quality indices of Eastern Cape water resources	SAMRC EMU	Al Okoh
Emerging and re-emerging chemical and microbial pollutants in the aquatic environments of the ECP	SAMRC EMU	Al Okoh
Evaluation of reservoirs of antibiotic resistance determinants in the environment including the aquatic environment of the ECP	SAMRC EMU	Al Okoh
Characterizing and tracking of antimicrobial resistance in the water-plant-food public health interface: An emerging water, sanitation and hygiene issue	PEER (USAID)	L Korsten and Al Okoh
Evaluation of the efficacies of current chlorine disinfection guidelines in view of the increasing incidences of chlorine disinfectant resistant pathogens.	SAMRC EMU	Al Okoh
Bioactive compounds of health importance from microbes, micro-algae and seaweeds	SAMRC EMU and UFH	L Mabinya
Nanomaterials and associated compounds in water/wastewater treatment	SAMRC EMU	OO Okoh
Porcine circoviruses and parvoviruses in swine from some communities in Eastern Cape, South Africa	NRF and SAMRC EMU	CL Obi
Bioflocculants	NRF	Al Okoh
Cholera monitoring and response guidelines	WRC	Al Okoh
Methicillin resistant Staphylococcus aureus in raw milk and cow carcasses in Eastern Cape, South Africa	SAMRC EMU	I Iweriebor

MAJOR RESEARCH PROJECTS		
PROJECT /RESEARCH TITLE	**FUNDER**	**PRINCIPAL INVESTIGATOR**
Group B Streptococcus and Staphylococcus aureus anogenital colonization of pregnant women in some areas of the Eastern Cape, South Africa	NRF and SAMRC EMU	CL Obi
Surface Charge Modification of Bioflocculants Produced by Marine Actinobacteria species for Enhanced Coal Quality Improvement through the Removal of Ash and Heavy Metals	ESKOM, UFH and SAMRC EMU	UU Nwodo
Kinetically Enhance Methane Production by some Novel Actinobacteria species on Waste Keratinase Materials	ESKOM, UFH and SAMRC EMU	UU Nwodo
Exploration of actinobacteria diversity from the woodlands and extreme environments of South Africa and Egypt for high activity laccases production	NRF and SAMRC EMU	UU Nwodo
Development Novel anti-infective lead compounds from endophytic actinobacterial species	TIA	UU Nwodo
Exploration for novel xylanases and ligninases produced by actinobacterial species for biomass valorization. Funded under the South Africa-Tunisia Joint Science and Technology Research Programme	NRF and SAMRC EMU	UU Nwodo
Biological evaluation of antidiabetic and antimicrobial compounds extracted from some medicinal plants used in Cala community folkloric medicine for the management of chronic non-communicable diseases: A possible alternative in the treatment of diabetes and associated bacterial infections	NRF and SAMRC EMU	CL Obi
Genetic diversity of HIV in drug naïve patients in Eastern Cape Province	SAMRC EMU	V Adeniji
Tick-borne bacterial pathogens in the Eastern Cape Province	SAMRC EMU and UFH	B Iweriebor
Diarrhea disease burden in the Amatole District Municipality of the Eastern Cape Province Funding from your grants	SAMRC EMU	B Iweriebor
Hepatitis E Virus and Swine fever virus in domestic and wild pigs in the Eastern Cape Province	SAMRC EMU	B Iweriebor
Norovirus and Sapovirus from pig and human fecal samples in the Eastern cape, South Africa	SAMRC EMU	B Iweriebor
Escherichia coli O157:H7 in raw milk, milking machines, udder and hand swabs collected from three dairy farms in the Eastern Cape	SAMRC EMU	AI Okoh

** Please note that all these projects are carried over and still active in 2016/17.

CONTACT DETAILS

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PROGRAMME 2:
MATERNAL, CHILD AND WOMENS' HEALTH

PURPOSE OF PROGRAMME

To improve the health status and quality of life of women and children through high-quality scientific research that informs policy and practice, improves health services and promotes health.

UNITS THAT CONSTITUTE THIS PROGRAMME

- Gender and Health Research Unit
- Maternal and Infant Health Care Strategies Research Unit
- SAMRC/WITS Development Pathways Research Unit
- SAMRC Unit on Child and Adolescent Health

PROGRAMME STRATEGIC OBJECTIVES

- To conduct and promote research for the improvement of maternal, child and women's health, while also making an impact on gender inequity and gender-based violence (GBV)
- To train and mentor high calibre postgraduate students in the field of maternal, child and women's health
- To synthesise evidence, optimise information and knowledge flow, influence policy and practice within the health sector and other sectors of government in relation to issues affecting maternal, child and women's health
- To develop interventions for prevention of gender-based violence for testing and evaluation of effectiveness in affected communities
- To test or evaluate interventions (programmes) to prevent GBV and reduce maternal and neonatal deaths in primary and secondary levels of care

UNIT NAME:
GENDER AND HEALTH RESEARCH UNIT

NAME OF UNIT DIRECTOR:
Rachel Jewkes

Number of publications for the period 2016/17:	14
Number of publications published in journals with impact factor greater than 5:	2
Number of policy briefs produced:	0
Number of collaborative research projects completed in the reporting period:	3
Number of post graduate students receiving supervision under your unit:	9

STRATEGIC PURPOSE OF UNIT

The research focus of the Unit is on gender based violence (GBV), (intimate partner violence, rape and child abuse), gender inequity and their intersections with health. GBV is highly prevalent globally with one in three women and girls experiencing such violence in their lifetime with similar levels reported in South Africa. Intimate partner violence is recognised as a key driver of the HIV epidemic in young women in South Africa.

It is associated with multiple adverse reproductive health outcomes and is a major cause of mental ill health. It is recognised as a substantial drain on the economy and barrier to national development and as such elimination of violence against women and girls has been identified as part of the global development strategy captured in the 2030 Sustainable Development Goals.

The Gender and Health Research Unit (GHRU) therefore focuses its research on understanding the dynamics and context of GBV and its drivers, as well as the association with health. Prevention research is a key focus and the Unit provides research leadership in building the evidence base for GBV prevention globally, developing and testing evidence-based interventions. Research also focus on the delivery of evidence-based care for survivors of rape and IPV, which includes the use of operations research to develop and test solutions.

STRATEGIC REVIEW OF THE REPORTING PERIOD

The Unit remains a global leader in knowledge generation on gender-based violence and is recognised as a centre of research excellence. The research contribution of the Unit Director was recognised through NRF granting her an A1 rating in 2016. The Unit has developed a global leadership position as drivers of the Consortium delivering the DFID-funded What Works to Prevent Violence? Global Programme which is undertaking research in 13 countries of Asia and Africa. Over the last year all 16 projects have completed their baselines and started to implement their interventions.

Many of them have had a formative research phase and six have been intensively supported by the GHRU in their intervention development. The work has been underpinned by capacity building, with projects funded through innovation grants all given direct technical assistance and research skills building workshops held in Dubai and Tajikistan to enable the programme to leave a sustainable footprint of new GBV researchers globally. The work is also underpinned by extensive research translation and uptake engagement activities have been the focus the past year, including work in South Africa led by the Unit Director, Rachel Jewkes, to advise on the direction of the She Conquers Campaign, which was launched in June 2016 by the Deputy President, and membership of the task team to address GBV in higher education established by the Deputy Minister of Higher Education.

The Unit's research has also included a focus on violence against children because this is very closely linked to violence against women and often gendered. One of the high impact articles of this year was a report on infanticide and murder of children under the age five in South Africa in 2009.

This highlighted both the high prevalence of neonaticide, which constitutes half of all murders in the studied age group, and the fact that in rural areas girls are killed significantly more often than boys. Overall mothers are most often responsible for the deaths of young children, pointing to a failure of the health and social development systems to identify and support vulnerable mothers. Non-fatal violence against children also indelibly impacts affected girls and boys. In the past year papers have highlights how for boys this elevates their likelihood of subsequent rape and partner violence perpetration, with pathways for the latter mediated by the impact of child abuse on mental health.

MAJOR RESEARCH PROJECTS		
PROJECT /RESEARCH TITLE	**FUNDER**	**PRINCIPAL INVESTIGATOR**
Social Anatomy of (non) Violent Protests	SAMRC	Mohamed Seedat
Evaluation of HERrespect: an intervention addressing violence against female garment workers in Bangladesh	DFID	Ruchira Tabassum Naved
'Living with dignity' - A gender-relational approach to building community resilience and responses to Violence Against Women and Girls (VAWG) in Tajikistan'	DFID	Henri Myrttinen
Evaluation of peace education in schools in Afghanistan	DFID	Rachel Jewkes
Being Heard	Wellsprings	Elizabeth Dartnall

CONTACT DETAILS

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UNIT NAME:
MATERNAL AND INFANT HEALTH CARE STRATEGIES

NAME OF UNIT DIRECTOR:
Robert C Pattinson

Number of publications for the period 2016/17:	**23**
Number of publications published in journals with impact factor greater than 5:	**3**
Number of policy briefs produced:	**2**
Number of collaborative research projects completed in the reporting period:	**1**
Number of post graduate students receiving supervision under your unit:	**8***

*4PhD and 4 Masters

STRATEGIC PURPOSE OF UNIT

The unit runs three national clinical audit programmes;

- Maternal Morbidity and Mortality Audit System (for maternal deaths),
- Perinatal Problem Identification System and
- Child Health Care Problem Identification Programme

These audit programmes have been adopted by the three ministerial committees and are part of their databases for their reports. From these reports problems are identified and evidence based solutions sought. In finding solutions we use various research methods and then test the implementation strategies in various parts of the country. Examples of this are:

- The Basic Antenatal Care (BANC) plus programme developed and tested by the unit is now the standard practice used throughout the country for antenatal care.
- The ESMOE programme has been scaled-up to all districts in the country and its algorithms are being taught to pre-service students, all interns and doctors and midwives in the district, regional and tertiary hospitals.
- KMC has also been introduced in all provinces.

THE UNIT'S RESEARCH FOCUS AREAS:

The research focus is to develop health care strategies to improve the care of pregnant women, their babies and children in primary and secondary levels of care through the following interventions to reduce maternal and neonatal deaths by improving emergency obstetric and neonatal care:

- Ascertaining if continuous wave Doppler performed in an unselected population of pregnant women between 28 and 32 weeks pregnant can identify women at risk of having a stillbirth
- Designing and testing ways to train health care professionals in emergency obstetric care by adapting the ESMOE programme.
- Improve basic antenatal care by new strategies of providing novel referral systems
- Operational research on and evaluation of the implementation and scale-up of kangaroo mother care and other maternal and newborn health interventions at different health-system levels.
- To provide on-going information on the quality of perinatal and child health care services, identify the missed opportunities in these services and provide evidence based recommendations which if implemented would reduce perinatal and child deaths.

STRATEGIC REVIEW OF THE REPORTING PERIOD

The major area we have concentrated on has been in improving antenatal care by using innovative methods. The best example is in using the Umbiflow apparatus to detect fetuses at risk of stillbirth, but others include developing innovative ways of providing care for pregnant women with problems at the primary health care clinic.

This is expanding to developing new ways of improving intrapartum care and postnatal care. In intrapartum care we are part of an international team re-evaluating the whole method of giving intrapartum care and in 2018 we will be starting testing these strategies. This is also linked to ensuring adequate postnatal care by providing a communication system between the delivery site and the postnatal follow-up clinic.

MAJOR RESEARCH PROJECTS		
PROJECT /RESEARCH TITLE	**FUNDER**	**PRINCIPAL INVESTIGATOR**
Basic Antenatal Care Plus	National Department of Health	Robert C Pattinson
Congo Red Dot	Grand Challenges – Gates Foundation	Robert C Pattinson
Essential Management of Obstetric Emergencies – Emergency Medical Services programme	Foundation for Professional Development	Robert C Pattinson

CONTACT DETAILS

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UNIT NAME:
SAMRC /WITS DEVELOPMENTAL PATHWAYS FOR HEALTH RESEARCH

NAME OF UNIT DIRECTOR:
Shane Norris

Number of publications for the period 2016/17:	33
Number of publications published in journals with impact factor greater than 5:	11
Number of policy briefs produced:	0
Number of collaborative research projects completed in the reporting period:	3
Number of post graduate students receiving supervision under your unit:	29

STRATEGIC PURPOSE OF UNIT

The MRC/Wits Developmental Pathways for Health Research Unit (DPHRU) was established in 2011 and this is DPHRU's 6th year. The research activities of DPHRU align with two national priorities: (i) improving maternal and child health, and (ii) tackling obesity and metabolic disease risk. The research vision of DPHRU is to improve the health of South Africans by reducing the risk of metabolic disease.

The research mandate is to investigate genetic, physiological, psychosocial and lifestyle determinants of growth and development, risk of metabolic disease, and healthy ageing through innovative multi-disciplinary methodologies across the life-course so as to improve health in South Africa. We utilise a life-course and intergenerational epidemiology framework to investigate: (i) maternal and child health and nutrition, (ii) growth, psychosocial and physical development, and (iii) obesity and metabolic disease risk in South Africa.

From both scientific research and policy perspectives, confronting the developmental origins of disparities in physical and psychological development and metabolic risk early in life, is an important strategy to healthy ageing. South African formative and intervention research in the area of developmental origins of health and disease is critically needed in order to address research gaps and provide evidence for policy formulation to help deal with the complex burden of disease in South Africa. DPHRU is well positioned to address this need through its research programme and scientific expertise in this area.

CONTACT DETAILS

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UNIT NAME:
SAMRC UNIT ON CHILD AND ADOLESCENT HEALTH

NAME OF UNIT DIRECTOR:
Heather Zar

Number of publications for the period 2016/17:	39
Number of publications published in journals with impact factor greater than 5:	12
Number of policy briefs produced:	0
Number of collaborative research projects completed in the reporting period:	3
Number of post graduate students receiving supervision under your unit:	40

STRATEGIC PURPOSE OF UNIT

The SAMRC Unit on Child and Adolescent Health focuses on key health concerns affecting children and adolescents in South Africa and in Africa. A primary focus is on child lung health and the intersection of infection with emergence of chronic non-communicable diseases, addressing lung health from birth through adolescence. Studies focus on the epidemiology, aetiology and risk factors for acute and chronic lung disease and the impact of acute disease on child health and on development of chronic disease. Research encompasses a broad range of methodologies from epidemiology to clinical science to laboratory-based methods.

GOALS AND OBJECTIVES OF INTENDED RESEARCH

- **To promote clinical research and the translation of basic science into clinical research** to improve diagnosis, prevention and management of specific priority childhood diseases that shape child health in South Africa with a focus on pneumonia, tuberculosis, HIV-associated lung diseases and chronic illnesses such as asthma.
- **To translate clinical evidence into population-level interventions** to improve child health through primary health care and community initiatives that can be applied in diverse settings across the country and the continent, with a focus on priority illnesses.

SPECIFIC OBJECTIVES:

- To expand and strengthen research and collaborations in child health to improve health in South Africa and the region.
- To develop a translational, cutting edge research programme focused on childhood diseases including national priorities such as pneumonia, HIV and TB.
- To investigate the impact of early exposures including infectious diseases on child health and on the development of chronic disease.
- To increase understanding of the risk factors, host responses and long term outcome of early childhood illness.
- To enhance the health of children and adolescents by developing new strategies for diagnosis, management and prevention of diseases.
- To provide a platform for the training of clinician scientists in child health.
- To promote implementation of research findings into policy and practice.

STRATEGIC REVIEW OF THE REPORTING PERIOD

- Focus on the Drakenstein Child Health study, a birth cohort study following 1000 mother–child pairs to investigate early life exposures and the impact on child health. Child and maternal follow-up continued through this period with some key publications on pneumonia incidence and aetiology, psychosocial risk factors, environmental determinants and the impact of early life pneumonia in child health.
- Expanded the Unit's clinical reach to include start-up and support of a satellite clinical research site in childhood TB, linked to the TB-RePORT consortium, to increase capacity development to an underserved area in the Eastern Cape.
- Continued to follow-up HIV-infected adolescents for disease progression and determinants in the Cape Town Adolescent Antiretroviral cohort. Presented novel data on lung health and metabolic disease at international meetings.
- Provided the first data on the new diagnostic Xpert Ultra for childhood TB for the World Health Organization expert meeting – this informed the new WHO recommendations to endorse Ultra for use in children and as a replacement for Xpert.
- RSV vaccination trials – During the reporting period the unit began a monoclonal antibody vaccination trial in preterm infants and is planning for a second RSV vaccination trial to investigate maternal antenatal RSV vaccination to prevent RSV disease in infancy.

MAJOR RESEARCH PROJECTS		
PROJECT /RESEARCH TITLE	**FUNDER**	**PRINCIPAL INVESTIGATOR**
Validation of Biomarkers of paediatric TB and further development for use in diagnosis of childhood TB	NIH, NIAID	Heather Zar
Early life determinants of child health	NRF	Heather Zar
Impact of early life exposures on chronic respiratory illness in African children	Wellcome Trust	Diane Gray
Highly sensitive cartridge-based nucleic acid amplification testing for the diagnosis of pulmonary tuberculosis in children TB-RePORT	NIH and CRDF Global (Civilian Research & Development Foundation)	Heather Zar/ Mark Nicol
A combination of oral swabs and highly sensitive nucleic acid amplification testing for the diagnosis of pulmonary tuberculosis in HIV-infected and uninfected children TB-RePORT	NIH and CRDF Global (Civilian Research & Development Foundation)	Heather Zar/ Mark Nicol

CONTACT DETAILS

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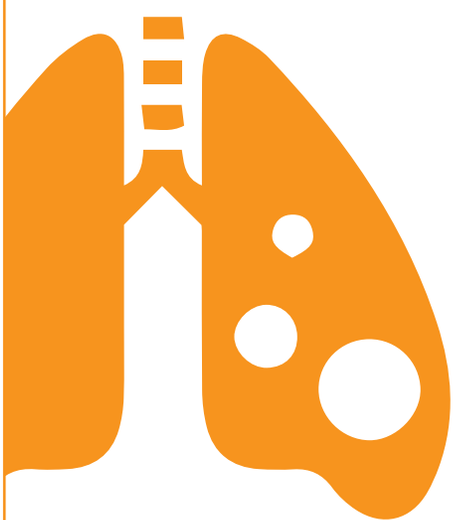
PROGRAMME 3:
HIV, AIDS, TB AND OTHER COMMUNICABLE DISEASES



PURPOSE OF THE PROGRAMME

To conduct research on preventing HIV and related co-morbidities including TB and other infectious diseases, such as malaria. It seeks to contribute to the national and international science system by testing TB drugs and malaria insecticides, carry out the AIDS Vaccine project through coordinating development and test HIV vaccines in South Africa, in partnership with our funders and our regional counterparts.

UNITS THAT CONSTITUTE THIS PROGRAMME

- HIV Prevention Research Unit
- Centre for Tuberculosis Research Unit
- Office of Malaria Research (MOMR)
- MRC/CAPRISA HIV-TB Pathogenesis and Treatment Research Unit
- MRC/NHLS/UCT Molecular Mycobacteriology Research Unit
- Respiratory and Meningeal Pathogens Research Unit
- Diarrhoeal Pathogens Research Unit

PROGRAMME STRATEGIC OBJECTIVES

- To increase the body of knowledge informing the development of the response to prevention and curative interventions for HIV, AIDS, TB and other communicable diseases
- To increase the contribution to the national health system by maintaining national health research facilities that provide services for the prevention of HIV and related co-morbidities, including TB
- To provide research grants to principal investigators responsible for HIV research in line with European and Developing Countries Clinical Trials Partnership (EDCTP) TESA mandate, provide financial support to researchers within neighbouring countries for training in laboratory and research techniques, utilising funds from sponsors and Unit savings
- To provide leadership and coordinate activities for training and development of young scientists and employees at different levels and to work towards retention of critical skills and talent management thereof
- To ensure appropriate training of clinical, laboratory and other research staff, and communities in and around the research sites
- To increase the body of scientific knowledge through research translation into products, patents, papers, policy practice and health promotion (including to the general public) by organising meetings, seminars, workshops and conferences
- To design and construct the most appropriate and promising HIV candidate vaccines for southern Africa and to increase the number of interventions developed for TB and HIV
- To increase the body of scientific evidence that relates to testing and evaluating medical equipment and devices that are developed for the prevention of HIV and related co-morbidities

UNIT NAME:
HIV PREVENTION RESEARCH UNIT

NAME OF UNIT DIRECTOR:
Gita Ramjee

Number of publications for the period 2016/17:	**18**
Number of publications published in journals with impact factor greater than 5:	**3**
Number of policy briefs produced:	**0**
Number of collaborative research projects completed in the reporting period:	**3**
Number of post graduate students receiving supervision under your unit:	**6***

*4 Masters, 2 PHDs

STRATEGIC PURPOSE OF UNIT

The HIV Prevention Research Unit (HPRU) is one of the largest units of the South African Medical Research Council and is located in Durban, KwaZulu-Natal. The unit is uniquely placed to address the quadruple burden of disease in South Africa which consists of four colliding epidemics: maternal, new-born and child health; HIV/AIDS and tuberculosis (TB); non-communicable diseases; and violence and injury. KwaZulu-Natal is also the epicentre of the global HIV epidemic leading to an enormous global and national interest to address the high HIV infection rates seen among men, women and adolescents in this region. Of the quadruple burden of disease in SA, HPRU aims to focus their research agenda on HIV prevention – a national priority area.

STRATEGIC REVIEW OF THE REPORTING PERIOD

The unit is by large funded by the National Institutes of Health (NIH). Through a competitive grant process, a Clinical Trials Unit (CTU) was awarded to HPRU by the NIH in 2014. This 7-year grant cycle sustains the infrastructure, all contracted staff as well as the operations and administration of most of the research undertaken by the unit. In addition, we receive funding from other sources such as the FDA, EDCTP, the University of Washington, Seattle and the SAMRC reserves.

In 2016, we began to diversify our approach and develop proposals and funding applications (e.g. Health Systems Trust, USAID, UNAIDS) expanding our research agenda to epidemiological research and social and behavioural studies. Furthermore, we provide technical support to government or civil society (e.g. SANAC, NGOs, and CBOs). HPRU has been a collaborator and co-investigator, including serving as the Quality Assurance laboratory on the Human Sciences Research Council's lead South African National HIV Prevalence, Incidence and Behaviour Survey since 2008. We have participated in three surveys to date.

Over the last decade, the unit has participated in several large-scale trials of women-initiated HIV prevention options such as microbicides and pre-exposure prophylaxis (PrEP) [1-6]. Due to the excellent performance in terms of recruitment, retention, community partnerships and data quality in these biomedical clinical trials, the unit has an outstanding track record to further secure large number of grants from several international donors to conduct multidisciplinary HIV prevention research. This includes follow up studies from our successful trials. For instance, our ASPIRE (MTN 020) study recently observed a moderate but significant HIV prevention effect of the vaginal ring containing an antiretroviral agent called Dapivirine [1].

This led to the product to be tested in an "open label" trial, which will assess its use by previous participants in more "real life" situations. We hope that the additional data obtained by the open label HOPE study will lead to licensure of the first women- initiated HIV prevention technology. We anticipate the results in the latter part of 2018. Should we be successful, the study will have implications on policy as well as public health.

Similarly, our excellent track record led to the unit being invited by the HIV Vaccine Trials Network (HVTN) to conduct several small and large-scale HIV preventative vaccine trials. The unit will now expand its research focus to include men in HIV prevention trials. In addition, recent partnership with the HIV Prevention Trials Network (HPTN) will have the unit conducting innovative research on long-acting HIV prevention injectables. This study will utilise an ARV agent called Cabotagravir for HIV prevention.

The trial is expected to be conducted over several years. We are also co-investigators/collaborators in the EDCPT funding proposal to test a combination prevention option of vaccines and PrEP. The trial, in collaboration with several African countries and Imperial College, London, will complement the large-scale HVTN 702-vaccine trial conducted solely in South Africa and led by Prof Glenda Gray of the SAMRC. With these multiple collaborations, the unit expects to be in the forefront of cutting-edge research in South Africa and globally.

Through the lessons learnt from participants engaged in our research as well as the data generated over the last five years, we have identified the urgent need to enhance our understanding of the use of biomedical interventions in the context of women's lives [7]. Women face numerous biological, behavioural, structural and societal challenges that may affect their health, including their ability to adhere to HIV prevention products. We are therefore conducting a series of studies, which aim to: map out the HIV epidemic among women in the past decade using geographic mapping; to understand where the HIV incidence is the highest and determine the biological, behavioural, cultural and structural factors that place women and girls at high risk of HIV acquisition. This self-initiated research will lead to the development of effective risk-scoring tool that we hope to test and introduce in the public sector HIV Counselling and Testing centres. The goal is to have a user-friendly tool that can assess individual risk at the grass roots level and refer or provide targeted and appropriate combination prevention packages for HIV prevention. We hope to increase awareness of all possible prevention options in the

community and provide risk-appropriate interventions. This research is likely to impact on policy and overall public health.

In addition, we have learnt that women and girls are a diverse group, who may also be part of other vulnerable populations such as people with disabilities, migrants, youth in informal settlements or older people. We have therefore developed an additional social science strategy for the unit, which will particularly focus on HIV prevention and access to sexual reproductive health in vulnerable populations. This body of work will identify potential additional risk factors as well as needed social, behavioural or structural changes that ensure that HIV prevention methods and products are accessible and acceptable for everyone. For instance, in 2015 we identified the need for HIV prevention in older people. The SAMRC funded a project on older people (50+) and HIV, which is now complete and manuscripts are in preparation. Similarly, we have successfully recruited a specialist in the area of disability and HIV, who is now strengthening the Unit's inclusion of people with disabilities (with a particular focus on women and girls with disabilities). The Unit intends to mainstream disability within existing projects where appropriate as well as to develop a number of grant applications to source focused funding for this marginalised group.

MAJOR RESEARCH PROJECTS		
PROJECT /RESEARCH TITLE	**FUNDER**	**PRINCIPAL INVESTIGATOR**
HVTN 702:	HIV Vaccines Trials Network	Logashvari Naidoo Simone Hendriks Vimla Naicker
HVTN 703:	HIV Vaccines Trials Network	Anamika Premrajh Logashvari Naicker
HVTN 111: To evaluate the safety and tolerability of clade C DNA and bivalent gp120 protein and MF59 adjuvant in each vaccine regimen	HIV Vaccines Trials Network	Gita Ramjee
MTN 025: A Phase 3B Open-Label Follow-on Trial to Assess the Continued Safety of and Adherence to a Vaginal Ring Containing Dapivirine in Women	Microbicides Trials Network	Gita Ramjee
SHIOP: A Study to investigate Sexual health, HIV and co-morbidity with non-communicable infections among Older Persons	SAMRC	Makandwe Nyirenda

CONTACT DETAILS

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UNIT NAME:
CENTRE FOR TUBERCULOSIS RESEARCH UNIT

NAME OF UNIT DIRECTOR:
Rob Warren

Number of publications for the period 2016/17:	**53**
Number of publications published in journals with impact factor greater than 5:	**35**
Number of policy briefs produced:	**5**
Number of collaborative research projects completed in the reporting period:	**5**
Number of post graduate students receiving supervision under your unit:	**89**
Number of postdoctoral fellows receiving supervision under your unit:	**24**
Number of career development awardees supervised in your unit:	**5**

STRATEGIC PURPOSE OF UNIT

- To expand our research focus areas without weakening current strengths, i.e. develop expertise outside of TB and to diversifying through collaboration.
- To achieve societal impact by engaging with communities – to ultimately change the health of the nation.
- To transform and decolonise – i.e. to develop a healthy student and staff pipeline by increasing the diversity of the unit.
- To implement training programmes and upskill staff and students.
- To attain accreditation.
- To develop and strengthen networks to promote collaboration.
- To diversify and grow income base by attracting funding to increase outputs (and impact) and to develop capital for investment in infrastructure.

STRATEGIC REVIEW OF THE REPORTING PERIOD

The Centre for Tuberculosis research is a Centre which fosters knowledge-based solutions to health challenges facing Africa through fundamental and translational research and quality training of students. Various research teams form our unit and each one has its own niche.

The Immunology groups primary aim is TB diagnosis with specific objectives to developing point of care, lateral flow-based tests to measure signatures as part of screening tests for active TB while the Animal TB research groups is involved in the development of diagnostic tests for animal TB. The Host Genetics groups' interests are Primary Immunodeficiency Disorders (PIDs). This group uses exome sequencing to identify disease-causing mutations in patients with (PIDs) with increased susceptibility to mycobacterial disease as a means to identify novel TB susceptibility genes.

The TB Drugs and Host Therapeutics research team's interests are macrophage responses to pathogenic and non-pathogenic mycobacteria and to evaluate what host molecules can serve as effective drug targets for the development of host-directed therapeutics. The Host Pathogen Mycobactomics research group has a keen interest in host-pathogen interactions. They have developed a novel reporter system that allows the fractionation of Mycobacterium tuberculosis which has entered into a non-replicating but viable phase (drug tolerant state). In terms of novel drugs, the team is currently screening compounds using a novel reported system and has identified a number of possible hits.

The Comparative Genomics and Drug Resistance group is currently involved in the evaluation of novel molecular diagnostic assays and the development of a targeted deep sequencing method for the detection of underlying resistance (pre-resistance) to inform the clinician when to change therapy. In addition, the group is currently involved with identifying novel drug resistance mutations using whole genome sequencing.

This data will form part of the ReSeqTB platform, which serves as a global resource for diagnostic developers. The Clinical Mycobacteriology and Epidemiology team have set up an aerobiology platform to measure infectiousness of TB patients to further the understanding of transmission. In addition, the team is investigating the influence of alcohol on the microbiome and its role on TB outcomes. The Bioinformatics team is involved with analysis of big data, including clinical, genome sequence, RNA sequence and proteomic data for the advancement of bioinformatics in South Africa.

MAJOR RESEARCH PROJECTS		
PROJECT /RESEARCH TITLE	**FUNDER**	**PRINCIPAL INVESTIGATOR**
Identification of host genes involved in the survival of pathogenic mycobacteria	NRF	B Baker
Characterization of Immune Responses to Bovine TB in Wild Dogs	NRF SARChI	M Miller and S Parsons
Characterization of IP-10 production	NRF SARChI	S Parsons and M Miller
Human genetics of TB resistance in HIV-infected persons	NIAID	E Hoal
Evaluation of host biomarker-based point of care tests for targeted screening for active TB	EDCTP	G Walzl
The Correlate of Risk Targeted Intervention Study (CORTIS)	BMGF	G Walzl
Isolation and characterisation of Mycobacterium tuberculosis persisters	NRF	S Sampson
Whole genome sequencing of Mycobacterium tuberculosis	FWO	RM Warren

CONTACT DETAILS

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UNIT NAME:
OFFICE OF MALARIA RESEARCH (MOMR)

NAME OF UNIT DIRECTOR:
Rajendra Maharaj

Number of publications for the period 2016/17:	**3**
Number of publications published in journals with impact factor greater than 5:	**0**
Number of policy briefs produced:	**0**
Number of collaborative research projects completed in the reporting period:	**4**
Number of post graduate students receiving supervision under your unit:	**1**

STRATEGIC PURPOSE OF UNIT
The SAMRC Office of Malaria Research (MOMR) was created with the mandate of supporting malaria elimination efforts within the SADC region in alignment with the National Department of Health's goal of malaria elimination by 2020. The MOMR aims to facilitate the production and dissemination of new scientific findings and knowledge on malaria by contributing to a body of evidence to enhance understanding on how to prevent, control and eradicate malaria.

STRATEGIC REVIEW OF THE REPORTING PERIOD
The Office of Malaria Research focuses on malaria vector control, insecticide evaluation, malaria vector training and the provision of technical support to national and international committees. The MOMR continues to work in close partnership with the National Department of Health Malaria Directorate in its efforts to eliminate malaria. The director facilitates training on malaria vector control and is a member of various national committees including the SA Malaria Elimination Committee. Prof Maharaj is also a member of the Elimination Eight (E8).

As part of the above focus areas the Office performed laboratory evaluations on the insecticide Dichlorodiphenyltrichloroethane, commonly known as DDT, for the KwaZulu-Natal Department of Health. Insecticide efficacy laboratory trials were also conducted for companies Sumitomo Chemicals and WEFCO. An agreement was signed in November 2016 with Bayer Environmental Science to conduct laboratory and field trials on a new form of insecticide.

The MOMR was awarded a SAMRC intramural research grant of R250 000 in June 2016. In October 2016 the MOMR initiated and hosted the inaugural meeting of the KwaZulu-Natal Research Committee. This committee is responsible for developing strategies that would help maintain a healthy research base and promote research that contributes towards the elimination goal of KwaZulu-Natal and scholarly output. Prof Maharaj was elected as the chairperson of the committee.

MAJOR RESEARCH PROJECTS		
PROJECT /RESEARCH TITLE	**FUNDER**	**PRINCIPAL INVESTIGATOR**
Expired DDT efficacy testing (laboratory)	Undertaken for KZN provincial department of Health	Rajendra Maharaj
Laboratory evaluation on a new insecticide formulation - SumiShield	Sumitomo Chemicals	Rajendra Maharaj
Laboratory evaluation of a new insect growth regulator - Dimilin	WEFCO	Rajendra Maharaj
Field and laboratory trials on insecticide -Fludora Fusion	Bayer	Rajendra Maharaj
Eliminating residual malaria transmission in KZN through Winter Larviciding	SAMRC	Rajendra Maharaj

CONTACT DETAILS
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UNIT NAME:
MRC/CAPRISA HIV-TB PATHOGENESIS AND TREATMENT RESEARCH UNIT

NAME OF UNIT DIRECTOR:
Salim S. Abdool Karim

Number of publications for the period 2016/17:	8
Number of publications published in journals with impact factor greater than 5:	0
Number of policy briefs produced:	0
Number of collaborative research projects completed in the reporting period:	1
Number of post graduate students receiving supervision under your unit:	25

STRATEGIC PURPOSE OF UNIT

TB remains the most common cause of death among People Living with HIV both globally and in South Africa. According to the 2016 WHO Global TB report, the TB incidence in South Africa was 834 000 per 100 000 population in 2015. The province of KwaZulu-Natal (KZN) has had a notable decline in TB incidence in the last five years, however, it remains among the top three provinces with the highest TB incidence and an HIV co-infection of 63% among TB patients. MRC-CAPRISA HIV-TB Pathogenesis and Treatment Research Unit is ideally situated to undertake research to reduce morbidity and mortality from HIV-TB co-infection in KZN. The overarching research theme of this unit is the interaction between HIV and TB, focusing on treatment and pathogenesis. Given the scale of these epidemics and the magnitude of the impact of HIV-TB co-infection in South Africa, the research mandate of the unit is directed towards:

- Enhancing the translation of clinical trial evidence into effective integrated HIV-TB services through implementation science and thereby improve survival of HIV-TB co-infected patients
- Improving the survival of HIV-TB co-infected patients by optimising their treatment
- Generating new knowledge on the pathogenesis and biological interaction between HIV and TB, specifically focusing on identifying immunological mechanisms associated with the high risk of TB recurrence in HIV-infected patients
- Impacting policies and practices aimed at reducing the burden of the dual epidemics in South Africa
- Building research capacity in South Africa

The research agenda for the MRC-CAPRISA HIV-TB Pathogenesis and Treatment Research Unit includes the disciplines of clinical medicine, epidemiology, biostatistics, immunology, microbiology and public health with five focus areas that target HIV-TB co-infection.

CONTACT DETAILS

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UNIT NAME:
MRC/NHLS/UCT MOLECULAR MYCOBACTERIOLOGY RESEARCH UNIT

NAME OF UNIT DIRECTOR:
Valerie Mizrahi

Number of publications for the period 2016/17:	**12**
Number of publications published in journals with impact factor greater than 5:	**4**
Number of policy briefs produced:	**0**
Number of collaborative research projects completed in the reporting period:	**3**
Number of post graduate students receiving supervision under your unit:	**241**

STRATEGIC PURPOSE OF UNIT

The urgency of the need to develop new tools for the control of tuberculosis (TB) cannot be overstated. Given its high burden of disease coupled with advanced laboratory and clinical research infrastructure, South Africa has a special role to play in this regard. Against this background, the MMRU focuses on aspects of the physiology and metabolism of Mycobacterium tuberculosis of particular relevance to TB drug discovery, with emphasis on the identification and validation of new drug targets; mycobacterial persistence in the face of host immunity and drug pressure, focusing on the association between persistence and the evolution of drug resistance; and TB transmission, focusing on the capture, identification, and characterisation of aerosol-borne tubercle bacilli.

STRATEGIC REVIEW OF THE REPORTING PERIOD

Research. Over the past year, significant advances were made in the following areas of research:

Mycobacterial metabolism and physiology. The MMRU's work in this area is focused on DNA, nucleotide and cofactor metabolism, which underpins some of the unit's activities in TB drug discovery. Significant progress was made on characterisation of the "mutasome" – a novel system, discovered in the MMRU, which mycobacteria engage to bypass replication-blocking lesions in DNA and induce chromosomal mutations in response to DNA damage that may confer resistance to TB drugs. Using advanced imaging technology, the temporal and spatial relationship of the three mutasome components to one another and to another key component of the DNA replication machinery have been elucidated. Ongoing work is aimed at identifying mechanisms to restrict the evolution of drug resistance in TB by interfering with the function of the mutasome.

TB drug discovery. Four major studies, each of which represents the culmination of more than five years of work in this area, were published in 2016. Three of the papers report the identification and validation of new TB drug targets that are the subjects of considerable interest within international TB drug discovery consortia. The fourth reports the development and application of new tools for the rapid classification of novel anti-mycobacterial agents, discovered by high-throughput phenotypic screening, into broad mechanistic classes. These tools, which were developed within the MMRU's TB drug screening platform supported by SHIP, have been fully integrated into the TB Drug Accelerator programme of the Bill & Melinda Gates Foundation.

B transmission. With the support of funding from the MRC's Flagship programme, researchers in the MMRU have developed an exciting and rapidly growing research programme on the aerobiology of Mycobacterium tuberculosis which is embedded within a broader study on the microbiological, immunological and environmental determinants of TB transmission. This programme, which is co-funded by the Bill & Melinda Gates Foundation, capitalises on the MMRU's existing strengths in molecular mycobacteriology while building new capabilities enabled by technological advances in imaging, single-cell microbiology, chemical biology and genomics. These capabilities are impacting profoundly on the entire research portfolio of the MMRU.

Education and Training. An underlying principle of the MMRU is to use excellent research as the vehicle to train the next generation of scientists. Three doctoral and one masters student completed their studies over the past year and will graduate in June 2017. Several students benefited from training opportunities at top international laboratories, and others presented their research at major conferences. Over the past year, two postdoctoral fellows have taken up independent faculty positions in South Africa, and one other in India, where they continue to work on TB. The ongoing development and career progression of young researchers reflects the MMRU's commitment to, and track record in, human capital development.

MAJOR RESEARCH PROJECTS		
PROJECT /RESEARCH TITLE	**FUNDER**	**PRINCIPAL INVESTIGATOR**
Accelerating antibiotic-mediated kill of Mycobacterium tuberculosis	The Broad Institute of MIT & Harvard	Valerie Mizrahi

CONTACT DETAILS

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PROGRAMME 4:
HEALTH SYSTEMS STRENGTHENING

PROGRAMME 4: HEALTH SYSTEMS STRENGTHENING

PURPOSE OF THE PROGRAMME

To contribute to health systems strengthening by undertaking systematic reviews, health policy and health systems research to provide evidence for policy-makers, stakeholders and researchers seeking to address today's most pressing health challenges. The programme aims to take advantage of information and technology by exploring and expanding the role of eHealth (health informatics, digital health, tile health, telemedicine, eLearning and mobile health) in strengthening health systems.

UNITS THAT CONSTITUTE THIS PROGRAMME

- Burden of Disease Research Unit
- Biostatistics Research Unit
- South African Cochrane Centre
- Health Systems Research Unit
- Health Policy Research Unit
- Health Services to Systems Research Unit

PROGRAMME STRATEGIC OBJECTIVES

- To contribute towards the evidence base for national, regional and international health care decision making by conducting high-quality systematic reviews, and health systems and health policy research reviews to improve health systems effectiveness
- To strengthen research and development through training and mentoring postgraduate students (MSc, PhD, Postdoctoral Fellows) in eHealth, health policy, health systems research and biostatistics
- To contribute to capacity development and training in the use and conduct of systematic reviews, and support of clinical trial registration for the African region
- To synthesise evidence, optimise information and knowledge flow through ICT and other means to ensure that research results are translated into policy, practice, cost-effective products and health promotion
- To develop and enhance health information systems and surveillance through systematic evaluation and identification of processes for improvement
- To provide statistical analysis to ensure scientific validity, relevance and efficiency of health systems interventions and/or service delivery models, and engage in health systems strengthening activities
- To carry out biostatistical support training projects to assist SAMRC researchers and postgraduate students within the SAMRC

UNIT NAME:
BURDEN OF DISEASE RESEARCH UNIT

NAME OF UNIT DIRECTOR:
Debbie Bradshaw

Number of publications for the period 2016/17:	15
Number of publications published in journals with impact factor greater than 5:	6
Number of policy briefs produced:	2
Number of collaborative research projects completed in the reporting period:	0
Number of post graduate students receiving supervision under your unit:	13

STRATEGIC PURPOSE OF UNIT

The mission of the Unit is to assess and monitor the country's health status and determinants of disease; to project the future burden of disease in order to provide planning information to improve the health of the nation, and to evaluate health information systems. Inequalities are of particular importance due to the legacy of Apartheid in South Africa and the current macro-economic trends arising from globalisation. Multidisciplinary approaches are used, drawing on epidemiology, demography and biostatistics. Expertise has been developed in the areas of summary health measures, health surveys, the analysis of mortality data and health informatics. Progress on monitoring the country's health status and determinants of disease is an essential foundation for guiding policy and programmes to improve life expectancy and quality of life.

STRATEGIC REVIEW OF THE REPORTING PERIOD

The Unit has undertaken a substantive project to provide mortality trends for the period 1997-2012. The initial burden of disease study provided a point estimate and made use of a Demographic and AIDS model to estimate the impact of HIV/AIDS. In this study, an approach was developed to estimate mis-attributed AIDS deaths by correlating the rapid increase in certain causes of deaths (pneumonia, diarrhoea, etc.) with the rapid increase in the prevalence of HIV. In addition, data from a national survey of Forensic Pathology Service morgues undertaken previously was used to improve the information about deaths related to external causes of injury. This work developed methods to overcome the data quality concerns of vital registration and provide consistent and coherent estimates that can be used by policy makers.

The extended mortality trends highlight the continued decline in mortality from HIV and TB, with non-communicable diseases coming to the fore and now contributing the highest number of deaths in South Africa. The unfinished agenda of maternal and child health, infectious diseases and injuries persists with some small gains in some aspects. The profiles of causes that have led to premature mortality provide each province with information about the conditions that need to be targeted with health promotion and disease prevention initiatives. As the conditions rank differently for each province, provinces are urged to use this information to prioritise activities that will address the upstream causes of disease, as well as strengthen their health service response. Work is underway to estimate the non-fatal component of the burden of disease and review the available information on the prevalence of modifiable risk factors. Methodologies and tools are being developed to systematically assess data-collection biases and the quality of epidemiological data, and to incorporate this information into a meta-regression to provide information on the trends in these risk factors.

IMPROVING POPULATION HEALTH INFORMATION

DISTRICT MORTALITY PROFILES

A collaborative project with Health Systems Trust has provided mortality profiles for the health districts for inclusion in the District Health Barometer, an annual publication aimed at providing health statistics for each district. The cause of death data obtained from Statistics South Africa are presented using a short list of causes developed by the Unit and after adjusting for known data problems such as redistributing the ill-defined causes. All the chapters include a caveat concerning the quality of the data, and it is hoped that making the profiles available will highlight the utility of such information and fuel the process of improvement. The loss of life due to premature mortality is emphasised, to assist districts in identifying opportunities to reduce mortality.

RAPID MORTALITY SURVEILLANCE

Since 1999, the South African Medical Research Council has obtained monthly information about the deaths registered on the National Population Register and has developed a consolidated data base. This data is subject to two forms of under-reporting: the first is non-registration on the population register (because the deceased did not have a South African birth certificate or identity document) and the second is non-registration of the death. Through demographic evaluation of the completeness of death registration, a method has been developed to adjust the data to calculate estimates of key mortality indicators for the country.

Reports have been produced annually from 2011 to 2015, providing timely empirical estimates of the mortality-based high-level indicators for Outputs 1 and 2 of the health-related targets of the Negotiated Service Delivery Agreement (NSDA) and progress towards the targets of the Medium Term Strategic Framework (MTSF) up to 2015. The latest report (for 2015, released in 2016) shows that the average life expectancy at birth in South Africa now exceeds 63 years, having increased by more than nine years since the low of 54 years in 2005. The increase in life expectancy is due to a drop in the levels of child mortality as well as young adult mortality.

While the increase appears to be on track to meet the MTSF target for 2019, compared to earlier years, the increase in life expectancy has slowed down. The level of infant and under-five mortality rates has declined slightly over the year to 27 and 37 per 1 000 live births in 2015, respectively, while the neonatal mortality rate remained at 12 per 1 000 live births. The maternal mortality ratio peaked at just over 300 per 100 000 live births in 2009 and has declined to 154 per 100 000 live births in 2014, little changed since 2013. Efforts to reduce maternal and child mortality further will be needed if the MTSF targets are to be met by 2019.

CANCER REGISTRY

The Eastern Cape Cancer Registry is the only population-based cancer register in the country. It tracks the incidence of all cancers that are experienced by a population of just over 1 million people who live in local municipalities of Mbizana and Ngquza Hill in the north and Mbhashe and Mnquma in the south of the Eastern Cape Province. The registry collaborates with 19 health facilities

which include those inside the study area and the regional referral centres to ensure that all patients diagnosed with cancer are included in the register.

The distinctive profile highlights the continued high rates of oesophageal and cervical cancers experienced in this area. In addition, the incidences of breast and prostate cancers have increased. Notably there is also steady increase in Kaposi sarcoma which is one of AIDS defining cancers.

The Eastern Cape Cancer Registry is amongst the few registries in Africa that contributed to the world cancer incidence publication; Cancer Incidence in Five Continents (CI5) Volumes X and XI. It is also participating in the world cancer survival study in which initial comparisons with other population-based cancer registers suggest that the survival of cancer patients in this area is much lower than that experienced both in Africa and high income countries. The project received additional funds in 2014. The cancer registry is being strengthened to better monitor the survival experience of the cancer patients in the area.

POPULATION HEALTH DATA

Planning for the South African Demographic and Health Survey (SADHS) 2016 started in 2014 by the SAMRC, NDoH and Stats SA. The last SADHS was implemented in 2003. Version 7 of the international survey series was adopted with modifications to customise the survey to the needs of South Africa. Computer assisted personal interviews (CAPI) were adopted to enhance the quality of fieldwork. A pre-test was run in five provinces at the beginning of 2016 and the tools were streamlined for data collection from a nationally representative sample of household from July to November 2016. The data is currently being checked and the preliminary analysis is expected to be released in 2017. The survey will provide the country with key indicators on health status, health programmes, and risk factors for health linked to relevant socio-demographic information.

INJURY REDUCTION AND SURVEILLANCE

Emerging from the collaboration between the Western Cape Department of Health, the University of Cape Town's School of Public Health and the Burden of Disease Research Unit (BODRU) to reduce the burden of disease in the province, the Unit has continued to collaborate on the injury prevention focus. The burden reduction project prioritised distal (up-stream) risk factors as well as strengthening surveillance systems. BODRU has been engaged with different injury surveillance systems to track both fatalities and episodes of non-fatal trauma, and systematically reviewed the evidence around observatories as a surveillance tool to reduce injuries.

These initiatives have demonstrated different approaches and tools that can be used. There has been a particular emphasis on alcohol, gun control and urban upgrading in the Unit's contributions to the evaluation of distal interventions to reduce injuries and violence. A key finding has been that reducing firearm mortality by means of stricter gun control is one of the most important short-to medium-term measures to address the burden of violence in SA. This intervention should be implemented in parallel with longer-term social and policy interventions. The Unit has contributed to the Western Cape's Alcohol Harm Reduction Policy, currently (March 2017) being drafted as a White Paper, which marks a new policy direction for the province and the country by prioritising population health and wellness ahead of economic imperatives for expanding the alcohol trade.

CLINICALLY CODED INFORMATION

Research on routine health information systems has focused on concerns about quality. A recurring theme has been the need for the appropriate human and other resources to support routine health information system (RHIS) implementation. With national plans towards a National Health Insurance (NHI) system, the Unit has initiated a study to assess the availability and quality of patient morbidity data in RHISs in public sector hospitals to assess the ability of RHISs to support the NHI, morbidity surveillance and burden of disease (BOD) assessments. In-depth fieldwork is under way to collect data from a nationally representative sample of hospitals in the NHI pilot districts.

WHO-FIC COLLABORATING CENTRE

The ultimate aim of establishing a WHO-FIC collaborating center in South Africa (WHO-FIC SA) is to promote the use of the International Classifications that support health care and related services, and thereby contribute to improved health status through improved and standardised classification of health information such as morbidity, functionality, and causes of death. The vision of the WHO-FIC network is 'Classifications to support National and International Health Information Systems.'

The WHO-FIC Collaborating Centre in South Africa provides the opportunity to strengthen the links between stakeholders within South Africa involved in the implementation and use of ICD-10 (for both morbidity and mortality coding) and the International Classification of Functioning, Disability and Health (ICF), and to contribute to the development on the newly emerging International Classification for Health Interventions (ICHI) and ICD-11, the 11th revision of the ICD. WHO-FIC SA forms part of an international network of WHO-FIC collaborating centres, and has facilitated participation in the WHO-FIC annual meetings as well as mid-year meetings of WHO-FIC sub-committees and reference groups. These meetings reflect the strong benefits achieved through harnessing global resources to support the development and maintenance of the classification systems.

MAJOR RESEARCH PROJECTS		
PROJECT /RESEARCH TITLE	**FUNDER**	**PRINCIPAL INVESTIGATOR**
Evaluation of Morbidity Data in Routine Health Information Systems (MbHIS-EVAL)	SAMRC and NRF	Lyn Hanmer, Edward Nicol and Debbie Bradshaw.
National Cause-of-death Validation Project	CDC	Debbie Bradshaw, Jané Joubert and Pam Groenewald

CONTACT DETAILS

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UNIT NAME:
BIOSTATISTICS UNIT

NAME OF UNIT DIRECTOR:
Carl J Lombard

Number of publications for the period 2016/17:	**58**
Number of publications published in journals with impact factor greater than 5:	**10**
Number of policy briefs produced:	**-**
Number of collaborative research projects completed in the reporting period:	**25**
Number of post graduate students receiving supervision under your unit:	**8**

STRATEGIC PURPOSE OF UNIT

The Biostatistics Unit has three entities contributing to its scientific activities. Firstly Biostatistics plays a key role in the statistical design, planning and analysis of a variety of studies conducted by the SAMRC. These range from national health related surveys, sport sciences interventions, epidemiological studies to pragmatic health systems trials. The input of the biostatisticians is critical in ensuring the scientific validity of the study and the results.

Secondly the Health Geographical Information Systems adds value by incorporating demographic and health specific spatial information at the design, planning and analysis stages of these studies. Thirdly the South African Food Composition Database (SAFOODS) is a strategic entity of the Unit and the SAMRC since they maintain and develop the national database of nutritional values of food that are consumed by South Africans. This information is used by the public (nutritional values on food products), dieticians, researchers in nutrition and the food industry. These overlapping entities make the Biostatistics Unit a truly collaborative unit and its services are part of research studies and training conducted at nearly all universities and research institutions in the country.

STRATEGIC REVIEW OF THE REPORTING PERIOD

SAFOODS

The update of composition of baby foods was a key and specific focus in 2016/17. This project increased the baby food composition data from 70 to 250 food items and was used to report results of a randomised control feeding trial, and subsequent publications. Data in the update included: information received from partners in industry who provided nutritional values of baby food products which they produce; direct measurement of moisture values and standardised compilation methodology. The update resulted in six presentations at the National Nutrition Congress in September 2016.

SAFOODS was approached by Tufts University to apply for a grant for the development of a food composition database for Malawi in 2015. They were successful in this bid and was awarded a R1.3 million award (2 years, starting in 2016) assisting Malawi in establishing a country specific food database which would relate to the increase of food composition data for Indigenous African Agriculture products. Various activities including visits to Malawi will result in the establishment of an office and the Malawi Food Composition database, which has already commenced.

HEALTH-GIS

A long standing collaboration on the transmission of extensively drug-resistant tuberculosis in KwaZulu-Natal, which was supported with geospatial analysis and graphical presentation of place and health service utilization of study participants, resulted in a publication in the New England Journal of Medicine in January 2017.

The group has been part of the activities of the target of the WHO relating to malaria: Getting to Zero by 2020. The National Department of Health has been supported by participating in planning meetings in southern Africa relating the malaria elimination agenda across a number of countries (ie South Africa, Mozambique and Swaziland). Natashia Morris, Research Support Manager: GIS, was requested to represent the National Directorate Malaria at a 21 country meeting in Genève called by the World Health Organization to develop a network amongst these states and thereby to track progress, identify challenges and bottlenecks, share data and strategies in malaria elimination.

BIOSTATISTICS

The Unit has a research focus on longitudinal data analysis. Tarylee Reddy, Senior Statistician is pursuing a PhD in this area and developed a novel approach to estimation of the time to biomarker threshold: applications to HIV. Two biomarkers are being used in clinical care in people living with HIV in South Africa, CD4 count and viral load. This work looked at applying the persistence rule (two consecutive results below a clinical threshold) and providing decision information (the probability and time to event) to the clinician through the statistical model. This work was published in 2016 and selected for an international webinar by the publisher (Wiley).

The Biostatistics Unit has an active collaboration with the South African IOC Centre of excellence based at the universities of Pretoria and Stellenbosch. One focus of research is the assessment of intervention for the prevention of injury and illness in athletes participating in mass sporting events such as the Two Ocean's Marathon and the Cape Town Cycle Tour. Data for the Two Oceans Marathon study have been collected from 2008-2011 (pre-intervention) to 2012-2015 (post-intervention) and statistical analysis of pre-post intervention have been conducted. A specific focus of 2016/17 was the analysis of a cohort study of 41 000 distance runners and investigating novel risk factors associated with more severe exercise associated muscle cramping condition. A number of presentations of this work were made at the IOC World Conference on Prevention of Injury & Illness in Sport in Monaco, March 2017.

The Biostatistics Unit in the person of Prof Samuel Manda was awarded funding for own initiated research from the SAMRC in June 2016. The project is titled: Geo-spatial mapping of cardiovascular co-morbidities in South Africa: A novel approach to assess disease burden, hotspots and resource allocation. The overall goal of this project is to analyse similarities and differences in geographic patterns in CVDs burden and related risk factors in South Africa using existing data, mainly obtained from nationally representative surveys. Multivariate spatial Bayesian approaches will be used and applied as innovative statistical methods of disease mapping and hotspot analysis to address the research questions. An initial investigators meeting was held in September 2016 and the various activities to establish the data needed for the analysis are underway.

The Biostatistics Unit plays a key role in ensuring that the estimation of the burden of the major diseases affecting the country are robust and sound. In particular, the unit is part of the National Department of Health's major projects such as the First National TB Prevalence Study and the National Antenatal HIV Surveys, where the unit perform an active role in different committees and technical working groups.

MAJOR RESEARCH PROJECTS		
PROJECT /RESEARCH TITLE	**FUNDER**	**PRINCIPAL INVESTIGATOR**
Geo-spatial mapping of cardiovascular co-morbidities in South Africa: A novel approach to assess disease burden, hotspots and resource allocation	SAMRC	Samuel Manda
Malawi National Food Composition Database	University of Tufts	Averalda van Graan
Impact evaluation of the DREAMS Program	PEPFAR	Tarylee Reddy (co-investigator)
Impact evaluation of the Global Fund Young Women and Girls (YW&G) Intervention in ten South African districts	CDC	Carl Lombard (co-investigator)
First National TB Prevalence Study	NDoH, Gates Foundation	Samuel Manda (co-investigator

CONTACT DETAILS

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UNIT NAME:
HEALTH SYSTEMS RESEARCH UNIT

NAME OF UNIT DIRECTOR:
Catherine Mathews

Number of publications for the period 2016/17:	**48**
Number of publications published in journals with impact factor greater than 5:	**3**
Number of policy briefs produced:	**0**
Number of collaborative research projects completed in the reporting period:	**1***
Number of post graduate students receiving supervision under your unit:	**30**

STRATEGIC PURPOSE OF UNIT

South Africa continues to experience the burden of four intersecting epidemics: the 'old' agenda of maternal, infant and child mortality; morbidity and mortality relating to HIV and TB; a growing burden of chronic illness; and an unusually high burden, compared to many other middle income countries, related to injuries and violence. These intersecting epidemics continue to place pressure on the health system's ability to deliver appropriate, timely and high quality care and to reduce inequalities in access to such care.

Although there have been some gains, particularly in the reduction of mother to child HIV transmission, the provision of care to people living with TB and HIV/AIDS and the reach of primary health care services, the health system remains weak, particularly at district, primary care and community levels, with inadequate integration across levels of care and between the public and private sectors. This undermines the health system's resilience in the face of new challenges.

If South Africa is to achieve Sustainable Development Goal 3 (SDG 3) (enduring health lives and promoting well-being for all at all ages), we will need to achieve the target of Universal Health Coverage (UHC): all people and communities will need to have the promotive, preventive, curative, rehabilitative and palliative health services they need, of sufficient quality to be effective, and without exposing them to financial harm. Strengthening South Africa's health system is a precondition to achieving UHC and SDG 3.

The SAMRC's Health Systems Research Unit aims to conduct health systems research, including embedded research that describes and evaluates how health systems function and how they can be strengthened through the development and implementation of policies and programmes. The Unit aims to improve the organisation, efficiency, effectiveness and resilience of health systems, reduce inequity within health systems and increase its impact on population health and well-being. The Unit focuses on strengthening community-based, school-based and health facility-based platforms, to promote health, and to prevent and treat disease. For this, we work in the following thematic areas:

- Maternal and Child Health, and Nutrition
- Adolescent Health and Well-being and Sexual and Reproductive Health
- Infectious and Non-Communicable Diseases
- Social and Economic Policy and Health
- Knowledge synthesis for strengthening health systems

STRATEGIC REVIEW OF THE REPORTING PERIOD

During this year, our Unit was funded for, and initiated projects, that target the burden of disease in South Africa, and key priority groups identified in the Global Plan to eliminate HIV transmission from mother to child and to keep mothers healthy, the National Strategic Plan 2017-2022 and the National Strategic Plan on Communicable Diseases:

- An evaluation of the Global Fund Programme for Young Women and Girls, which is an intensive, comprehensive HIV prevention intervention delivered in community, school and primary health care platforms, to develop and cost approaches to expand HIV care coverage and reduce inequities in coverage, to inform decisions on strategies to scale-up HIV care for this vulnerable children and adolescents in South Africa.
- The mental health and psychosocial well-being of adolescents was examined in HIV positive adolescent populations as well as among other adolescent populations made vulnerable due to poverty and psychosocial risk. The focus of this research is to develop scalable service models for implementation in community, school and primary health care settings.
- A telephonic follow-up study of a national cohort of HIV exposed and unexposed infants, to assess long-term maternal and child health outcomes.
- A study on quality and completeness of routine data and assessing the correlation between antenatal HIV prevalence using routine facility-based HIV testing data compared with antenatal survey data.
- A longitudinal study assessing the impact of the Child Support Grant (CSG) on child health outcomes. The study is a birth cohort study assessing the impact of the CSG on child nutritional status and dietary patterns in children from birth to two years in an urban township in Langa, Western Cape. The birth cohort commenced in March 2016. Fieldwork is in progress with the aim to recruit and follow up 500 mothers and their children.
- A project in collaboration with the Rural Health Advocacy Project (Wits University) to assess the differential resource needs of community-based services in urban/peri-urban, rural and deep rural areas.
- At the beginning of 2017, at the invitation of the NDoH we started an investment case for Community Health Workers (CHWs). This case compares the financial benefits for the health sector and society of CHWs services compared to their cost to the health system. The first part will be completed at the end of June 2017 and will be used in negotiations with Treasury.

- Although the unit has a long -standing history of conducting systematic reviews, during 2016/17, we consolidated these efforts into the "Knowledge synthesis for strengthening health systems" thematic area. Our synthesis work utilises both effectiveness and qualitative evidence to address a wide range of health systems problems, including the effects on health systems management of routine health information systems and health care workers perceptions and experience of using mHealth technologies. We have published widely cited syntheses in the area of task shifting, including on the impacts of lay or community health workers. In addition, we are initiating a novel rapid response service that draws together evidence from knowledge syntheses to address urgent health policy and practice questions facing South African decision makers.
- We started a descriptive study in which we are documenting treatment and pregnancy outcomes in women who are exposed to second-line TB treatment during their pregnancy.
- The iAlARM study is a NIH funded study with Brown university, UCT, Sonke Gender Justice and SAMRC, to better understand the complex individual, social and health systems factors underpinning this HIV care gender gap. iALARM aims to use health informational support as a tool to promote understanding and catalyse collaborative action between health system and community stakeholders, to enhance linkage and retention in HIV care for men. We completed the formative intervention development phase this year. Morbidity and mortality from diabetes is growing in SSA and we need to enhance diabetes treatment adherence. We conducted a formative, intervention development study to develop a theory and evidence -informed brief-text message mobile phone-based intervention to support patient adherence to diabetes treatment, which is being tested in a pragmatic randomised controlled trial in two SSA settings, Cape Town and Lilongwe.

MAJOR RESEARCH PROJECTS

FOCAL AREA	PROJECT /RESEARCH TITLE	FUNDER	PRINCIPAL INVESTIGATOR
Adolescent Health and Well-being and Sexual and Reproductive Health	Impact Evaluation of the Global Fund Young Women and Girls (YW&G) Intervention on HIV Incidence in Ten South African Districts	Centres for Disease Control and Prevention; Global Fund	Catherine Mathews
	A health economic evaluation of HIV care provision and health-related quality of life and wellbeing among children and adolescents (5-19 years) in KwaZulu-Natal, South Africa	South African Medical Research Council	Darshini Govindasamy
Maternal and Child Health, and Nutrition	Long-term health outcomes of mothers and infants enrolled in the 2012-13 SAPMTCT Evaluation	UNICEF	Ameena Goga, Witness Chirinda
Social and Economic Policy and Health	Birth cohort assessing the nutritional status and dietary patterns of recipients and non-recipients of the CSG in Langa Township, Western Cape	Centre of Excellence for Food Security/SAMRC	Wanga Zembe, Vundli Ramokolo, Tanya Doherty
Knowledge synthesis for strengthening health systems	South African initiative for rapid evidence syntheses and systematic reviews on health policies and systems	Alliance for Health Policy and Systems Research	Karen Daniels
Communicable and Non-Communicable Diseases	An exploratory study documenting treatment and pregnancy outcomes in women who are exposed to second-line TB treatment during their pregnancy	Eli Lilly Foundation/ SAMRC	Marian Loveday, Yoliswa Mzobe
	Formative research to develop and pre-test a brief text message mHealth intervention to support diabetes adherence	GACD, MRC UK, SAMRC	Natalie Leon, Sara Cooper
	Health economic study to determine the cost of implementing a brief text message mHealth intervention to support diabetes adherence	GACD, MR UK, SAMRC	Emmanuelle Davaiud, Donela Besada

CONTACT DETAILS

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UNIT NAME:
MRC/UWC HEALTH SERVICES TO SYSTEM RESEARCH UNIT

NAME OF UNIT DIRECTOR:
Helen Schneider

Number of publications for the period 2016/17:	**3**
Number of publications published in journals with impact factor greater than 5:	**0**
Number of policy briefs produced:	**0**
Number of collaborative research projects completed in the reporting period:	**5**
Number of post graduate students receiving supervision under your unit:	**14**

STRATEGIC PURPOSE OF UNIT

To generate evidence on health system strengthening relevant to current health system reforms in South Africa, whilst contributing to international knowledge and debates. In general terms, it will focus on the contexts, mechanisms and processes through which initiatives to improve access, quality and equity of health services and the integration into the everyday practices of the routine institutional environment ("real-world" settings), on the one hand; and achieve sustainable coverage and impact at scale, on the other hand.

In 2016/17, the Unit undertook the following: A mixed methods evaluation of the effectiveness of the ward based outreach teams (WBOTs) in the North West Province, conducted by researcher Tumelo Mampe; A case study of South Africa's Primary Health Care System commissioned by the Alliance for Health Policy and Systems Research, as part of a suite of five country case studies; development of a database of publications on Community Health Workers, which formed the basis for a scoping review of trends in publications on CHWs in low and middle income countries; development of a proposal, for the National Department of Health, to evaluate a district level quality improvement and health system strengthening initiative (referred to as the 3-feet model) in four districts identified as having high maternal, neonatal and child mortality; a review of "whole health system" development in the Western Cape since 1994.

CONTACT DETAILS

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PROGRAMME 5:
PUBLIC HEALTH INNOVATION

PURPOSE OF THE PROGRAMME

To promote the improvement of health and quality of life (impact prevention of ill health, improvement of public health and treatment) in the Republic of South Africa through innovation, and technology development and transfer.

UNITS THAT CONSTITUTE THIS PROGRAMME

- MRC/UCT Drug Discovery and Development Research Unit
- Primate Unit and Delft Animal Centre
- Medical Imaging Research Unit
- The Biomedical Research and Innovation Platform
- Herbal Drugs Research Unit

PROGRAMME STRATEGIC OBJECTIVES

- To establish key modern technology (enabling) platforms to facilitate generation of new drug discovery knowledge through world-class applied research
- To establish and manage research laboratories and facilities as state-of-the-art national research facilities for research and development
- To train and mentor a new generation of high-quality postgraduate students and Postdoctoral Fellows in multi-disciplinary research, and in so doing, equip them to compete in the science and/or education sectors nationally and internationally
- To strengthening research and development to build on and enhance public health innovation
- To increase the body of scientific knowledge through research translation into products, patents, research papers, policy, practice and health promotion (including to the general public)
- To increase the number of health care innovations and to produce patents based on new discoveries and new research methodologies

UNIT NAME:
MRC/UCT DRUG DISCOVERY & DEVELOPMENT RESEARCH UNIT (DDDRU)

NAME OF UNIT DIRECTOR:
Kelly Chibale

Number of publications for the period 2016/17:	**8**
Number of publications published in journals with impact factor greater than 5:	**1**
Number of policy briefs produced:	**0**
Number of collaborative research projects completed in the reporting period:	**0**
Number of post graduate students receiving supervision under your unit:	**23**

STRATEGIC PURPOSE OF UNIT
South Africa suffers a very high disease burden with attendant high morbidity and mortality. It is thus vital for South African scientists to enhance the drug discovery capability of the country to address its health needs in particular, but also those of the rest of the African continent. At present, this expertise exists in part, but lacks capacity and competency in several key areas. The strategic purpose of the unit is to discover and develop new drugs against infectious diseases. The unit's research focus areas are new drugs for malaria and tuberculosis. An attendant focus is the development of drug discovery infrastructure and expertise as well as the training of a new generation of South African scientists with key modern pharmaceutical industry skills required to discover modern medicines. The unit has been playing a critical key role in building capacity and competency in the relevant areas of drug discovery, in particular providing a strong focus and leadership in integrating various disciplines required to move potential medicines along a value chain in efforts to underpin biomedical research and drug development.

STRATEGIC REVIEW OF THE REPORTING PERIOD
Malaria and Tuberculosis Drug Discovery: Hit to Lead and Lead Optimization Medicinal Chemistry Progression of hits from target-based and phenotypic whole cell screening Campaigns: to conduct a medicinal chemistry programme on selected antimalarial and antituberculosis hit compounds from phenotypic whole cell screening of synthetic and natural product libraries. An attendant objective is to identify and characterise pharmacologically active metabolites.

Drug discovery to tackle the neglected disease schistosomiasis and Antimicrobial Resistance (AMR) for new antimicrobials to combat resistance to current antibiotics represent two new strategic research areas the Unit has started to focus on. The following new collaborations were initiated during the reporting period: (a) Dr Thomas Spangenberg, Merck, Germany: Malaria drug discovery; (b) Dr Thierry Diagana. Novartis Institute for Tropical Diseases: Malaria drug discovery. (c) Professor Jennifer Keiser, Swiss Tropical and Public Health Institute, Switzerland: Schistosomiasis drug discovery; (d) Prof Christopher Schofield, University of Oxford, UK: Antimicrobial Resistance drug discovery.

MAJOR RESEARCH PROJECTS		
PROJECT /RESEARCH TITLE	**FUNDER**	**PRINCIPAL INVESTIGATOR**
Antimalarial drug discovery	Merck	Kelly Chibale
Developing the Next Generation of β-lactamase Inhibitors and Monobactam Antibiotics	Newton Fund UK MRC and SAMRC	Kelly Chibale and Christopher Schofield (University of Oxford)

CONTACT DETAILS
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UNIT NAME:
PRIMATE UNIT AND DELFT ANIMAL CENTRE (PUDAC)

NAME OF UNIT DIRECTOR:
Chesa Chauke

Number of publications for the period 2016/17:	**1**
Number of publications published in journals with impact factor greater than 5:	**0**
Number of policy briefs produced:	**0**
Number of collaborative research projects completed in the reporting period:	**0**
Number of post graduate students receiving supervision under your unit:	**1**

STRATEGIC PURPOSE OF UNIT

PUDAC is a research support platform that provides the infrastructure to conduct pre-clinical research; scientific and technological research support; the capacity to maintain and utilise animal models (nonhuman primates, horses and rodents) and biomedical research (collaborative and contract). The platform also contributes to research by generating new in-house research to define and validate animal models; laboratory animal science and technology; providing skilled laboratory scientific and technological support. PUDAC's research is important since this platform provides professional support, well-kept animal models and research support to national and international researchers, as well as assists scientists to achieve their research objectives.

STRATEGIC REVIEW OF THE REPORTING PERIOD

During the 2016/2017 reporting period, PUDAC was focusing more on validating the nonhuman model (Vervet and Rhesus monkeys) and providing pre-clinical services in areas such as drug development, HIV/AIDS and vaccine development. The platform is currently in the process of revitalising its mandate to add value to its existing strength on nonhuman primate management and research support. Various opportunities were identified pertaining to the laboratory animal platforms i.e.: 1) to promote research and leveraging resources, 2) to explore opportunities in biotechnology and development, 3) to provide professional support for research, availability of facilities to stakeholders, 4) to invest in the shortage of scientists and technologist in the field of laboratory animal science and 5) to implement transformation and ethics programmes.

The new research focus will be in these specialized fields: Nutrition and NCDs; metabolic diseases (obesity/T2D, cardiovascular and hypertension); environmental factors (diet/stress induced models); physiological factors (geriatric models); gene-environment interaction (epigenetics); reproductive toxicology and other emerging factors (gut microbiome and HIV/SIV studies). The new collaborators will be from selected academic institutions (HDIs), which includes UWC, University of Limpopo, Zululand, and CPUT.

MAJOR RESEARCH PROJECTS

PROJECT /RESEARCH TITLE	FUNDER	PRINCIPAL INVESTIGATOR
Hyperglycinemia in captive-bred vervet monkeys with cataracts: genetic dynamics and associations	SAMRC	Zandisiwe Magwebu
Gonadotropin-Releasing-Hormone I & II receptor expression in human and non-human primate sperm	SAMRC	Charon de Villiers
Autosomal recessive congenital cataract in captive-bred vervet monkeys	SAMRC	Zandisiwe Magwebu
The in vitro effect of Gonadotropin-Releasing-Hormones (GnRH-I and GnRH-II) on Vervet monkey (Chlorocebus aethiops) sperm motility	SAMRC	Charon de Villiers
Sub-chronic Toxicity and efficacy of vitamin K7 (GN50R) in Vervet monkeys	Gnosis Spa, Italy	Chesa Chauke

CONTACT DETAILS

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UNIT NAME:
HERBAL DRUGS RESEARCH UNIT

NAME OF UNIT DIRECTOR:
Alvaro Viljoen

Number of new collaborations formed with any South African Institution aimed at capacity development:	**4**
Number of post graduate students receiving supervision:	**20**

STRATEGIC PURPOSE OF UNIT

The main aim of the Unit is to conduct technologically advanced scientific research, and to make basic knowledge readily available to stakeholders, in order to promote the quality, safety and efficacy (QSE) of herbal medicines.

Herbal medicine has not been officially recognised in most countries, despite the continued use of medicinal plants over many centuries and an upsurge in the popularity and use of these natural resources throughout the last decade. Consequently, education, training and research in this area have not been rendered due attention and support. The quantity and quality of the safety and efficacy data on phytomedicines are far from sufficient to meet the criteria needed to support their use worldwide. This lack of research data can be attributed partly to the fact that health care policies have neglected to adequately address phytomedicines. However, the absence of appropriate or accepted research methodology for evaluating traditional and herbal medicines remains the biggest stumbling block to the commercial development of phytomedicines. It is envisaged that the Unit in Herbal Drug Research will use modern technology to add substantial value to assist in developing some of South Africa's botanical assets into commercial products. In this way, the unit may be instrumental in unlocking and advancing the possible socio-economic value of our indigenous resources to the benefit of all South Africans.

MAJOR RESEARCH PROJECTS UNDERWAY

1. **Collect authentic and taxonomically verified plant material:** Field work was continued to collect material from medicinal plants. In most cases, collections have been made from multiple sites to capture the botanical and phytochemical variation. Several field workers have also been used to supply important botanical samples from remote areas.
2. **Create a national repository of authentic voucher material for reference purposes:** The material mentioned above has been photographed and voucher material has been prepared for all collections.
3. **Establish a virtual herbarium and online chromatographic database as a readily accessible online resource:** We have engaged in discussions with the National Herbarium (SANBI, Pretoria) who will provide high-resolution images for this aspect of the project. A website has already been created which will be free and accessible to all to identify medicinal plants. The website will be further developed in 2017 / 2018.
4. **Document the chemotypic variation for the most important medicinal plants in South Africa:** A comprehensive chemotypic variation study has been completed for *Athrixia phylicoides* (bush tea), *Tarchonanthus camphoratus* (camphor bush), *Sceletium tortuosum* and *Olea europea*. The results are been processed and prepared for publication.
5. **Isolation of biomarkers using preparative techniques from important medicinal plants.** The procurement of a preparative HPLC system has accelerated this aspect of our work and in a relatively short period of time the following biomarkers have been isolated from ethnomedicinally import plants (listed below). For most isolates the structures have been resolved while NMR structural elucidation is in progress for others.

NAME OF PLANT	ISOLATED COMPOUNDS
Leonotis leonurus	Marrulibanoside
Harpagophytum Procumbens	Harpagoside, Verbascoside, 2,6-diacetylverbascoside
Myrothamnus flabellifolius	Miquelianin, kaempferol 3-O-glucuronide
Tarchonanthus camphoratus	m/z =321
Helichrysum odoratissimum	4,5- dicaffeoylquinic acid
Helichrysum petiolare	m/z =515, m/z= 283
Sceletium tortuosum	m/z= 568
Rauwolfia & Withania species	Fractionations

6. **Develop validated analytical methods for robust quality control of medicinal plants.** This aspect represents the very core of the research focus of the Unit. Important quality control studies are currently in progress and one study is highlighted below which has recently been completed.

UPCOMING PROJECTS:

- Developing monographs of the five important South African medicinal plants
- Screening medicinal plants with potential anxiolytic activity using an in vivo zebrafish model
- The hepatotoxic effects of indigenous South African plants in the zebrafish model

CONTACT DETAILS

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PROGRAMME 6:
BIOMEDICAL RESEARCH

PURPOSE OF THE PROGRAMME

To conduct basic research, applied research and transactional research to determine predisposition to disease. This understanding is important for planning effective intervention and disease control.

UNITS THAT CONSTITUTE THIS PROGRAMME

- Bioinformatics Capacity Development Research Unit
- Immunology of Infectious Diseases Research Unit
- Stem Cell Research and Therapy Unit
- WITS/SAMRC Antiviral Gene Therapy Research Unit
- Human Genetics

PROGRAMME STRATEGIC OBJECTIVES

- To generate scientific knowledge in the field of biomedical science, which will provide insights into various diseases of national priority. This in turn will lead to novel diagnostic, preventive and therapeutic strategies
- To undertake original research of high quality, which will provide novel insights into acute and chronic inflammatory diseases of national priority, thus leading to novel diagnostic, preventive and therapeutic strategies
- To train and mentor high-quality postgraduate students who are able to compete in the science, health and/or education sectors locally and abroad
- To strengthen biomedical research through a policy of enabling researchers from other academic institutions to have access to sophisticated laboratory equipment and supervision. In addition, to provide assistance to national research funding agencies with respect to evaluating applications for research funding
- To translate research data into policy and practice regarding prevention, diagnosis, treatment and management of diseases
- To develop and test biomedical innovations that will address various conditions
- To develop health-care management systems and plan a 'gene therapy' intervention programme for retinal degenerative diseases

UNIT NAME:
STEM CELL RESEARCH AND THERAPY UNIT

NAME OF UNIT DIRECTOR:
Michael S Pepper

Number of publications for the period 2016/17:	26
Number of publications published in journals with impact factor greater than 5:	1
Number of policy briefs produced:	0
Number of collaborative research projects completed in the reporting period:	1
Number of post graduate students receiving supervision under your unit:	16

STRATEGIC PURPOSE OF UNIT

The mandate of the Unit is to utilise knowledge and resources in the stem cell field to address South Africa's disease burden. This is being done both from the perspective of generating new knowledge and also by adopting a translational approach to treating disease. In addition to the basic and translational research being conducted, we are actively involved in regulatory issues as they pertain to cell therapy in South Africa. The Unit focuses mainly on adult stem cells, namely hematopoietic and mesenchymal stem cells (HSCs and MSCs). With regard to HSCs, one of the highlights is the development of a gene therapy for HIV based on the principle of rendering the immune system in HIV-positive patients resistant to the virus. With regard to ASCs, we have developed a model of adipogenesis which is the first of its kind to study transcriptional events in humans in an unbiased manner. This is of particular importance in our country given the high prevalence of obesity. Finally, a major focus of the group is to study stem cell heterogeneity with the aim of developing a superior therapeutic product. We are approaching this from the perspective of single cell transcriptomics.

STRATEGIC REVIEW OF THE REPORTING PERIOD

The SAMRC EMU for Stem Cell Research and Therapy aims to address South Africa's high disease burden through (a) understanding the pathogenesis of diseases which are highly prevalent in our society and (b) developing cell-based therapies that can be used to treat our patients.

With regard to pathogenesis, the two diseases we are focusing on are HIV and obesity. With regard to HIV, we have developed a proprietary miRNA gene therapy that induces a functional cure in mice. Efforts are currently underway to initiate a Phase I trial in humans using this approach. We are also working on determining at which stage hematopoietic stem cells (HSCs) become susceptible to HIV, and have a project aimed at characterising the host cell response to HIV in cells of the hematopoietic system. With regard to obesity, we have identified novel mediators in vitro, and these are being assessed in vivo. Cell-based therapies we are working on involve adult stem cells, namely HSCs and mesenchymal stromal/stem cells (MSCs).

MAJOR RESEARCH PROJECTS		
PROJECT /RESEARCH TITLE	**FUNDER**	**PRINCIPAL INVESTIGATOR**
Is there a genetic predisposition to death and disability after moderate-severe hypoxic ischemic encephalopathy in cooled infants? A genome-wide association study in a South African cohort.	SAMRC	Michael Pepper

CONTACT DETAILS

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UNIT NAME:
WITS/SAMRC ANTIVIRAL GENE THERAPY RESEARCH UNIT

NAME OF UNIT DIRECTOR:
Patrick Arbuthnot

Number of publications for the period 2016/17:	**16**
Number of publications published in journals with impact factor greater than 5:	**8**
Number of policy briefs produced:	**0**
Number of collaborative research projects completed in the reporting period:	**2**
Number of post graduate students receiving supervision under your unit:	**10**

STRATEGIC PURPOSE OF UNIT

The Wits/SAMRC Antiviral Gene Therapy Research Unit (AGTRU) aims to develop use of therapeutic nucleic acids (gene therapy) to counter serious viral infections of public health importance in sub-Saharan Africa. As gene therapy is based on rational drug design, the technology is very powerful and potentially applicable to many previously 'undruggable' diseases of South African importance. The unit focuses mainly on advancing a cure for persistent infection with hepatitis B virus (HBV).

Chronic infection with HBV is hyperendemic to sub Saharan Africa and continues to be a significant cause of public health problems. Carriers of the virus are at high risk for cirrhosis and liver cancer. Currently available HBV therapies are poorly effective and there is a need for improved treatment to prevent complicating cirrhosis and hepatocellular carcinoma. Research completed to date in our unit shows that gene therapy has the potential to eliminate the virus from infected cells. Advancing our technology to use in patients is now being undertaken in partnership with large US-based partners in the pharmaceutical industry.

Expertise in gene therapy within South Africa is modest. The Wits/SAMRC AGTRU is one of the only laboratories in the country with the range of skills that is required to advance gene therapy to a stage of clinical application. Training of young scientists is a fundamental purpose of the unit. We are pursuing this activity vigorously to grow expertise in this exciting and powerful field of modern medicine.

STRATEGIC REVIEW OF THE REPORTING PERIOD

Our research is aimed at advancing use of gene editing and gene silencing as feasible approaches to disabling and curing persistent hepatitis B virus infection. The work is now entering an important phase, which is clinical translation of the work. Our partnership with Johnson & Johnson is ongoing and is important to realising our ambitions of clinical implementation of gene editing to achieve cure from HBV infection. During the coming year this will be a priority of our research. Research during the past year has also been the subject of publications, conference presentations, development of career scientists and postgraduate student training. Three students from our unit graduated with PhDs during 2016: Musa Marimani, Fiona van den Berg and Juliette Delhove. Recruitment of new postgraduate students, particularly from designated demographic groups of South Africa, also continues to be a priority.

The work has also been a topic of collaborative partnerships with scientists from South Africa and abroad. New partnerships that have been recently established are with Dr Priya Karmali and Dr Jerel Vega who are scientists from Arcturus Therapeutics (San Diego, CA). This partnership is vital to our J&J-sponsored research aimed at completing preclinical optimisation of therapeutic gene editing as a treatment for chronic HBV infection. In addition we have several established research partnerships that are ongoing. These include collaborations with Prof Toni Cathomen and Claudio Mussolino, of the Laboratory of Cell and Gene Therapy, Freiburg University Medical Center in Germany.

The partnership has led to fruitful investigation of the use of customised DNA-binding proteins to disable HBV replication. Simon Waddington, Director of the Gene Transfer Technology Group at University College London, is now an honorary member of the Antiviral Gene Therapy Research Unit. He has valuable expertise in topics of viral vectorology, and in particularly the methods for assessing kinetics of transgene expression.

MAJOR RESEARCH PROJECTS		
PROJECT /RESEARCH TITLE	**FUNDER**	**PRINCIPAL INVESTIGATOR**
Formulating mRNA encoding HBV-targeting TALENs in synthetic non-viral vectors	Johnson & Johnson Innovation, NRF & SAMRC	Abdullah Ely & Patrick Arbuthnot
Use of obligate heterodimeric forms of anti-HBV TALENs to improve target specificity	DFG (Deutsche Forschungsgemeinschaft), NRF & SAMRC	Betty Maepa, Abdullah Ely & Patrick Arbuthnot
Generating ancestral (anc) capsids of adeno-associated viral vectors for delivery of therapeutic sequences to the liver	Johnson & Johnson Innovation, NRF & SAMRC	Betty Maepa, Abdullah Ely & Patrick Arbuthnot
mRNA vaccines for HBV	DFG, NRF & SAMRC	Betty Maepa, Abdullah Ely & Patrick Arbuthnot

CONTACT DETAILS

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BREAKING NEW GROUND IN RESEARCH & DEVELOPMENT

CLINICAL HEALTH GUIDELINES APPLICATION

The Clinical Health Guidelines App, which was successfully launched in 2015, continues to enjoy success with the number of downloads having gone up to over 40000. The App has been updated to include the adult and Paediatric hospital guidelines. The majority of downloads are from South Africa.

The relevance and quality of the app is also demonstrated by the fact that the app is gaining popularity in several other countries. This spun out a company called EMG (Essential Medical Guidance), which currently employs 10 people. In addition, SHIP is funding the development of the PHC101 App with NMMU.

SAMRC COLLABORATING CENTRES & TB REPORT SA

SAMRC TB HIV COLLABORATING CENTRES

SAMRC TB HIV Collaborating Centres in tuberculosis and HIV research in adult and paediatric populations was established in 2015 with the aim of creating a cohesive programme of multidisciplinary research to address key questions that could impact on lowering the burden of disease in South Africa. The SAMRC entered into a collaboration with the NIH to establish RePORT SA, which created exclusive opportunities for the centres to apply for TB RePORT SA and RePORT international RFAs.

- TUBERCULOSIS COLLABORATING CENTRE FOR CHILD HEALTH (TB-CHILD)
- SOWETO MATLOSANA SAMRC COLLABORATING CENTRE FOR HIV/AIDS AND TB
- CLINICAL AND COMMUNITY HIV-TUBERCULOSIS RESEARCH COLLABORATING CENTRE
- CENTRE FOR BASIC AND TRANSLATIONAL HUMAN TB RESEARCH
- ADVANCING CARE AND TREATMENT (ACT) FOR TB/HIV
- CENTRE FOR TUBERCULOSIS BIOMARKER-TARGETED INTERVENTION
- WITS CLINICAL HIV/TB RESEARCH UNIT
- TB FREE THROUGH RESEARCH AND INNOVATION
- TYGERBERG SAMRC COLLABORATING CENTRE FOR HIV LABORATORY RESEARCH
- WITS RHI COLLABORATING CENTRE FOR HIV/AIDS

CLINICAL CANCER RESEARCH CENTRES

The SAMRC established Clinical Cancer Research Centres (CCRCs) at medical schools and/or hospitals in South Africa in 2015 with the explicit aim to integrate cancer-related research programmes in fields such as basic laboratory and clinical sciences, prevention and control methodologies, and population-based studies into a transdisciplinary cancer research centre that may straddle departmental and institutional boundaries.

- SAMRC/UCT GYNAECOLOGICAL CANCER RESEARCH CENTRE (GCRC)
- SAMRC/WITS COMMON EPITHELIAL CANCER RESEARCH CENTRE
- PROSPECTIVE GASTROINTESTINAL CANCER RESEARCH PROJECT

THE MOMR COLLABORATING CENTRES

As part of the restructuring of the research Units, the Office of Malaria Research was mandated to establish collaborating centres to strengthen the network of malaria scientists in South Africa. It was essential to create MRC Collaborating Centres for Malaria Research to assist the national Department of Health to achieve its goal of malaria elimination by 2020.

THE COLLABORATING CENTRE AT THE UNIVERSITY OF CAPE TOWN (CENTRE FOR THE OPTIMISATION OF ARTEMESININ THERAPY)	WITS RESEARCH INSTITUTE FOR MALARIA (WRIM)	UNIVERSITY OF PRETORIA COLLABORATING CENTRE (INSTITUTE FOR SUSTAINABLE MALARIA CONTROL)
The collaborating centre at the University of Cape Town (Centre for the Optimisation of Artemesinin Therapy) is headed by Prof Karen Barnes focusing on clinical trials to determine efficacy of the currently used antimalarials. The centre also focuses on the spread of antimalarial drug resistance.	Wits Research Institute for Malaria (WRIM), headed by Prof Maureen Coetzee focuses on entomology and vector control. The strength of this centre is its work on insecticide resistance and molecular taxonomy. This centre serves as a training centre for entomologists from the southern African region.	Prof Christiaan de Jaeger is the director of the University of Pretoria collaborating centre (Institute for Sustainable Malaria Control). This centre has a more multi-disciplinary approach to malaria control and is mainly involved in research into novel vector control technologies.

The three Centres have also been encouraged to share expertise and resources and are currently busy looking at the issue of gametocyte carriage as a driver of residual malaria transmission in the country. In collaboration with the three centres and other research institutes in the country, MOMR has set up a platform for research dissemination, especially to give emerging scientists a platform to share their research.

SAMRC IN CONVERSATION WITH

SOUTH AFRICANS

STRATEGIC STAKEHOLDER ENGAGEMENTS

ENGAGMENT	OBJECTIVE
RAND EASTER SHOW 25 March 2016	Increase brand awareness and expose citizens to the mandate of the organisation.
INTERNATIONAL CONFERENCE ON COMMUNITY PSYCHOLOGY 27 May 2016	Showcase the parent brand with specific focus on the work of the SAMRC/UNISA Violence, Peace & Injury Research Unit.
INTERNATIONAL AIDS CONFERENCE & SOUTH AFRICA'S TB CONFERENCE 17 July 2016	Showcase the parent brand with specific focus on HIV prevention research, biomedical innovation as well as treatment and care aimed at changing the disease profile of both HIV and TB.

MEDIA RELATIONS MANAGEMENT

The following table lists all press releases issued to national, regional and community media institutions in the reporting period April 2016 to March 2017.

MONTH	TOPIC / ISSUE
APRIL 2016	• Research shows disparity between Child Support Grant and child health in South Africa • Research reveals that more than one young child is killed per day in South Africa
MAY 2016	• Large-Scale HIV Vaccine Trial to Launch in South Africa • South African Medical Research Council (SAMRC) co-hosts International Community Psychology Conference • Call for Nominations to serve on the Board of the South African Medical Research Council (SAMRC)
JUNE 2016	• SMS text message information system shows ability to improve adherence to care in chronic patients • SAMRC showcases advances in and seeks new investment opportunities in biomedical research at 2016 BIO International Convention • More research needed on whether incentives improve TB detection and therapy • Investment in biomedical research sustained
JULY 2016	• Early mother-to-child transmission of HIV stats plunge • SAMRC revives HIV vaccine trial site in the Eastern Cape • SAMRC / FORTE Joint Research Projects Announced
AUGUST 2016	• 2016 South Africa Demographic and Health Survey Underway
SEPTEMBER 2016	• Violence in SA - towards prevention • Tuberculosis in Rhinoceros: Is this an under recognised threat?
OCTOBER 2016	• Country's leading researchers recognised for remarkable efforts in medical research • Country's medical research council announces fourth consecutive clean audit

MONTH	TOPIC / ISSUE
NOVEMBER 2016	• Saving lives at birth through innovation • SAMRC announces new board • GACD- funds Project to provide evidence on the economic burdens of tobacco use in South Africa • 2nd National Burden of Disease Study reveals noteworthy changes in mortality trends for South Africa • World's first new HIV vaccine efficacy study in seven years gathers pace
JANUARY 2017	• DNA-based detection test improves battle strategy against TB by finding undiagnosed cases in the community • DNA sequencing used to track transmission of incurable TB in South Africa • R10 million to support innovative health technologies in maternal and neonatal care across Africa
FEBRUARY 2017	• Novel public-private collaboration tackles what is expected to become the most common cause of death in Africa • Trial Studying HIV-Related Cardiovascular Disease Arrives in South Africa
MARCH 2017	• South African Medical Research Council (SAMRC) Scientific Merit Awards 2017 • Discovery of new gene that causes sudden death in adolescents • First lead exposure study puts poorly designed shooting ranges under fire • Global rise of multidrug resistant tuberculosis threatens to derail decades of progress • SAMRC President expands country's research & development influence globally

The independently measured media performance of the SAMRC is reflected below:

TITLE	AVE VALUE MEASURED
AVE GENERATED FOR PRINT MEDIA	ZAR 25 830 534.61
AVE GENERATED FOR BROADCAST MEDIA	ZAR 9 855 700.30
TOTAL AVE GENERATED BY THE SAMRC (1 APRIL 2016 – 31 MARCH 2017)	ZAR 35 686 234.91

COVERAGE TYPE	NUMBER OF ARTICLES
NUMBER OF ARTICLES CONSIDERED AS POSITIVE COVERAGE	1 827
NUMBER OF ARTICLES CONSIDERED AS NEUTRAL COVERAGE	13 307
NUMBER OF ARTICLES CONSIDERED AS NEGATIVE COVERAGE	9
TOTAL NUMBER OF ARTICLES GENERATED	15 143

NOTE:

AVE: Advertising Value Equivalency – measure of the media coverage by comparing it to the cost of a similar placement were it an advertisement.
Negative articles are described by the issue reported on and are not a reflection that the SAMRC's reputation was brought into disrepute or was perceived negatively in the articles.

BREAKING NEW GROUND IN RESEARCH & DEVELOPMENT

ANTIVIRAL THERAPY

The project titled "Novel vector-delivered antiviral therapies for the treatment of latent HIV infection", led by Marco Weinberg, has resulted in a number key discoveries and world firsts. A publication on the project in the high impact journal Molecular Therapy was accompanied by an editorial that lauded the work as being a unique and creative solution to the problem of persistent latent HIV infection. A provisional patent has also been filed on a technology developed by this team.

**This research was funded through the Strategic Health Innovation Partnerships (SHIP) managed by the Grants, Innovation & Product Development (GIPD) Division.

GOVERNANCE

INTRODUCTION

The SAMRC Act provides for the governance of the organisation. As a Section 3A entity, it is accountable to Parliament for its performance and budget. As the SAMRC executive authority is the Department of Health, the Minister of Health is responsible for appointing the Board. The Board, in turn, is responsible for the corporate governance of the SAMRC. This includes fiduciary responsibility and compliance with legislative requirements, including the Public Finance Management Act (PFMA). In addition, the SAMRC Board appoints the SAMRC's President, who carries full responsibility for implementing the Board's mandate. The SAMRC President chairs the SAMRC's Executive Management Committee, which is responsible for the day-to-day management of the organisation.

Corporate governance embodies processes and systems by which public entities are directed, controlled and held to account. In addition to legislative requirements based on a public entity's enabling legislation and Companies Act, corporate governance, with regard to public entities, is applied through the precepts of the PFMA and run in tandem with the principles contained within the King Report on Corporate Governance.

OUR LEGAL CONTEXT

CONSTITUTIONAL MANDATE

The Constitutional (Constitution of the Republic of South Africa Act, 1996 (Act 108 of 1996, as amended) base that supports the SAMRC's mandate is:

- Section 10 (right to human dignity)
- Section 11 (right to life)
- Section 12 (right to freedom and security of the person)
- Section 14 (right to privacy)
- Section 24 (right to environment that is not harmful to health)
- Section 27 (right to healthcare, food, water, and social security).

In the Constitutional context, the outcome of SAMRC work must translate to some tangible / realisable proposition addressing one of these areas.

STATUTORY & OTHER MANDATES

The Legal & Compliance Services Division of the SAMRC has identified 52 Acts of Parliament (with 21 of those characterised as primary (i.e. non-compliance therewith or parts thereof would be catastrophic to the business / mandate of the SAMRC). Further to that, 7 Good Practice Standards (local and international) have been identified to be applicable to the SAMRC. Last, 10 Regulatory Authorities have been identified to have authority over the business or conduct of the SAMRC.

THE 51 ACTS INCLUDE THE FOLLOWING:

- SAMRC Act 58 of 1991, as amended
  This is the enabling and founding legislation creating the SAMRC. It is instructive on the mandate of the SAMRC and the prioritisation of its research programmes. The SAMRC Act empowers the functional and authoritative structures of the SAMRC to source / employ such resources and engage the Executive Authority and such other key stakeholders as may be appropriate to give effect to the mandate of the SAMRC. The SAMRC Act is currently under review. The SAMRC Board, the NDoH, the NDoST and the Parliamentary Portfolio Committee of Health have been briefed about the contemplated review of the SAMRC Act.
- The National Health Act 61 of 2003
- Intellectual Property, Rights from Publicly Financed Research and Development Act, 2008
- Employment Equity Act 55 of 1998
- Basic Conditions of Employment Act 75 of 1997
- Public Finance Management Act (No.1 of 1999 as amended by Act 29 of 1999)
- The Patents Act 57 of 1978
- Copyright Act 98 of 1978 Trade Marks Act 194 of 1993
- Designs Act 195 of 1993
- Implementation of Official Languages Act 12 of 2012
- Protecting of Personal Information Act 4 of 2013

The Good Practice Codes include:

- King Code on Corporate Governance
- Good Clinical Practices (GCP)
- Good Laboratory Practices (GLP)

The Regulatory Authorities include

- Information Regulator created in terms of the Protection of Personal Information Act
- South African Revenue Services
- Health Professions Council of South Africa

All these instrumentals are constantly monitored to attend to necessary reviews as and when public policy, professional practice and legislative changes are initiated.

LEADERSHIP GALVANISES PROCESS TO AMEND SAMRC ACT

The South African Medical Research Council (SAMRC) initiated a process in collaboration with the NDoH to review the SAMRC Act. The objective of the review process was to identify and agree to changes that could be adopted as suitable amendments to optimise the SAMRC's ability to respond to its mandate to conduct and fund research that impacts on the wellbeing of South Africans. The SAMRC identified and justified four key reasons to review the SAMRC Act.

REASON	SAMRC ACT's CURRENT DRAWBACK
MODERNISE THE SAMRC ACT	Current Act outdated with references non-existent law, e.g. reference to 1983 Constitution.
ALIGN THE SAMRC ACT WITH CURRENT LEGISLATION	Current Act using references to e.g. Public Deposits Act of 1984 and therefore not aligned to e.g. PFMA of 1991
COMPETITIVELY POSITION THE SAMRC	Over and above the allocation from the National Fiscus, the Act must enable the SAMRC to go the funding base and compete with its (SAMRC) counterparts.
IMPROVE THE EFFICACY OF THE SAMRC	Current Act needs to be aligned with the Companies Act 2008 and the King Code on Corporate Governance

Key strategic stakeholders, such as the National Department of Health and the South African Law Reform Commission, were consulted as part of the initial steps of the review process to make recommendations of suitable amendments to aid the SAMRC to achieve the objectives of the review process. The strategic stakeholders, as an immediate imperative to the review process, were requested to assess the current SAMRC Act and provide their feedback on the following substantive provisions in consideration of how the SAMRC can optimise the delivery of its mandate by amending the Act:

- What the leadership requirements of the SAMRC should be;
- What the financial/funding model of the SAMRC should be;
- What approach to employ in collaborating / contracting / competing with the private sector entities doing business in medical / health research space;
- Transformation aspirations of the SAMRC and the delivery model appropriate to these; and
- What the institutional model should be.

The consultation process with the said stakeholders is expected to draw comparable experiences and organisational design and delivery models of identified local, regional, continental and global entities pursuing a cause or mandate similar to that of the SAMRC.

SAMRC'S ENGAGEMENT WITH THE PORTFOLIO COMMITTEE ON HEALTH

The South African Medical Research Council is accountable to Parliament through the Parliamentary Portfolio Committee of Health. The SAMRC regularly responds to invitations from the committee.

Titles of the presentations delivered to the Portfolio Committee on Health in the 2016/17 reporting period.

DATE	DISCUSSION
6 April 2016	2016/17 Annual Performance Plan
11 October 2016	2015/16 Annual Report
8 March 2017	National Burden of Disease Study

OUR BOARD

The role of our Board is set out in the South African Medical Research Council Act of 1991 and states that "the affairs of the SAMRC shall be managed and controlled by a Board, which shall, subject to the provisions of this Act, determine the policy and objectives of the SAMRC and exercise control generally over the performance of its functions, the exercise of its powers and the execution of its duties".

In essence, the Act mandates the Board to designate an Executive Management Committee, consisting of the President and other members who are employees of the SAMRC, and who, subject to the directives and control of the Board, are responsible for managing the affairs of the organisation in accordance with the objects and policy of the SAMRC.

The Board is supported by a board secretary who fulfils the following roles and responsibilities

- Organising and recording the activities of Board and committee meetings in professional manner
- Advising and assisting the board regarding their duties and responsibilities
- Ensuring Board and committee packs and reports are professionally compiled and timeously distributed in consultation with the chairperson and CEO to the relevant parties
- Ensuring that statutory reports and returns are presented to the Board for approval
- Ensuring effective and efficient management of all logistical arrangements pertaining to Board activities
- Ensuring effective and accurate record-keeping of Board proceedings and resolutions in compliance with statutory requirements
- Acting as a communication and information channel for Board members
- Ensuring Board resolutions and directives are communicated and implemented by relevant parties
- Following up on Board matters (decisions and requests)
- Tracking and coordination of Board requests between the Board and management.

"The concept of advancing life is entrenched in the global health context, gives impetus to the strategic goals of the SAMRC and is informed by a people focused school of thought to change the lives of the people we serve. The SAMRC focuses on delivering responsive medical research to help fulfil the National Department of Health's promise of a long and healthy life for all South Africans".

PROFESSOR MIKE SATHEKGE
Board Chairperson

NAME	DESIGNATION (In terms of the Public Entity Board structure)	DATE APPOINTED	DATE RESIGNED	QUALIFICATIONS	
Prof. M Sathekge	Chairperson		n/a	MB ChB, MMed (Nucl Med), PhD. Professor, Chief Specialist and Head of Department of Nuclear Medicine	
Prof Q Abdool Karim	Deputy Chairperson	1 Nov 2016	n/a	PhD (Medicine); Diploma in Public Service Management (cum laude); MS (Parasitology); Higher Education Diploma (Post-graduate); BSc (Hons) (Biochemistry); BSc (Microbiology, Biochemistry) NRF A rated scientist; Fellow: Royal Society of South Africa; Academy of Science of South Africa; African Academy of Science (Vice-President: Southern Africa); The World Academy of Science; Organisation of Women in Science and Development; US National Academy of Medicine (Foreign Associate)	
Dr R Chikwamba	Member	1 Nov	n/a	MBA; PhD; Member of the Academy of Science of South Africa (ASSAF Member, South African Council for Natural Scientific Professions; Dr Chikwamba sits on various boards focusing on agriculture, conservation and health, notably the Global Governing Board of ICRISAT, the Board of Directors of the Wits Health Consortium (Pty) Ltd, the South African Medical Research Council and is the chair of the Advisory Board of the Applied Center for Climate and Earth System Sciences (ACCESS).	
Dr P Hanekom	Member	1 Nov 2013	n/a	BSc; BVMCH (Veterinarian); Postgraduate Diploma in Economic Principles MSc in Financial Economics	
Prof M Cotton	Member	1 Nov 2016	n/a	MBChB (UCT), M.Med (Wits), PhD (Stell), FCPaed (SA), DTM&H (Wits), DCH (SA) Registered as specialist in Paediatric Infectious Diseases with HPCSA	

	AREA OF EXPERTISE	BOARD DIRECTORSHIPS (LIST THE ENTITIES)	OTHER COMMITTEES OR TASK TEAMS (e.g: Audit Committee/ Ministerial Task Team)	NO. OF MEETINGS ATTENDED
	Design and implementation of novel point-of-care targeted diagnostics and therapies using molecular nuclear medicine to address cancer and the dual curse (HIV &TB)	• President of the Colleges of Medicine of South Africa (National Specialist Examining body) • President of International Society of Radiolabeled Blood Elements (ISORBE) • Governing Board of the World Association of Radiopharmaceutical Therapy	Board	5
			ExCo	
			Research & Development	3
	HIV/AIDS, Sexual reproductive health, surveillance, Adolescent Health, Implementation Science	• PEPFAR Scientific Advisory Board • MAC AIDS Foundation Board	Board	1
			Exco	
			R&D	1
	Life sciences and health; Leadership, strategy development and execution; Research and development strategy, management; Strategic partnerships and business development; Strategic communication and stakeholder engagement; Governance.	• Member of Advisory Committee of the Academy of Science of South Africa (ASSAF) • Member of Applied Center of Climate and Earth System Science (ACCESS) • Global Governing Board of ICRISAT • Flobal Oversight Council: Vital Signs • Board Member, WITS Health Consortium (PTY) Ltd. • African Union (AU) High–Level committee on Science, Technology and Innovation Strategy for Africa 2024 (STISA 2024)	Board	1
			REMCO	1
	• Financial and economic analysis and research • Strategic planning • Project management • Governance and accountability	• Pikitup SOC • Mapungubwe Institute of Strategic Reflection • Muropeng a''Afrika (PTY LTD) • Cradle of Humankind Trust	Board	5
			ExCo	Consulta-tive
			Audit, Risk & IT (Chair)	4
	Paediatric infectious diseases	N/A	Board	1
			R&D	1

NAME	DESIGNATION (In terms of the Public Entity Board structure)	DATE APPOINTED	DATE RESIGNED	QUALIFICATIONS	
Ms N Kadwa	Member	1 Nov 2016	n/a	B. Proc Practicing attorney in South Africa; Member of KwaZulu-Natal Law Society; Appeared in the High and Constitutional Court of South Africa.	
Prof. E Bukusi	Member	1 Nov 2013	n/a	• Certificate in International Health • Postgraduate diploma in International Research Ethics • Bachelor of Medicine and Bachelor of surgery • Masters of Medicine in Obstetrics and Gynaecology • Master of Public Health (Epidemiology) • Masters in Bioethics (MBE) • PhD in Epidemiology	

	AREA OF EXPERTISE	BOARD DIRECTORSHIPS (LIST THE ENTITIES)	OTHER COMMITTEES OR TASK TEAMS (e.g: Audit Committee/ Ministerial Task Team)	NO. OF MEETINGS ATTENDED
	• Administrative and Constitutional; Environmental and Property Law; Commercial and Corporate Law; Property Law • Delivery of a vast number of opinions on varied aspects including property issues, e.g. Lease, eviction, public liability and insurance, human resources, financial and tax obligations especially in relation to property disposition structuring, advices on brief with respect to policies and procedures. • Chairing of disciplinary hearings, mediation on matters, Training and Workshops; Drafting, Reviewing, Vetting of Contracts 1. Purchase and Sales as well as other dispositions such as cessions and donations Grant Agreements, 2. Purchase and Sales of Movables (with Various specifications) 3. Leases, assignments, cessions and other encumbrances 4. CDA's & NDA's 5. Corporate Financing Agreements including for a Corporate Financial lender 6. Consultancy Agreements 7. Memorandum of Understanding 8. Material Transfer Agreements Intellectual Property Agreements 9. Drafting as paper on Corporate governance in terms of NEMA, 10. Drafting several appeal decision recommendations for Minister of EDTEA and his predecessors.	Appeals Panel Member of EDTEA (Economic Development, Tourism and Environmental Affairs); Trustee of Several Private Trusts	Board ARIC	1 1
	• Research focused on sexually transmitted infections, reproductive health, and HIV prevention, care and treatment • Enhancing capacity to conduct socio-behavioural and biomedical research and provide HIV care through training and infrastructure development • Research ethics and the development of systems and structures for regulation of research	• Member Board of Trustees, HIV Research Trust • UNAIDS Scientific Expert Panel • International Partnership for Microbicides DSMB Advisory Panel • Reduction of Early Mortality Advisory Committee • AVAC • Multipurpose Prevention Technologies (MPT) • DSMB World Health Organization Corticosteriods in pregnancy use study • Board of local NGO – IMPACT Research and Development organisation • Advisory board on the ATHENA network PrEP Preference study	Board Research & Development R&D	5 2

NAME	DESIGNATION (In terms of the Public Entity Board structure)	DATE APPOINTED	DATE RESIGNED	QUALIFICATIONS	
Prof L Zungu	Member	1 Nov 2016	n/a	BCur; Diploma in Nursing Education and Administration; Primary Health Care Certificate; BCur (Hons) in Community Health Nursing; Occupational Health Programme Evaluation; MCur in Community Health Nursing; PhD in Occupational Health Nursing; Health Practitioner's Dispensing Course; Post Graduate Diploma in International Research Ethics	
Dr Z Kwitshana	Member	1 Nov 2013	n/a	• Doctor of Philosophy (Immunology) • Master of Medical Science • Diploma Project Management • National Higher Diploma Med Tech (Pathophys/ Immunology) • Specialist Diploma Med.Tech. (Chemical Pathology) • National Diploma Medical Technology (Clinical Pathology)	
Prof J Mahlangu	Member	1 Nov 2016	n/a	MMed (Haem), clinical haematology subspecialist; Cert Clin Haem, Clinical haematology subspecialist; FCPath, Haematologist; MBBCh, Medical practitioner; BSc (Lab Med), Scientist	
Prof W Rae	Member	1 Nov 2016	n/a	PhD (UFS), MMedSc (UCT), Medical Physicist, MBChB (Wits) Medical Practitioner, BSc (Rhodes).	
Prof B Shaw	Member	1 Nov 2016	n/a	D.Phil (Biokinetics); M.Phil (Biokinetics); B.A. Honours (Biokinetics) cum laude; B.A. Honours (Sport Science); B.A. (Humanities)	
Prof L Skaal	Member	1 Nov 2016	n/a	Doctor of Public Health (DrPH); Master of Public Health (MPH); BSc Physiotherapy; Assessment and Moderation Certificate	
Prof T Sodi	Member	1 Nov 2016	n/a	Honours Degree in Psychology; Masters Degree in Clinical Psychology; PhD (Psychology). Prof Sodi is registered with the Health Professions Council of South Africa as a Clinical Psychologist.	
Prof S Velaphi	Member	1 Nov 2016	n/a	MBChB, MMed, FC Paed, Fellowship in Perinatal Neonatal Medicine	

	AREA OF EXPERTISE	BOARD DIRECTORSHIPS (LIST THE ENTITIES)	OTHER COMMITTEES OR TASK TEAMS (e.g: Audit Committee/ Ministerial Task Team)	NO. OF MEETINGS ATTENDED
	Occupational health and safety; Community Health	Member of the Examination Board at Texila American University (TAU) in India	Board	1
			REMCO	1
	Immunological and nutritional impact of co-infection with HIV and neglected tropical diseases (Helminthiasis). Revitalising capacity in medical parasitology for national control of neglected tropical diseases	• Charles James Hospital Board • SA Immunology Society • International Journal of Maternal and Child Health and AIDS Editorial Board • National Schistosomiasis Review Working Group (Group Leader) • Mass Treatment Campaign Committee	Board	5
			Research & Development	3 Consultative
			EXCO	
	Clinical Haematologist with special interest in haemostasis and thrombosis, clinical trials and other aspects of clinical and diagnostic haematology and pathology.	Poliomyelitis Research Foundation Board. WITS Health Consortium Board	Board	1
			ARIC	1
	Imaging Medical Physics, Quantitative Image Analysis	N/A	Board	1
			ARIC	1
	Exercise Science and Biokinetics: cardiopulmonary disease; non-communicable disease (NCD); hypokinetic disease	• Editorial board: ACSM's Health and Fitness Journal • Executive Director: Africa & Vice-President: Publications and Communication - International Physical Activity Projects (IPAP)	Board	1
			ARIC	1
	Social & Behavioural Studies: Addictive behaviours and Obesity Prevention	SAIDS Board PHASA Exec	Board	1
			R&D	1
	Culture and mental illness/health; Mental retardation; Mental health policy; Culture and ethics; Suicide; Health and behaviour; Archival research; Phenomenology and phenomenological research.	N/A	Board	1
			REMCO Exco	1
	Neonatology	Clothing Company for Church Clothes/Uniform	Board	1
			R&D	1

ENTERPRISE RISK MANAGEMENT

The Board has ultimate responsibility for assessing and managing risk across the SAMRC, and to ensure that an effective holistic approach to risk management is in place to understand, evaluate and mitigate risk at the SAMRC. The Board is committed to effective risk management and recognises that the management of strategic business risk is an imperative cornerstone and enabler in achieving the organisation's vision of building a healthy nation through research and innovation.

The Audit, Risk & IT Committee (ARIC) has been delegated the oversight role over strategic business and operational risks, internal financial controls, fraud risk as it relates to financial reporting and information technology risks as it relates to operational and financial reporting. The ARIC in turn reports and escalates risk issues back to the Board.

The Enterprise Risk Management (ERM) Unit at SAMRC is a dedicated department that reports directly to the ARIC and has primary responsibility for the design, implementation and monitoring of enterprise-wide risk management across the SAMRC and its integration into the day-to-day activities.

The SAMRC's approach to ERM entails the proactive management and mitigation of risk under the guidance of the SAMRC Board, President and Executive Management, and it has put in place risk control strategies and policy documents designed to govern risk management within the organisation. These are subject to annual review to ensure alignment with international best-practice and the SAMRC business environment. The current governance policies, reviewed annually, relating to risk management include:

- Risk Management Strategy
- Risk Management Policy and Framework
- Risk Appetite and Tolerance Framework
- Fraud Prevention Policy and Plan
- Combined Assurance Framework Policy
- Code of Business Conduct

Major risks that could influence the achievement of SAMRC's strategic objectives are actively and continuously identified throughout the organisation, together with the current mitigation strategies. Where appropriate, management action plans to further improve the management of the risk are timeously developed and implemented.

While risk cannot be fully eliminated, the SAMRC endeavours to minimise its exposure by ensuring that appropriate infrastructure, controls, systems and ethical behaviour are applied across the entity. The risk management activity has received corporate endorsement and risk management processes have been formalised and adopted. The strategic risk management activities are reported, via ARIC, to the Board on a quarterly basis. The register of strategic risks is updated as and when emerging risks are identified. Where appropriate, management action plans to further improve the management of the risk are timeously developed and implemented.

Risk dashboards are utilised to report to the Executive Management Committee and Audit, Risk & IT Committee. These quarterly reports form the basis of the continuous monitoring on the status of implementation on management action plans. Further support is provided by internal audit in the form of assurance on the effectiveness of control procedures in place to reduce the possibility and outcome of the known risks.

ERMU will to continue to embed risk management principles and the methodology, and continue with the implementation of a process to ensure follow-up by management of their risk intervention action plans to reduce the risk exposure to the SAMRC.

KEY RISKS & MITIGATION ACTIVITIES

During the financial year under review, the SAMRC Executive Management and Board identified, and took necessary mitigating actions on the key business risks identified. The table below shows the alignment between strategic focus areas and business risks facing the organisation:

KEY BUSINESS RISKS	SELECTION OF RISK MITIGATION DECISIONS AND KEY ACTIONS TAKEN / IN PROGRESS
Strategic Goal 1: Administer health research effectively and efficiently in South Africa	
Relationship with organised Labour	• Monthly meetings with Union to strengthen the relationship • Industrial relations within the organisation being strengthen
Inefficiencies in Corporate Processes	• Contracts in place for 80% procurement spend • Implement pre-contract management award and contract management software
Outdated SAMRC Act	• On-going consultation and engagement with NDoH on the progress on amending the MRC Act
Insufficient facility management, including movable and immovable assets	• Revamping and leasing out of office space in Ridge Road building
Communication challenges	• No further actions identified
Non-compliance to legal and regulatory requirements and policies and procedures	• More active role by HSE Office in both construction projects and projects with HSE related activities
Strategic Goal 2: Lead the generation of new knowledge and facilitate its translation into policies and practices to improve health	
Formation of NAPHISA: Overlap in mission and research between the MRC and NAPHISA	• On-going engage with NDoH on the establishment of NAPHISA and Parliamentary discussions
Inferior quality of research output / Lack of research integrity	• Development of formal guidelines for data management • Development of systems and processes for managing, promoting and monitoring responsible conduct of research • Oversight over the conduct of animal research and improved functioning of the Animal Research Committee
Research focus not aligned to national health priorities	• Ensure the distribution of baseline funding across the research focus areas of the IMUs are aligned to the national health priorities
Ineffective management of extramural research units and collaborating research centres	Streamline the management of EMU and Cancer Centres: • Relook at the organisational design of the functional area • Design and implement management and monitoring processes
Inability to attract, develop and retain appropriately skilled staff or sufficient capacity	• Development of Career Ladder Progression Model • Roll out of leadership interventions, coaching and mentoring programmes
Limited MRC national research footprint	• No further actions identified
Transformation challenges	• Approval of the draft EE Strategy and Plan • Appointment of Intra-mural Unit (IMU) Deputy Directors
Inability to sustainably grow funding	• No further actions identified
Strategic Goal 3: Support innovation and technology development to improve health	
Ineffective support for innovation, partnerships, platforms and technology development	• Appointment to the newly created SHIP Commercialisation Director / Specialist post to be implemented
Strategic Goal 4: Build capacity for the long-term sustainability of the country's health research	
Limited research capacity	• Develop a medium / long term strategy for supporting the development of HDI research scientist., including research focus areas and transformation criteria for selecting institutes, individuals, etc.

INTERNAL CONTROL & INDEPENDENT ASSURANCE

The SAMRC has a number of management controls and governance structures in place to provide assurance on the status of governance and control at an organisational level. These include clearly defined and documented processes, policies approved by the Board which is accessible to all staff via the intranet, and clearly defined procedures and work practices. While the Board is ultimately responsible for the internal controls at the SAMRC, this function is delegated to the President to ensure that business risks are properly managed. The Board relies on the Audit Risk & IT Committee to monitor and report on the status of internal controls at the SAMRC.

Management plays a very crucial role in terms of internal control, as the 'first line of defence', in the day-to-day activities of the organisation. Other 'control measures' include the oversight responsibilities of certain committees (e.g. health & safety, legal and risk) and the role of assurance providers. SAMRC has developed a combined assurance model and framework to provide a coordinated approach to all assurance activities. SAMRC is in the process of enhancing the initial Basic Combined Assurance Plan, linking the strategic risks with the key control universe, and define and assign appropriate assurance types (both internal and external) and activities. This process will be further developed during the 2017/18 financial year.

The ARIC is responsible for monitoring the appropriateness of the organisation's combined assurance model and ensuring that significant risks facing SAMRC are adequately managed. The Auditor-General is responsible for expressing an opinion on the financial statements and to report on findings relating to the audit predetermined objectives, and material non-compliance with specific requirements in key applicable legislation.

The SAMRC Internal Audit (IA) function is outsourced to KPMG and derives its independence from its Charter, approved by the Board. IA reports functionally to the ARIC and has unrestricted access to the Chairman of the ARIC and SAMRC President. The internal audit function strives to assist the business in accomplishing its objectives by applying a risk-based approach to evaluate and improve the effectiveness of risk management, internal controls and governance processes across the organisation.

FRAUD & CORRUPTION

The SAMRC has a zero tolerance to fraudulent behaviour and is committed to fighting fraudulent behaviour at all levels of the organisation. The SAMRC Fraud Prevention Policy addresses fraud risk management both proactively and reactively, and the fraud prevention plan developed includes a fraud strategy as one of the outputs of the plan. The components of the SAMRC's fraud strategy consist of prevention, detection, investigation and response. The prevention of fraud is the most important component of the SAMRC's strategy in dealing with fraud.

The core fraud risks facing the SAMRC as part of the Fraud Prevention Plan Strategy were revisited as part of the annual fraud risk assessment. The identified controls to mitigate these were evaluated for effectiveness, and where deemed necessary, action plans to further strengthen certain areas were developed to enhance the control environment.

The SAMRC has an on-line whistle-blower hotline where staff can report fraudulent activities/incidents anonymously. The web-page, 'Report fraudulent activities at the SAMRC, is available to all staff on the SAMRC Intranet home page. Staff who have knowledge of an occurrence of fraud or corruption, or who have good reason to suspect that a fraudulent or corrupt act has occurred, have a duty to promptly report any reasonable suspicions. All reported cases are treated with the utmost confidentiality to protect the rights of both the whistle blower and the alleged party.

ETHICS MANAGEMENT

The Code of Business Conduct Framework Policy, approved by the Board is intended to prevent unethical behaviour and encourage ethical behaviour. This balance of business conduct is directed at the SAMRC's internal stakeholders (Board, managers and employees) and external stakeholders, such as suppliers. The Code helps to define the parameters of the spirit of the SAMRC business and research conduct, ethics and personal ethos of staff. It is a requirement that all internal stakeholders display integrity, honesty, mutual respect and openness when conducting business.

It is the responsibility of each and every employee to ensure that he/she complies with the provisions of the Code. In an event where an employee breaches the provisions of the policy, this will be addressed in terms of the Disciplinary and Grievance Policy.

Each SAMRC employee is required to declare any interest and potential conflicts of interest on an annual basis. Failure to disclose his/her interests, or the wilful provision of incorrect or misleading details can lead to charges of misconduct. To provide staff with a more efficient and effective solution when having to respond to the requirements of annual disclosure SAMRC has implemented an On-Line declaration of interest tool. All outside work, financial and private interest, and any other business activities must be declared when completing the SAMRC staff annual On-line Declaration of Interest.

Where these relate to dealings with any state entity full declaration must be provided as required in the On-line Declaration of interest. SAMRC staff are entrusted with public funds and as such, they need to maintain the highest standards of professional ethics.

In addition, a code of conduct for supply chain management (SCM) practitioners and other role players is in place, whereby conflicts of interest are declared on an annual basis in addition to the SAMRC-wide annual on-line declaration process.

SAMRC'S MATERIALITY & SIGNIFICANCE FRAMEWORK: 2016/2017

The Materiality and Significance Framework for the SAMRC, in terms of the Treasury Regulation 28.3.1 and the National Treasury Practice Note on Applications under of Section 54 of the Public Finance Management Act (PFMA), is as follows:

Section 50: Fiduciary duties of accounting authorities:

1) The accounting authority for a public entity must –

PFMA SECTION	QUANTITATIVE [AMOUNT]	QUALITATIVE [NATURE]
(c) on request, disclose to the executive authority responsible for that public entity or the legislature to which the public entity is accountable, all material facts, including those reasonably discoverable, which in any way may influence the decisions or action of the executive authority or that legislature;	Disclose all material facts.	The Board will disclose to the National Department of Health all material facts as requested and all material facts not requested, including those reasonably discoverable, which in any way may influence the decisions or action of the National Department of Health, at the discretion of the Board.

Section 51: General responsibilities of accounting authorities:

1) An accounting authority for a public entity –

PFMA SECTION	QUANTITATIVE [AMOUNT]	QUALITATIVE [NATURE]
(g) must promptly inform the National Treasury on any new entity which that public entity intends to establish or in the establishment of which it takes the initiative, and allow the National Treasury a reasonable time to submit its decision prior to formal establishment	Disclose all material facts timeously.	Full particulars to be disclosed to the Minister of Health for approval after which it is to be presented to Treasury.

Section 54: Information to be submitted by accounting authorities:

2) Before a Public Entity concludes any of the following transactions, the Accounting Authority for the Public Entity must promptly and in writing inform the relevant Treasury of the transaction and submit relevant particulars of the transaction to its Executive Authority for approval of the transaction:

PFMA SECTION	QUANTITATIVE [AMOUNT]	QUALITATIVE [NATURE]
a) establishment of a company;	Any proposed establishment of a legal entity.	Full particulars to be disclosed to the Minister of Health and Minister of Finance (National Treasury) for approval (simultaneous submission).
b) participation in a significant partnership, trust, unincorporated joint venture or similar arrangement;	Qualifying transactions exceeds R10Mil (based on 2% of total SAMRC assets, as at 31 March 2015). This includes research collaborative arrangements	
c) acquisition or disposal of a significant shareholding in a company;	Greater than 20% of shareholding.	

PFMA SECTION	QUANTITATIVE [AMOUNT]	QUALITATIVE [NATURE]
d) acquisition or disposal of a significant asset;	Qualifying transactions exceeds R10 million (based on 2% of total SAMRC assets, as at 31 March 2015). Including Financial Leases	Any asset that would increase or decrease the overall operational functions of the SAMRC, outside of the approved strategic plan and budget.
e) commencement or cessation of a significant business activity; and	Any activity not covered by the mandate / core business of the SAMRC and that exceeds the R10 million transaction value (based on 2% of total SAMRC assets, as at 31 March 2015).	Full particulars to be disclosed to the Minister of Health and Minister of Finance (National Treasury) for approval (simultaneous submission).
f) a significant change in the nature or extent of its interest in a significant partnership, trust, unincorporated joint venture or similar arrangement.	Qualifying transactions exceeds R10 million (based on 2% of total SAMRC assets, as at 31 March 2015)	

Section 55: Annual report and financial statements

3) The annual report and financial statements referred to in subsection (1) (d) ("financial statements") must -
   a) fairly present the state of affairs of the Public Entity, its business, its financial results, its performance against predetermined objectives and its financial position as at the end of the financial year concerned;
   b) include particulars of:

PFMA SECTION	QUANTITATIVE [AMOUNT]	QUALITATIVE [NATURE]
i) any material losses through criminal conduct and any irregular expenditure and fruitless and wasteful expenditure that occurred during the financial year;	All instances	Report quarterly to the Minister of Health. Report annually in the Annual Financial Statements
ii) any criminal or disciplinary steps taken as a consequence of such losses or irregular expenditure or fruitless and wasteful expenditure;		
iii) any losses recovered or written off;		
iv) any financial assistance received from the state and commitments made by the state on its behalf; and		
v) any other matters that may be prescribed.	All instances, as prescribed	

Section 56: Assignment of powers and duties by accounting authorities

PFMA SECTION	QUANTITATIVE [AMOUNT]	QUALITATIVE [NATURE]
1) The accounting authority for a public entity may— a) In writing delegate any of the powers entrusted or delegated to the accounting authority in terms of this Act, to an official in that public entity b) Instruct an official in that public entity to perform any of the duties assigned to the accounting authority in terms of this Act.	Values excluded from the Delegation of Authority Framework Policy.	Instances that are excluded from the Delegation of Authority Framework Policy.
2) A delegation or instruction to an official in terms of subsection (1)— c) Is subject to any limitations and conditions the accounting authority may impose; d) May either be to a specific individual or to the holder of a specific post in the relevant public entity; and e) Does not divest the accounting authority of the responsibility concerning the exercise of the delegated power or the performance of the assigned duty.	Values excluded from the Delegation of Authority Framework Policy.	Instances that are excluded from the Delegation of Authority Framework Policy.

TREASURY CIRCULARS AND GUIDELINES RELATED TO SUPPLY CHAIN MANAGEMENT

National Department of Health and National Treasury are to

1. be notified of procurement transactions exceeding R10 million;
2. be informed of amounts in excess of
   a. 20% or R20 million (including applicable taxes) for construction related orders; and
   b. 15% or R15 million (including applicable taxes) for goods / service related orders

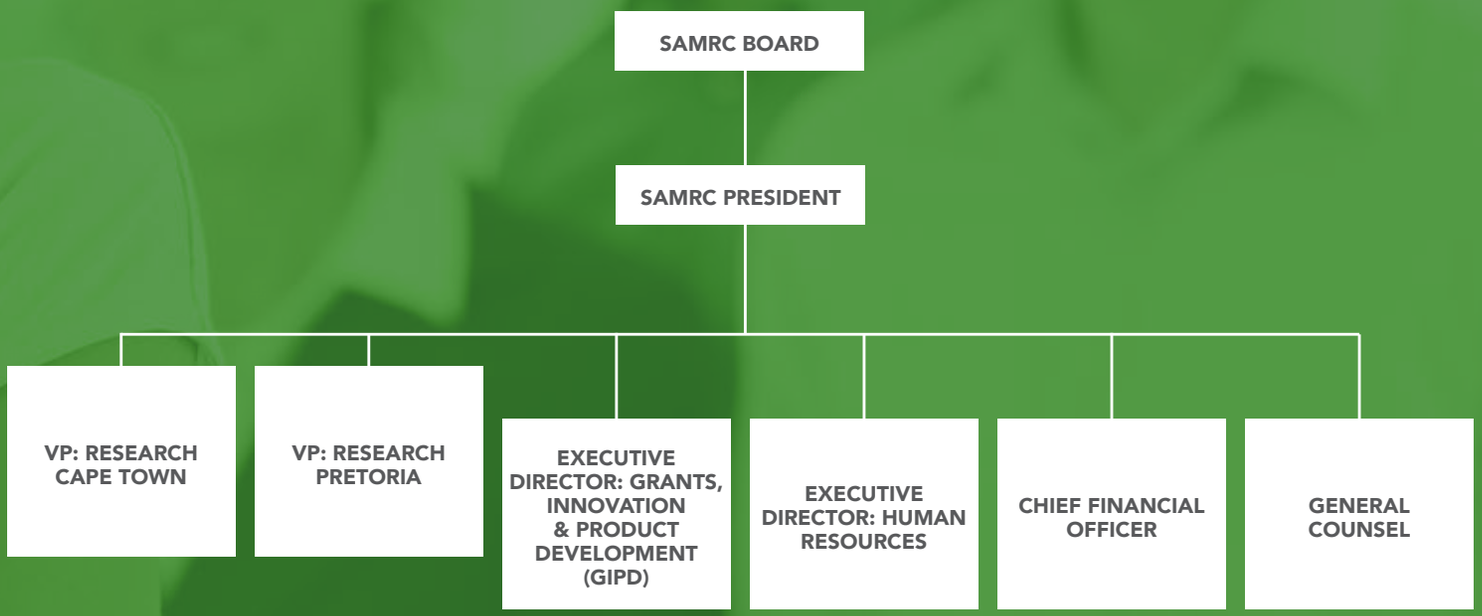
The materiality level mentioned above was calculated using the guidance practice note of the National Treasury. Using these parameters the SAMRC materiality level calculation outcomes were as follows:

ELEMENT	% RAND TO BE APPLIED AGAINST R VALUE	ELEMENT VALUE AT 31 MARCH 2015	CALCULATED MATERIALITY & SIGNIFICANCE VALUE
Total Assets (1%-2%)	2%	R 471 715 579.00	R 9 434 311.58

The SAMRC materiality and significant value will be R10 million based on the highest percentage of the total asset element and the significant fluctuations in the month-to-month total asset value. This is the most stable element, given the performance statement outcomes associated with the current economic climate challenges.

HUMAN RESOURCES MANAGEMENT

SAMRC
ORGANOGRAM



HIGH LEVEL ORGANISATIONAL STRUCTURE

OVERVIEW

HR's primary function is to enable scientists and those who support science to have the necessary passion, skills and experience to help the SAMRC deliver its mandate of funding and conducting research that impacts on the lives of South Africans.

This HR Report provides insight into employee metrics and how we are translating the SAMRC's strategic priorities into action. It gives examples of what we achieved in 2016/17 in the areas of transformation and the development of human capacity (through numerous study assistance and training programmes). The report addresses the development of our remuneration policy and the career progression of staff that is fair, transparent and addresses issues of equity.

HR operates in close partnership with executive management, unit directors and all business divisions and infrastructure functions. The HR function endeavours to assist the SAMRC and its employees to achieve the annual performance indicators.

HR PRIORITIES FOR THE YEAR UNDER REVIEW

HR plays an instrumental role in ensuring that the SAMRC remains vigilant to its transformation agenda, growing human resource capacity and guiding leadership in its endeavour to meet the strategic objectives of the SAMRC. In 2016/17, we concluded a series of highly visible internal awareness campaigns and reminders on the HR policies during various workshops.

ACHIEVEMENTS
FOR THE YEAR UNDER REVIEW

TRANSFORMATION

The SAMRC is operationalising its Transformation Plan. In the first instance, it was evident that there was a lack of transformation at the level of Unit Director, amongst senior scientists. To address succession planning and transformation, the SAMRC created the post of Deputy Directors. This aspect of the Transformation Plan is aimed at offering leadership development training and opportunities for senior scientists within the SAMRC to develop leadership skills. The internal process of appointing four Deputy Directors has been successful and we have now advertised externally for an additional four posts.

In addition to appointing our new Deputy Directors, we have executed a series of Diversity Awareness workshops across the organisation. These workshops were aimed at creating a better understanding of the concept of diversity and its impact in the workplace. Every staff member of the SAMRC participated in these interactive workshops during which they were challenged to reflect on the manner in which they may be enabling or impeding the transformation process.

RECRUITMENT

In 2016, the recruitment time was shortened to well below the target of 32 days. Table 13 reflects the number and level of new recruits in the SAMRC to ensure that we are "fit for purpose".

Table 12: Recruitment, 1 April 2016 to 31 March 2017

OCCUPATIONAL BAND	MALE				FEMALE				TOTAL
	AFRICAN	COLOURED	INDIAN	WHITE	AFRICAN	COLOURED	INDIAN	WHITE	
Top management	0	0	0	0	0	0	0	0	0
Senior management	0	1	0	1	0	0	0	0	2
Professionally qualified and experienced specialists and mid-management	6	0	0	0	8	4	4	3	25
Skilled technical and academically qualified workers, junior management, supervisors, foreman and superintendents	8	3	2	1	31	4	4	0	53
Semi-skilled and discretionary decision making	9	0	0	0	20	2	0	0	31
Unskilled and defined decision making	0	0	0	0	0	0	0	0	0
TOTAL	**23**	**4**	**2**	**2**	**59**	**10**	**8**	**3**	**111**

PERFORMANCE MANAGEMENT

The SAMRC placed emphasis on managing and developing employee performance management processes to enhance performance. As part of the drive to focus on performance, the SAMRC embarked on a process with organised labour and the Board to propose an incentive programme to reward high performers and at the same time manage staff that are poor performers.

EMPLOYEE & LABOUR RELATIONS

HR has implemented clear mechanisms to ensure compliance with labour law, investigating of misconduct and taking the appropriate disciplinary action when required. Salary negotiations with NEHAWU were successfully concluded in the face of a decline of 7% in the baseline budget for the 2017/18 financial year. It is notable that no disputes were referred for the year under review.

CHALLENGES FACED

Major challenges experienced by the HR team include the attraction of Biostatisticians, Clinicians and Pharmacists. Recruiting new staff from a relatively small pool of specialised skills related to medical and health research and the appointment of black, female and disabled research talent at a senior level continue to confront the organisation. Managing the risk of contract employment within the context of new labour legislation had to be addressed while still balancing the SAMRC's need to contain permanent appointments against employees' expectations and their need for job security.

Introducing succession planning, especially for identified critical and scarce skills at the EMC and UD level, and planning succession and skills transfer for retirements within the next five years remains high on the HR agenda.

We are also addressing the adoption of improved and modern ways of performance management, particularly the alignment of individual performance goals with business and organisational goals. There was greater emphasis on using the Performance Management process to facilitate staff development and growth through regular performance discussions between employees and line management. Maintaining a trust relationship with organised labour remained a challenge during 2016/17. Serious efforts were made to ensure that both management and labour understand the employment relations processes. On-going management training to empower managers to successfully manage employees in their units and divisions was undertaken in an effort to address the employee relations environment.

FUTURE HR PLANS & GOALS

HR is committed to implementing its Five-year SAMRC Transformation and Employment Equity Plan to address transformation especially at Senior Specialist Scientist level and above. Fast tracking of talented EE candidates will be used as a strategy to meet its employment equity targets at senior management and specialist scientist levels. In addition, an Automated EE target setting tool will be implemented. A Support Services Internship Programme will be established to complement the successful internship programme currently rolled out in the Research Units. The Management Development Programme and Accelerated Development Programme will be continued with even greater emphasis on the development of black, female and disabled staff.

The functionality of the current HR information system will be reviewed in order to automate HR processes. An HR call-centre will be implemented to provide a single point of entry for staff to log and track their HR queries. The system will also facilitate the monitoring of HR service delivery. A central data repository of all job descriptions and organograms for the SAMRC will be established.

As part of the implementation of a new Employee Wellness Programme under a new service provider, HR will place particular focus on absenteeism management in order to manage the relatively high utilisation of sick leave within the SAMRC. In addition, the review of the leave system currently used will also ensure greater efficiency in the management of leave.

HUMAN RESOURCE OVERSIGHT

STATISTICS

EXPENDITURE

The following table summarises the final audited expenditure by salary bands (Table 1). In particular, it provides an indication of the amount spent on personnel costs per salary band.

Table 1: Personnel costs by salary bands, 2016/17

SALARY BANDS	PERSONNEL EXPENDITURE (R)	% OF TOTAL PERSONNEL COST	AVERAGE PERSONNEL COST PER EMPLOYEE (R)
Lower skilled (levels 12)	R3 102 127	1.2	R134 875
Skilled (level 35)	R14 075 881	5.3	R154 680
Highly skilled production (levels 68)	R80 479 194	30.2	R328 486
Highly skilled supervision (levels 912)	R95 323 854	35.7	R666 600
Senior management (levels 1316)	R73 814 709	28	R1 272 667
TOTAL	**R266 795 765**	**100**	**R476 421**

The following tables provide a summary per programme of expenditure incurred as a result of salaries and overtime. In each case, the table provides an indication of the percentage of the personnel budget that was used for these items.

Table 2: Salaries, overtime, home-owners allowance and medical assistance by salary bands, 2016/17

SALARY BANDS	SALARIES						OVERTIME				
	AMOUNT (R) - BASELINE	SALARIES AS A % OF TOTAL PERSONNEL COST	AMOUNT (R) – CONTRACT	SALARIES AS A % OF TOTAL PERSONNEL COST	AMOUNT (R) – FLAGSHIP BL	SALARIES AS A % OF TOTAL PERSONNEL COST	AMOUNT (R) - BASELINE	OVERTIME AS A % OF TOTAL PERSONNEL COST	AMOUNT (R) - CONTRACT	OVERTIME AS A % OF TOTAL PERSONNEL COST	AMOUNT (R) – FLAGSHIP BL
Lower skilled (Levels 12)	R3,087,440.00	1.16	R0	0	R0	0	R14 686.98	0.01	R0	0	R0
Skilled (Levels 35)	R4,250,367.00	1.59	R8,292,657.00	3.11	R1,418,910.00	0.53	R25 904.94	0.01	R88 042.24	0.03	R0
Highly skilled production (Levels 68)	R49,320,247.00	18.49	R28,859,187.00	10.82	R1,919,032.00	0.72	R275, 394.32	0.10	R105, 333.98	0.04	R0
Highly skilled supervision (Levels 912)	R64,721,207.00	24.26	R30,057,267.00	11.27	R505,846.00	0.19	R18 414.90	0.01	R21 119.06	0.01	R0
Senior management (Levels 1316)	R71,720,634.00	26.88	R2,094,075.00	0.78	R0	0	R0	0	R0	0	R0
TOTAL	**R193,099,895.00**	**72.38**	**R69,303,186.00**	**25.98**	**R3,843,788.00**	**1.44**	**R334, 401.14**	**0.13**	**R214 495.28**	**0.08**	**R0**

No home owners' allowance provided. Total Cost to Company package paid.

No separate medical assistance provided. Included in Total Cost to Company package paid.

EMPLOYMENT AND VACANCIES

The following table summarises the number of posts on the establishment, the number of employees, the vacancy rate, and whether there are any staff that are additional to the establishment.

Table 3: Employment and vacancies by salary bands, 31 March 2017 (includes permanent and contract staff)

SALARY BAND	NUMBER OF POSTS	NUMBER OF POSTS FILLED	BASELINE FUNDED (PERMANENT)	CONTRACT FUNDED	FLAGSHIP	VACANCY RATE (%)	NUMBER OF POSTS FILLED ADDITIONAL TO THE ESTABLISHMENT
Lower skilled (Levels 12)	23	23	23	0	0	0	0
Skilled (Levels 35)	92	91	28	54	9	1%	0
Highly skilled production (Levels 68)	257	245	150	87	8	4.7%	0
Highly skilled supervision (Levels 912)	151	143	95	47	1	5.3%	0
Senior management (Levels 1316)	63	58	55	3	0	7.9%	0
TOTAL	**586**	**560**	**351**	**191**	**18**	**4.4%**	**0**

JOB EVALUATION

Table 4 summarises the number of jobs that were evaluated during the year under review. The table also provides statistics on the number of posts that were upgraded or downgraded.

Table 4: Job evaluation, 1 April 2016 to 31 March 2017

SALARY BAND	NUMBER OF POSTS	NUMBER OF JOBS EVALUATED	% OF POSTS EVALUATED BY SALARY BANDS	POSTS UPGRADED		POSTS DOWNGRADED	
				NUMBER	% OF POSTS EVALUATED	NUMBER	% OF POSTS EVALUATED
Lower skilled (Levels 12)	23	0	0	No posts were evaluated for re-grading purposes – posts were evaluated to establish grade for recruitment purposes		No posts were evaluated for re-grading purposes – only evaluated to establish grade for recruitment purposes	
Skilled (Levels 35)	91	2	2				
Highly skilled production (Levels 68)	245	18	7				
Highly skilled supervision (Levels 912)	143	14	10				
Senior management	58	3	5				
TOTAL	**560**	**37**	**7**				

The following table provides a summary of the number of employees whose salary positions were upgraded due to their posts being upgraded.

Table 5: Profile of employees whose salary positions were upgraded due to their posts being upgraded, 1 April 2016 to 31 March 2017

BENEFICIARIES	AFRICAN	ASIAN	COLOURED	WHITE	TOTAL
Female	No salary upgrades were done during the period under review				
Male					
TOTAL					
Employees with a disability					0

The following table summarises the number of cases where remuneration levels exceeded the grade determined by job evaluation. Reasons for the deviation are provided in each case.

Table 6: Employees whose salary level exceed the grade determined by job evaluation, 1 April 2016 to 31 March 2017 (in terms of PSR 1.V.C.3)

TOTAL NUMBER OF EMPLOYEES WHOSE SALARIES EXCEEDED THE GRADES DETERMINED BY JOB EVALUATION IN 2015/16	None

EMPLOYMENT CHANGES

Turnover rates provide an indication of trends in the employment profile of the department. The following table provides a summary of turnover rates by salary band.

Table 7: Annual turnover rates by salary band, 1 April 2016 to 31 March 2017

SALARY BAND	NUMBER OF EMPLOYEES PER BAND	APPOINTMENTS AND TRANSFERS INTO THE DEPARTMENT	TERMINATIONS AND TRANSFERS OUT OF THE DEPARTMENT	TURNOVER RATE (%)
Lower skilled (Levels 12)	23	0	3	13
Skilled (Levels 3)	91	31	19	21
Highly skilled production(Levels 68)	245	53	34	14
Highly skilled supervision(Levels 912)	143	25	12	8
Senior management	58	2	2	3

Formula used: Band terminations / band total x 100/1 = turnover rate (%)

Table 8: Reasons why staff are leaving the department

TERMINATION TYPE	NUMBER OF EXITS	% OF TOTAL EXITS
Death	2	3
Resignation	40	57
Expiry of contract	26	37
Dismissal – operational changes	0	0
Dismissal – misconduct	0	0
Dismissal: Inefficiency	0	0
Discharged due to ill-health	0	0
Retirement	2	3
Transfers to other public service departments	0	0
Terminations	0	0
Other: Retrenchment	0	0
TOTAL	**70**	**100**
TOTAL NUMBER OF EMPLOYEES WHO LEFT AS A % OF THE TOTAL EMPLOYMENT		**12**

Formula used: terminations / total = turnover rate (%) for organisation

Table 9: Promotions by salary band

SALARY BAND	EMPLOYEES 31 MARCH 2017	PROMOTIONS TO ANOTHER SALARY LEVEL	SALARY BANDS PROMOTIONS AS A % OF EMPLOYEES BY SALARY LEVEL	PROGRESSIONS TO ANOTHER NOTCH WITHIN A SALARY LEVEL	NOTCH PROGRESSIONS AS A % OF EMPLOYEES BY SALARY BAND
Lower skilled (Levels 12)	23	0	0	Notch progressions not used at the SAMRC	
Skilled (Levels 35)	91	0	0		
Highly skilled production (Levels 68)	245	4	1.6		
Highly skilled supervision (Levels 912)	143	3	2.1		
Senior management	58	6	10.3		
TOTAL	**560**	**13**	**2.3**		

EMPLOYMENT EQUITY

The tables in this section are based on the formats prescribed by the Employment Equity Act, 55 of 1998.

Table 10: Total number of employees (including employees with disabilities) in each of the following occupational categories, 31 March 2017

OCCUPATIONAL CATEGORY (SASCO)	MALE				FEMALE				TOTAL
	AFRICAN	COLOURED	INDIAN	WHITE	AFRICAN	COLOURED	INDIAN	WHITE	
Legislators, senior officials and managers	6	5	4	16	2	5	4	16	58
Professionals	16	8	3	2	29	28	25	32	143
Technicians and associate professionals	21	22	13	4	92	53	30	10	245
Clerks	23	7	0	1	40	13	5	2	91
Service and sales workers	0	0	0	0	0	0	0	0	0
Skilled agriculture and fishery workers	0	0	0	0	0	0	0	0	0
Craft and related trades workers	0	0	0	0	0	0	0	0	0
Plant and machine operators and assemblers	0	0	0	0	0	0	0	0	0
Elementary occupations	10	3	0	0	6	4	0	0	23
TOTAL	**76**	**45**	**20**	**23**	**169**	**103**	**64**	**60**	**560**
Employees with disabilities	0	1	0	1	0	1	2	0	5

Table 11: Total number of employees (including employees with disabilities) in each of the following occupational bands, 31 March 2017

OCCUPATIONAL BAND	MALE				FEMALE				TOTAL
	AFRICAN	COLOURED	INDIAN	WHITE	AFRICAN	COLOURED	INDIAN	WHITE	
Top management	1	0	0	0	0	0	0	1	2
Senior management	5	5	4	16	2	5	4	15	56
Professionally qualified and experienced specialists and mid-management	16	8	3	2	29	28	25	32	143
Skilled technical and academically qualified workers, junior management, supervisors, foreman and superintendents	21	22	13	4	92	53	30	10	245
Semi-skilled and discretionary decision making	23	7	0	1	40	13	5	2	91
Unskilled and defined decision making	10	3	0	0	6	4	0	0	23
TOTAL	**76**	**45**	**20**	**23**	**169**	**103**	**64**	**60**	**560**

Table 12: Recruitment, 1 April 2016 to 31 March 2017

OCCUPATIONAL BAND	MALE				FEMALE				TOTAL
	AFRICAN	COLOURED	INDIAN	WHITE	AFRICAN	COLOURED	INDIAN	WHITE	
Top management	0	0	0	0	0	0	0	0	0
Senior management	0	1	0	1	0	0	0	0	2
Professionally qualified and experienced specialists and mid-management	6	0	0	0	8	4	4	3	25
Skilled technical and academically qualified workers, junior management, supervisors, foreman and superintendents	8	3	2	1	31	4	4	0	53
Semi-skilled and discretionary decision making	9	0	0	0	20	2	0	0	31
Unskilled and defined decision making	0	0	0	0	0	0	0	0	0
TOTAL	**23**	**4**	**2**	**2**	**59**	**10**	**8**	**3**	**111**
Employees with disabilities	0	0	0	0	0	0	0	0	0

Table 13: Promotions, 1 April 2016 to 31 March 2017

OCCUPATIONAL BANDS	MALE				FEMALE				TOTAL
	AFRICAN	COLOURED	INDIAN	WHITE	AFRICAN	COLOURED	INDIAN	WHITE	
Lower skilled (levels 1-2)	0	0	0	0	0	0	0	0	0
Skilled (Levels 35)	0	0	0	0	0	0	0	0	0
Highly skilled production (Levels 68)	0	0	0	0	0	1	3	0	4
Highly skilled supervision (Levels 912)	0	1	0	0	1	0	1	0	3
Senior management	1	1	0	1	1	1	1	0	6
TOTAL	**1**	**1**	**0**	**1**	**1**	**2**	**4**	**0**	**13**
Employees with disabilities	0	0	0	0	0	0	0	0	0

Table 14: Terminations, 1 April 2016 to 31 March 2017

(Terminations include all exits in the organisation for the period and is consistent with the EE Reporting)

OCCUPATIONAL BAND	MALE				FEMALE				TOTAL
	AFRICAN	COLOURED	INDIAN	WHITE	AFRICAN	COLOURED	INDIAN	WHITE	
Top management	0	0	0	0	0	0	0	1	1
Senior management	0	0	0	1	0	0	0	0	1
Professionally qualified and experienced specialists and mid-management	1	0	1	0	4	1	3	2	12
Skilled technical and academically qualified workers, junior management, supervisors, foreman and superintendents	3	1	1	0	19	3	6	1	34
Semi-skilled and discretionary decision making	5	0	1	0	12	1	0	0	19
Unskilled and defined decision making	2	0	0	0	0	1	0	0	3
TOTAL	**11**	**1**	**3**	**1**	**35**	**6**	**9**	**4**	**70**
Employees with disabilities	0	0	0	0	0	0	0	0	0

Table 15: Disciplinary action, 1 April 2016 to 31 March 2017

	MALE				FEMALE				TOTAL
	AFRICAN	COLOURED	INDIAN	WHITE	AFRICAN	COLOURED	INDIAN	WHITE	
Disciplinary action	1	3	0	0	0	0	0	0	4

Table 16: Skills development, 1 April 2016 to 31 March 2017

	AFRICAN	COLOURED	INDIAN	WHITE	AFRICAN	COLOURED	INDIAN	WHITE	TOTAL
Legislators, senior officials and managers	3	4	1	5	2	2	3	8	28
Professionals	10	7	1	2	15	14	20	15	84
Technicians and associate professionals	12	7	5	1	32	11	14	2	84
Clerks	13	1	2	0	52	5	9	5	87
Service and sales workers	0	0	0	0	0	0	0	0	0
Skilled agriculture and fishery workers	0	0	0	0	0	0	0	0	0
Craft and related trades workers	0	0	0	0	0	0	0	0	0
Plant and machine operators and assemblers	0	0	0	0	0	0	0	0	0
Elementary occupations	1	0	0	0	5	2	0	0	8
TOTAL	**39**	**19**	**9**	**8**	**106**	**34**	**46**	**30**	**291**
Employees with disabilities	0	1	0	1	0	0	0	1	3

PERFORMANCE REWARDS

To encourage good performance, the department has granted the following performance rewards (or performance bonuses) during the year under review. The information is presented in terms of race, gender, and disability (Table 18) and salary bands (Table 19).

Table 17: Performance bonuses by race, gender, and disability, 1 April 2016 to 31 March 2017

	BENEFICIARY PROFILE			COST	
	NUMBER OF BENEFICIARIES	TOTAL NUMBER OF EMPLOYEES IN GROUP	% OF TOTAL WITHIN GROUP OF BENEFICIARIES	COST (R)	AVERAGE COST PER EMPLOYEE (R)
AFRICAN	**112**	**245**	**46**	**903 048**	**8 062**
Male	35	76	46	373 190	10 663
Female	77	169	46	529 858	6 881
ASIAN	**51**	**84**	**61**	**537 604**	**10 541**
Male	14	20	70	161 518	11 537
Female	37	64	58	376 086	10 164
COLOURED	**106**	**148**	**72**	**972 121**	**9 170**
Male	31	45	69	258 377	8 335
Female	75	103	73	713 744	9 517

Table 17: Continued from previous page

	BENEFICIARY PROFILE			COST	
	NUMBER OF BENEFICIARIES	TOTAL NUMBER OF EMPLOYEES IN GROUP	% OF TOTAL WITHIN GROUP OF BENEFICIARIES	COST (R)	AVERAGE COST PER EMPLOYEE (R)
WHITE	**62**	**83**	**75**	**1 095 706**	**17 673**
Male	19	23	83	436 635	25 239
Female	43	60	72	659 071	15 327
Employees with a disability	0	0	0	0	0
TOTAL	**331**	**560**	**59**	**3 508 479**	**10599**

Table 18: Performance bonuses by salary bands for personnel below Senior Management Service, 1 April 2016 to 31 March 2017

SALARY BAND	BENEFICIARY PROFILE			COST		
	NUMBER OF BENEFICIARIES	NUMBER OF EMPLOYEES	% OF TOTAL WITHIN SALARY BANDS	TOTAL COST (R)	AVERAGE BONUS PER EMPLOYEE (R)	TOTAL COST AS A % OF THE TOTAL BONUS POOL
Lower skilled (Levels 12)	20	23	87	50 031	2 502	1.4
Skilled (Levels 35)	26	91	29	76 151	2 917	2.2
Highly skilled production (Levels 68)	145	245	59	874 796	19 796	24.9
Highly skilled supervision (Levels 912)	93	143	65	1 270 240	12 343	36.2
TOTAL	**284**	**502**	**57**	**2 271 218**	**11 707**	**64.7**

Table 19: Performance related rewards (cash bonus), by salary band, for Senior Management Service

SALARY BAND	BENEFICIARY PROFILE			COST		
	NUMBER OF BENEFICIARIES	NUMBER OF EMPLOYEES	% OF TOTAL WITHIN BAND	TOTAL COST (R)	AVERAGE COST PER EMPLOYEE (R)	TOTAL COST AS A % OF THE TOTAL BONUS POOL
Band E-F	47	58	84.5	1 237 261	26 126	35.3
TOTAL	**47**	**58**	**84.5**	**1 237 261**	**26 126**	**35.3**

FOREIGN WORKERS

The tables below summarise the employment of foreign nationals in the SAMRC in terms of salary bands and by major occupation. The tables also summarise changes in the total number of foreign workers in each salary band and by each major occupation.

Table 20: Foreign workers, 1 April 2016 to 31 March 2017, by salary band

SALARY BAND	1 APRIL 2016		31 MARCH 2017		CHANGE	
	NUMBER	% OF TOTAL OF MRC EMPLOYEES	NUMBER	% OF TOTAL OF MRC EMPLOYEES	NUMBER	% CHANGE
Lower skilled (Levels 12)	0	0	0	0	0	0
Skilled (Levels 35)	0	0	0	0	0	0
Highly skilled production (Levels 68)	3	0.6	3	0.5	0	-0.1
Highly skilled supervision (Levels 912)	14	2.7	17	3.0	3	0.3
Senior management (Levels 1316)	4	0.8	5	0.9	1	0.1
TOTAL	**21**	**4.1**	**25**	**4.4**	**4**	**0.3**

Table 21: Foreign workers, 1 April 2016 to 31 March 2017, by major occupation

MAJOR OCCUPATION	1 APRIL 2016		31 MARCH 2017		CHANGE	
	NUMBER	% OF TOTAL OF MRC EMPLOYEES	NUMBER	% OF TOTAL OF MRC EMPLOYEES	NUMBER	% CHANGE
Unit Director	1	0.2	2	0.4	1	0.2
Statistician	0	0	0	0	0	0
BOD Intern	0	0	0	0	0	0
Research Trainee	0	0	0	0	0	0
Scientist	1	0.2	1	0.2	0	0
Senior Scientist	6	1.2	8	1.4	2	0.2
Senior Statistician	1	0.2	1	0.2	0	0
Specialist Scientist	2	0.4	4	0.7	2	0.3
Specialist Statistician	2	0.4	1	0.2	-1	-0.2
Senior IT Advisor	0	0	0	0	0	0
Senior Specialist Scientist	1	0.2	2	0.4	1	0.2
Senior Specialist Statistician	0	0	0	0	0	0
Chief Research Technologist	1	0.2	1	0.2	0	0
Chief Specialist Scientist	1	0.2	0	0	-1	-0.2
Chief Specialist Statistician	1	0.2	1	0.2	0	0
Project Leader	0	0	0	0	0	0
Project Coordinator	1	0.2	1	0.2	0	0
Division Manager	2	0.4	2	0.4	0	0
Research Manager	1	0.2	1	0.2	0	0
TOTAL	**21**	**4.1**	**25**	**4.5**	**4**	**0.5**

LEAVE UTILISATION, 1 JANUARY 2016 TO 31 DECEMBER 2016

The Public Service Commission identified the need for careful monitoring of sick leave within the public service. The following tables provide an indication of the use of sick leave (Table 23) and disability leave (Table 24). In both cases, the estimated cost of the leave is also provided.

Table 22: Sick leave, 1 January 2016 to 31 December 2016

SALARY BAND	TOTAL DAYS	NUMBER OF SICK LEAVE DAYS TAKEN WITH A MEDICAL CERTIFICATE	% DAYS WITH MEDICAL CERTIFICATION	NUMBER OF EMPLOYEES USING SICK LEAVE	% OF TOTAL EMPLOYEES USING SICK LEAVE	AVERAGE DAYS PER EMPLOYEE USING SICK LEAVE	ESTIMATED COST (R'000)
Lower skilled (Levels 12)	121	66	55	18	78	7	62 598
Skilled (Levels 35)	249	62	25	55	60	5	156 996
Highly skilled production (Levels 68)	880	361	41	177	72	5	1 169 137
Highly skilled supervision (Levels 912)	380	162	43	89	62	4	1 012 078
Senior management	61	30	49	21	36	3	33 144
TOTAL	**1691**	**681**	**40**	**360**	**64**	**5**	**2 433 953**

Table 23: Disability leave (temporary and permanent), 1 January 2016 to 31 December 2016

SALARY BAND	TOTAL DAYS TAKEN	% DAYS WITH MEDICAL CERTIFICATION	NUMBER OF EMPLOYEES USING DISABILITY LEAVE	% OF TOTAL EMPLOYEES USING DISABILITY LEAVE	AVERAGE DAYS PER EMPLOYEE	ESTIMATED COST (R'000)
Lower skilled (Levels 12)	0	0	0	0	0	0
Skilled (Levels 35)	0	0	0	0	0	0
Highly skilled production (Levels 68)	37	100	3	1.2	12	33 094
Highly skilled supervision (Levels 912)	56	100	3	2.1	19	88 058
Senior management	144	100	3	5.2	48	690 211
TOTAL	**237**	**100**	**9**	**1.6**	**26**	**811 363**

Note: this is not Injury on duty, but special sick leave – longer periods, outside normal sick leave allocations. The spike in the Senior Management figure is attributable to these three employees having had major surgery or illness.

Table 24 summarises the utilisation of annual leave. The wage agreement concluded with trade unions in the PSCBC in 2000 requires management of annual leave to prevent high levels of accrued leave being paid at the time of termination of service.

Table 24: Annual Leave, 1 January 2016 to 31 December 2016

SALARY BANDS	NO OF EMPLOYEES TAKING LEAVE (DIFFERS TO TABLE 8 AS THE REPORTING PERIOD DIFFERS)	TOTAL DAYS TAKEN	AVERAGE PER EMPLOYEE IN THE CATEGORY
Lower skilled (Levels 12)	23	516	22
Skilled (Levels 35)	69	1048	15
Highly skilled production (Levels 68)	203	3571	18
Highly skilled supervision (Levels 912)	118	2225	19
Senior management	51	1168	23
TOTAL	**464**	**8528**	**18**

Table 25: Capped leave, 1 January 2016 to 31 December 2016 (capped leave refers to leave which had to be taken by 30 June 2016 to avoid forfeiting the leave)

SALARY BANDS	TOTAL DAYS OF CAPPED LEAVE TAKEN	AVERAGE NUMBER OF DAYS TAKEN PER EMPLOYEE	AVERAGE CAPPED LEAVE PER EMPLOYEE AS AT 31 DECEMBER 2016
Lower skilled (Levels 12)	84	14	14
Skilled (Levels 35)	105	12	12
Highly skilled production (Levels 68)	521	10	10
Highly skilled supervision (Levels 912)	413	11	11
Senior management	489	15	15
TOTAL	**1612**	**12**	**12**

The following table summarises payments made to employees as a result of leave that was not taken.

Table 26: Leave pay-outs, 1 April 2016 to 31 March 2017

REASON	TOTAL AMOUNT (R'000)	NUMBER OF EMPLOYEES	AVERAGE PAYMENT PER EMPLOYEE
Terminations	1 263 071	64	19 735
TOTAL	**1 263 071**	**64**	**19 735**

HIV AND AIDS & HEALTH PROMOTION PROGRAMMES

Table 27: Steps taken to reduce the risk of occupational exposure

UNITS/CATEGORIES OF EMPLOYEES IDENTIFIED TO BE AT HIGH RISK OF CONTRACTING HIV & RELATED DISEASES	KEY STEPS
N/A	

Table 28: Details of Health Promotion and HIV and AIDS Programmes

QUESTION	YES	NO	DETAILS, IF YES
1. Has the department designated a member of the SMS to implement the provisions contained in Part VI E of Chapter 1 of the Public Service Regulations, 2001? If so, provide her/his name and position.	X		The Executive Director: Human Resources takes responsibility as part of the Wellness Programme.
2. Does the department have a dedicated unit or has it designated specific staff members to promote the health and well-being of your employees? If so, indicate the number of employees who are involved in this task and the annual budget that is available for this purpose.	X 2 R750 000		A formal outsourced employee wellness programme, administered by an external service provider, in collaboration with HR.
3. Has the department introduced an Employee Assistance or Health Promotion Programme for your employees? If so, indicate the key elements/services of this Programme.	X		• Employee Assistance Programme [EAP] , incl Psychological Issues, Life Management and work related Issues, Managerial Consultancy & Referral Issues • Health and awareness programme, HIV and Wellness interventions, incl. on-site visits, VCT, risk assessments • Annual Wellness events at all regional offices • Staff orientation on Wellness Programme at Induction • HIV and Chronic Conditions Case Management • Incapacity, ill-health and absenteeism management
4. Has the department established (a) committee(s) as contemplated in Part VI E.5 (e) of Chapter 1 of the Public Service Regulations, 2001? If so, please provide the names of the members of the committee and the stakeholder(s) that they represent.		X	No employee committee within the SAMRC. HIV programme managed by Alexander Forbes Health Care Consultants.
5. Has the department reviewed its employment policies and practices to ensure that these do not unfairly discriminate against employees on the basis of their HIV status? If so, list the employment policies/practices so reviewed.	X		Recruitment policies. Rest of policies are subject to legislative requirements, e.g. LRA, EE Act. All other relevant policies currently under cyclical review.
6. Has the department introduced measures to protect HIV-positive employees or those perceived to be HIV-positive from discrimination? If so, list the key elements of these measures.	X		No special reference is formally made. It is part of SAMRC's general code of conduct to honour the Constitution, the Bill of Rights and other legislation, ie. no unfair discrimination on any arbitrary grounds.
7. Does the department encourage its employees to undergo Voluntary Counselling and Testing? If so, list the results that you have you achieved.	X		As part of the Wellness programme. Testing opportunities provided during annual Health days. Approximately 60% of staff have tested through the Wellness Days and therefore know their status, with 8 employees registered on the SAMRC wellness HIV programme or on a medical aid programme.
8. Has the department developed measures/indicators to monitor & evaluate the impact of its health promotion programme? If so, list these measures/indicators.	X		Monthly utilisation statistics, Reports on counselling sessions, calls received, Voluntary Counselling and Testing (VCT) data, Chronic Disease Management (CDM) data. Quarterly reports are submitted to the SAMRC by the Wellness consultants.

LABOUR RELATIONS

The following collective agreements were entered into with trade unions within the SAMRC.

Table 29: Collective agreements, 1 April 2016 to 31 March 2017

SUBJECT MATTER	DATE
Salary adjustments and other benefits	26 March 2016, with effect from 1 April 2016

The following table summarises the outcome of disciplinary hearings conducted within the SAMRC for the year under review.

Table 30: Misconduct and disciplinary hearings finalised, 1 April 2016 to 31 March 2017

OUTCOME OF DISCIPLINARY HEARINGS	NUMBER	% OF TOTAL SAMRC STAFF
Correctional counselling		
Verbal warning		
Written warning	2	0.36
Final written warning	2	0.36
Suspended without pay		
Fine		
Demotion		
Dismissal		
Not guilty		
Case withdrawn	1	0.18
TOTAL	**5**	**0.89**

Table 31: Types of misconduct addressed at disciplinary hearings

TYPE OF MISCONDUCT	NUMBER	% OF TOTAL SAMRC STAFF
Unauthorised possession, absenteeism, influence of alcohol	4	0.7
TOTAL	**4**	**0.7**

Table 32: Grievances lodged, 1 April 2016 to 31 March 2017

	NUMBER	% OF TOTAL SAMRC STAFF
Number of grievances resolved	1	0.2
Number of grievances not resolved	1	0.2
TOTAL NUMBER OF GRIEVANCES LODGED	**2**	**0.4**

Table 33: Disputes lodged with Councils, 1 April 2016 to 31 March 2017

	NUMBER	% OF TOTAL SAMRC STAFF
Number of disputes upheld	1	0.2
Number of disputes dismissed	0	0
TOTAL NUMBER OF DISPUTES LODGED	**1**	**0.2**

Table 34: Strike actions, 1 April 2016 to 31 March 2017

TOTAL NUMBER OF PERSON WORKING DAYS LOST	No strike action occurred during the period under review.
Total cost (R) of working days lost	
Amount (R) recovered as a result of no work no pay	

Table 35: Precautionary suspensions, 1 April 2016 to 31 March 2017

	NUMBER	% OF TOTAL SAMRC STAFF
Number of people suspended		
Number of people whose suspension exceeded 30 days	1	0.2
Average number of days suspended	141	
Cost (R) of suspensions	R802 100	

SKILLS DEVELOPMENT

This section highlights the efforts of the department with regard to skills development.

Table 36: Training needs identified, 1 April 2016 to 31 March 2017

OCCUPATIONAL CATEGORY	GENDER	NUMBER OF EMPLOYEES AS AT 31 MARCH 2017	TRAINING NEEDS IDENTIFIED AT START OF REPORTING PERIOD			
			LEARNERSHIPS	SKILLS PROGRAMMES & OTHER SHORT COURSES	OTHER FORMS OF TRAINING INTERVENTIONS	TOTAL NUMBER OF INTERVENTIONS REQUESTED
Legislators, senior officials and managers	Female	27	0	1	23	24
	Male	31	0	0	4	4
Professionals	Female	114	0	11	210	221
	Male	29	0	1	37	38
Technicians and associate professionals	Female	185	0	16	317	333
	Male	60	0	8	102	110
Clerks	Female	60	0	2	220	222
	Male	31	0	2	117	119
Service and sales workers	Female	0	0	0	0	0
	Male	0	0	0	0	0
Skilled agriculture and fishery workers	Female	0	0	0	0	0
	Male	0	0	0	0	0
Craft and related trades workers	Female	0	0	0	0	0
	Male	0	0	0	0	0
Plant and machine operators and assemblers	Female	0	0	0	0	0
	Male	0	0	0	0	0
Elementary occupations	Female	10	0	0	0	0
	Male	13	0	0	0	0
Sub Total	**Female**	**396**	**0**	**30**	**770**	**800**
	Male	**164**	**0**	**11**	**260**	**271**
TOTAL		**560**	**0**	**41**	**1030**	**1071**

Table 37: Training provided, 1 April 2016 to 31 March 2017

OCCUPATIONAL CATEGORY	GENDER	NUMBER OF EMPLOYEES AS AT 31 MARCH 2017	TRAINING PROVIDED WITHIN THE REPORTING PERIOD			
			LEARNERSHIPS	SKILLS PROGRAMMES & OTHER SHORT COURSES	OTHER FORMS OF TRAINING	TOTAL NUMBER OF TRAINING INTERVENTIONS EXECUTED
Legislators, senior officials and managers	Female	27	0	0	15	15
	Male	31	0	1	12	13
Professionals	Female	114	0	8	56	64
	Male	29	0	2	18	20
Technicians and associate professionals	Female	185	0	10	49	59
	Male	60	0	7	18	25
Clerks	Female	60	0	5	66	71
	Male	31	0	1	15	16
Service and sales workers	Female	0	0	0	0	0
	Male	0	0	0	0	0
Skilled agriculture and fishery workers	Female	0	0	0	0	0
	Male	0	0	0	0	0
Craft and related trades workers	Female	0	0	0	0	0
	Male	0	0	0	0	0
Plant and machine operators and assemblers	Female	0	0	0	0	0
	Male	0	0	0	0	0
Elementary occupations	Female	10	0	0	7	7
	Male	13	0	0	1	1
Sub Total	**Female**	**396**	**0**	**23**	**193**	**216**
	Male	**164**	**0**	**11**	**64**	**75**
TOTAL		**560**	**0**	**34**	**257**	**291**

INJURY ON DUTY

The following tables provide basic information on injury on duty.

Table 38: Injury on duty, 1 April 2016 to 31 March 2017

NATURE OF INJURY ON DUTY	NUMBER	% OF TOTAL SAMRC STAFF
Required basic medical attention only	5	0.9
Temporary total disablement	4	0.7
Permanent disablement	0	0
Fatal	0	0
TOTAL	**9**	**1.6**

FINANCIAL INFORMATION

THE REPORTS AND STATEMENTS SET OUT BELOW COMPRISE THE ANNUAL FINANCIAL STATEMENTS PRESENTED TO THE ACCOUNTING AUTHORITY:

Annual Financial Statements for the year ended March 31, 2017

REPORT OF THE CHIEF EXECUTIVE AND PRESIDENT

GENERAL FINANCIAL REVIEW

(All figures R'000, prior year in parenthesis.)

Revenue for the year showed an increase of 10.4% to R937 789 (R849 722). This consists of an increase in government grants of 5.4% to R576 833 (R547 274) as well as an increase in contract income of 19.3% to R360 955 (R302 449).

This resulted in an operating deficit of R2 649 for the year compared to an operating surplus R37 352 in 2015/16. An increase in investment income of R35.9% to R35 267 (R25 948) due to an increase in the average balance of investments during the year under review resulted in a net surplus for the year 32 278 compared to a surplus of R60 739 in 2015/16.

The final surplus for the year of R32 278 compares to a budget deficit of R22 000. This is due mainly as a result of higher than anticipated income on investments and income recognized on contract funding. Higher than budget collaborative research costs were offset by lower spending by intra-mural research units.

The organisation remains financially strong with accumulated reserves of R336 236 (R303 958).

Total assets have increased by 19.6% to R752 068 (R628 635) due mainly to an increase in cash and cash equivalents of 20.9% to R543 940 (R449 955). This is mainly due to cash received from funders for research projects in progress or not yet commenced as evidenced by the increase in deferred income by 40.2% to R288 898 (R206 001).

Provisions include an amount of R 4 010 raised in respect of a performance bonus for the 2016/17 year while the employee benefit obligation in respect of the pension fund and medical aid has increased to R12 036 from R5 784 in 2015/16.

The organisation again generated a substantial operating cash flow of R 117 580 compared to R179 624 in the prior period.

Net cash flows from investing activities were negative due mainly to capital expenditure of R23 013 (R41 546)

The net impact of the above is an increase of R93 985 in cash and cash equivalents compared to an increase of R136 164 in the prior year.

SPENDING TRENDS

Operating expenses reflected a substantial increase of 15.1% to R947 121 (R823 071) higher than the increase in income. Collaborative research costs increased by 20.9% to R471 121 (R389 747) reflecting the continued growth in high impact grant awards.

Laboratory costs, computer expenses, magazine subscriptions, security costs and consulting and professional fees have shown increases in excess of inflation although overall spending has been maintained within budget.

Employee related costs have increased by 7.3% to R303 910 (R283 153). Basic salary costs have increased by 5.5% to R169 830 (R161 023) while temporary staff costs have increased by 20.9% to R13 129 (R10 858) due to the increase in temporary staff employed. Employee related costs include a bonus provision of R4 010 while an additional cost of R 6 252 has been incurred as a result of the increase in employee benefit obligations in respect of the pension fund and medical aid.

REQUESTS FOR ROLL OVER OF FUNDS

Accumulated reserves at 31 March 2016 amount to R336 236 (R303 958). The necessary approvals have been requested for the rollover of funds received from Government but not yet spent.

SUPPLY CHAIN MANAGEMENT

There were no unsolicited bid proposals received during the year. The existing Materiality Framework was approved by the Minister. Irregular expenditure for the year decreased to R484 from R1473 in 2015/16.

AUDIT REPORT MATTERS

There were no matters to report.

EVENTS AFTER THE REPORTING DATE

There were no significant events occurring after balance sheet date.

ECONOMIC VIABILITY

Funding allocations of R614 961 for 2017/18 have been approved by government through the MTEF process. This together with accumulated reserves of R336 236 and the increases anticipated in grant income will ensure that the SAMRC will continue to operate as a going concern.

Annual Financial Statements for the year ended March 31, 2017

REPORT OF THE AUDITOR-GENERAL

REPORT ON THE AUDIT OF THE FINANCIAL STATEMENTS

OPINION

1. I have audited the financial statements of the South African Medical Research Council set out on pages 145 to 218, which comprise the statement of financial position as at 31 March 2017 and the statement of financial performance, statement of changes in net assets, statement of cash flows and statement of comparison of budget and actual amounts for the year then ended, as well as the notes to the financial statements, including a summary of significant accounting policies.

2. In my opinion, the financial statements present fairly, in all material respects, the financial position of the South African Medical Research Council as at 31 March 2017, and its financial performance and cash flows for the year then ended in accordance with the South African Standards of Generally Recognised Accounting Practice (SA Standards of GRAP) and the requirements of the Public Finance Management Act, 1999 (Act No. 1 of 1999) (PFMA).

BASIS FOR OPINION

3. I conducted my audit in accordance with the International Standards on Auditing (ISAs). My responsibilities under those standards are further described in the auditor general's responsibilities for the audit of the financial statements section of my report.

4. I am independent of the public entity in accordance with the International Ethics Standards Board for Accountants' *Code of ethics for professional accountants* (IESBA code) and the ethical requirements that are relevant to my audit in South Africa. I have fulfilled my other ethical responsibilities in accordance with these requirements and the IESBA code.

5. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

OTHER MATTER

6. I draw attention to the matter below. My opinion is not modified in respect of this matter.

UNAUDITED SUPPLEMENTARY SCHEDULES

7. The supplementary information set out on page 219 does not form part of the financial statements and is presented as additional information. I have not audited this schedule and, accordingly, I do not express an opinion thereon.

RESPONSIBILITIES OF THE ACCOUNTING AUTHORITY FOR THE FINANCIAL STATEMENTS

8. The accounting authority is responsible for the preparation and fair presentation of the financial statements in accordance with the SA Standards of GRAP and the requirements of the PFMA and for such internal control as the accounting authority determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

9. In preparing the financial statements, the accounting authority is responsible for assessing the public entity's ability to continue as a going concern, disclosing, as applicable, matters relating to going concern and using the going concern basis of accounting unless the accounting authority intends to either liquidate the public entity or cease operations, or has no realistic alternative but to do so.

AUDITOR-GENERAL'S RESPONSIBILITIES FOR THE AUDIT OF THE FINANCIAL STATEMENTS

10. My objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes my opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with the International Standards on Auditing (ISAs) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

11. A further description of my responsibilities for the audit of the financial statements is included in the annexure to this report.

Annual Financial Statements for the year ended March 31, 2017

REPORT OF THE AUDITOR-GENERAL

REPORT ON THE AUDIT OF THE ANNUAL PERFORMANCE REPORT

INTRODUCTION AND SCOPE

12. In accordance with the Public Audit Act of South Africa, 2004 (Act No. 25 of 2004) (PM) and the general notice issued in terms thereof, I have a responsibility to report material findings on the reported performance information against predetermined objectives for selected objectives presented in the annual performance report. I performed procedures to identify findings but not to gather evidence to express assurance.

13. My procedures address the reported performance information, which must be based on the approved performance planning documents of the public entity. I have not evaluated the completeness and appropriateness of the performance indicators included in the planning documents. My procedures also did not extend to any disclosures or assertions relating to planned performance strategies and information in respect of future periods that may be included as part of the reported performance information. Accordingly, my findings do not extend to these matters.

14. I evaluated the usefulness and reliability of the reported performance information in accordance with the criteria developed from the performance management and reporting framework, as defined in the general notice, for the following selected objectives presented in the annual performance report of the public entity for the year ended 31 March 2017:

OBJECTIVES	PAGES IN THE ANNUAL PERFORMANCE REPORT
Strategic goal 2 - lead the generation of new knowledge and facilitate its translation into policies and practices to improve health	38-39
Strategic goal 3 - support innovation and technology development to improve health	38-39
Strategic goal 4 - build capacity for the long-term sustainability of the country's health research	38-39

15. I performed procedures to determine whether the reported performance information was properly presented and whether performance was consistent with the approved performance planning documents. I performed further procedures to determine whether the indicators and related targets were measurable and relevant, and assessed the reliability of the reported performance information to determine whether it was valid, accurate and complete.

16. I did not raise any material findings on the usefulness and reliability of the reported performance information for the above-mentioned objectives.

OTHER MATTER

17. I draw attention to the matter below.

ACHIEVEMENT OF PLANNED TARGETS

18. Refer to the annual performance report on pages 38 to 39 for information on the achievement of planned targets for the year and explanations provided for the under or overachievement of a number of targets.

REPORT ON THE AUDIT OF COMPLIANCE AND LEGISLATION

INTRODUCTION AND SCOPE

19. In accordance with the PAA and the general notice issued in terms thereof, I have a responsibility to report material findings on the compliance of the public entity with specific matters in key legislation. I performed procedures to identify findings but not to gather evidence to express assurance.

20. I did not identify any instances of material non-compliance in respect of the compliance criteria for the applicable subject matters.

OTHER INFORMATION

21. The public entity's accounting authority is responsible for the other information. The other information comprises the information

Annual Financial Statements for the year ended March 31, 2017

REPORT OF THE AUDITOR-GENERAL

included in the annual report. The other information does not include the financial statements, the auditor's report and those selected objectives presented in the annual performance report that have been specifically reported on in the auditor's report.

22. My opinion on the financial statements and findings on the reported performance information and compliance with legislation do not cover the other information and I do not express an audit opinion or any form of assurance conclusion thereon.

23. In connection with my audit, my responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements and the selected objectives presented in the annual performance report, or my knowledge obtained in the audit, or otherwise appears to be materially misstated. If, based on the work I have performed on the other information obtained prior to the date of this auditor's report, I conclude that there is a material misstatement of this other information, I am required to report that fact.

INTERNAL CONTROL DEFICIENCIES

24. I considered internal control relevant to my audit of the financial statements, reported performance information and compliance with applicable legislation; however, my objective was not to express any form of assurance thereon. I did not identify any significant deficiencies in internal control.

Auditor - General

Cape Town

31 July 2017

AUDITOR-GENERAL
SOUTH AFRICA

Auditing to build public confidence

ANNEXURE - AUDITOR-GENERAL'S RESPONSIBILITY FOR THE AUDIT

1. As part of an audit in accordance with the ISAs, I exercise professional judgement and maintain professional scepticism throughout my audit of the financial statements, and the procedures performed on reported performance information for selected objectives and on the public entity's compliance with respect to the selected subject matters.

FINANCIAL STATEMENTS

2. In addition to my responsibility for the audit of the financial statements as described in the auditor's report, I also:

- identify and assess the risks of material misstatement of the financial statements whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for my opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the public entity's internal control.

- evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the accounting authority.

- conclude on the appropriateness of the accounting authority's use of the going concern basis of accounting in the preparation of the financial statements. I also conclude, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the public entity's ability to continue as a going concern. If J conclude that a material uncertainty exists, I am required to draw attention in my auditor's report to the related disclosures in the financial statements about the material uncertainty or, if such disclosures are inadequate, to modify the opinion on the financial statements. My conclusions are based on the information

Annual Financial Statements for the year ended March 31, 2017

REPORT OF THE AUDITOR-GENERAL

available to me at the date of the auditor's report. However, future events or conditions may cause the public entity to cease operating as a going concern.

- evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

COMMUNICATION WITH THOSE CHARGED WITH GOVERNANCE

3. I communicate with the accounting authority regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that I identify during my audit.

4. I also confirm to the accounting authority that I have complied with relevant ethical requirements regarding independence, and communicate all relationships and other matters that may reasonably be thought to have a bearing on my independence and, where applicable, related safeguards.

Annual Financial Statements for the year ended March 31, 2017

ACCOUNTING AUTHORITY'S RESPONSIBILITIES AND APPROVAL

The Accounting Authority is required by the Public Finance Management Act (Act 1 of 1999), to maintain adequate accounting records and is responsible for the content and integrity of the annual financial statements and related financial information included in this report. It is the responsibility of the Accounting Authority to ensure that the annual financial statements fairly present the state of affairs of the entity as at the end of the financial year and the results of its operations and cash flows for the period then ended. The external auditors are engaged to express an independent opinion on the annual financial statements and was given unrestricted access to all financial records and related data.

The annual financial statements have been prepared in accordance with Standards of Generally Recognised Accounting Practice (GRAP) including any interpretations, guidelines and directives issued by the Accounting Standards Board.

The annual financial statements are based upon appropriate accounting policies consistently applied and supported by reasonable and prudent judgements and estimates.

The Accounting Authority acknowledges that it is ultimately responsible for the system of internal financial control established by the entity and places considerable importance on maintaining a strong control environment. To enable the Accounting Authority to meet these responsibilities, the Accounting Authority sets standards for internal control aimed at reducing the risk of error or deficit in a cost effective manner. The standards include the proper delegation of responsibilities within a clearly defined framework, effective accounting procedures and adequate segregation of duties to ensure an acceptable level of risk.

These controls are monitored throughout the entity and all employees are required to maintain the highest ethical standards in ensuring the entity's business is conducted in a manner that in all reasonable circumstances is above reproach. The focus of risk management in the entity is on identifying, assessing, managing and monitoring all known forms of risk across the entity.

While operating risk cannot be fully eliminated, the entity endeavours to minimise it by ensuring that appropriate infrastructure, controls, systems and ethical behaviour are applied and managed within predetermined procedures and constraints.

The Accounting Authority is of the opinion, based on the information and explanations given by management, that the system of internal control provides reasonable assurance that the financial records may be relied on for the preparation of the annual financial statements. However, any system of internal financial control can provide only reasonable, and not absolute, assurance against material misstatement or deficit.

The Accounting Authority has reviewed the entity's cash flow forecast for the year to 31 March 2018 and, in the light of this review and the current financial position, is satisfied that the entity has or has access to adequate resources to continue in operational existence for the foreseeable future.

Although the Accounting Authority is primarily responsible for the financial affairs of the entity, it is supported by the entity's external auditors.

The external auditors are responsible for independently auditing and expressing an opinion on the entity's annual financial statements. The annual financial statements have been examined by the entity's external auditors and their report is presented on pages 139 to 142.

The annual financial statements set out on pages 145 to 218, which have been prepared on the going concern basis, were approved by the Accounting Authority on 30 July 2017 and were signed on its behalf by:

Professor M Sathekge
Chairperson of the Board

Annual Financial Statements for the year ended March 31, 2017

AUDIT COMMITTEE REPORT

We are pleased to present our report for the financial year ended March 31, 2017.

AUDIT COMMITTEE MEMBERS AND ATTENDANCE

The audit committee consists of the members listed hereunder and should meet 4 times per annum as per its approved terms of reference. During the current year 4 meetings were held.

NAME OF MEMBER	NUMBER OF MEETINGS ATTENDED
Doctor P Hanekom (Chairperson)	4
Advocate J Ralefatane (term ended 31 October 2016)	2
Professor Y Osman (term ended 31 October 2016)	3
Professor K Mfenyana (term ended 31 October 2016)	3
Doctor F Conradie (term ended 31 October 2016)	1
Advocate N Kadwa	1
Professor J Mahlangu	1
Professor B Shaw	1
Professor W Rae	1

AUDIT COMMITTEE RESPONSIBILITY

The audit committee reports that it has complied with its responsibilities arising from section 55(1)(a) of the PFMA and Treasury Regulation 27.1.

The audit committee also reports that it has adopted appropriate formal terms of reference as its audit committee charter, has regulated its affairs in compliance with this charter and has discharged all its responsibilities as contained therein.

THE EFFECTIVENESS OF INTERNAL CONTROL

The system of internal controls applied by the entity over financial and risk management is effective, efficient and transparent. In line with the PFMA and the King III Report on Corporate Governance requirements, Internal Audit provides the audit committee and management with assurance that the internal controls are appropriate and effective. This is achieved by means of the risk management process, as well as the identification of corrective actions and suggested enhancements to the controls and processes. From the various reports of the Internal Auditors, the Audit Report on the annual financial statements, and the management report of the Auditor-General South Africa, it was noted that no matters were reported that indicate any material deficiencies in the system of internal control or any deviations therefrom.

Accordingly, we can report that the system of internal control over financial reporting for the period under review was efficient and effective.

The audit committee is satisfied with the content and quality of monthly and quarterly reports prepared and issued by the Accounting Authority of the entity during the year under review.

EVALUATION OF ANNUAL FINANCIAL STATEMENTS

The audit committee has:

- reviewed and discussed the audited annual financial statements to be included in the annual report, with the Auditor- General and the Accounting Authority;
- reviewed the entity's compliance with legal and regulatory provisions.

The audit committee concurs with and accepts the Auditor-General of South Africa's report on the annual financial statements, and are of the opinion that the audited annual financial statements should be accepted and read together with the report of the Auditor-General of South Africa.

INTERNAL AUDIT

The audit committee is satisfied that the internal audit function is operating effectively and that it has addressed the risks pertinent to the entity and its audits.

AUDITOR-GENERAL OF SOUTH AFRICA

The audit committee has met with the Auditor-General of South Africa to ensure that there are no unresolved issues.

RISK MANAGEMENT

The risk management activity has received corporate endorsement and risk management processes have been formalised and adopted. Risk management activities are reported on a quarterly basis.

INFORMATION SYSTEMS

The IT infrastructure and Escape Supply Management system was upgraded during the year under review. The Oracle JD Edwards financial system was modified in order to interface with Central Supplier Database.

Chairperson of the Audit Committee

31 March 2017

Annual Financial Statements for the year ended March 31, 2017

STATEMENT OF FINANCIAL POSITION

	NOTE(S)	2017 R	2016 R
ASSETS			
CURRENT ASSETS			
Financial assets at fair value	3	6,430,523	6,370,811
Receivables from exchange transactions	4	37,385,856	13,223,965
VAT receivable	5	11,796,907	12,494,929
Prepayments	6	4,521,093	2,600,610
Cash and cash equivalents	7	543,939,683	449,954,519
		604,074,062	**484,644,834**
NON-CURRENT ASSETS			
Biological assets that form part of an agricultural activity	8	1,147,101	1,137,529
Property, plant and equipment	9	140,409,601	135,848,670
Intangible assets	10	6,436,756	7,004,253
Investments in controlled entities	11	2	2
		147,993,460	**143,990,454**
TOTAL ASSETS		**752,067,522**	**628,635,288**
LIABILITIES			
CURRENT LIABILITIES			
Payables from exchange transactions	12	104,036,715	102,237,232
Provisions	13	7,251,811	7,204,989
Deferred income	14	288,897,953	206,000,975
		400,186,479	**315,443,196**
NON-CURRENT LIABILITIES			
Employee benefit obligation	15	12,036,000	5,784,000
Earmarked funds	16	3,609,128	3,450,504
		15,645,128	**9,234,504**
TOTAL LIABILITIES		**415,831,607**	**324,677,700**
NET ASSETS		**336,235,915**	**303,957,588**
Accumulated surplus	17	336,235,915	303,957,588

Annual Financial Statements for the year ended March 31, 2017

STATEMENT OF FINANCIAL PERFORMANCE

	NOTE(S)	2017 R	2016 R
Revenue	18	937,788,794	849,722,349
Other income	19	6,682,910	10,700,648
Operating expenses		(947,120,846)	(823,070,915)
OPERATING (DEFICIT) SURPLUS	28	**(2,649,142)**	**37,352,082**
Investment income	20	35,266,897	25,947,888
Fair value adjustments	26	(53,229)	(1,266,456)
Finance costs	23	(286,199)	(1,294,175)
SURPLUS FOR THE PERIOD		**32,278,327**	**60,739,339**

Annual Financial Statements for the year ended March 31, 2017

STATEMENT OF CHANGES IN NETT ASSETS

	ACCUMULATED SURPLUS	TOTAL NET ASSETS
	R	R
BALANCE AT APRIL 1, 2015 CHANGES IN NET ASSETS SURPLUS FOR THE 12 MONTHS	**243,218,249**	**243,218,249**
Changes in net assets		
Surplus for the 12 months	60,739,339	60,739,339
Total changes	60,739,339	60,739,339
BALANCE AT APRIL 1, 2016 CHANGES IN NET ASSETS SURPLUS FOR THE YEAR	**303,957,588**	**303,957,588**
Changes in net assets		
Surplus for the year	32,278,327	32,278,327
Total changes	32,278,327	32,278,327
BALANCE AT MARCH 31, 2017	**336,235,915**	**336,235,915**
NOTE	17	

Annual Financial Statements for the year ended March 31, 2017

CASH FLOW STATEMENT

	NOTE(S)	2017 R	2016 R
CASH FLOWS FROM OPERATING ACTIVITIES			
RECEIPTS			
Interest income		35,137,720	25,845,197
Dividends received		129,177	102,691
Cash receipts from grants and other income		1,001,984,330	946,565,517
		1,037,251,227	**972,513,405**
PAYMENTS			
Suppliers		(919,385,031)	(791,594,781)
Finance costs		(286,199)	(1,294,175)
		(919,671,230)	**(792,888,956)**
NET CASH FLOWS FROM OPERATING ACTIVITIES	29	**117,579,997**	**179,624,449**
CASH FLOWS FROM INVESTING ACTIVITIES			
Purchase of property, plant and equipment	9	(23,012,580)	(41,545,636)
Proceeds from sale of property, plant and equipment	9	268,410	143,551
Purchase of other intangible assets	10	(1,025,764)	(1,206,176)
Purchase of biological assets that form part of an agricultural activity	8	(66,734)	(1,412,135)
Proceeds from sale of biological assets that form part of an agricultural activity	8	83,211	34,459
Loans and receivables repaid		-	235,307
NET CASH FLOWS FROM INVESTING ACTIVITIES		**(23,753,457)**	**(43,750,630)**
CASH FLOWS FROM FINANCING ACTIVITIES			
Movement in earmarked funds	16	**158,624**	**290,366**
NET INCREASE IN CASH AND CASH EQUIVALENTS		**93,985,164**	**136,164,185**
Cash and cash equivalents at the beginning of the year		449,954,519	313,790,334
CASH AND CASH EQUIVALENTS AT THE END OF THE YEAR	7	**543,939,683**	**449,954,519**

An amount of R288,897,953 included in cash and cash equivalents is due to cash received from funders for research projects in progress or not yet commenced.

Annual Financial Statements for the year ended March 31, 2017

STATEMENT OF COMPARISON OF BUDGET AND ACTUAL AMOUNTS

	APPROVED BUDGET	ACTUAL AMOUNTS ON COMPARABLE BASIS	DIFFERENCE BETWEEN APPROVED BUDGET AND ACTUAL	REFERENCE
	R	R	R	
BUDGET ON ACCRUAL BASIS				
STATEMENT OF FINANCIAL PERFORMANCE				
REVENUE				
REVENUE FROM EXCHANGE TRANSACTIONS				
Income from contracts, grants and services rendered	321,155,719	360,955,461	**39,799,742**	41
Rental income	5,000,000	5,488,289	**488,289**	
Other income	3,000,000	1,194,621	**(1,805,379)**	41
Interest received - investment	27,000,000	35,137,720	**8,137,720**	41
Dividends received	-	129,177	**129,177**	
TOTAL REVENUE FROM EXCHANGE TRANSACTIONS	**356,155,719**	**402,905,268**	**46,749,549**	
REVENUE FROM NON-EXCHANGE TRANSACTIONS				
Government grants & subsidies	576,833,333	576,833,333	-	
TOTAL REVENUE	**932,989,052**	**979,738,601**	**46,749,549**	

Annual Financial Statements for the year ended March 31, 2017

STATEMENT OF COMPARISON OF BUDGET AND ACTUAL AMOUNTS

	APPROVED BUDGET	ACTUAL AMOUNTS ON COMPARABLE BASIS	DIFFERENCE BETWEEN APPROVED BUDGET AND ACTUAL	REFERENCE
	R	R	R	
EXPENDITURE				
Personnel	(298,122,479)	(303,910,400)	**(5,787,921)**	41
Infra-structural, communication & statutory costs	(54,398,446)	(26,900,254)	**27,498,192**	41
Depreciation and amortisation	(18,472,722)	(19,012,805)	**(540,083)**	
Finance costs	-	(286,199)	**(286,199)**	
Lease rentals	(6,778,492)	(5,631,062)	**1,147,430**	41
Debt Impairment reversal	-	65,020	**65,020**	
Bad debts written off	(1,000,000)	-	**1,000,000**	41
Repairs and maintenance	(9,707,314)	(15,887,183)	**(6,179,869)**	41
Travel, subsistence and vehicle fleet costs	(39,412,236)	(30,610,582)	**8,801,654**	41
Collaborative research	(443,329,500)	(471,121,281)	**(27,791,781)**	41
External research support, consulting and internal audit	(20,701,842)	(12,950,831)	**7,751,011**	41
Printing and stationery	(8,114,046)	(5,811,008)	**2,303,038**	41
Information technology	(21,100,243)	(17,054,877)	**4,045,366**	41
Laboratory operating expenses	(21,744,778)	(21,234,724)	**510,054**	
Audit fees	(2,759,040)	(2,006,431)	**752,609**	
Other expenses	(9,347,914)	(13,388,059)	**(4,040,145)**	41
TOTAL EXPENDITURE	**(954,989,052)**	**(945,740,676)**	**9,248,376**	
OPERATING SURPLUS	**(22,000,000)**	**33,997,925**	**55,997,925**	
Loss on disposal of assets	-	(763,697)	**(763,697)**	
Loss on foreign exchange	-	(902,672)	**(902,672)**	
Fair value adjustments	-	(53,229)	**(53,229)**	
	-	(1,719,598)	**(1,719,598)**	
SURPLUS BEFORE TAXATION	**(22,000,000)**	**32,278,327**	**54,278,327**	
ACTUAL AMOUNT ON COMPARABLE BASIS AS PRESENTED IN THE BUDGET AND ACTUAL COMPARATIVE STATEMENT	**(22,000,000)**	**32,278,327**	**54,278,327**	

The accounting policies on pages 151 to 167 and the notes on pages 168 to 218 form an integral part of the annual financial statements.

Annual Financial Statements for the year ended March 31, 2017

ACCOUNTING POLICIES

1. PRESENTATION OF ANNUAL FINANCIAL STATEMENTS

The annual financial statements have been prepared in accordance with the Standards of Generally Recognised Accounting Practice (GRAP), issued by the Accounting Standards Board in accordance with Section 91(1) of the Public Finance Management Act (Act 1 of 1999).

These annual financial statements have been prepared on an accrual basis of accounting and are in accordance with historical cost convention as the basis of measurement, unless specified otherwise. They are presented in South African Rand, which is also the functional currency. The amounts presented in the annual financial statements are rounded to the nearest Rand.

A summary of the significant accounting policies, which have been consistently applied in the preparation of these annual financial statements, are disclosed below.

These accounting policies are consistent with the previous period.

1.1 GOING CONCERN ASSUMPTION

These annual financial statements have been prepared based on the expectation that the entity will continue to operate as a going concern for at least the next 12 months.

1.2 SIGNIFICANT JUDGEMENTS AND SOURCES OF ESTIMATION UNCERTAINTY

In preparing the annual financial statements, management is required to make estimates and assumptions that affect the amounts represented in the annual financial statements and related disclosures. Use of available information and the application of judgement is inherent in the formation of estimates. Actual results in the future could differ from these estimates which may be material to the annual financial statements. Significant judgements include:

TRADE RECEIVABLES AND LOANS AND RECEIVABLES

The entity assesses its trade receivables and loans and receivables for impairment at the end of each reporting period. In determining whether an impairment loss should be recorded in surplus or deficit, the entity makes judgements as to whether there is observable data indicating a measurable decrease in the estimated future cash flows from a financial asset.

The impairment for trade receivables and loans and receivables is calculated on a portfolio basis, based on historical loss ratios, adjusted for national and industry-specific economic conditions and other indicators present at the reporting date that correlate with defaults on the portfolio. These annual loss ratios are applied to loan balances in the portfolio and scaled to the estimated loss emergence period.

FAIR VALUE ESTIMATION

The fair value of financial instruments traded in active markets (such as trading) is based on quoted market prices at the end of the reporting period. The quoted market price used for financial assets held by the entity is the current bid price.

The fair value of financial instruments that are not traded in an active market (for example, over-the counter derivatives) is determined by using valuation techniques. The entity uses a variety of methods and makes assumptions that are based on market conditions existing at the end of each reporting period. Quoted market prices or dealer quotes for similar instruments are used for long-term debt. Other techniques, such as estimated discounted cash flows, are used to determine fair value for the remaining financial instruments. The fair value of interest rate swaps is calculated as the present value of the estimated future cash flows. The fair value of forward foreign exchange contracts is determined using quoted forward exchange rates at the end of the reporting period.

The carrying value less impairment provision of trade receivables and payables are assumed to approximate their fair values. The fair value of financial liabilities for disclosure purposes is estimated by discounting the future contractual cash flows at the current market interest rate that is available to the entity for similar financial instruments.

IMPAIRMENT TESTING

The entity reviews and tests the carrying value of current and non-current assets when events or changes in circumstances suggest that the carrying amount may not be recoverable. Assets are grouped at the lowest level for which identifiable cash flows are largely independent of cash flows of other assets and liabilities. If there are indications that impairment may have occurred, estimates are prepared of expected future cash flows for each group of assets. Expected future cash flows used to determine the value in use of tangible assets are inherently uncertain and could materially change over time. They are significantly affected by a number of factors including supply demand, together with economic factors such as research units closed as part of the revitalisation process.

Annual Financial Statements for the year ended March 31, 2017

ACCOUNTING POLICIES

1.2 SIGNIFICANT JUDGEMENTS AND SOURCES OF ESTIMATION UNCERTAINTY (CONTINUED)

PROVISIONS

Provisions were raised and management determined an estimate based on the information available. Additional disclosure of these estimates of provisions are included in note 13 - Provisions.

POST RETIREMENT BENEFITS

The present value of the post retirement obligation depends on a number of factors that are determined on an actuarial basis using a number of assumptions. The assumptions used in determining the net cost (income) include the discount rate. Any changes in these assumptions will impact on the carrying amount of post retirement obligations.

The entity determines the appropriate discount rate at the end of each year. This is the interest rate that should be used to determine the present value of estimated future cash outflows expected to be required to settle the pension obligations. In determining the appropriate discount rate, the entity considers the interest rates of high-quality corporate bonds that are denominated in the currency in which the benefits will be paid, and that have terms to maturity approximating the terms of the related pension liability.

Other key assumptions for pension obligations are based on current market conditions. Additional information is disclosed in Note 15.

1.3 BIOLOGICAL ASSETS THAT FORM PART OF AN AGRICULTURAL ACTIVITY

The entity recognises Biological assets or agricultural produce when, and only when:

- the entity controls the asset as a result of past events;
- it is probable that future economic benefits or service potential associated with the asset will flow to the entity; and
- the fair value or cost of the asset can be measured reliably.

Biological assets are measured at their fair value less costs to sell.

Agricultural produce harvested from an entity's biological assets shall be measured at its fair value less estimated costs to sell at point of harvest.

A gain or loss arising on initial recognition of Biological assets at fair value less costs to sell and from a change in fair value less estimated costs to sell Biological assets is included in surplus or deficit for the period in which it arises.

Where biological assets are acquired at no cost, or for a nominal cost, the cost is determined to be its fair value less costs to sell as at the date of acquisition.

Where fair value cannot be measured reliably, biological assets are measured at cost less any accumulated impairment losses.

1.4 PROPERTY, PLANT AND EQUIPMENT

Property, plant and equipment are tangible non-current assets (including infrastructure assets and biological assets used for research) that are held for use in the production or supply of goods or services, rental to others, or for administrative purposes, and are expected to be used during more than one period.

The cost of an item of property, plant and equipment is recognised as an asset when:

- it is probable that future economic benefits or service potential associated with the item will flow to the entity; and
- the cost or fair value of the item can be measured reliably.

Property, plant and equipment is initially measured at cost.

The cost of an item of property, plant and equipment is the purchase price and other costs attributable to bring the asset to the location and condition necessary for it to be capable of operating in the manner intended by management. Trade discounts and rebates are deducted in arriving at the cost. Subsequent costs of replacing part of an item of property, plant and equipment is recognised in the carrying amount of the asset if it is probable that the future economic benefits embodied within the part will flow to the entity and its costs can be measured reliably. The costs of day to day servicing of property, plant and equipment are recognised in the surplus or deficit.

Where an asset is acquired through a non-exchange transaction, its cost is its fair value as at date of acquisition.

When significant components of an item of property, plant and equipment have different useful lives, they are accounted for as separate items (major components) of property, plant and equipment.

Annual Financial Statements for the year ended March 31, 2017

ACCOUNTING POLICIES

1.4 PROPERTY, PLANT AND EQUIPMENT (CONTINUED)

Property, plant and equipment is carried at cost less accumulated depreciation and any impairment losses.

Property, plant and equipment are depreciated on the straight line basis over their expected useful lives to their estimated residual value.

The useful lives of items of property, plant and equipment have been assessed as follows:

ITEM	DEPRECIATION METHOD	AVERAGE USEFUL LIFE
Land	Not depreciated	Indefinite
Buildings	Straight line	40 - 50 years
Vehicles and containers	Straight line	5 - 10 years
Furniture and office equipment	Straight line	3 - 15 years
Computer equipment	Straight line	5 - 10 years
Air conditioners	Straight line	10 - 15 years
Irrigation equipment	Straight line	10 - 15 years
Signage	Straight line	10 - 15 years
Usufruct buildings	Straight line	over life of asset
Prefabricated buildings	Straight line	20 - 30 years
Other property, plant and equipment -Biological assets - Vervet monkeys	Straight line	30 years
Laboratory equipment	Straight line	5 - 30 years

The residual value, and the useful life and depreciation method of each asset is reviewed at the end of each reporting date. If the expectations differ from previous estimates, the change is accounted for as a change in accounting estimate. The useful lives of assets are based on management's estimation. The actual useful lives of assets and residual values are assessed annually, and may vary depending on a number of factors. In re-assessing asset useful lives, factors such as technology, innovation, product life cycles and maintenance programmes are taken into account. The estimation of residual values of assets determine whether they will be sold or used to the end of their useful lives and what their condition would be like at that time. Residual value assessments consider issues such as, the remaining life of the asset and the estimated amount which the entity would currently obtain.

Each part of an item of property, plant and equipment with a cost that is significant in relation to the total cost of the item is depreciated separately.

The depreciation charge for each period is recognised in surplus or deficit unless it is included in the carrying amount of another asset.

Items of property, plant and equipment are derecognised when the asset is disposed of or when there are no further economic benefits or service potential expected from the use of the asset.

The gain or loss arising from the derecognition of an item of property, plant and equipment is included in surplus or deficit when the item is derecognised. The gain or loss arising from the derecognition of an item of property, plant and equipment is determined as the difference between the net disposal proceeds, if any, and the carrying amount of the item.

Assets which the entity sells via auction when it is obsolete or can no longer be used by the entity, are not accounted for as current assets held for sale. Proceeds from sales of these assets are recognised as profit or loss on disposal of assets. All cash flows on these assets are included in cash flows from investing activities in the cash flow statement.

Reviewing the impairment of assets is performed on an annual basis. Assets impaired as a result of restructuring are not accounted for as non-current assets held for sale as these assets will be transferred to institutions of higher learning.

The entity separately discloses expenditure to repair and maintain property, plant and equipment in the notes to the financial statements (see note 9).

Annual Financial Statements for the year ended March 31, 2017

ACCOUNTING POLICIES

1.5 INTANGIBLE ASSETS

An asset is identifiable if it either:

- is separable, i.e. is capable of being separated or divided from an entity and sold, transferred, licensed, rented or exchanged, either individually or together with a related contract, identifiable assets or liability, regardless of whether the entity intends to do so; or
- arises from contractual rights or other legal rights, regardless of whether those rights are transferable or separable from the entity or from other rights and obligations.

An intangible asset is recognised when:

- it is probable that the expected future economic benefits or service potential that are attributable to the asset will flow to the entity; and
- the cost or fair value of the asset can be measured reliably.

Intangible assets are initially recognised at cost.

Where an intangible asset is acquired through a non-exchange transaction, its initial cost at the date of acquisition is measured at its fair value as at that date.

Intangible assets are carried at cost less any accumulated amortisation and any impairment losses. For all intangible assets amortisation is provided on a straight line basis over their useful life.

The amortisation period and the amortisation method for intangible assets are reviewed at each reporting date and any change is accounted for as a change in estimate.

Amortisation is provided to write down the intangible assets, on a straight line basis, to their residual values. The estimated useful lives for current and comparative periods are as follows:

ITEM	DEPRECIATION METHOD	AVERAGE USEFUL LIFE
Computer software	Straight line	3 - 10 years

Intangible assets are derecognised:

- on disposal; or
- when no future economic benefits or service potential are expected from its use or disposal.

The gain or loss arising from the derecognition of intangible assets is included in surplus or deficit when the asset is derecognised (unless the Standard of GRAP on leases requires otherwise on a sale and leaseback).

1.6 INVESTMENTS IN CONTROLLED ENTITIES

Investments in controlled entities are carried at cost less any accumulated impairment. The financial statements of the entity is not consolidated with those of the controlled entities, because the SAMRC does not have any debt or equity instruments that is traded in a public market.

1.7 FINANCIAL INSTRUMENTS

A financial instrument is any contract that gives rise to a financial asset of one entity and a financial liability or a residual interest of another entity.

A concessionary loan is a loan granted to or received by an entity on terms that are not market related.

Credit risk is the risk that one party to a financial instrument will cause a financial loss for the other party by failing to discharge an obligation.

Currency risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in foreign exchange rates.

Derecognition is the removal of a previously recognised financial asset or financial liability from an entity's statement of financial position.

The effective interest method is a method of calculating the amortised cost of a financial asset or a financial liability (or group of financial assets or financial liabilities) and of allocating the interest income or interest expense over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash payments or receipts through the expected life of the financial instrument or, when appropriate, a shorter period to the net carrying amount of the financial asset or financial liability. When calculating the effective interest rate, an entity shall estimate cash flows considering all contractual terms of the financial instrument (for example, prepayment, call and similar options) but shall not consider future credit losses. The calculation includes all fees and amounts paid or received between parties to the contract that are an integral part of the effective interest rate (see the Standard of GRAP on Revenue from Exchange Transactions), transaction costs, and all other premiums or discounts. There is a presumption that the cash flows and the expected life of a group of similar financial instruments can be estimated reliably.

Annual Financial Statements for the year ended March 31, 2017

ACCOUNTING POLICIES

1.7 FINANCIAL INSTRUMENTS (CONTINUED)

However, in those rare cases when it is not possible to reliably estimate the cash flows or the expected life of a financial instrument (or group of financial instruments), the entity shall use the contractual cash flows over the full contractual term of the financial instrument (or group of financial instruments).

Fair value is the amount for which an asset could be exchanged, or a liability settled, between knowledgeable willing parties in an arm's length transaction.

A financial asset is:

- cash;
- a contractual right to:
  - receive cash or another financial asset from another entity; or
  - exchange financial assets or financial liabilities with another entity under conditions that are potentially favourable to the entity.

A financial liability is any liability that is a contractual obligation to:

- deliver cash or another financial asset to another entity; or
- exchange financial assets or financial liabilities under conditions that are potentially unfavourable to the entity.

Interest rate risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market interest rates.

Liquidity risk is the risk encountered by an entity in the event of difficulty in meeting obligations associated with financial liabilities that are settled by delivering cash or another financial asset.

Loan commitment is a firm commitment to provide credit under pre-specified terms and conditions.

Market risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market prices. Market risk comprises three types of risk: currency risk, interest rate risk and other price risk.

Other price risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market prices (other than those arising from interest rate risk or currency risk), whether those changes are caused by factors specific to the individual financial instrument or its issuer, or factors affecting all similar financial instruments traded in the market.

A financial asset is past due when a counterparty has failed to make a payment when contractually due.

Transaction costs are incremental costs that are directly attributable to the acquisition, issue or disposal of a financial asset or financial liability. An incremental cost is one that would not have been incurred if the entity had not acquired, issued or disposed of the financial instrument.

Financial instruments at amortised cost are non-derivative financial assets or non-derivative financial liabilities that have fixed or determinable payments, excluding those instruments that:

- the entity designates at fair value at initial recognition; or
- are held for trading.

Financial instruments at cost are investments in residual interests that do not have a quoted market price in an active market, and whose fair value cannot be reliably measured.

Financial instruments at fair value comprise financial assets or financial liabilities that are:

- derivatives;
- combined instruments that are designated at fair value;
- instruments held for trading. A financial instrument is held for trading if:
  - it is acquired or incurred principally for the purpose of selling or repurchasing it in the near-term; or
  - on initial recognition it is part of a portfolio of identified financial instruments that are managed together and for which there is evidence of a recent actual pattern of short term profit-taking;
  - non-derivative financial assets or financial liabilities with fixed or determinable payments that are designated at fair value at initial recognition; and
  - financial instruments that do not meet the definition of financial instruments at amortised cost or financial instruments at cost.

ACCOUNTING POLICIES

1.7 FINANCIAL INSTRUMENTS (CONTINUED)

CLASSIFICATION

The entity has the following types of financial assets (classes and category) as reflected on the face of the statement of financial position or in the notes thereto:

CLASS OF FINANCIAL INSTRUMENT	CATEGORY
Trade debtors	Financial assets measured at amortised cost
Shares	Held for trading measured at fair value
Unit trusts	Held for trading measured at fair value
Cash and cash equivalents	Financial assets measured at amortised cost
Loans and receivables	Financial assets measured at amortised cost

The entity has the following types of financial liabilities (classes and category) as reflected on the face of the statement of financial position or in the notes thereto:

CLASS	CATEGORY
Trade payables	Financial liabilities measured at amortised cost

INITIAL RECOGNITION

The entity recognises a financial asset or a financial liability in its statement of financial position when the entity becomes a party to the contractual provisions of the instrument.

The entity recognises financial assets using trade date accounting.

INITIAL MEASUREMENT OF FINANCIAL ASSETS AND FINANCIAL LIABILITIES

The entity measures a financial asset and financial liability initially at its fair value plus, in the case of a financial asset or a financial liability not subsequently measured at fair value, transaction costs that are directly attributable to the acquisition or issue of the financial asset or financial liability.

SUBSEQUENT MEASUREMENT OF FINANCIAL ASSETS AND FINANCIAL LIABILITIES

The entity measures all financial assets and financial liabilities after initial recognition using the following categories:

- Financial instruments at fair value.
- Financial instruments at amortised cost.

All financial assets measured at amortised cost, or cost, are subject to an impairment review. The factors taken into account when considering impairment are solvency and whether the account holder is a slow payer.

IMPAIRMENT AND UNCOLLECTIBILITY OF FINANCIAL ASSETS

The entity assess at the end of each reporting period whether there is any objective evidence that a financial asset or group of financial assets is impaired.

Financial assets measured at amortised cost:

If there is objective evidence that an impairment loss on financial assets measured at amortised cost has been incurred, the amount of the loss is measured as the difference between the asset's carrying amount and the present value of estimated future cash flows (excluding future credit losses that have not been incurred) discounted at the financial asset's original effective interest rate. The carrying amount of the asset is reduced through the use of an allowance account. The amount of the loss is recognised in surplus or deficit.

If, in a subsequent period, the amount of the impairment loss decreases and the decrease can be related objectively to an event occurring after the impairment was recognised, the previously recognised impairment loss is reversed by adjusting an allowance account. The reversal does not result in a carrying amount of the financial asset that exceeds what the amortised cost would have been had the impairment not been recognised at the date the impairment is reversed. The amount of the reversal is recognised in surplus or deficit.

If there is objective evidence that an impairment loss has been incurred on an investment in a residual interest that is not measured at fair value because its fair value cannot be measured reliably, the amount of the impairment loss is measured as the difference between the carrying amount of the financial asset and the present value of estimated future cash flows discounted at the current market rate of return for a similar financial asset. Such impairment losses are not reversed.

Annual Financial Statements for the year ended March 31, 2017

ACCOUNTING POLICIES

1.7 FINANCIAL INSTRUMENTS (CONTINUED)

PRESENTATION

Interest relating to a financial instrument is recognised as revenue in surplus or deficit.

Losses and gains relating to a financial instrument or a component that is a financial liability is recognised as revenue or expense in surplus or deficit.

1.8 LEASES

OPERATING LEASES - LESSOR

Operating lease revenue is recognised as revenue on a straight-line basis over the lease term.

Initial direct costs incurred in negotiating and arranging operating leases are added to the carrying amount of the leased asset and recognised as an expense over the lease term on the same basis as the lease revenue.

Income for leases is disclosed under revenue in statement of financial performance.

OPERATING LEASES - LESSEE

Operating lease payments are recognised as an expense on a straight-line basis over the lease term. The difference between the amounts recognised as an expense and the contractual payments are recognised as a prepayment or liability.

1.9 IMPAIRMENT OF CASH-GENERATING ASSETS

Cash-generating assets are assets managed with the objective of generating a commercial return. An asset generates a commercial return when it is deployed in a manner consistent with that adopted by a profit-oriented entity.

Impairment is a loss in the future economic benefits or service potential of an asset, over and above the systematic recognition of the loss of the asset's future economic benefits or service potential through depreciation (amortisation).

Carrying amount is the amount at which an asset is recognised in the statement of financial position after deducting any accumulated depreciation and accumulated impairment losses thereon.

A cash-generating unit is the smallest identifiable group of assets managed with the objective of generating a commercial return that generates cash inflows from continuing use that are largely independent of the cash inflows from other assets or groups of assets.

Costs of disposal are incremental costs directly attributable to the disposal of an asset, excluding finance costs and income tax expense.

Depreciation (Amortisation) is the systematic allocation of the depreciable amount of an asset over its useful life.

Fair value less costs to sell is the amount obtainable from the sale of an asset in an arm's length transaction between knowledgeable, willing parties, less the costs of disposal.
Recoverable amount of an asset or a cash-generating unit is the higher of its fair value less costs to sell and its value in use. Useful life is either:

(a) the period of time over which an asset is expected to be used by the entity; or
(b) the number of production or similar units expected to be obtained from the asset by the entity.

1.10 IMPAIRMENT OF NON-CASH-GENERATING ASSETS

Cash-generating assets are assets managed with the objective of generating a commercial return. When an asset is deployed in a manner consistent with that adopted by a profit-oriented entity, it generates a commercial return.

Non-cash-generating assets are assets other than cash-generating assets.

Impairment is a loss in the future economic benefits or service potential of an asset, over and above the systematic recognition of the loss of the asset's future economic benefits or service potential through depreciation (amortisation).

Carrying amount is the amount at which an asset is recognised in the statement of financial position after deducting any accumulated depreciation and accumulated impairment losses thereon.

ACCOUNTING POLICIES

1.10 IMPAIRMENT OF NON-CASH-GENERATING ASSETS (CONTINUED)

Fair value less costs to sell is the amount obtainable from the sale of an asset in an arm's length transaction between knowledgeable, willing parties, less the costs of disposal.

Recoverable service amount is the higher of a non-cash-generating asset's fair value less costs to sell and its value in use. Useful life is either:

(a) the period of time over which an asset is expected to be used by the entity; or

(b) the number of production or similar units expected to be obtained from the asset by the entity.

Criteria developed by the entity to distinguish non-cash-generating assets from cash-generating assets are as follows: Assets used for administration and in daily operation of the entity is classified as non-cash-generating assets.

Where a substantial part of the asset is hired out, the asset is classified as cash generating assets.

IDENTIFICATION

When the carrying amount of a non-cash-generating asset exceeds its recoverable service amount, it is impaired.

The entity assesses at each reporting date whether there is any indication that a non-cash-generating asset may be impaired. If any such indication exists, the entity estimates the recoverable service amount of the asset.

This impairment test is performed at the same time every year. If an intangible asset was initially recognised during the current reporting period, that intangible asset was tested for impairment before the end of the current reporting period.

VALUE IN USE

Value in use of non-cash-generating assets is the present value of the non-cash-generating assets remaining service potential. The present value of the remaining service potential of non-cash-generating assets is determined using the following approach:

RESTORATION COST APPROACH

Restoration cost is the cost of restoring the service potential of an asset to its pre-impaired level. The present value of the remaining service potential of the asset is determined by subtracting the estimated restoration cost of the asset from the current cost of replacing the remaining service potential of the asset before impairment. The latter cost is determined as the depreciated reproduction or replacement cost of the asset, whichever is lower.

RECOGNITION AND MEASUREMENT

If the recoverable service amount of a non-cash-generating asset is less than its carrying amount, the carrying amount of the asset is reduced to its recoverable service amount. This reduction is an impairment loss.

An impairment loss is recognised immediately in surplus or deficit.

When the amount estimated for an impairment loss is greater than the carrying amount of the non-cash-generating asset to which it relates, the entity recognises a liability only to the extent that is a requirement in the Standards of GRAP.

After the recognition of an impairment loss, the depreciation (amortisation) charge for the non-cash-generating asset is adjusted in future periods to allocate the non-cash-generating asset's revised carrying amount, less its residual value (if any), on a systematic basis over its remaining useful life.

REVERSAL OF AN IMPAIRMENT LOSS

The entity assesses at each reporting date whether there is any indication that an impairment loss recognised in prior periods for a non-cash-generating asset may no longer exist or may have decreased. If any such indication exists, the entity estimates the recoverable service amount of that asset.

An impairment loss recognised in prior periods for a non-cash-generating asset is reversed if there has been a change in the estimates used to determine the asset's recoverable service amount since the last impairment loss was recognised. The carrying amount of the asset is increased to its recoverable service amount. The increase is a reversal of an impairment loss. The increased carrying amount of an asset attributable to a reversal of an impairment loss does not exceed the carrying amount that would have been determined (net of depreciation or amortisation) had no impairment loss been recognised for the asset in prior periods.

A reversal of an impairment loss for a non-cash-generating asset is recognised immediately in surplus or deficit.

After a reversal of an impairment loss is recognised, the depreciation (amortisation) charge for the non-cash-generating asset is adjusted in future periods to allocate the non-cash-generating asset's revised carrying amount, less its residual value (if any), on a systematic basis over its remaining useful life.

Annual Financial Statements for the year ended March 31, 2017

ACCOUNTING POLICIES

1.11 EMPLOYEE BENEFITS

Employee benefits are all forms of consideration given by SAMRC in exchange for service rendered by employees. An annual valuation of the MRC Pension Fund and Post Retirement Medical Aid is performed.

A qualifying insurance policy is an insurance policy issued by an insurer that is not a related party (as defined in the Standard of GRAP on Related Party Disclosures) of the reporting entity, if the proceeds of the policy can be used only to pay or fund employee benefits under a defined benefit plan and are not available to the reporting entity's own creditors (even in liquidation) and cannot be paid to the reporting entity, unless either:

- the proceeds represent surplus assets that are not needed for the policy to meet all the related employee benefit obligations; or
- the proceeds are returned to the reporting entity to reimburse it for employee benefits already paid.

Termination benefits are employee benefits payable as a result of either:

- an entity's decision to terminate an employee's employment before the normal retirement date; or
- an employee's decision to accept voluntary redundancy in exchange for those benefits.

SHORT-TERM EMPLOYEE BENEFITS

Short-term employee benefits are employee benefits (other than termination benefits) that are due to be settled within twelve months after the end of the period in which the employees render the related service.

When an employee has rendered service to the entity during a reporting period, the entity recognises the undiscounted amount of short-term employee benefits expected to be paid in exchange for that service:

- as a liability (accrued expense), after deducting any amount already paid. If the amount already paid exceeds the undiscounted amount of the benefits, the entity recognises that excess as an asset (prepaid expense) to the extent that the prepayment will lead to, for example, a reduction in future payments or a cash refund.

The expected cost of compensated absences is recognised as an expense as the employees render services that increase their entitlement or, in the case of non-accumulating absences, when the absence occurs. The entity measures the expected cost of accumulating compensated absences as the additional amount that the entity expects to pay as a result of the unused entitlement that has accumulated at the reporting date.

The entity recognises the expected cost of bonus, incentive and performance related payments when the entity has a present legal or constructive obligation to make such payments as a result of past events and a reliable estimate of the obligation can be made. A present obligation exists when the entity has no realistic alternative but to make the payments.

POST-EMPLOYMENT BENEFITS

Post-employment benefits are employee benefits (other than termination benefits) which are payable after the completion of employment.

SAMRC offers its employees post-employee benefits to the SAMRC Pension Fund.

POST-EMPLOYMENT BENEFITS: DEFINED CONTRIBUTION PLANS

Defined contribution plans are post-employment benefit plans under which an entity pays fixed contributions into a separate entity (a fund) and will have no legal or constructive obligation to pay further contributions if the fund does not hold sufficient assets to pay all employee benefits relating to employee service in the current and prior periods.

When an employee has rendered service to the entity during a reporting period, the entity recognise the contribution payable to a defined contribution plan in exchange for that service:

- as a liability (accrued expense), after deducting any contribution already paid. If the contribution already paid exceeds the contribution due for service before the reporting date, an entity recognise that excess as an asset (prepaid expense) to the extent that the prepayment will lead to, for example, a reduction in future payments or a cash refund; and
- as an expense, unless another Standard requires or permits the inclusion of the contribution in the cost of an asset.

Where contributions to a defined contribution plan do not fall due wholly within twelve months after the end of the reporting period in which the employees render the related service, they are discounted. The rate used to discount reflects the time value of money. The currency and term of the financial instrument selected to reflect the time value of money is consistent with the currency and estimated term of the obligation.

POST-EMPLOYMENT BENEFITS: DEFINED BENEFIT PLANS

Defined benefit plans are post-employment benefit plans other than defined contribution plans.

Annual Financial Statements for the year ended March 31, 2017

ACCOUNTING POLICIES

1.11 EMPLOYEE BENEFITS (CONTINUED)

Actuarial gains and losses comprise experience adjustments (the effects of differences between the previous actuarial assumptions and what has actually occurred) and the effects of changes in actuarial assumptions. In measuring its defined benefit liability the entity recognise actuarial gains and losses in surplus or deficit in the reporting period in which they occur.

Assets held by a long-term employee benefit fund are assets (other than non-transferable financial instruments issued by the reporting entity) that are held by an entity (a fund) that is legally separate from the reporting entity and exists solely to pay or fund employee benefits and are available to be used only to pay or fund employee benefits, are not available to the reporting entity's own creditors (even in liquidation), and cannot be returned to the reporting entity, unless either:

- the remaining assets of the fund are sufficient to meet all the related employee benefit obligations of the plan or the reporting entity; or
- the assets are returned to the reporting entity to reimburse it for employee benefits already paid.

Current service cost is the increase in the present value of the defined benefit obligation resulting from employee service in the current period.

Interest cost is the increase during a period in the present value of a defined benefit obligation which arises because the benefits are one period closer to settlement.

Past service cost is the change in the present value of the defined benefit obligation for employee service in prior periods, resulting in the current period from the introduction of, or changes to, post-employment benefits or other long-term employee benefits. Past service cost may be either positive (when benefits are introduced or changed so that the present value of the defined benefit obligation increases) or negative (when existing benefits are changed so that the present value of the defined benefit obligation decreases). In measuring its defined benefit liability the entity recognise past service cost as an expense in the reporting period in which the plan is amended.

Plan assets comprise assets held by a long-term employee benefit fund and qualifying insurance policies.

The present value of a defined benefit obligation is the present value, without deducting any plan assets, of expected future payments required to settle the obligation resulting from employee service in the current and prior periods.

The return on plan assets is interest, dividends or similar distributions and other revenue derived from the plan assets, together with realised and unrealised gains or losses on the plan assets, less any costs of administering the plan (other than those included in the actuarial assumptions used to measure the defined benefit obligation) and less any tax payable by the plan itself.

The entity account not only for its legal obligation under the formal terms of a defined benefit plan, but also for any constructive obligation that arises from the entity's informal practices. Informal practices give rise to a constructive obligation where the entity has no realistic alternative but to pay employee benefits. An example of a constructive obligation is where a change in the entity's informal practices would cause unacceptable damage to its relationship with employees.

The amount recognised as a defined benefit liability is the net total of the following amounts:

- the present value of the defined benefit obligation at the reporting date;
- minus the fair value at the reporting date of plan assets (if any) out of which the obligations are to be settled directly;
- plus any liability that may arise as a result of a minimum funding requirement.

The amount determined as a defined benefit liability may be negative (an asset). The entity measures the resulting asset at the lower of:

- the amount determined above; and
- the present value of any economic benefits available in the form of refunds from the plan or reductions in future contributions to the plan. The present value of these economic benefits is determined using a discount rate which reflects the time value of money.

Any adjustments arising from the limit above is recognised in surplus or deficit.

The entity determine the present value of defined benefit obligations and the fair value of any plan assets with sufficient regularity such that the amounts recognised in the annual financial statements do not differ materially from the amounts that would be determined at the reporting date.

Annual Financial Statements for the year ended March 31, 2017

ACCOUNTING POLICIES

1.11 EMPLOYEE BENEFITS (CONTINUED)

The entity recognises the net total of the following amounts in surplus or deficit, except to the extent that another Standard requires or permits their inclusion in the cost of an asset:

- current service cost;
- interest cost;
- the expected return on any plan assets and on any reimbursement rights;
- actuarial gains and losses;
- past service cost;
- the effect of any curtailments or settlements; and
- the effect of applying the limit on a defined benefit asset (negative defined benefit liability).

The entity uses the Projected Unit Credit Method to determine the present value of its defined benefit obligations and the related current service cost and, where applicable, past service cost. The Projected Unit Credit Method (sometimes known as the accrued benefit method pro-rated on service or as the benefit/years of service method) sees each period of service as giving rise to an additional unit of benefit entitlement and measures each unit separately to build up the final obligation.

Actuarial valuations for GRAP 25 purposes are conducted on an annual basis by independent actuaries separately for each plan. The results of the valuation are updated for any material transactions and other material changes in circumstances (including changes in market prices and interest rates) up to the reporting date.

The entity recognises gains or losses on the curtailment or settlement of a defined benefit plan when the curtailment or settlement occurs. The gain or loss on a curtailment or settlement comprises:

- any resulting change in the present value of the defined benefit obligation; and
- any resulting change in the fair value of the plan assets.

Before determining the effect of a curtailment or settlement, the entity re-measure the obligation (and the related plan assets, if any) using current actuarial assumptions (including current market interest rates and other current market prices).

When it is virtually certain that another party will reimburse some or all of the expenditure required to settle a defined benefit obligation, the right to reimbursement is recognised as a separate asset. The asset is measured at fair value. In all other respects, the asset is treated in the same way as plan assets. In surplus or deficit, the expense relating to a defined benefit plan is not presented as the net of the amount recognised for a reimbursement.

The entity offsets an asset relating to one plan against a liability relating to another plan when the entity has a legally enforceable right to use a surplus in one plan to settle obligations under the other plan and intends either to settle the obligations on a net basis, or to realise the surplus in one plan and settle its obligation under the other plan simultaneously.

ACTUARIAL ASSUMPTIONS

Actuarial assumptions are unbiased and mutually compatible.

Financial assumptions are based on market expectations, at the reporting date, for the period over which the obligations are to be settled.

The rate used to discount post-employment benefit obligations (both funded and unfunded) reflect the time value of money. The currency and term of the financial instrument selected to reflect the time value of money is consistent with the currency and estimated term of the post-employment benefit obligations.

Post-employment benefit obligations are measured on a basis that reflects:

- estimated future salary increases;
- the benefits set out in the terms of the plan (or resulting from any constructive obligation that goes beyond those terms) at the reporting date; and
- estimated future changes in the level of any state benefits that affect the benefits payable under a defined benefit plan, if, and only if, either:
- those changes were enacted before the reporting date; or
- past history, or other reliable evidence, indicates that those state benefits will change in some predictable manner, for example, in line with future changes in general price levels or general salary levels.

Assumptions about medical costs take account of estimated future changes in the cost of medical services, resulting from both inflation and specific changes in medical costs.

POST RETIREMENT MEDICAL AID OBLIGATIONS

The SAMRC provides post-retirement health care benefits, to some of its employees and their legitimate spouses. The major portion of the liability is funded by an investment policy.

Annual Financial Statements for the year ended March 31, 2017

ACCOUNTING POLICIES

1.11 EMPLOYEE BENEFITS (CONTINUED)

The entitlement to post-retirement health care benefits is based on the employee remaining in service up to retirement age and the completion of a minimum service period. The expected costs of these benefits are accrued over the period of employment. Independent qualified actuaries carry out valuations of these obligations.

The amount recognised as a liability for other long-term employee benefits is the net total of the following amounts:

- the present value of the defined benefit obligation at the reporting date;
- minus the fair value at the reporting date of plan assets (if any) out of which the obligations are to be settled directly.

The entity shall recognise the net total of the following amounts as expense or revenue, except to the extent that another Standard requires or permits their inclusion in the cost of an asset:

- current service cost;
- interest cost;
- the expected return on any plan assets and on any reimbursement right recognised as an asset;
- actuarial gains and losses, which shall all be recognised immediately;
- past service cost, which shall all be recognised immediately; and
- the effect of any curtailments or settlements.

TERMINATION BENEFITS

The entity recognises termination benefits as a liability and an expense when the entity is demonstrably committed to either:

- terminate the employment of an employee or group of employees before the normal retirement date; or
- provide termination benefits as a result of an offer made in order to encourage voluntary redundancy.

The entity is demonstrably committed to a termination when the entity has a detailed formal plan for the termination and is without realistic possibility of withdrawal. The detailed plan includes [as a minimum]:

- the location, function, and approximate number of employees whose services are to be terminated;
- the termination benefits for each job classification or function; and
- the time at which the plan will be implemented.

Termination benefits are payable whenever an employee's employment is terminated before normal retirement date or whenever an employee accepts voluntary redundancy in exchange for these benefits. The SAMRC recognises termination benefits as an expense when it is demonstrably committed to either terminate the employment of current employees according to a detailed formal plan without the possibility of withdrawal or to provide termination benefits as a result of an offer made to encourage voluntary redundancy. Benefits failing due more than 12 months after reporting date are discounted to present value.

PENSION PLAN

Contributions to a pension plan in respect of service in a particular period are included in the total cost of employment and are charged to the statement of financial performance in the year in which they relate as part of the cost of employment.The amount recognised in the surplus or deficit for the period under defined benefit plans represents the movement in the present value of the defined benefit obligation and the fair value of the plan assets, after adjusting for contributions paid to the fund, as well as any unrecognised past service costs. Actuarial gains or losses are recognised in the surplus or deficit in the period in which it occurs.

1.12 PROVISIONS AND CONTINGENCIES

Provisions are recognised when:

- the entity has a present obligation as a result of a past event;
- it is probable that an outflow of resources embodying economic benefits or service potential will be required to settle the obligation; and
- a reliable estimate can be made of the obligation.

The amount of a provision is the best estimate of the expenditure expected to be required to settle the present obligation at the reporting date.

Provisions are measured at the present value of the expenditures expected to be made to settle the obligation using the pre-tax rate that reflects the current market assessments of the time value of money and the risks specific to the obligation. The increase in the provision due to the passage of time is recognised as finance charges.

Where some or all of the expenditure required to settle a provision is expected to be reimbursed by another party, the reimbursement is recognised when, and only when, it is virtually certain that reimbursement will be received if the entity settles the obligation. The reimbursement is treated as a separate asset. The amount recognised for the reimbursement does not exceed the amount of the provision.

Annual Financial Statements for the year ended March 31, 2017

ACCOUNTING POLICIES

1.12 PROVISIONS AND CONTINGENCIES (CONTINUED)

Provisions are reviewed at each reporting date and adjusted to reflect the current best estimate. Provisions are reversed if it is no longer probable that an outflow of resources embodying economic benefits or service potential will be required, to settle the obligation.

A provision is used only for expenditures for which the provision was originally recognised. Provisions are not recognised for future operating deficits.
A constructive obligation to restructure arises only when an entity:

- has a detailed formal plan for the restructuring, identifying at least:
  - the activity/operating unit or part of an activity/operating unit concerned;
  - the principal locations affected;
  - the location, function, and approximate number of employees who will be compensated for services being terminated;
  - the expenditures that will be undertaken; and
  - when the plan will be implemented; and
- has raised a valid expectation in those affected that it will carry out the restructuring by starting to implement that plan or announcing its main features to those affected by it.

A restructuring provision includes only the direct expenditures arising from the restructuring, which are those that are both:

- necessarily entailed by the restructuring; and
- not associated with the ongoing activities of the entity

No obligation arises as a consequence of the sale or transfer of an operation until the entity is committed to the sale or transfer, that is, there is a binding arrangement.

After their initial recognition contingent liabilities recognised in entity combinations that are recognised separately are subsequently measured at the higher of:

- the amount that would be recognised as a provision; and
- the amount initially recognised less cumulative amortisation.

Contingent assets and contingent liabilities are not recognised. Contingencies are disclosed in note 32.

1.13 COMMITMENTS

Items are classified as commitments when an entity has committed itself to future transactions that will normally result in the outflow of cash.

Commitments for which disclosure is necessary to achieve a fair presentation is disclosed in a note to the annual financial statements, if both the following criteria are met:

- Contracts should be non-cancellable or only cancellable at significant cost (for example, contracts for computer or building maintenance services); and
- Contracts should relate to something other than the routine, steady, state business of the entity – therefore salary commitments relating to employment contracts or social security benefit commitments are excluded.

1.14 REVENUE FROM EXCHANGE TRANSACTIONS

Revenue is the gross inflow of economic benefits or service potential during the reporting period when those inflows result in an increase in net assets, other than increases relating to contributions from owners.

An exchange transaction is one in which the entity receives assets or services, or has liabilities extinguished, and directly gives approximately equal value (primarily in the form of goods, services or use of assets) to the other party in exchange.

Fair value is the amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an arm's length transaction.

MEASUREMENT

Revenue is measured at the fair value of the consideration received or receivable.

SALE OF GOODS

Revenue from the sale of goods is recognised when all the following conditions have been satisfied:

- the entity has transferred to the purchaser the significant risks and rewards of ownership of the goods;
- the entity retains neither continuing managerial involvement to the degree usually associated with ownership nor effective control over the goods sold;
- the amount of revenue can be measured reliably;
- it is probable that the economic benefits or service potential associated with the transaction will flow to the entity; and
- the costs incurred or to be incurred in respect of the transaction can be measured reliably.

Annual Financial Statements for the year ended March 31, 2017

ACCOUNTING POLICIES

1.14 REVENUE FROM EXCHANGE TRANSACTIONS (CONTINUED)

Revenue derived from the sale of animal blood; dietary assessment kits and nutritional text books; sale of biological assets are classified as sale of goods.

RENDERING OF SERVICES

When the outcome of a transaction involving the rendering of services can be estimated reliably, revenue associated with the transaction is recognised by reference to the stage of completion of the transaction at the reporting date. The outcome of a transaction can be estimated reliably when all the following conditions are satisfied:

- the amount of revenue can be measured reliably;
- it is probable that the economic benefits or service potential associated with the transaction will flow to the entity;
- the stage of completion of the transaction at the reporting date can be measured reliably; and
- the costs incurred for the transaction and the costs to complete the transaction can be measured reliably.

When services are performed by an indeterminate number of acts over a specified time frame, revenue is recognised on a straight line basis over the specified time frame unless there is evidence that some other method better represents the stage of completion. When a specific act is much more significant than any other acts, the recognition of revenue is postponed until the significant act is executed.

When the outcome of the transaction involving the rendering of services cannot be estimated reliably, revenue is recognised only to the extent of the expenses recognised that are recoverable.

Consulting and research service revenue is recognised by reference to the stage of completion of the transaction at the reporting date. Stage of completion is determined by the proportion that costs incurred to date bear to the total estimated costs of the transaction.

INTEREST, ROYALTIES AND DIVIDENDS

Revenue arising from the use by others of entity assets yielding interest, royalties and dividends or similar distributions is recognised when:

- It is probable that the economic benefits or service potential associated with the transaction will flow to the entity, and
- The amount of the revenue can be measured reliably.

Interest is recognised, in surplus or deficit, using the effective interest rate method.

Royalties are recognised as they are earned in accordance with the substance of the relevant agreements.

Dividends or their equivalent distributions are recognised, in surplus or deficit, when the entity's right to receive payment has been established.

Service fees included in the price of the product are recognised as revenue over the period during which the service is performed.

1.15 REVENUE FROM NON-EXCHANGE TRANSACTIONS

Revenue comprises gross inflows of economic benefits or service potential received and receivable by an entity, which represents an increase in net assets, other than increases relating to contributions from owners.

Conditions on transferred assets are stipulations that specify that the future economic benefits or service potential embodied in the asset is required to be consumed by the recipient as specified or future economic benefits or service potential must be returned to the transferor.

Control of an asset arise when the entity can use or otherwise benefit from the asset in pursuit of its objectives and can exclude or otherwise regulate the access of others to that benefit.

Exchange transactions are transactions in which one entity receives assets or services, or has liabilities extinguished, and directly gives approximately equal value (primarily in the form of cash, goods, services, or use of assets) to another entity in exchange.

Non-exchange transactions are transactions that are not exchange transactions. In a non-exchange transaction, an entity either receives value from another entity without directly giving approximately equal value in exchange, or gives value to another entity without directly receiving approximately equal value in exchange.

Stipulations on transferred assets are terms in laws or regulation, or a binding arrangement, imposed upon the use of a transferred asset by entities external to the reporting entity.

Annual Financial Statements for the year ended March 31, 2017

ACCOUNTING POLICIES

1.15 REVENUE FROM NON-EXCHANGE TRANSACTIONS (CONTINUED)

RECOGNITION

An inflow of resources from a non-exchange transaction recognised as an asset is recognised as revenue, except to the extent that a liability is also recognised in respect of the same inflow.

As the entity satisfies a present obligation recognised as a liability in respect of an inflow of resources from a non-exchange transaction recognised as an asset, it reduces the carrying amount of the liability recognised and recognises an amount of revenue equal to that reduction.

MEASUREMENT

Revenue from a non-exchange transaction is measured at the amount of the increase in net assets recognised by the entity.

When, as a result of a non-exchange transaction, the entity recognises an asset, it also recognises revenue equivalent to the amount of the asset measured at its fair value as at the date of acquisition, unless it is also required to recognise a liability. Where a liability is required to be recognised it will be measured as the best estimate of the amount required to settle the obligation at the reporting date, and the amount of the increase in net assets, if any, recognised as revenue. When a liability is subsequently reduced, because the taxable event occurs or a condition is satisfied, the amount of the reduction in the liability is recognised as revenue.

GIFTS AND DONATIONS, INCLUDING GOODS IN-KIND

Gifts and donations, including goods in-kind, are recognised as assets and revenue when it is probable that the future economic benefits or service potential will flow to the entity and the fair value of the assets can be measured reliably.

SERVICES IN-KIND

The entity recognise services in-kind that are significant to its operations and/or service delivery objectives as assets and recognise the related revenue when it is probable that the future economic benefits or service potential will flow to the entity and the fair value of the assets can be measured reliably.

Where services in-kind are not significant to the entity's operations and/or service delivery objectives and/or do not satisfy the criteria for recognition, the entity disclose the nature and type of services in-kind received during the reporting period.

1.16 REVENUE RECOGNITION FOR EXCHANGE AND NON-EXCHANGE TRANSACTIONS

Revenue represents the parliamentary grant from government as well as external income. Parliamentary grant (Revenue from non-exchange transactions)

Government grants are recognised when it is probable that the future economic benefit will flow to the SAMRC and these benefits can be measured reliably. The grant is recognised to the extent that there are no further obligations arising from the receipt of the grant. Government grants are assistance by government in the form of transfer of resources in return for compliance with conditions related to operating activities. Grants that compensate the SAMRC for expenses incurred are recognised in surplus or deficit in the same periods in which the expense is recognised.

Revenue other than grants, donations, project revenue and council activities (Revenue from exchange transactions)

Revenue is recognised on the accrual basis. Revenue is recognised when significant risks and rewards of ownership have been transferred.

RESEARCH REVENUE

Revenue is recognised only to the extent of research costs incurred and is probable that they will be recoverable. Advance income received in respect of which no work has been done, is treated as deferred income until such time the expenditure is incurred or the conditions of the grant/contract are met.

RENTAL INCOME

Rental income from tenants is recognised in the statement of financial performance on a straight line basis over the term of the lease. Lease incentives granted are recognised as an integral part of the total rental income, over the term of the lease.

DEFERRED INCOME

Deferred income is recognised to the extent that expenses are incurred and that conditions of the grant are met.

Annual Financial Statements for the year ended March 31, 2017

ACCOUNTING POLICIES

1.17 BORROWING COSTS

Borrowing costs are interest and other expenses incurred by an entity in connection with the borrowing of funds. Borrowing costs are recognised as an expense in the period in which they are incurred.

1.18 TRANSLATION OF FOREIGN CURRENCIES

FOREIGN CURRENCY TRANSACTIONS

A foreign currency transaction is recorded, on initial recognition in Rands, by applying to the foreign currency amount the spot exchange rate between the functional currency and the foreign currency at the date of the transaction.

At each reporting date:

- foreign currency monetary items are translated using the closing rate;
- non-monetary items that are measured in terms of historical cost in a foreign currency are translated using the exchange rate at the date of the transaction; and
- non-monetary items that are measured at fair value in a foreign currency are translated using the exchange rates at the date when the fair value was determined.

Exchange differences arising on the settlement of monetary items or on translating monetary items at rates different from those at which they were translated on initial recognition during the period or in previous annual financial statements are recognised in surplus or deficit in the period in which they arise.

When a gain or loss on a non-monetary item is recognised directly in net assets, any exchange component of that gain or loss is recognised directly in net assets. When a gain or loss on a non-monetary item is recognised in surplus or deficit, any exchange component of that gain or loss is recognised in surplus or deficit.

Cash flows arising from transactions in a foreign currency are recorded in Rands by applying to the foreign currency amount the exchange rate between the Rand and the foreign currency at the date of the cash flow.

1.19 VAT

The SAMRC accounts for vat on the invoice basis.

1.20 COMPARATIVE FIGURES

Where necessary, comparative figures have been reclassified to conform to changes in presentation in the current year.

1.21 FRUITLESS AND WASTEFUL EXPENDITURE

Fruitless and wasteful expenditure means expenditure which was made in vain and would have been avoided had reasonable care been exercised.

All expenditure relating to fruitless and wasteful expenditure is recognised as an expense in the statement of financial performance in the year that the expenditure was incurred. The expenditure is classified in accordance with the nature of the expense, and where recovered, it is subsequently accounted for as revenue in the statement of financial performance.

1.22 IRREGULAR EXPENDITURE

Irregular expenditure as defined in section 1 of the PFMA is expenditure other than unauthorised expenditure, incurred in contravention of or that is not in accordance with a requirement of any applicable legislation, including -

(a) this Act; or
(b) the State Tender Board Act, 1968 (Act No. 86 of 1968), or any regulations made in terms of the Act; or
(c) any provincial legislation providing for procurement procedures in that provincial government.

National Treasury practice note no. 4 of 2008/2009 which was issued in terms of sections 76(1) to 76(4) of the PFMA requires the following (effective from 1 April 2008):

Irregular expenditure that was incurred and identified during the current financial year and which was condoned before year end and/or before finalisation of the financial statements is recorded appropriately in the irregular expenditure register. In such an instance, no further action is required with the exception of updating the note to the annual financial statements.

Annual Financial Statements for the year ended March 31, 2017

ACCOUNTING POLICIES

1.22 IRREGULAR EXPENDITURE (CONTINUED)

Irregular expenditure that was incurred and identified during the current financial year and for which condonement is being awaited at year end must is recorded in the irregular expenditure register. No further action is required with the exception of updating the note to the annual financial statements.

Where irregular expenditure was incurred in the previous financial year and is only condoned in the following financial year, the register and the disclosure note to the annual financial statements will be updated with the amount condoned.

Irregular expenditure that was incurred and identified during the current financial year and which was not condoned by the National Treasury or the relevant authority must be recorded appropriately in the irregular expenditure register. If liability for the irregular expenditure can be attributed to a person, a debt account must be created if such a person is liable in law. Immediate steps will be taken to recover the amount from the person concerned. If recovery is not possible, the accounting authority may write off the amount as debt impairment and disclose such in the relevant note to the annual financial statements. The irregular expenditure register will be updated accordingly.

1.23 BUDGET INFORMATION

General purpose financial reporting by entity shall provide information on whether resources were obtained and used in accordance with the legally adopted budget.

The approved budget is prepared on an accrual basis and presented by functional classification linked to performance outcome objectives.

The approved budget covers the fiscal period from 4/1/2016 to 3/31/2017.

The budget for the economic entity includes all the entities approved budgets under its control.

The annual financial statements and the budget are on the same basis of accounting therefore a comparison with the budgeted amounts for the reporting period have been included in the Statement of comparison of budget and actual amounts.

Comparative information is not required.

1.24 RELATED PARTIES

The entity operates in an economic sector currently dominated by entities directly or indirectly owned by the South African Government. As a consequence of the constitutional independence of the three spheres of government in South Africa, only entities within the national sphere of government are considered to be related parties.

Management are those persons responsible for planning, directing and controlling the activities of the entity, including those charged with the governance of the entity in accordance with legislation, in instances where they are required to perform such functions.

Close members of the family of a person are considered to be those family members who may be expected to influence, or be influenced by, that management in their dealings with the entity.

Only transactions with related parties not at arm's length or not in the ordinary course of business are disclosed.

1.25 EARMARKED FUNDS

The Earmarked funds are donations; bequests from deceased estates or cash received for a limited period to be used for visiting eminent scientists; cancer research or tuberculosis research. The monies received have been allocated to a separate account. The monies are ring-fenced from the cash balance of the SAMRC.

1.26 CONDITIONAL GRANTS AND RECEIPTS OR OBLIGATIONS

Revenue received from conditional grants, donations and funding are recognised as revenue to the extent that the entity has complied with any of the criteria, conditions or obligations embodied in the agreement. Revenue relating to criteria, conditions or obligations that have not been met is shown in deferred income.

Annual Financial Statements for the year ended March 31, 2017

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

2. NEW STANDARDS AND INTERPRETATIONS

2.1 STANDARDS AND INTERPRETATIONS ISSUED, BUT NOT YET EFFECTIVE

The entity has not applied the following standards and interpretations, which have been published and are mandatory for the entity's accounting periods beginning on or after April 1, 2017 or later periods:

STANDARD/ INTERPRETATION:	EFFECTIVE DATE: YEARS BEGINNING ON OR AFTER	EXPECTED IMPACT:
GRAP 20: Related parties	April 1, 2018	Not expected to impact results but may result in additional disclosure than would have previously been provided in the financial statements
GRAP 109 Accounting by Principals and Agents	April 1, 2018	None
GRAP 21 (as amended 2015): Impairment of non-cash- generating assets	April 1, 201	The impact of the amendment is not material
GRAP 26 (as amended 2015): Impairment of cash-generating assets	April 1, 2018	None
Directive 12: The Selection of an Appropriate Reporting Framework by Public Entities8	April 1, 2018	None

Annual Financial Statements for the year ended March 31, 2017

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

3. FINANCIAL ASSETS AT FAIR VALUE

	2017	2016
	R	R
DESIGNATED AT FAIR VALUE		
Listed shares	980,619	1,021,739
Sanlam demutualisation shares - No. of shares 12715 (2016 - 12715) and Old Mutual demutualisation shares No. of shares 3682 (2016 - 3682)		
Unit trusts	5,449,904	5,349,072
SIM General Equity Fund R - 16060,98 units (2016 - 15403,51 units) and SIM Balanced Fund R - 27220,83 (2016 - 26382,96)		
	6,430,523	**6,370,811**
CURRENT ASSETS		
Designated at fair value	6,430,523	6,370,811
FINANCIAL ASSETS AT FAIR VALUE		
FAIR VALUES OF FINANCIAL ASSETS MEASURED AT FAIR VALUE		
Class 1 Listed shares	980,619	1,021,739
Methods used to determine fair value are as follow: Quoted selling price per share at 31 March 2017 (31 March 2016)		
Class 2 Unit trusts	5,449,904	5,349,072
Methods used to determine fair value are as follow: Valuation certificate received from Sanlam indicating the unit balance and price per unit and market value at 31 March 2017 (31 March 2016)		
	6,430,523	**6,370,811**

FAIR VALUE HIERARCHY OF FINANCIAL ASSETS AT FAIR VALUE

For financial assets recognised at fair value, disclosure is required of a fair value hierarchy which reflects the significance of the inputs used to make the measurements. The fair value hierarchy have the following levels:

Level 1 represents those assets which are measured using unadjusted quoted prices in active markets for identical assets.

Level 2 applies inputs other than quoted prices that are observable for the assets either directly (i.e. as prices) or indirectly (i.e. derived from prices).

Level 3 applies inputs which are not based on observable market data.

Annual Financial Statements for the year ended March 31, 2017

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

3. FINANCIAL ASSETS AT FAIR VALUE (CONTINUED)

	2017	2016
	R	R
LEVEL 1		
Class 1 Listed shares	980,619	1,021,739
Class 2 Unit trusts	5,449,904	5,349,072
	6,430,523	**6,370,811**

The entity has not reclassified any financial assets from cost or amortised cost to fair value, or from fair value to cost or amortised cost during the current or prior period.

RECONCILIATION OF FINANCIAL ASSETS AT FAIR VALUE THROUGH SURPLUS OR DEFICIT MEASURED IN LEVEL 1

RECONCILIATION OF FINANCIAL ASSETS AT FAIR VALUE THROUGH SURPLUS OR DEFICIT MEASURED IN LEVEL 1 - MARCH 2017

	OPENING BALANCE	GAINS OR LOSSES IN SURPLUS OR DEFICIT	CAPITALISA-TION	OPENING BALANCE
Class 1 Shares	1,021,739	(41,120)	-	980,619
Class 2 Unit trusts	5,349,072	(38,159)	138,991	5,449,904
	6,370,811	**(79,279)**	**138,991**	**6,430,523**

RECONCILIATION OF FINANCIAL ASSETS AT FAIR VALUE THROUGH SURPLUS OR DEFICIT MEASURED IN LEVEL 1 - MARCH 2016

	OPENING BALANCE	GAINS OR LOSSES IN SURPLUS OR DEFICIT	CAPITALISA-TION	OPENING BALANCE
Class 1 Shares	1,144,749	(123,010)	-	1,021,739
Class 2 Unit trusts	5,189,329	43,289	116,454	5,349,072
	6,334,078	**(79,721)**	**116,454**	**6,370,811**

Annual Financial Statements for the year ended March 31, 2017

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

4. RECEIVABLES FROM EXCHANGE TRANSACTIONS

	2017	2016
	R	R
Trade debtors	33,511,201	11,322,546
Employee costs in advance	226,617	117,337
Deposits	2,321,856	1,304,463
Travel and subsistence advances	1,326,182	479,619
	37,385,856	**13,223,965**

The increase in receivables from exchange transactions is attributed to funder/grantor invoices raised as specified in the contracts.

CREDIT QUALITY OF TRADE AND OTHER RECEIVABLES

The credit quality of trade and other receivables that are neither past nor due nor impaired can be assessed by reference to external credit ratings (if available) or to historical information about counterparty default rates.

TRADE AND OTHER RECEIVABLES PAST DUE BUT NOT IMPAIRED

Trade and other receivables which are less than 3 months past due are not considered to be impaired. At March 31, 2017, R2,626,072 - (2016: R636,622) were past due but not impaired.

The ageing of amounts past due but not impaired is as follows:

	2017	2016
	R	R
1 month past due	571,713	392,838
2 months past due	110,059	165,191
3 months past due	1,944,300	78,593

4. RECEIVABLES FROM EXCHANGE TRANSACTIONS (CONTINUED)

TRADE AND OTHER RECEIVABLES IMPAIRED

The amount of the provision was R 322,168 - as of March 31, 2017 (2016: R 376,080). All trade debtor balances are reviewed and assessed for impairment.

Impairment considerations include solvency of debtor and recoverability of amount owed.

Aged as follows:

	2017	2016
	R	R
1 month but less than 2 months past due	-	310,563
2 months but less than 3 months past due	210,195	53,645
More than 3 months past due	111,973	11,872

The carrying amount of trade and other receivables are denominated in the following currencies:

	2017	2016
	R	R
Rand	28,617,275	10,871,732
US Dollar	4,893,926	-
Other - Euro and Pound sterling	-	450,814

RECONCILIATION OF PROVISION FOR IMPAIRMENT OF TRADE AND OTHER RECEIVABLES

	2017	2016
	R	R
Opening balance	376,080	1,792,883
Provision for impairment	322,168	376,080
Unused amounts reversed	(376,080)	(1,792,883)
	322,168	**376,080**

Annual Financial Statements for the year ended March 31, 2017

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

5. VAT RECEIVABLE

	2017	2016
	R	R
VAT	11,796,907	12,494,929

6. PREPAYMENTS

Prepayments relate to expenditure paid in advance for subscriptions, annual computer licenses; computer warranties; airtickets and accommodation.

	2017	2016
	R	R
Prepayments	4,521,093	2,600,610

7. CASH AND CASH EQUIVALENTS

Cash and cash equivalents consist of:

	2017	2016
	R	R
Cash on hand	15,568	17,050
Bank balances	543,924,115	449,937,469
	543,939,683	**449,954,519**

7. CASH AND CASH EQUIVALENTS (CONTINUED)

ANALYSIS OF BANK BALANCES

	2017	2016
	R	R
ABSA and Standard Bank	1,482,697	1,848,201
ABSA funders account	4,226,892	-
First National Bank	188,733	233,792
Cash at the Reserve Bank	512,523,879	385,821,794
First National Bank funder accounts	25,501,914	62,033,682
	543,924,115	**449,937,469**

The cash at the Reserve Bank includes funds for the Botha Trust; Bruhns Trust; Melville Douglas Trust; Q&S Abdool Karim Trust; FJ Kleynhans Trust and Motor vehicle reserve fund.

The Motor vehicle reserve fund was established to provide self-insurance of motor vehicles with a low market value.

MOTOR VEHICLE RESERVE FUND

	2017	2016
	R	R
Balance at beginning of year	3,013,222	2,758,952
Allocation for year	261,520	254,270
	3,274,742	**3,013,222**

Annual Financial Statements for the year ended March 31, 2017

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

8. BIOLOGICAL ASSETS THAT FORM PART OF AN AGRICULTURAL ACTIVITY

	2017			2016		
	COST / VALUATION	ACCUMULATED DEPRECIATION AND ACCUMULATED IMPAIRMENT	CARRYING VALUE	COST / VALUATION	ACCUMULATED DEPRECIATION AND ACCUMULATED IMPAIRMENT	CARRYING VALUE
	R	R	R	R	R	R
Bearer mature biological assets	1,147,101	-	1,147,101	1,137,529	-	1,137,529

RECONCILIATION OF BIOLOGICAL ASSETS THAT FORM PART OF AN AGRICULTURAL ACTIVITY - MARCH 2017

	OPENING BALANCE	ADDITIONS	DECREASES DUE TO SALES/ DISPOSAL	GAINS OR LOSSES ARISING FROM CHANGES IN FAIR VALUE	OTHER CHANGES, MOVEMENTS	TOTAL
	R	R	R	R	R	R
Bearer mature biological assets	1,137,529	66,734	(83,211)	26,050	(1)	1,147,101

RECONCILIATION OF BIOLOGICAL ASSETS THAT FORM PART OF AN AGRICULTURAL ACTIVITY - MARCH 2016

	OPENING BALANCE	ADDITIONS	DECREASES DUE TO SALES/ DISPOSAL	GAINS OR LOSSES ARISING FROM CHANGES IN FAIR VALUE	OTHER CHANGES, MOVEMENTS	TOTAL
	R	R	R	R	R	R
Bearer mature biological assets	904,792	1,412,135	(34,459)	(1,186,735)	41,796	1,137,529

Annual Financial Statements for the year ended March 31, 2017

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

8. BIOLOGICAL ASSETS THAT FORM PART OF AN AGRICULTURAL ACTIVITY (CONTINUED)

SAMRC holds certain monkeys and horses for breeding and external research purposes. All research activities are monitored and controlled to ensure humane treatment of animals.

The last selling price per biological animal type is used to determine fair value.

	2017	2016
	R	R
Fair value less costs to sell of biological assets during the period	1,147,101	1,137,529

9. PROPERTY, PLANT AND EQUIPMENT

	2017			2016		
	COST / VALUATION	ACCUMULATED DEPRECIATION AND ACCUMULATED IMPAIRMENT	CARRYING VALUE	COST / VALUATION	ACCUMULATED DEPRECIATION AND ACCUMULATED IMPAIRMENT	CARRYING VALUE
Land	1,738,558	-	1,738,558	1,738,558	-	1,738,558
Buildings	93,838,353	(32,073,642)	61,764,711	89,615,455	(29,739,144)	59,876,311
Vehicles and containers	19,821,000	(14,366,544)	5,454,456	19,682,624	(13,167,088)	6,515,536
Furniture and office equipment	37,016,080	(19,752,792)	17,263,288	33,815,822	(17,966,111)	15,849,711
Computer equipment	60,985,952	(41,153,206)	19,832,746	60,329,627	(40,097,128)	20,232,499
Laboratory equipment	50,462,872	(17,010,013)	33,452,859	45,037,181	(14,340,183)	30,696,998
Other property, plant and equipment - vervet monkeys	1,512,469	(609,486)	902,983	1,501,311	(562,254)	939,057
TOTAL	**265,375,284**	**(124,965,683)**	**140,409,601**	**251,720,578**	**(115,871,908)**	**135,848,670**

Annual Financial Statements for the year ended March 31, 2017

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

9. PROPERTY, PLANT AND EQUIPMENT (CONTINUED)

RECONCILIATION OF PROPERTY, PLANT AND EQUIPMENT - MARCH 2017

	OPENING BALANCE	ADDITIONS	DISPOSALS	DEPRECIATION	TOTAL
Land	1,738,558	-	-	-	1,738,558
Buildings	59,876,311	4,332,233	(27,154)	(2,416,679)	61,764,711
Vehicles and containers	6,515,536	696,051	(352,120)	(1,405,011)	5,454,456
Furniture and office equipment	15,849,711	4,795,074	(216,005)	(3,165,492)	17,263,288
Computer equipment	20,232,499	7,199,674	(170,333)	(7,429,094)	19,832,746
Laboratory equipment	30,696,998	5,936,387	(227,760)	(2,952,766)	33,452,859
Other property, plant and equipment - vervet monkeys	939,057	53,161	(38,733)	(50,502)	902,983
	135,848,670	**23,012,580**	**(1,032,105)**	**(17,419,544)**	**140,409,601**

RECONCILIATION OF PROPERTY, PLANT AND EQUIPMENT - MARCH 2016

	OPENING BALANCE	ADDITIONS	DISPOSALS	TRANSFERS	OTHER CHANGES, MOVEMENTS	DEPRECIATION	IMPAIRMENT REVERSAL	TOTAL
Land	1,738,558	-	-	-	-	-	-	1,738,558
Buildings	47,550,389	13,985,025	(31,095)	(75,782)	32,798	(1,585,024)	-	59,876,311
Vehicles and containers	7,570,168	804,039	(538,769)	-	-	(1,806,893)	486,991	6,515,536
Furniture and office equipment	10,533,780	7,956,379	(261,988)	75,782	(25,325)	(2,504,053)	75,136	15,849,711
Computer equipment	19,991,524	8,647,819	(186,036)	-	-	(8,341,132)	120,324	20,232,499
Laboratory equipment	23,677,480	10,116,128	(1,440,396)	-	1	(2,454,465)	798,250	30,696,998
Other property, plant and equipment - vervet monkeys	952,078	36,246	-	-	-	(49,267)	-	939,057
	112,013,977	**41,545,636**	**(2,458,284)**	**-**	**7,474**	**(16,740,834)**	**1,480,701**	**135,848,670**

Annual Financial Statements for the year ended March 31, 2017

NOTES TO THE ANNUAL FINANCIAL
STATEMENTS

9. PROPERTY, PLANT AND EQUIPMENT (CONTINUED)

OTHER INFORMATION

PROPERTY, PLANT AND EQUIPMENT FULLY DEPRECIATED AND STILL IN USE (GROSS CARRYING AMOUNT)

	2017	2016
	R	R
Property, plant and equipment - Buildings	436	513
Property, plant and equipment - Laboratory equipment	565	531
Property, plant and equipment - Computer equipment	2,302	2,320
Property, plant and equipment - Furniture and office equipment	8,297	8,848
	11,600	**12,212**

PROPERTY, PLANT AND EQUIPMENT FULLY DEPRECIATED AND STILL IN USE WITH RESIDUAL VALUE (GROSS CARRYING AMOUNT)

	NO. OF ASSETS	2017 RESIDUAL VALUE	NO. OF ASSETS	2016 RESIDUAL VALUE
Property, plant and equipment - Vehicles and containers	**68**	**1,611,611**	**75**	**1,715,114**

Useful lives and residual value is assessed annually by management.

IMPAIRED ASSETS LOSS MARCH 2017

	ONCOLOGY
Property, plant and equipment - Laboratory equipment	28,189
	28,189

IMPAIRED ASSETS LOSS MARCH 2016

	ONCOLOGY
Property, plant and equipment - Laboratory equipment	28,189
	28,189

The assets impaired for the discontinued research units is reflected above. The assets impaired constitutes 0.02% (March 2016 - 0,02%) of the carrying cost of property, plant and equipment and Nil% for March 2017 (March 2016 - Nil%) of the carrying value of intangible assets.

Annual Financial Statements for the year ended March 31, 2017

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

9. PROPERTY, PLANT AND EQUIPMENT (CONTINUED)

The SAMRC Board, at its meeting of 1 March 2013, approved the restructuring of the SAMRC to focus on the 10 highest causes of death in the burden of disease in South Africa. Following this decision the Board at its meeting of 19 February 2014 further approved that discussions be held with institutions for higher learning regarding the transfer of staff and assets of the following units: Promec, Indigenous Knowledge Systems, Oncology and Tuberculosis. To ensure that research in these areas was continued at these institutions it was further agreed that the assets be transferred for no consideration.

The approval for this transaction was received from the Minister of Health in terms of the SAMRC materiality framework on 3 April 2014.

During the prior period under review the impaired assets of Promec, Indigenous Knowledge Systems and Tuberculosis were transferred to an institution of higher learning/clinics.

All items of property, plant and equipment are owned by the entity. There are no restrictions on the title of Property, plant and equipment.

EXPENDITURE INCURRED TO REPAIR AND MAINTAIN PROPERTY, PLANT AND EQUIPMENT

EXPENDITURE INCURRED TO REPAIR AND MAINTAIN PROPERTY, PLANT AND EQUIPMENT INCLUDED IN STATEMENT OF FINANCIAL PERFORMANCE

	2017	2016
	R	R
Contracted services	**14,146,421**	**12,078,128**

DEEMED COST

Deemed cost was determined using fair value.

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NOTES TO THE ANNUAL FINANCIAL STATEMENTS

10. INTANGIBLE ASSETS

	2017			2016		
	COST / VALUATION	ACCUMULATED AMORTISATION AND ACCUMULATED IMPAIRMENT	CARRYING VALUE	COST / VALUATION	ACCUMULATED AMORTISATION AND ACCUMULATED IMPAIRMENT	CARRYING VALUE
Computer software	**16,396,051**	**(9,959,295)**	**6,436,756**	**16,534,814**	**(9,530,561)**	**7,004,253**

RECONCILIATION OF INTANGIBLE ASSETS - MARCH 2017

	OPENING BALANCE	ADDITIONS	DISPOSALS	AMORTISATION	TOTAL
Computer software	**7,004,253**	**1,025,764**	**(1)**	**(1,593,260)**	**6,436,756**

RECONCILIATION OF INTANGIBLE ASSETS - MARCH 2016

	OPENING BALANCE	ADDITIONS	AMORTISATION	TOTAL
Computer software	**7,684,548**	**1,206,176**	**(1,886,471)**	**7,004,253**

There are no restrictions on the title of intangible assets.

11. INVESTMENTS IN CONTROLLED ENTITIES

NAME OF COMPANY	HELD BY	% HOLDING MARCH 2017	% HOLDING MARCH 2016	CARRYING AMOUNT 2017	CARRYING AMOUNT 2016
Medres (Pty) Ltd	SAMRC	100.00 %	100.00 %	1	1
Jirehsa Medical (Pty) Ltd	Medres (Pty) Ltd	25.00 %	25.00 %	1	1
				2	**2**

The carrying amounts of controlled entities are shown net of impairment losses.

The financial statements of Medres (Pty) Ltd and Jirehsa Medical (Pty) Ltd have not been consolidated with those of the SAMRC, because the SAMRC does not have debt or equity instruments that is traded in a public market.

SAMRC has obtained National Treasury's approval to increase its shareholding in Jirehsa Medical (Pty) Ltd from 25% to 42%.

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11. INVESTMENTS IN CONTROLLED ENTITIES (CONTINUED)

CONTROLLED ENTITIES WITH LESS THAN 50% VOTING POWERS HELD

Although the entity holds less than 50% of the voting powers in Jirehsa Medical (Pty) Ltd the investment is considered a controlled entity because SAMRC has the power to govern the financial and operating policies of Jirehsa Medical (Pty) Ltd.

12. PAYABLES FROM EXCHANGE TRANSACTIONS

	2017	2016
	R	R
Trade payables	50,600,431	75,219,343
Leave accrual	20,293,356	17,631,864
Accruals	33,097,313	7,963,143
Interest due to funders	45,615	1,422,882
	104,036,715	**102,237,232**

The increase in accounts payable is attributed to amounts paid in respect of grants awarded.

The carrying amount of trade payables are denominated in the following currencies:

	2017	2016
	R	R
Rand	37,622,451	69,590,083
US Dollar	4,727,314	383,875
Pound Sterling	8,238,546	5,227,200
Swiss Francs	10,094	-
Euro	-	18,185
Canadian dollar	2,026	-

LEAVE ACCRUAL

Balance at the beginning of the year	17,631,864	16,359,716
Leave payouts	(510,863)	(675,947)
Movement recognised in profit or loss	3,172,355	1,948,095
	20,293,356	**17,631,864**

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13. PROVISIONS

RECONCILIATION OF PROVISIONS - MARCH 2017

	OPENING BALANCE	ADDITIONS	UTILISED DURING THE YEAR	REVERSED DURING THE YEAR	TOTAL
Provision for bonus dispute	929,019	-	-	-	929,019
Provision for collaborative research	-	199,000	-	-	199,000
Provision for performance bonus	3,523,376	4,010,130	(3,509,116)	(14,260)	4,010,130
Employee benefit cost provision	970,216	-	(970,216)	-	-
Other provisions	1,782,378	894,605	(563,321)	-	2,113,662
	7,204,989	**5,103,735**	**(5,042,653)**	**(14,260)**	**7,251,811**

RECONCILIATION OF PROVISIONS - MARCH 2016

	OPENING BALANCE	ADDITIONS	UTILISED DURING THE YEAR	REVERSED DURING THE YEAR	TOTAL
Provision for bonus dispute	929,019	-	-	-	929,019
Provision for collaborative research	4,241,579	-	(4,241,579)	-	-
Provision for performance bonus	3,573,000	3,523,376	(3,573,000)	-	3,523,376
Employee benefit cost provision	-	970,216	-	-	970,216
Other provisions	17,189,562	563,320	(15,583,574)	(386,930)	1,782,378
	25,933,160	**5,056,912**	**(23,398,153)**	**(386,930)**	**7,204,989**

COLLABORATIVE RESEARCH COSTS

The provision relates to collaborative research costs for self initiated research grants at Walter Sisulu University that will be settled in the next twelve months.

PROVISION FOR BONUS DISPUTE

The bonus dispute provision relates to the estimated legal costs that needs to paid to NEHAWU.

Annual Financial Statements for the year ended March 31, 2017

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

13. PROVISIONS (CONTINUED)

OTHER PROVISIONS

The other provisions relate to grant funds received on completed projects and projects relating to research units that closed during the rationalisation process, 2017 COIDA estimate; retention payable to building contractor for building works and repayment of grant funds to European Union and Centers for Disease Control amount of R440,195 (March 2016 - relate to the Department of Labour assessment for the claim for occupational injury on duty assessment for 2016 (COIDA) estimate; grant funds received on completed projects and projects relating to research units that closed during the rationalisation process).

EMPLOYEE BENEFIT COST PROVISION

The 2015/2016 promotion amount provided for was paid in June 2016.

PROVISION FOR PERFORMANCE BONUS

The performance bonus cycle was changed after discussions and agreement with the union. The Board approved the new bonus cycle, which will be paid after the financial year. The 2015/2016 performance bonus was paid in October and November 2016. The amount reflected is the 2016/2017 provision for performance bonuses.

14. DEFERRED INCOME

The increase in deferred income can be attributed to the following contract funds received in advance: DFID; Department of Science and Technology; Bill & Melinda Gates Foundation; MRC UK to fund Newton TB and Non Communicable Diseases projects; Grand Challenges SA; American Jewish World Service; Department of Health; MRC UK to fund the MIND project and Centre for Disease Control.

	2017	2016
	R	R
Deferred income	288,897,953	206,000,975
SUMMARY OF DEFERRED INCOME		
Research grants received in advance	287,777,026	205,711,547
Other funds received in advance	1,120,927	289,428
	288,897,953	**206,000,975**

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

15. EMPLOYEE BENEFIT OBLIGATIONS

	2017	2016
	R	R
Post retirement medical aid obligation	7,165,000	5,432,000
Pension fund - Defined benefit obligation	4,871,000	352,000
	12,036,000	**5,784,000**

POST RETIREMENT BENEFITS

POST RETIREMENT MEDICAL AID PLAN

SAMRC, took a compulsory insurance policy in order to fund post retirement medical obligations of its ex-employees. Given the nature of the policy, it is appropriate to treat this as a plan asset. Certain assets have been allocated specifically for the purpose of covering the post retirement medical aid defined benefit liability. The defined benefit medical liability has been recognised and accounted for under the requirements of GRAP 25 - Employee Benefits. The assets have been accounted for in terms of the requirements of the accounting standards to which they relate and not in terms of GRAP 25 because the plan is not registered. The relevant assets are included in investments and cash balances.

PENSION FUNDS

SAMRC personnel are members of the following pension funds

- State Pension Fund (Associated institutions - AIPF) (Act No. 51 of 1963)
- State Pension fund for temporary employees (Act No. 75 of 1979)
- MRC Pension fund (since January 1994)

(a) The first two funds were established by Law and are regulated by the respective Acts.

(b) The last-named fund is regulated by the Pension Fund Act and is managed by an independent Board of Trustees. The MRC Pension fund was actuarially valued at 1 April 2014. Next statutory valuation for the fund is 1 April 2017.

(c) The first two funds offer defined benefits to staff. With regard to the MRC Pension fund, some members are on a defined benefit scheme, while the remainder are on a defined contribution scheme.

The MRC Pension Fund and the Post retirement Medical Aid Plan is valued annually in compliance with GRAP 25.

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NOTES TO THE ANNUAL FINANCIAL STATEMENTS

15. EMPLOYEE BENEFIT OBLIGATIONS (CONTINUED)

POST RETIREMENT MEDICAL AID PLAN

THE AMOUNTS RECOGNISED IN THE STATEMENT OF FINANCIAL POSITION ARE AS FOLLOWS:

	2017	2016
	R	R
CARRYING VALUE		
Present value of the defined benefit obligation-wholly unfunded	(1,194,000)	(1,144,000)
Present value of the defined benefit obligation-partly or wholly funded	(22,177,000)	(21,505,000)
Fair value of plan assets	16,206,000	17,217,000
NET LIABILITY	**(7,165,000)**	**(5,432,000)**

CHANGES IN THE PRESENT VALUE OF THE DEFINED BENEFIT OBLIGATION ARE AS FOLLOWS:

	2017	2016
	R	R
Opening balance	22,649,000	22,830,000
Interest costs	2,004,000	1,746,000
Service costs	-	41,000
Benefits paid	(2,080,000)	(1,964,000)
Actuarial loss (gain)	798,000	(4,000)
CLOSING BALANCE	**23,371,000**	**22,649,000**

NET EXPENSE RECOGNISED IN THE STATEMENT OF FINANCIAL PERFORMANCE

	2017	2016
	R	R
Current service cost	-	41,000
Interest cost	2,004,000	1,746,000
Expected return on plan assets	(1,504,000)	(1,427,000)
Recognised actuarial loss	1,233,000	1,067,000
TOTAL INCLUDED IN EMPLOYEE RELATED COST	**1,733,000**	**1,427,000**

15. EMPLOYEE BENEFIT OBLIGATIONS (CONTINUED)

CALCULATION OF ACTUARIAL GAINS AND LOSSES

	2017	2016
	R	R
Actuarial losses (gains) – Obligation	798,000	(4,000)
Actuarial losses – Plan assets	435,000	1,071,000
	1,233,000	**1,067,000**

CHANGES IN THE FAIR VALUE OF PLAN ASSETS ARE AS FOLLOWS:

	2017	2016
	R	R
Opening balance	17,217,000	18,825,000
Actuarial (losses)	(435,000)	(1,071,000)
Expected return on plan assets	1,504,000	1,427,000
Benefits paid	(2,080,000)	(1,964,000)
CLOSING BALANCE	**16,206,000**	**17,217,000**

The entity will investigate the options available to eliminate the net liability as far as possible.

KEY ASSUMPTIONS USED

Assumptions used at the reporting date:

	2017	2016
Discount rates used	9.00 %	9.30 %
General increases to medical aid subsidy	7.50 %	8.00 %
Expected rate of return on assets	9.00 %	9.30 %
Proportion continuing membership at retirement	100.00 %	100.00 %
Proportion of retiring members who are married	80.00 %	80.00 %
Retirement age for staff who joined prior to 1 May 1998	65	65
Retirement age for staff who joined after 1 May 1998	65	65

The expected rate of return on plan assets is based on market expectations, at the beginning of the period, for returns over the entire life of the related obligation.

The discount rate has been determined by reference to market yields at the balance sheet date of South African long-term bonds.

Annual Financial Statements for the year ended March 31, 2017

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

15. EMPLOYEE BENEFIT OBLIGATIONS (CONTINUED)

OTHER ASSUMPTIONS

Assumed healthcare cost trends rates have a significant effect on the amounts recognised in surplus or deficit. A one percentage point change in assumed healthcare cost trends rates would have the following effects:

	IMPACT ON LIABILITY RM	% INCREASE/ DECREASE
MARCH 2017		
Assumptions as above	23,371	
Discount rate - increases by 1% p.a.	21,644	(7)
Discount rate - decreases by 1% p.a.	25,376	9
Medical inflation - increases by 1% p.a.	25,223	8
Medical inflation - decreases by 1% p.a.	21,751	(7)
MARCH 2016		
Assumptions as above	22,649	
Discount rate - increases by 1% p.a.	20,922	(8)
Discount rate - decreases by 1% p.a.	24,622	9
Medical inflation - increases by 1% p.a.	24,501	8
Medical inflation - decreases by 1% p.a.	20,034	(7)

Amounts for the current period and previous four years are as follows:

	2017	2016	2015	2014	2013
	R	R	R	R	R
Defined benefit obligation- partially or wholly unfunded	22,177,000	21,505,000	21,763,000	20,534,000	22,932,000
Defined benefit obligation - wholly unfunded	1,194,000	1,144,000	1,067,000	889,000	1,687,000
Plan assets	16,206,000	17,217,000	18,825,000	17,976,000	18,501,000

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15. EMPLOYEE BENEFIT OBLIGATIONS (CONTINUED)

PENSION FUNDS

	2017	2016
	R	R
Defined benefit obligation - Wholly funded		
Present value of obligation	(105,379,000)	(95,825,000)
Fair value of plan assets	100,508,000	95,473,000
NET (LIABILITY)	**(4,871,000)**	**(352,000)**

CHANGES IN THE PRESENT VALUE OF THE DEFINED BENEFIT OBLIGATION ARE AS FOLLOWS:

	2017	2016
	R	R
Opening defined benefit obligation	95,825,000	106,556,000
Benefits paid	(8,022,000)	(19,027,000)
Service cost	3,425,000	4,017,000
Interest cost	9,427,000	7,928,000
Actuarial loss (gain)	3,766,000	(4,236,000)
Member contributions	1,457,000	1,282,000
Re-insurance premiums	(265,000)	(361,000)
Expenses	(234,000)	(334,000)
CLOSED DEFINED BENEFIT OBLIGATION CLOSING BALANCE	**105,379,000**	**95,825,000**

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15. EMPLOYEE BENEFIT OBLIGATIONS (CONTINUED)

CHANGES IN THE FAIR VALUE OF PLAN ASSETS ARE AS FOLLOWS:

	2017	2016
	R	R
Opening fair value of plan assets after limitation	95,473,000	98,377,000
Additional payment by SAMRC	-	6,085,000
Contributions	5,605,000	4,897,000
Benefits paid	(8,022,000)	(19,027,000)
Expected return on plan assets	9,213,000	7,333,000
Actuarial (loss)	(1,262,000)	(1,497,000)
Re-insurance premiums	(265,000)	(361,000)
Expenses	(234,000)	(334,000)
CLOSING FAIR VALUE OF PLAN ASSETS	**100,508,000**	**95,473,000**

CALCULATION OF ACTUARIAL GAINS AND LOSSES

	2017	2016
	R	R
Actuarial loss (gains) - Obligation	3,766,000	(4,236,000)
Actuarial loss - Plan assets	1,262,000	1,497,000
	5,028,000	**(2,739,000)**

STAFF COSTS INCLUDES THE FOLLOWING IN RESPECT OF THE DEFINED BENEFIT PENSION PLAN:

	2017	2016
	R	R
Current service cost	3,425,000	4,017,000
Interest cost	9,427,000	7,928,000
Expected return on plan assets	(9,213,000)	(7,333,000)
Net actuarial gains and (losses) recognised in current year	5,028,000	(2,739,000)
Previous asset limitation	(4,148,000)	(3,615,000)
	4,519,000	**(1,742,000)**

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15. EMPLOYEE BENEFIT OBLIGATIONS (CONTINUED)

THE PRINCIPAL ACTUARIAL ASSUMPTIONS USED IN DETERMINING THE PENSION PLAN PER ANNUM WERE:

	2017	2016
General inflation rate	6.70%	7.50%
Discount rate	9.60%	9.80%
Expected return on plan assets	9.60%	9.80%
Salary inflation - percentage plus merit increase	7.70%	8.50%

	2017	2016	2015	2014	2013
	R	R	R	R	R
Defined benefit obligation	105,379,000	95,825,000	106,556,000	88,433,000	116,740,000
Plan assets	100,508,000	95,473,000	98,377,000	89,805,000	116,997,000

16. EARMARKED FUNDS

	2017	2016
	R	R
Botha trust	151,636	151,636
Bruhns trust	1,101,922	1,036,097
Melville Douglas trust	13,325	13,325
Q&S Abdool Karim trust	2,230,803	2,138,004
FJ Kleynhans trust	111,442	111,442
	3,609,128	**3,450,504**

The Earmarked funds are donations; bequests from deceased estates or cash received for a limited period to be used for visiting eminent scientists; cancer research or tuberculosis research. During the prior period a bequest of R111,442 for cancer research was received from the deceased estate of FJ Kleynhans, a trust fund was established for the bequest.

The Earmarked funds are held at the Reserve Bank.

The Bruhns and Q & S Abdool Karim trust funds earned interest.

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17. ACCUMULATED SURPLUS

	2017	2016
	R	R
Accumulated surplus	336,235,915	303,957,588

The policy of the SAMRC is to maintain a reserve of R50 million to provide for any unforeseen health emergencies.The accumulated surplus at the end of the reporting period is required to fund capital projects and other commitments as well as the maintenance of current funding levels of research projects over the MTEF period. The surplus will also be used to attract equivalent leverage funding from international funders.

18. TOTAL REVENUE

	2017	2016
	R	R
Income from contracts, grants and services rendered	360,955,461	302,448,665
Rental income	5,488,289	4,316,568
Other income	1,194,621	5,651,108
Interest received - investment	35,137,720	25,845,197
Dividends received	129,177	102,691
Government grants & subsidies	576,833,333	547,273,684
	979,738,601	**885,637,913**

THE AMOUNT INCLUDED IN REVENUE ARISING FROM EXCHANGES OF GOODS OR SERVICES ARE AS FOLLOWS:

	2017	2016
	R	R
Income from contracts, grants and services rendered	360,955,461	302,448,665
Rental income	5,488,289	4,316,568
Other income	1,194,621	5,651,108
Interest received - investment	35,137,720	25,845,197
Dividends received	129,177	102,691
	402,905,268	**338,364,229**

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18. TOTAL REVENUE (CONTINUED)

THE AMOUNT INCLUDED IN REVENUE ARISING FROM NON-EXCHANGE TRANSACTIONS IS AS FOLLOWS:

	2017	2016
	R	R
Government grants & subsidies	576,833,333	547,273,684

REVENUE

	2017	2016
	R	R
Income from contracts, grants and services rendered	360,955,461	302,448,665
Government grants	576,833,333	547,273,684
	937,788,794	**849,722,349**

19. OTHER INCOME AS REFLECTED IN THE STATEMENT OF FINANCIAL PERFORMANCE

	2017	2016
	R	R
Rental income	5,488,289	4,316,568
Gain on foreign exchange	-	732,972
Other income	1,194,621	5,651,108
	6,682,910	**10,700,648**

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STATEMENTS

20. INVESTMENT REVENUE

	2017	2016
	R	R
DIVIDEND REVENUE		
Listed financial assets - Local	129,177	102,691
INTEREST REVENUE		
Unit trusts	36,293	38,081
Bank	337,638	462,030
Interest charged on trade and other receivables	5,391	69,628
Corporation for public deposits	34,644,241	25,275,458
Interest received - other	114,157	-
	35,137,720	**25,845,197**
	35,266,897	**25,947,888**

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21. EMPLOYEE RELATED COSTS

	2017	2016
	R	R
Basic	169,829,559	161,023,323
Other non pensionable allowances	75,482,273	71,939,664
Bonus	3,995,870	4,921,717
UIF	1,035,974	1,047,747
SDL	2,399,344	2,522,877
Leave payments	1,606,928	2,448,159
Adjustments from the application of IAS 19/GRAP 25	6,252,000	(315,115)
Other salary related costs	8,057,699	5,878,899
Defined pension benefit plan expense - current service cost	4,073,343	3,870,399
Overtime payments	735,681	519,671
Temporary staff	13,129,440	10,857,779
Retrenchments	115,814	2,206,305
Defined pension contribution plan expense	17,196,475	15,261,696
Promotion provision	-	970,216
	303,910,400	**283,153,337**

The increase in employee related costs can mainly be attributed to normal salary increases plus the increase in the liability in respect of the post retirement medical aid plan of R1,733,000 and the defined benefit pension fund of R4,519,000. In addition, deputy director posts were created to facilitate career progression and transformation.

22. IMPAIRMENT OF ASSETS

REVERSAL OF IMPAIRMENTS

	2017	2016
	R	R
Intangible assets	-	(1,480,701)

At March 2016 - the reversal of previously impairment of property, plant and equipment was identified by management for assets that were disposed (R1,291,794) or brought back into use (R188,907).

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NOTES TO THE ANNUAL FINANCIAL STATEMENTS

23. FINANCE COSTS

	2017	2016
	R	R
Other interest paid	286,199	1,294,175

SAMRC had to refund interest due to its funders for monies received in advance (March 2017 - R49,419; March 2016 - R634,764), to the earmarked funds (March 2017 - R235,581; March 2016 - R178,925), and to staff for late payment of salary increases (March 2017 - RNIL; March 2016 - R450,361). Interest paid to suppliers for late payments of account is not classified as fruitless and wasteful expenditure if the invoice is received late from the supplier (March 2017 - R1,199; March 2016 - R 30,125).

24. DEBT IMPAIRMENT

	2017	2016
	R	R
Provision / Reversal of debt impairment	(65,020)	(1,294,477)

The debt impairment reflected above include the current periods provision for bad debt of R322,168 (including vat of R23,466) and reversal of the previous year's provision (March 2016 provision for bad debts of R376,080 including vat of R12,358).

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NOTES TO THE ANNUAL FINANCIAL STATEMENTS

25. GENERAL EXPENSES

	2017	2016
	R	R
Advertising	1,369,153	2,793,887
Auditors remuneration	2,006,431	2,561,206
Bank charges	347,656	347,325
Computer expenses	17,054,877	14,749,751
Consulting and professional fees	12,950,831	7,966,359
Insurance	2,186,464	2,513,620
Magazines, books and periodicals	4,781,481	2,498,215
Postage and courier	828,821	1,119,502
Printing and stationery	5,811,008	4,060,687
Security	8,342,056	6,977,875
Subscriptions and membership fees	748,795	677,331
Telephone and fax	2,864,611	2,809,961
Training	2,822,527	2,157,076
Travel, subsistence and conference attendance	30,610,582	28,847,711
Utilities	12,330,646	13,590,945
Laboratory operating cost	21,234,724	12,539,040
Collaborative research	471,121,281	389,747,411
Other expenses	3,666,103	6,688,198
	601,078,047	**502,646,100**

TRAVEL, SUBSISTENCE AND CONFERENCE ATTENDANCE

	2017	2016
	R	R
Local travel	5,790,094	6,368,881
Overseas travel	7,521,287	6,544,639
Accommodation - local and overseas	6,992,275	6,312,306
Subsistence and travel expenditure	6,750,486	6,465,873
Conference expenditure	3,556,440	3,156,012
	30,610,582	**28,847,711**

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25. GENERAL EXPENSES (CONTINUED)

OTHER EXPENSES

	2017	2016
	R	R
Canteen costs	1,096,523	1,151,963
Personnel teas	858,841	760,027
Royalty distribution	-	5,633
Hire of premises and equipment	1,624,123	4,697,618
Licences	86,616	63,558
Staff recruitment costs	-	9,399
	3,666,103	**6,688,198**

Collaborative research costs include amounts that were paid to research institutions which relates to tranche payments of contractual agreements signed with institutions who will conduct research on behalf of the SAMRC as part of the entity's mandate. No goods or services are received for these payments as they relate to start-up costs for research, the 2016/ 2017 amount is R221,677,567 (2016 - R123,967,771).

26. FAIR VALUE ADJUSTMENTS

	2017	2016
	R	R
Biological assets - (Fair value model)	26,050	(1,186,735)
Other financial assets		
Other financial assets at fair value	(79,279)	(79,721)
	(53,229)	**(1,266,456)**

27. AUDITORS' REMUNERATION

	2017	2016
	R	R
Fees	2,006,431	2,561,206

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

28. OPERATING (DEFICIT) SURPLUS

Operating (deficit) surplus for the year is stated after accounting for the following:

	2017	2016
	R	R
OPERATING LEASE CHARGES		
Premises		
Contractual amounts	5,631,062	4,800,490
Loss on sale of property, plant and equipment	763,697	2,314,732
Reversal of impairments	-	(1,480,701)
Loss (gain) on exchange differences	902,672	(732,972)
Amortisation on intangible assets	1,593,260	1,886,471
Depreciation on property, plant and equipment	17,419,545	16,740,834
Employee costs	303,910,400	283,153,337

Annual Financial Statements for the year ended March 31, 2017

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STATEMENTS

29. CASH GENERATED FROM OPERATIONS

	2017	2016
	R	R
Surplus	32,278,327	60,739,339
ADJUSTMENTS FOR:		
Depreciation and amortisation	19,012,805	18,627,305
Loss on sale of assets	763,697	2,314,732
Loss (gain) on foreign exchange	902,672	(732,972)
Fair value adjustments	53,229	1,266,456
Impairment reversals	-	(1,480,701)
Debt impairment	(65,020)	(1,294,477)
Movements in retirement benefit assets and liabilities	6,252,000	(6,400,000)
Movements in provisions	46,822	(18,728,171)
Capitalisation of financial assets	(138,991)	(116,454)
Non cash adjustment on biological assets	-	(41,796)
Other changes on property, plant and equipment	-	(7,474)
CHANGES IN WORKING CAPITAL:		
Receivables from exchange transactions	(24,999,543)	15,033,510
Prepayments	(1,920,483)	(805,704)
Payables from exchange transactions	1,799,482	37,308,694
VAT	698,022	(8,634,056)
Deferred income	82,896,978	82,576,218
	117,579,997	**179,624,449**

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NOTES TO THE ANNUAL FINANCIAL STATEMENTS

30. FINANCIAL INSTRUMENTS DISCLOSURE

CATEGORIES OF FINANCIAL INSTRUMENTS

MARCH 2017

	AT FAIR VALUE	AT AMORTISED COST	TOTAL
FINANCIAL ASSETS			
Trade and other receivables from exchange transactions	-	37,385,856	37,385,856
Cash and cash equivalents	-	543,939,683	543,939,683
Investment in controlled entities	2	-	2
Financial assets	-	6,430,523	6,430,523
	2	**587,756,062**	**587,756,064**

	AT AMORTISED COST	TOTAL
FINANCIAL LIABILITIES		
Trade and other payables from exchange transactions	104,036,715	104,036,715

MARCH 2016

	AT FAIR VALUE	AT AMORTISED COST	TOTAL
FINANCIAL ASSETS			
Trade and other receivables from exchange transactions	-	13,223,965	13,223,965
Cash and cash equivalents	-	449,954,519	449,954,519
Investment in controlled entities	2	-	2
Financial assets	-	6,370,811	6,370,811
	2	**469,549,295**	**469,549,297**

	AT AMORTISED COST	TOTAL
FINANCIAL LIABILITIES		
Trade and other payables from exchange transactions	102,237,232	102,237,232

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NOTES TO THE ANNUAL FINANCIAL STATEMENTS

31. COMMITMENTS

AUTHORISED COMMITMENTS

	2017	2016
	R	R
Already contracted for but not provided for		
Property, plant and equipment	9,011,726	7,818,764
Goods and services	13,195,220	11,460,902
Research grants	5,457,933	7,917,447
Operating leases	5,597,746	386,000
	33,262,625	**27,583,113**
Already contracted for but not provided for	33,262,625	27,583,113

This committed expenditure relates to property, plant and equipment, goods and services and research grants and will be financed by retained surpluses, existing cash resources, funds internally generated, etc.

OPERATING LEASES - AS LESSEE (EXPENSE)

	2017	2016
	R	R
MINIMUM LEASE PAYMENTS DUE		
within one year	4,330,711	362,000
in second to fifth year inclusive	1,267,035	24,000
	5,597,746	**386,000**

Operating lease payments represent rentals payable by the entity for certain of its office properties. Leases are negotiated for an average term of three years. No contingent rent is payable.

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NOTES TO THE ANNUAL FINANCIAL STATEMENTS

31. COMMITMENTS (CONTINUED)

OPERATING LEASES - AS LESSOR (INCOME)

	2017	2016
	R	R
MINIMUM LEASE PAYMENTS DUE		
within one year	1,950,427	4,328,328
in second to fifth year inclusive	1,033,462	3,227,636
	2,983,889	**7,555,964**

Certain of the entity's buildings generate rental income. Lease agreements have terms from 12 months to 9 years and eleven months.

32. CONTINGENCIES

CONTINGENT LIABILITIES

A written request has been submitted to National Treasury in order to retain the current years surplus in terms of Section 53(3) of the Public Finance Management Act. The outcome that the South African Medical Research Council will be required to repay the surplus is highly unlikely.

CONTINGENT ASSETS

In 2015/2016 Board members emoluments were paid at the 2015/2016 Category B Treasury remuneration schedule rates without the approval of Department of Health (DOH). The overpayment of R113,368 is recoverable from the individual board members if approval is not obtained from DOH. The required form was submitted to DOH on 27 May 2016, to date the SAMRC has not received a response to the submission. In 2016/2017 the rates used to pay Board members were the 2014/2015 category B rates.

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NOTES TO THE ANNUAL FINANCIAL STATEMENTS

33. RELATED PARTIES

EXECUTIVE AUTHORITY	Dept. of Health (DOH)
CONTROLLED ENTITIES	Medres (Pty) Ltd Refer to note 11
ASSOCIATES	Jirehsa Medical (Pty) Ltd Refer to note 5
MEMBERS OF KEY MANAGEMENT	Prof G Gray (President appointed 1 April 2014) (Wits Health Consortium - Perinatal HIV Research Unit researcher and NIH and; NRF grant recipient; director Hutchinson Centre Research Institute of SA)
	Mr. N Buick (Chief Financial Officer appointed 16 July 2012. Western Cape Education Department - Audit Committee member)
	Mr. M Bikwani (Executive Manager Human Capacity Development appointed 1 April 2013 termination date 31 July 2015)
	Dr. R Gordon (Ex officio Executive Management Committee member from 1 April 2013 and employee of Medicines for Malaria Ventures (MRC debtor)
	Prof. DC Stefan (Vice President appointed 1 October 2014, termination date 31 August 2016)
	Adv. N Bhuka appointed an EMC member from 1 October 2014)
	Prof. MJ Mphahlele (Vice President appointed 1 October 2014 and extra mural unit director at Sefako Makgatho Health Sciences University)
	Mr. B Spies (Executive Director Human Capacity Development appointed 1 August 2016)
BOARD MEMBER: Board members are employed by Universities who contract with SA Medical Research Council for grant income or collaborative research	Dr S Gumbi, term ended 31 October 2016 (Director of AEC Amersham - MRC supplier and an employee of Technology Innovation Agency an MRC debtor till 30 November 2015)
	Prof. M Sathekge (University of Pretoria - grant recipient and debtor, president of College of Medicine SA)
	Prof. Z Dlamini, term ended 31 October 2016 (UNISA - supplier and debtor till 31 May 2015.Mangosuthu University of Technology grant recipient and debtor)
	Prof. K Mokwena & Prof. P Mntla, term ended 31 October 2016 (Universities of Limpopo renamed to Sefako Makgatho Health Sciences University - grant recipient and debtor)
	Prof. C Feldman and Dr. F Conradie, term ended 31 October 2016 (Univ. of Witwatersrand and Wits Health Consortium- grant recipient and debtor)
	Dr. Z Kwitshana (Univ. KwaZulu Natal - supplier and debtor till 31 March 2016; Mangosuthu University of Technology grant recipient and debtor)

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NOTES TO THE ANNUAL FINANCIAL STATEMENTS

33. RELATED PARTIES (CONTINUED)

BOARD MEMBER:	Prof. K Mfenyana, term ended 31 October 2016 (Walter Sisulu University - grant recipient and debtor) Prof. Y Osman, term ended 31 October 2016 (University of Western Cape - grant recipient and debtor)
	Prof. K Setswe, term ended 31 October 2016 (HSRC - grant recipient and debtor)
	Prof. A Walubo, term ended 31 October 2016 (Free State University - grant recipient and debtor)
	Prof. Q Abdool Karim (CAPRISA - extramural unit, grant recipient and debtor; donor to SAMRC for the the Q&S Abdool Karim fund)
	Prof. L Skaal and Prof. T Sodi (University of Limpopo - grant recipient and debtor)
	Prof. M Cotton (University of Stellenbosch - grant recipient and debtor)
	Prof, S Velaphi and Prof. J Mahlangu (University of Witwatersrand - grant recipient and debtor)
	Prof. L Zungu (University of South Africa - supplier and debtor)
	Prof. B Shaw (University of Johannesburg - grant recipient, supplier and debtor)
	Prof. W Rae (University of Free State - grant recipient and debtor)
	Dr. R Chikwamba (CSIR - supplier and debtor)
EMPLOYEE: MR P CHARLS	Tertiary Education and Research Network of South Africa (TENET) (SAMRC internet service provider, the staff member is a co-opted director on the TENET Board effective 30 April 2015)
EMPLOYEE: DR N ABRAHAMS	Sonke Gender Justice Network (service provider, staff member is a director)
EMPLOYEE: PROF. MA DHANSAY	National Science and Technology Forum
EMPLOYEE: MS Y SINGH	One Voice South Africa
EMPLOYEE: MS N NAICKER	Public Health Association of South Africa (PHASA)

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NOTES TO THE ANNUAL FINANCIAL STATEMENTS

33. RELATED PARTIES (CONTINUED)

RELATED PARTY BALANCES

	2017	2016
	R	R
LOAN ACCOUNTS - OWING (TO) BY RELATED PARTIES		
Medres (Pty) Ltd (The loan is not considered to be recoverable and has been written off.)	199,949	184,074
AMOUNTS INCLUDED IN TRADE RECEIVABLE (TRADE PAYABLE) REGARDING RELATED PARTIES		
Dept. of Health (DOH)	2,029,549	-
Council for Scientific and Industrial Research (CSIR)	(2,898,243)	-
University of Stellenbosch	69,855	-
University of Pretoria	-	637,224
Mangosuthu University of Technology	-	(2,221,000)
University of Pretoria	(6,676,345)	-
Sefako Makgatho Health Sciences University	(1,317,410)	(3,623,200)
University of Stellenbosch	(88,400)	-
University of Western Cape	-	17,052
University of Witwatersrand	(6,738,122)	(390,225)
University of Johannesburg	(11,640)	-
University of Free State	-	10,672
Walter Sisulu University	-	342,000
Wits Health Consortium	(1,539,000)	(17,008,709)
Sefako Makgatho Health Sciences University	114,000	19,667
Mangosuthu University of Technology	-	18,836
DEFERRED INCOME		
Dept. of Health (DOH)	28,493,639	4,267,239
Dept. of Science and Technology (DST)	76,523,191	47,875,079

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NOTES TO THE ANNUAL FINANCIAL STATEMENTS

33. RELATED PARTIES (CONTINUED)

	2017	2016
	R	R
REVENUE - GRANTS RECEIVED AND SERVICES ENDERED TO RELATED PARTIES		
Dept. of Health (DOH, revenue from non- exchange)	576,833,333	547,273,684
Dept. of Health (DOH) Contracts, revenue from exchange	25,592,587	3,281,579
CAPRISA	3,742	-
University of Stellenbosch	114,484	-
University of Witwatersrand	290,135	185,347
Dept. of Science and Technology (DST)	81,705,545	54,228,791
Human Sciences Research Council (HSRC)	8,772	91,156
Mangosuthu University of Technology	-	18,836
Walter Sisulu University	-	300,000
University of Pretoria	(39,637)	587,449
University of Free State	1,500	530,718
Sefako Makgatho Health Sciences University	859,159	17,252
University of KwaZulu- Natal	-	8,238
University of Western Cape	463,836	734,439
	685,833,456	**607,257,489**

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NOTES TO THE ANNUAL FINANCIAL STATEMENTS

33. RELATED PARTIES (CONTINUED)

	2017	2016
	R	R
EXPENDITURE SUCH AS GRANTS AWARDED, EXTRA-MURAL UNIT GRANTS AND COLLABORATIVE RESEARCH GRANTS INCURRED WITH RELATED PARTY SUPPLIERS		
University of Pretoria	11,575,092	12,845,956
UNISA	262,889	-
College of Medicine of South Africa	930	-
University of Limpopo	201,200	-
CAPRISA	3,189,530	-
Wits Health Consortium	42,408,567	45,198,314
University of Witwatersrand	24,559,327	16,082,710
University of Western Cape	2,721,223	8,059,990
University of Free State	1,815,789	6,406,071
Walter Sisulu University	-	1,367,054
University of Stellenbosch	10,611,690	-
University of Johannesburg	74,540	-
Mangosuthu University of Technology	3,000,000	2,148,333
Tertiary Education and Research Network of South Africa (TENET)	788,292	694,235
Sefako Makgatho Health Sciences University	9,071,499	11,292,102
Sonke Gender Justice Network	3,474,719	1,734,327
Hutchinson Centre Research Institute of SA	1,222,833	-
National Science and Technology Forum	21,800	-
Public Health Association of South Africa (PHASA)	505,987	-
Council for Scientific Industrial Research (CSIR)	2,542,318	-
	118,048,225	**105,829,092**

Annual Financial Statements for the year ended March 31, 2017

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

33. RELATED PARTIES (CONTINUED)

	2017	2016
	R	R
EXECUTIVE AUTHORITY INFORMATION		
Minister: Dr. A Motsoaledi		
No subsistence, travel and other related re-imbursement costs have been paid.		
Director General: Ms. Precious Matsoso		
No subsistence, travel and other related re-imbursement costs have been paid.		
REMUNERATION OF MANAGEMENT		
EXECUTIVE DIRECTORS/MANAGERS LEAVE BALANCES		
Adv. N Bhuka	128,546	91,294
Mr. N Buick	166,321	147,797
Dr. R Gordon	59,764	67,270
Prof. G Gray	208,436	351,521
Prof. M Mphahlele	269,776	213,792
Prof. D Stefan	-	129,895
Mr. B Spies	48,970	-
	881,813	**1,001,569**

Annual Financial Statements for the year ended March 31, 2017

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

34. MEMBER'S EMOLUMENTS

EXECUTIVE

MARCH 2017

	EMOLUMENTS	VEHICLE & PARKING & CELLPHONE ALLOWANCE	RE-IMBURSEMENT	ACCOMMO-DATION AND ENTERTAIN-MENT	LOCAL AIRTRAVEL AND PARKING	TOTAL
	R	R	R	R	R	R
** Professor M Sathekge	116,480	19,252	-	11,310	74,105	221,147
** Professor E Bukusi	52,224	2,149	1,915	15,092	478,552	549,932
* Doctor F Conradie	19,584	-	-	2,461	21,404	43,449
* Professor Z Dlamini	52,864	2,149	-	6,034	63,018	124,065
* Professor C Feldman	34,816	3,179	-	-	6,790	44,785
* Doctor S. Gumbi	61,184	1,287	-	2,461	20,279	85,211
** Doctor P. Hanekom	75,776	921	-	1,200	73,714	151,611
** Doctor Z Kwitshana	73,856	3,684	-	10,088	81,465	169,093
* Professor K Mfenyana	34,816	3,733	-	2,548	40,202	81,299
* Professor P Mntla	34,816	2,558	-	1,200	13,638	52,212
* Doctor K Mokwena	64,896	3,159	-	4,981	48,632	121,668
* Professor Y Osman	34,816	2,149	-	1,173	13,698	51,836
* Advocate J Ralefatane	34,816	3,502	-	1,200	27,187	66,705
* Professor K Setswe	-	-	-	1,200	13,503	14,703
* Professor A Walubo	34,816	2,711	-	1,348	32,606	71,481
*** Professor Q Abdool Karim	-	-	-	2,521	7,906	10,427
*** Professor M Cotton	8,704	-	-	-	7,836	16,540
*** Professor J Mahlangu	19,584	1,535	-	-	18,721	39,840
*** Advocate N Kadwa	23,936	1,899	-	-	15,734	41,569
*** Doctor R Chikwamba	-	-	-	-	13,543	13,543
*** Professor W Rae	19,584	1,535	-	3,601	22,658	47,378
*** Professor B Shaw	19,584	1,535	-	1,200	12,758	35,077
*** Professor T Sodi	23,936	4,670	-	4,801	21,198	54,605
*** Professor L Skaal	19,584	5,799	-	4,801	23,710	53,894
*** Professor S Velaphi	17,408	-	-	1,200	22,121	40,729
*** Professor L Zungu	19,584	1,535	-	2,400	18,697	42,216
	897,664	**68,941**	**1,915**	**82,820**	**1,193,675**	**2,245,015**

* Old Board member

** Old and current Board member

*** New Board member

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NOTES TO THE ANNUAL FINANCIAL STATEMENTS

34. MEMBER'S EMOLUMENTS (CONTINUED)

	EMOLUMENTS	VEHICLE & PARKING & CELLPHONE ALLOWANCE	RE-IMBURSEMENT	ACCOMMO-DATION AND ENTERTAIN-MENT	LOCAL AIRTRAVEL AND PARKING	TOTAL
	R	R	R	R	R	R
Professor M Sathekge	115,712	13,091	-	3,762	50,833	183,398
Professor E Bukusi	59,696	3,684	3,557	11,050	216,044	294,031
Doctor F Conradie	52,808	3,684	-	1,285	13,407	71,184
Professor Z Dlamini	68,880	3,989	-	7,286	109,537	189,692
Professor C Feldman	32,144	3,341	-	-	7,724	43,209
Doctor S Gumbi	44,048	885	-	2,362	23,075	70,370
Doctor P Hanekom	86,736	-	-	1,285	64,409	152,430
Doctor Z Kwitshana	59,696	3,684	-	6,291	65,380	135,051
Professor K Mfenyana	27,552	4,040	-	5,073	26,103	62,768
Professor P Mntla	52,808	5,881	-	-	13,406	72,095
Doctor K Mokwena	84,440	5,037	2,470	8,708	60,563	161,218
Professor Y Osman	61,992	3,684	-	-	24,400	90,076
Advocate J Ralefatane	52,808	3,750	1,227	1,285	23,415	82,485
*** Professor K Setswe	-	-	-	-	13,407	13,407
Professor A Walubo	48,216	2,905	-	2,554	34,659	88,334
	847,536	**57,655**	**7,254**	**50,941**	**746,362**	**1,709,748**

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NOTES TO THE ANNUAL FINANCIAL STATEMENTS

34. MEMBER'S EMOLUMENTS (CONTINUED)

EXECUTIVE DIRECTORS/MANAGERS EMOLUMENTS

MARCH 2017

	PACKAGE TOTAL INCL. LEAVE PAYOUT; ALLOWANCES AND LUMP SUMS	BONUS	S & T	COMPANY CONTRIBU-TIONS	TOTAL
	R	R	R	R	R
G Gray (President)	2,547,000	51,317	11,105	178,117	2,787,539
N Bhuka (Executive Director)	1,428,745	45,647	354	100,720	1,575,466
N Buick (CFO)	2,387,986	64,045	8,158	228,921	2,689,110
R Gordon (Executive Director)	1,761,745	35,405	8,441	124,029	1,929,620
DC Stefan (Vice President)	1,839,802	-	103	71,087	1,910,992
MJ Mphahlele (Vice President)	2,082,967	41,920	8,955	146,461	2,280,303
B Spies (Executive Director)	918,888	-	800	113,412	1,033,100
	12,967,133	**238,334**	**37,916**	**962,747**	**14,206,130**

Prof. DC Stefan termination date was 31 August 2016. The lump sum payment made on termination is not disclosed due to confidentiality agreement with the ex- employee.

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

34. MEMBER'S EMOLUMENTS (CONTINUED)

MARCH 2016

	PACKAGE TOTAL INCL. LEAVE PAYOUT; ALLOWANCES AND LUMP SUMS	BONUS	S & T	COMPANY CONTRIBU-TIONS	TOTAL
	R	R	R	R	R
G Gray (President)	2,423,110	-	11,578	160,882	2,595,570
N Bhuka (Executive Director)	1,500,320	35,412	275	81,658	1,617,665
M Bikwani (Executive Director)	2,198,536	-	-	29,566	2,228,102
N Buick (CFO)	2,268,516	86,967	12,508	212,386	2,580,377
R Gordon (Executive Director)	1,699,277	-	25,112	106,008	1,830,397
DC Stefan (Vice President)	1,762,574	-	45,938	144,593	1,953,105
MJ Mphahlele (Vice President)	1,976,736	-	37,254	138,011	2,152,001
	13,829,069	**122,379**	**132,665**	**873,104**	**14,957,217**

35. RISK MANAGEMENT LIQUIDITY RISK

The entity's risk to liquidity is a result of the funds available to cover future commitments. The entity manages liquidity risk through an ongoing review of future commitments and credit facilities.

The table below analyses the entity's financial liabilities and net-settled derivative financial liabilities into relevant maturity groupings based on the remaining period at the statement of financial position to the contractual maturity date. The amounts disclosed in the table are the contractual undiscounted cash flows. Balances due within 12 months equal their carrying balances as the impact of discounting is not significant.

	LESS THAN 1 YEAR	BETWEEN 1 AND 2 YEARS	BETWEEN 2 AND 5 YEARS	OVER 5 YEARS
	R	R	R	R
AT MARCH 31, 2017				
Trade and other payables	104,036,715	-	-	-
AT MARCH 31, 2016				
Trade and other payables	102,237,232	-	-	-

Annual Financial Statements for the year ended March 31, 2017

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

35. RISK MANAGEMENT LIQUIDITY RISK (CONTINUED)

SAMRC's primary source of income is government grants and contractual income, funds receivable is estimated when preparing the MTEF. Budgets are prepared for each contract and spend is monitored on an ongoing basis to ensure the liquidity of the entity.

CREDIT RISK

This is the risk that one party to a financial instrument will cause a financial loss for the other party by failing to discharge an obligation. Management has a debtors policy in place, and this makes provision for credit evaluation for customers requiring credit above R1 million. Investments are allowed only in liquid securities and only with the SARB and the four major banks with high credit standing.

Contract work constitutes the biggest portion of the SAMRC's income, and the major exposure is delays in finalising contracts, and disputes in terms of whether or not the outputs have been produced. A certain number of contracts are stated and paid on a reimbursive basis, and this poses a risk if the funder is not satisfied with the outputs.

The SAMRC operates internationally and is exposed to foreign exchange risk arising from various currency exposures, primarily with respect to the US dollar; GBP and the Euro. SAMRC receives substantial funding from the UK; USA and Europe, as a result its statement of financial position can be affected by movements in the US dollar; GBP and Euro. Foreign exchange risk arises from future commercial transactions, recognised assets and liabilities and net investments.

Due to uncertainties in respect of when cash will be received from overseas, SAMRC does not hedge foreign exchange fluctuations.

Approximately 15% of SAMRC's Debtors (R4,893,926) are exposed to currency compared to 4% last year (R450,814),

SAMRC's project office does a scenario calculation looking at how much would be lost if there was an unfavourable currency change. On the basis of this outcome, it will be decided whether or not to proceed with a particular project.

MARKET RISK

INTEREST RATE RISK

In respect of income-earning financial assets interest- bearing financial liabilities, the table below indicates their average effective interest rates at the reporting date and the periods in which they mature.

Annual Financial Statements for the year ended March 31, 2017

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

35. RISK MANAGEMENT LIQUIDITY RISK (CONTINUED)

CASH FLOW INTEREST RATE RISK

FINANCIAL INSTRUMENT	AVERAGE EFFECTIVE INTEREST RATE	DUE IN LESS THAN A YEAR	DUE IN ONE TO TWO YEARS	DUE IN TWO AND MORE YEARS	2017	2016
	%	R	R	R	R	R
Trade and other receivables - normal credit terms	10.50 %	37,385,856	-	-	37,385,856	13,223,965
Cash in current banking institutions	- %	543,939,683	-	-	543,939,683	449,954,519
Trade and other payables - extended credit terms	10.50 %	104,036,715	-	-	104,036,714	102,237,232
Operating lease obligations	- %	4,330,711	1,267,035	-	5,597,746	386,000

FOREIGN EXCHANGE RISK

The entity does not hedge foreign exchange fluctuations.

FOREIGN CURRENCY EXPOSURE AT STATEMENT OF FINANCIAL POSITION DATE

EXCHANGE RATES USED FOR CONVERSION OF FOREIGN ITEMS WERE:

	2017	2016
	R	R
USD	13.4599	14.8820
GBP	16.7650	21.3906
Euro	14.3947	16.8911

The entity reviews its foreign currency exposure, including commitments on an ongoing basis. The entity has CFC accounts for specific foreign income grants whose payments are mainly made in foreign currency. The risk for currency fluctuations is eliminated by maintaining the CFC accounts for these grants.

Annual Financial Statements for the year ended March 31, 2017

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

36. GOING CONCERN

The annual financial statements have been prepared on the basis of accounting policies applicable to a going concern. This basis presumes that funds will be available to finance future operations and that the realisation of assets and settlement of liabilities, contingent obligations and commitments will occur in the ordinary course of business.

37. FRUITLESS AND WASTEFUL EXPENDITURE

	2017	2016
	R	R
Opening balance	175	8,828
Fruitless and wasteful expenditure current year	2,259	13,799
Recovered and approved	(2,434)	(22,452)
	-	175

Expenditure relates to interest on creditor accounts, invoices were in dispute and was only paid once the queries were resolved. Interest on municipal accounts have also been paid late due to the invoices not being received timeously, we have registered online and a number of municipal accounts are being received electronically, this should eliminate the risk of invoices not being received on time.

Interest charged due to negligence on the part of the staff member has been recovered from the employee.

Annual Financial Statements for the year ended March 31, 2017

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

38. IRREGULAR EXPENDITURE

		2017	2016
		R	R
Opening balance		547,481	320,496
Add: Irregular Expenditure - current period		484,298	1,472,658
Less: Amounts condoned		(909,409)	(1,245,673)
		122,370	**547,481**
ANALYSIS OF EXPENDITURE AWAITING CONDONATION PER AGE CLASSIFICATION			
Current period		122,370	547,481
DETAILS OF IRREGULAR EXPENDITURE – CURRENT YEAR			
Non compliance with Supply Chain	National Treasury - TR 16A6.1 & TR 16A6.4 -	74,644	39,520
Management Practices	SCM Practice note 8 of 2007/08; Paragraph 3.2. National Treasury - TR 16A6.1 & TR16A6.4	409,654	1,433,138
	SCM Practice note 8 of 2007/08; Paragraph 3.3. National Treasury - TR 16A6.1 & TR 16A6.4	-	-
	SCM Practice note 8 of 2007/08; Paragraph 3.4. SCM Practice note 7 of 2009/2010 and TR 16AS.3(a)(i)	-	-
	National Treasury - TR16A9.1(d) & Preferential Procurement Policy regulation 14	-	-
		484,298	**1,472,658**

DETAILS OF IRREGULAR EXPENDITURE CONDONED

At its meeting in May 2016; July 2016;October 2016 and January 2017 the Board condoned irregular expenditure of R547,481; R109,373; R181,050 and R71,505 respectively.

Irregular expenditure incurred for the period 1 January 2017 to 31 March 2017 is being submitted to the Board for condonation at the 30 May 2017 meeting. An amount of R351,916 relates to the incorrect points system used for one tender awarded in 2014 which terminates in 2017/2018 financial year. Measures have been put in place to ensure that there is no occurrence of this irregularity. The irregular expenditure has been incurred and has delivered value in the normal course of business.

Annual Financial Statements for the year ended March 31, 2017

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

39. DEVIATION FROM SUPPLY CHAIN MANAGEMENT REGULATIONS

Paragraph 12(1)(d)(i) of Government gazette No. 27636 issued on 30 May 2005 states that a supply chain management policy must provide for the procurement of goods and services by way of a competitive bidding process.

Paragraph 36 of the same gazette states that the accounting officer may dispense with the official procurement process in certain circumstances, provided that he records the reasons for any deviations and reports them to the next meeting of the accounting authority and includes a note to the annual financial statements.

All deviations were documented and submitted to the Accounting Authority or its delegate in terms of the Delegation of Authority Framework. Deviations were motivated in advance and subsequently approved.

40. PUBLIC FINANCE MANAGEMENT ACT (PFMA)

Section 55 (2)
No material losses through criminal conduct were incurred during the period ended 31 March 2017. Irregular and fruitless and wasteful expenditure incurred has been disclosed in notes 37 and 38.

Section 53 (3)
The entity may not accumulate surpluses unless written approval of the National Treasury has been obtained. Approval for the retention of the accumulated surplus as at 31 March 2017 has been requested (was obtained) from National Treasury.

Section 54 (2)
In terms of the PFMA and Treasury Regulation 28.1.5 the entity has developed and agreed to a framework of acceptable levels of materiality and significance.

41. BUDGET DIFFERENCES

MATERIAL DIFFERENCES BETWEEN BUDGET AND ACTUAL AMOUNTS

Forecasts of income and expenditure for the year are prepared monthly and tabled quarterly to the Board as part of the SAMRC management accounts. Variances to the approved budget are explained and the revised projections are approved by the Board and communicated quarterly to the Department of Health.

The outputs of the SAMRC are constrained by the available funding. When there is an increase in funding a lead time is required to plan for the utilisation of the additional funds. This lead time was underestimated in the 2016/2017 financial year and contributed to the underspending when compared to budget.

Efficiency savings were generated on infra-structural, communication and statutory costs and printing and stationery. Travel, subsistence and vehicle fleet cost and lease rentals were lower than budget.

Collaborative research costs were higher than budget due to payments made to SHIP and DFID funded grantees. The budget did not include the reversal of bad debt provision and the amount budgeted for bad debts was not utilised.

External research support, consulting and internal audit were lower than budget due to reduced consultancy services required.

Annual Financial Statements for the year ended March 31, 2017

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

41. BUDGET DIFFERENCES (CONTINUED)

Personnel costs were higher than budget due to the increase in the liability for employee benefit obligations.

Repairs and maintenance were higher than budget due to building repairs being budgeted as a capital item instead of as an expense.

Income from contracts, grants and services rendered is higher than budget mainly due to income from SHIP; Gender and Health and HIV Prevention and Research Unit activities recognised earlier than anticipated.

Information technology was lower than budget due to lower than anticipated cost for database development and support for information systems.

Other expenses were higher than budget as a result of higher than anticipated costs for library subscriptions. Other income is lower than budget due to the delay in conference centre projects.

Interest received was higher than budget due to the increase in interest rates and higher than anticipated average bank balances.

42. COMPARATIVE FIGURES

The commitment figure has been reclassified to include operating leases 2016 Reclassified - R27,583,113; 2016 Previous - R27,197,113.

43. SERVICES IN-KIND

During the year under review the SAMRC's Environment & Health Research Unit utilised office space at the University of Johannesburg and the Alcohol, Tobacco and Other Drug Research Unit utilised space at various district hospitals at no cost. The deemed fair rental value of the space is computed at R128,586 (2016 - R76,725).

In addition a staff member was seconded from Wits Health Consortium to the SAMRC to provide secretarial support to the President. The estimated annual value of this service is R331,000 (2016 - R304,000).

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STATEMENT OF FINANCIAL PERFORMANCE

	NOTE(S)	2017 R	2016 R
REVENUE			
Income from contracts, grants and services rendered		360,955,461	302,448,665
Rental income		5,488,289	4,316,568
Other income		1,194,621	5,651,108
Interest received - investment		35,137,720	25,845,197
Dividends received		129,177	102,691
Government grants & subsidies		576,833,333	547,273,684
TOTAL REVENUE		**979,738,601**	**885,637,913**
EXPENDITURE			
Employee related costs	21	(303,910,400)	(283,153,337)
Depreciation and amortisation		(19,012,805)	(18,627,305)
Impairment loss/ Reversal of impairments	22	-	1,480,701
Finance costs	23	(286,199)	(1,294,175)
Lease rentals on operating lease		(5,631,062)	(4,800,490)
Debt Impairment	24	65,020	1,294,477
Repairs and maintenance		(15,887,183)	(14,304,129)
General Expenses	25	(601,078,047)	(502,646,100)
TOTAL EXPENDITURE		**(945,740,676)**	**(822,050,358)**
OPERATING SURPLUS	28	**33,997,925**	**63,587,555**
Loss on disposal of assets		(763,697)	(2,314,732)
(Loss) / Gain on foreign exchange		(902,672)	732,972
Fair value adjustments	26	(53,229)	(1,266,456)
		(1,719,598)	**(2,848,216)**
SURPLUS FOR THE YEAR		**32,278,327**	**60,739,339**

ABBREVIATIONS

ABV	Antiretroviral therapy, Bleomycin and Vincristine
ARIC	Audit, Risk and IT Committee
ART	Antiretroviral Therapy
ARV	Anti-Retroviral
BCM	Body Cell Mass
BMD	Bone Mineral Density
BMI	Body Mass Index
BODS	Burden of Disease Survey
CCMA	Commission for Conciliation Mediation and Arbitration
CDC	Centre for Disease Control
CDM	Clean Development Mechanism
CEO	Chief Executive Officer
CFO	Chief Finance Officer
CHC	Community Health Centre
CHW	Community Health Worker
COX	Cyclooxygenase
CRA	Comparative Risk Assessment
CRS	Clinical Research Site
CSG	Child Support Grant
CSRI	Council for Scientific and Industrial Research
CVD	Cardiovascular Disease
DH	District Hospital
DSM-5	Diagnostic and Statistical Manual
DST	Department of Science and Technology
EAP	Employee Assistance Programme
EE	Employment Equity
EDCTP	European Developing Countries Clinical Trials Partnership
EMC	Executive Management Committee
ERMU	Entity-wide Risk Management Unit
FFS	Fee for Service
GACD	Global Alliance for Chronic Disease
GBV	Gender-Based Violence
GCP	Good Clinical Practices
GIPD	Grant Innovation Product Development
GLP	Good Laboratory Practices
GPCR	G Protein-Coupled Receptor
GRAP	Generally Recognised Accounting Practice
LDL	Low Density Lipoprotein
HIV	Human Immunodeficiency Virus
HIVR4P	HIV Research for Prevention
HPV	Human Papilloma Virus
HLA	Human Leukocyte Antigen
HPCSA	Health Professional Council of South Africa
HPV	Human Papillomavirus

ICT	Information Communication Technology
I-R	Ischemia-Reperfusion
KMC	Kangaroo Mother Care
LRA	Labour Relations Act
MARP	Most at Risk Population
MIC	Minimal Inhibition Concentrations
MTB	Mycobacterium Tuberculosis
MDR TB	Multi Drug Resistant Tuberculosis
MTEF	Medium Term Expenditure Framework
NCD	Non-Communicable Disease
NEHAWU	National Education Health and Allied Workers Union
NDoH	National Department of Health
NDoST	National Department of Science and Technology
NHI	National Health Insurance
NHRC	National Health Research Committee
NIH	National Institute for Health
NIAID	National Institute of Allergy and Infectious Diseases
NSDA	National Service Delivery Agreement
OSD	Occupational Specific Dispensation
PFMA	Public Finance Management Act
PHC	Public Health Clinic
PD	Pharmacodynamics
PK	Pharmacokinetics
PLWHA	People Living with HIV/Aids
PMTCT	Prevention of Mother to Child Transmission
PPIP	Perinatal Problem Identification Programme
POC	Point of Care
PSCBC	Public Service Coordinating Bargaining Council
SACENDU	South African Community Epidemiology Network on Drug Use
SCM	Supply Chain Management
SHIP	Strategic Health Innovation Partnership
STAT	Signal Transducer and Activator Transcription
SWEET	Study of Women Entering and in Endocrine Transition
TB	Tuberculosis
TESA	Trials of Excellence in Southern Africa
TENET	Tertiary Education and Research Network
TIA	Technology Innovation Agency
US	United States
VCT	Voluntary Counselling and Testing
VF	Ventricular Fibrillation
VIPRU	Violence Injury and Peace Research Unit
VT	Venticular Tachycardia
WHO	World Health Organisation
XDR	Extensively Drug-resistant Tuberculosis