SAPRIN Q4 highlights. (1 January to 31 March 2023)
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Research underway

a. Adolescent reproductive health

To address the question, "what is the state of adolescent reproductive health in rural populations and did the restrictions of the Covid-19 lockdown impact on reproductive health rights?", the United Nations Fund for Population Activities (UNFPA) funded research on adolescent sexual health and reproductive rights. To facilitate the development of scientific leadership skills, each nodal project was led by a mid-career African scientist. At a network level SAPRIN facilitated the multi-nodal study in three rural nodes (i.e., Agincourt, AHRI and DIMAMO) and the data science hub created the data specification and undertook the curation of the data from the baseline study. The data scientists also harmonized the data from the three nodes and created a database that will now be analysed and made publicly available.

b. Covid-19 related mortality

The research question, "how much did Covid-19 impact mortality rates?" is being addressed in a study of Covid-19 mortality surveillance through verbal autopsies, whereby highly skilled fieldworkers are trained to use a tablet computer in an interview with the closest caregiver of the deceased. The data is analysed by a sophisticated computerised algorithm to estimate of the most likely cause of death, given the reported signs and symptoms discussed and recorded in the interview. All three established SAPRIN nodes are contributing to the study, characterizing all-cause mortality rates and trends, by age and sex, to measure excess mortality due to the Covid-19 pandemic.

c. Multimorbidity

SAPRIN also collaborated in the "Multimorbidity in Africa: Digital innovation, visualisation and application" (MADIVA) project and has been part of the Data Management and Analysis Core (DMAC). The overall goal of the DMAC team has been to implement a comprehensive data management plan and effectively exploit data science techniques to enable the Hub to better understand multimorbidity and its drivers in low-resource settings in sub-Saharan Africa. The aim of the project is to improve prevention and management of multimorbidity and enhance population health and wellbeing. SAPRIN's role has been to develop the data management plan, harmonise between different nodes, conduct quality assessment of data, the development and

implementation of analytic techniques and data visualisation tools, and to conduct workshops on these topics.

Capacity Development

   a. **Data Internship**
   A data internship position was developed and recruited to provide an opportunity for a promising graduate to work in the SAPRIN data science office which covers all aspects of ICT requirements for the national research infrastructure

Research translation

   a. A seminar was given by SAPRIN at Statistics SA on 27 January 2023 called "**Measuring rural households and electricity access**: A comparison of national census data and small-area health and demographic surveillance system (HDSS) data". The collaborative team, from SAPRIN/SAMRC, UCT/DataFirst, and Statistics SA, fed back results that used national census data in the enumerator areas covering the Agincourt population node and compared these with the findings from the node. We compared household counts and electrification rates as measured in the 1996, 2001 and 2011 national censuses. The household measurements in the two systems agree within a few percentage points in 2001 and 2011, but show much bigger divergences in 1996. The population counts also show impressive agreement, with perhaps some over-enumeration of older males in the national census.

   b. SAPRIN contributed research findings to a policy conference held by the Department of Social Development on **Sexual and Reproductive Justice** on 22-24 March 2023. The research focused on female and male internal migrants and what is needed to keep them safe and healthy while away from home and included discussing migration as a potential risk factor for HIV transmission.

   c. To engage with the National Department of Health, SAPRIN presented at a **National Health Research Council** meeting in Pretoria on 13 February 2023. Aspects covered included enhancing data-driven decision-making to ensure a comprehensive understanding of health challenges, improving health outcomes, improving the efficiency and effectiveness of the health system, and allowing for accurate planning of programmes and interventions. Key domains discussed included monitoring and evaluating the National Health Insurance implementation and strengthening the national death register by calibrating it in SAPRIN nodes, using verbal autopsy to ascertain the most probable cause of death. This relationship will continue to be developed, with support from the SAMRC.

International collaborations

Internationally, SAPRIN is having an impact on the health and economic wellbeing of populations across Africa through the formation of an **African Population Cohort Consortium**. The SAPRIN

director co-leads a team of African scientists that won a grant from the Wellcome Trust with other partners to establish a harmonised network of longitudinal population cohorts in a range of countries. The South African model for population surveillance will provide the template to establish standards across the continent. The outcomes will include the production of robust and timely data on biology, genetic variation, health, behaviour, socioeconomics, and the environments that are needed to predict and combat disasters in future; and to deal with currently prevalent health burdens in Africa, such as a rising prevalence of non-communicable diseases and mental health problems, and existing burdens such as HIV/AIDS, tuberculosis, malaria, and malnutrition, all exacerbated by inequity and poverty, and in a context of migration and urbanisation. Such data have the potential to spark a scientific revolution in Africa, leading to new and meaningful understanding – with global significance – and guiding interventions specific to the continent to enhance population and individual health and wellbeing.