



**Health Systems Research Unit**

**Request for Applications (RFA):**

**Improving Sexual, Reproductive, Maternal and Newborn Health**

**MRC-RFA-HSRU-01-2018**

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## 1. Introduction

The mission of the South African Medical Research Council (SAMRC) is to improve the nation's health and quality of life by conducting and funding relevant and responsive health research, development, innovation and research translation. The SAMRC is the largest local funder of health research in Southern Africa and supports high quality research, innovation and capacity development through a variety of grant programs and strategic partnerships.

The Health Systems Research Unit of the SAMRC (HSRU), in partnership with the National Department of Health (NDOH), Clinton Health Access Initiative (CHAI), University of Limpopo Trust (ULT), University of Pretoria SAMRC unit on maternal and infant health strategies and ELMA Philanthropies are embarking on work to strengthen sexual, reproductive, maternal and newborn health (SRMNH) in South Africa. The work, entitled 'An Integrated Quality Improvement Approach to Improve Sexual, Reproductive, Maternal and Neonatal Health Outcomes' aims to improve sexual, reproductive, maternal and neonatal health outcomes in South Africa by transforming health service delivery to provide reliable, high quality care to every mother and baby. South Africa, has a relatively strong health system, in terms of infrastructure, skills, financial and information and supply chain systems. Maternal and newborn mortality remain a challenge primarily due to the inequitable distribution of these systems and a lack of management skills to reduce inefficiencies and improve the quality of clinical care across the entire health system. Additionally, health care services are not coordinated for the benefit of the end user, the patient. For the past seven years, South Africa has invested in improving sexual, reproductive, maternal and child health outcomes. South Africa's institutional maternal (130 per 100,000 live births) (1) and neonatal mortality rates (12.4 per 1,000 live births) (2017)<sup>1</sup> remain high. Additionally, the neonatal mortality rate at 12.4 per 1,000 live births nationally (2017)<sup>2</sup>, masks wide disparities between provinces (Western Cape: 8.5 per 1,000 live births vs Eastern Cape 13.2 per 1,000 live births)<sup>3</sup>. Since 2011, the institutional maternal mortality (iMMR) has decreased substantially due to changes in South Africa's antiretroviral treatment (ART) regimen, which increased access to lifelong maternal ART at higher CD4 cell counts (2). Despite relatively high levels of financial investment into healthcare (8.9% of GDP), free public health services and high levels of antenatal care, maternal and neonatal outcomes in South Africa remain poor. Although South African law guarantees access to sexual and reproductive health services, many women and girls face barriers accessing quality, comprehensive sexual and reproductive health

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<sup>1</sup> Data abstracted from DHIS

<sup>2</sup> District Health Information System (DHIS) data analysis

<sup>3</sup> District Health Information System (DHIS) data analysis

services. 58% of sexually active women of reproductive age use a modern method of family planning, yet an additional 18% of women have an unmet need for contraception. About 16% of adolescent girls have begun childbearing; this rate of teen pregnancy has remained unchanged since 1998. Approximately 24% of adolescents have an unmet need for contraception. Contraceptive use is dominated by short-acting methods, particularly injectable contraceptives; just 8% of contraceptive users use implants or IUDs. For South Africa's population size, they have the highest burden of HIV in the world. The generalized HIV epidemic makes maintaining sexual and reproductive health more challenging for South Africans, and young women contract HIV at twice the rate of young men<sup>4</sup>. South Africa has one of the highest rates of rape in the world, further contributing to the risk of HIV and unintended pregnancy among young women.

### **Maternal mortality in South Africa**

The main determinants of maternal mortality in South Africa are: non-pregnancy related infections (40%) (primarily related to HIV, tuberculosis, pneumonia, and meningitis), hypertension (16%) and obstetric haemorrhage (13%) (5). HIV infection accounts for 95% of all non-pregnancy related infections. A third of iMMR were due to HIV infections in 2015 (6), which is not surprising, since 30% of all pregnant women in South Africa are HIV positive.<sup>[1]</sup> . Of notable concern, is the significant increase in mortality due to excessive bleeding during caesarean deliveries. These jumped from 78 cases in 2002-2004 to 221 cases in 2011-2013. The majority of these deaths are potentially avoidable—according to the latest mortality audits, 33% of deaths due to excessive bleeding during or after caesarean delivery lacked a skilled doctor and 20% lacked a skilled nurse. Deaths related to excessive bleeding are related to poor surgical technique, poor monitoring post caesarean delivery, lack of blood supply, and poor emergency (EMS) transport.

Hypertensive deaths are primarily due to pre-eclampsia. The onset of pre-eclampsia/eclampsia can happen quickly (1), and has no definitive treatment other than delivery (although correct treatment can improve survival) Therefore, an experienced health worker and frequent antenatal visits are required to identify hypertension in high risk mothers during pregnancy. Women with hypertension necessitate frequent observation and reliable laboratory services to identify pre-eclampsia early. Due to the risks of surgery and of preterm delivery of newborns, accurate diagnosis of pre-eclampsia is also critical to avoid doing unnecessary harm. To this end, the NDoH recently increased the recommended frequency of ANC visits, from four to eight visits.

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<sup>4</sup> <http://www.statssa.gov.za/?p=9836>

<sup>5</sup> Data abstracted from DHIS

<sup>6</sup> District Health Barometer 2016/2017

### **Institutional Neonatal Mortality**

The first four weeks of life, known as the neonatal period, represent the most vulnerable time for a child's survival. Access to neonatal care during the first 24 hours of life is essential for a baby's survival. While the institutional neonatal mortality rate in South Africa has remained the same for nearly two decades, the proportional mortality from common causes of neonatal deaths has changed significantly. The causes of neonatal mortality include prematurity complications (47.9%), intrapartum complications, mainly intrauterine hypoxia (24.3%) and infections (11.6%) (4). Congenital disorders ("birth defects") are now beginning to feature as the fourth most common cause of neonatal deaths. Neonatal deaths can be prevented with low-cost, high impact interventions including the provision of antenatal steroids, breastfeeding and infection control. The majority of premature deaths are due to extreme low birth weight (60%) (<1,000 grams) (4). Interventions to prevent prematurity related deaths should focus on addressing causes of prematurity and appropriate case management of potentially viable preterm births.

### **Institutional Stillbirths**

Frequent ANC visits, (not necessarily the building of new infrastructure), are vital to addressing maternal infections and low birth weight babies and thus prevention of stillbirths and early neonatal deaths. Stillbirths or babies born with no signs of life, die mainly due to lack of the identification of high-risk foetuses. Two-thirds of stillbirths occur during the antepartum period. Causes of macerated/antenatal stillbirths include undiagnosed intrauterine growth restriction and post-maturity, congenital infections and congenital abnormalities; although, 50% of antepartum death are unknown, the remaining 50% could be prevented with improved ANC. On the other hand, fresh stillbirths occurring during labour and delivery are a very sensitive indicator of the quality of care during this period.

The integrated sexual, reproductive, maternal and newborn health (SRMNH) initiative seeks to reduce unplanned pregnancies, maternal and neonatal mortality and stillbirths in three provinces and to develop a replicable model and investment case for national scale through government adoption and funding. As a lower middle-income country with significant health resources (8.9% of GDP)<sup>5</sup>, South Africa should be able to ensure safe, quality care around the time of birth, however due to inequality and inefficiency in health care delivery, women and babies continue to be at higher risk than in comparable countries. This work will commence in three catchment areas attached to Dora Nginza Hospital, Letaba Hospital and Themba Hospital in

three provinces, namely Eastern Cape, Limpopo and Mpumalanga, and will then expand to these three provinces, and subsequently, nationally.

## 2. Funding Opportunity Description

The SAMRC HSRU is seeking proposals from South African public research organizations to strengthen health systems for improved sexual, reproductive, maternal and newborn health. Improving SRMNH requires a multifactorial approach to intervention design across the spectrum of prevention and care, comprised of a package of commodities, adequate numbers and distribution of clinical staff, and skills and enforced standardized protocols for timely diagnosis, treatment and referral. This RFA aims to support:

- a small number of highly collaborative implementation science / operational research / embedded research / innovations in the areas of Sexual Reproductive Maternal and Newborn Health. Pilot projects / feasibility projects are allowed, as long as they are embedded within the health system
- research that strengthens health systems including those that aim to close critical gaps within the health system
- studies to refine current service delivery so that these can be replicated at scale and integrated into routine care packages

Priority research areas include:

- How to strengthen health systems for people. This includes:
  - improving the process of care (competent care and systems and / positive user experiences), and
  - improving the quality of care to improve health outcomes, user confidence in the health system and increase user economic benefits. This includes:
    - developing and validating measurements of quality for SRMNH
    - assessing equity of quality of care across dimensions of vulnerability (settings (rural versus urban; districts versus quaternary care; primary versus quaternary care); demographics and diseases)
    - analyzing the effect of quality of care on health care providers and users
- How to strengthen the foundations of the health system including:
  - understanding population health needs and expectations, including:
    - exploring how demand for quality health care can be improved

- refining the best design for district-level learning strategies e.g. quality improvement collaboratives,
  - improving health system governance,
  - improving the accessibility and organization of care,
  - strengthening the health workforce (numbers, skills and support) and
  - improving access to and use of tools (equipment, medicines, data) within the health system, including:
    - how to best disseminate and use guidelines
    - how to improve data quality at facility, district, provincial and national levels
- How to scale up known effective interventions in the areas of SRMNH,
- The development or testing of novel innovations that could be potential game changers in improving SRMNH: Innovations may include:
  - process innovations that improve health service organization / governance / service delivery platforms
  - process innovations that improve quality of care
  - innovations that improve data use and quality in facilities
  - novel commodities that need feasibility and acceptability testing e.g. an innovation that monitors neonatal hypothermia

The research outputs would improve access to quality sexual, reproductive, antenatal, obstetric and new born care.

The total funding available for this priority area is approximately R 1.2 million between April 2019 and March 2020 (year 1). We anticipate funding a maximum of three projects at up to R400 000 each or six smaller projects (up to R200 000 each).

Funding may be renewable for years 2 (April 2020-March 2021) and 3 (April 2021-March 2022), but the available amounts will be less, as the intention of this work is to build and strengthen routine capacity and systems.

The total amount available for year 2 is approximately R435 000 (R145 000 per project if three projects are funded). The total amount available for year 3 is R168 000 (R56 000 per project if three projects are funded). Applicants do not need to submit budgets for years 2 and 3 if there is no need for funding support during years 2 and 3. Priority will be given to projects in the following catchment areas:

- Dora Nginza Hospital and all its feeder facilities (Eastern Cape);
- Letaba Hospital and all its feeder facilities (Limpopo); and
- Themba Hospital and all its feeder facilities (Mpumalanga).

Projects outside these catchment areas will be considered if they address a priority problem and could provide solutions to SRMNH challenges in South Africa

### 3. Eligibility

This is an open call for proposals from researchers based at South African universities, science councils (including the SAMRC) and other public institutions, including:

- Any institution approved by the Minister of Science and Technology for NRF funding
- Locally registered not-for profit research organisations whose primary purpose is to conduct research and/or product development – such entities should preferably have at least one local university or science council collaborator and may be subject to due diligence before the award of funds
- Technical advisors within the provincial and district offices District Clinical Specialist Teams
- National, provincial or district research organisations
- Non-governmental / community-based organisations whose work is embedded within the health system

The following are **not** eligible to apply for funding through this RFA but may be included as sub-contractors if they provide a service or capability that is not available among the project partners or among other eligible organizations:

- Private / for-profit South African and foreign companies and institutions
- Foreign not-for-profit companies, research institutions, universities, civil society groups and non-governmental organizations

In addition to the above, principal applicants **must** be South African citizens or permanent residence holders. While there is no limit to the number of applications submitted per institution, principal investigators may only submit one application each as the principal investigator, but may be involved in more than one application if listed as a co-investigator.



## 4. Application Process and Timeline

It is critical that applicants follow the instructions in this RFA. **Applications will not be processed further or considered for funding if they:**

- Are deemed non-responsive to the specific topics included in this RFA
- Are received after the deadline for submission
- Are incomplete, i.e. do not have **all** sections of the proposal and budget templates completed and all requested supporting documents attached
- Are from non-eligible organizations

All applications must be submitted using the SAMRC Proposal and Budget templates available on the [SAMRC website](#). The length of the application should not exceed 20 single-spaced A4 pages, excluding annexures, using Arial 11 font. The submission must include the following:

- The fully completed Proposal Template signed by the relevant authority at the institution and the PI – the proposal may be submitted as a Word document with a separate scanned pdf with signatures or a converted pdf document with signatures
- The fully completed Budget Template in Excel – templates are provided for projects that either include only 1 PI or multiple PIs
- CVs of the principal investigator and co-principal investigators

The full set of application documents must be emailed to [hsru.rfps@mrc.ac.za](mailto:hsru.rfps@mrc.ac.za) by 6 pm SA time on 1 February 2019. Any applications received after this date and time will not be accepted.

The timelines for the application process are shown in Table 1.

**Table 1 Application timelines**

<b>RFA Release Date</b>	<b>19 December 2018</b>
<b>Application Due Date:</b>	<b>6pm (SA time) 1 February 2019</b>
<b>Peer Review of Applications</b>	<b>February 2019</b>
<b>Internal Approvals</b>	<b>March 2018</b>
<b>Notification of Awards</b>	<b>April 2019</b>

For more information on the SAMRC's General Terms and Conditions of Funding, including allowable and non-allowable costs, please go to <http://www.samrc.ac.za/innovation/funding>.

## 5. Review and Evaluation of Proposals

There will be a two-step review and evaluation process:

1. Internal SAMRC screening for responsiveness to all the specified administrative and procedural provisions required in the RFA.
2. National and international peer review to assess the scientific merit (and other review criteria as specified below) of applications found to be responsive to the RFA.

### **Internal screening**

All applications will be screened by the SAMRC for completeness and responsiveness to the RFA and its administrative requirements/provisions. If the application is found to be incomplete or unresponsive to the provisions and priority areas described in the RFA, or was submitted after the deadline, the application will not be processed further.

### **Peer review**

Each responsive and complete application received by the due date will be reviewed by local and international reviewers who are experts in the RFA priority areas. Reviewers will consider each of the review criteria below in determining scientific and technical merit, and provide an overall score for the proposal.

### **Significance**

Does the proposal fit well within the objectives and scientific remit set out in the RFA? Will the project generate new scientific knowledge and technical capability? Do the applicants indicate awareness of complementary research underway elsewhere and how their research will add value to the field? Will the project likely result in a new and/or improved health product, practise or solution, impact public health policy and /or influence clinical practice in the relevant priority areas listed in the RFA?

### **Investigator(s) and research team**

Is the team a single institution or PI or large, multi-institutional and multi-disciplinary? If the project is collaborative in nature, do the investigators have complementary and integrated expertise? Are the PIs, collaborators, and other researchers well suited to and qualified to undertake the project? Do they have international scientific standing in the field, including publications and citations? Does the application address capacity development and support of new investigators?

### **Innovation/Impact**

Is the proposed project and approach highly innovative? Does the proposed project challenge and seek to shift current research or clinical practice paradigms by utilising novel theoretical concepts, approaches or methodologies, instrumentation, or interventions? What is the stage of development of the technology, i.e. is it still basic research or has proof of concept and clear practical application been demonstrated? Is the technology risk high or low? Is there a likelihood of generating strong and protectable IP with freedom to operate?

### **Environment**

Will the scientific environment in which the research will be conducted contribute to the probability of success? Are the institutional support, equipment and other physical resources available to the investigators adequate for the proposed project? Will the project benefit from unique features of the scientific environment, patient populations, existing research programmes, collaborative arrangements or other resources?

### **Methodology and Approach.**

Are the overall strategy, methodology, and analyses well-reasoned and appropriate to accomplish the specific aims of the project? Are the milestones and deliverables clearly thought through and articulated? Are potential problems, alternative strategies, and benchmarks for success presented? Has sufficient preliminary or pilot work been done to inform the design and feasibility of the study? Is the proposed approach relevant to the socio-political, cultural, legislative and economic contexts of the study settings? Are the plans feasible, with a realistic timeline? Is there credible supporting data on which the study is based (applicants must supply this). Are all of the necessary components for product development in place and/or available to the investigators?

## **6. Selection of Awardees**

The award of grants emanating from this call will be determined by the ELMA - SRMNH Project Management Committee and the Executive Management Committee of the SAMRC, taking into account the results of the peer review process. The SAMRC may also consider additional factors, such as geographical and institutional diversity and transformation in making its final determinations.

Based on the scientific merit of the applications and/or budget limitations, the SAMRC may award fewer or more grants than expected and may elect not to allocate all of the available funds to awards from this RFA.

## 7. Important Information

- The SAMRC may seek to verify any information provided by applicant's through independent research or by third parties approved by the SAMRC.
- The SAMRC assumes no responsibility for costs incurred in responding to this RFA or any further invitations or communications.
- The SAMRC reserves the right to amend or withdraw the RFA at any time.
- Successful awards may be subject to addressing reviewer comments and/or negotiation of project plans and budget.
- Grants will be paid to the institution where the principal investigator is employed, as set out in a funding agreement to be concluded between the parties.
- The SAMRC may use text, video or other visual representation submitted by successful applicants on the SAMRC website or on SAMRC materials for publicity and/or public awareness.

## 8. Contact Details

Please direct any requests for information and questions/queries on this RFA **by email** to Ms Yages Singh at [hsru.rfps@mrc.ac.za](mailto:hsru.rfps@mrc.ac.za) and [Yages.Singh@mrc.ac.za](mailto:Yages.Singh@mrc.ac.za).