

Zithulele Research: Identifying Novel Intervention Strategies in Deeply Rural South Africa

Zithulele is a deeply rural area surrounded by the Wild Coast in the Eastern Cape. Although it lies in **one of the most impoverished provinces in South Africa**, Zithulele Hospital stands out for its commitment to excellence in health delivery. In 2009, the hospital was recognized by the Lancet as a **beacon of hope**. Since then, the unique blend of non-profits, medical professionals, educators, community development workers, and students has brought about the opportunity to research and better understand the best ways to improve health in rural areas.

Baleta, A. (2009). Rural hospital beats the odds in South Africa. *The Lancet*, 374(9692), 771-772.



Rural Challenges in the Eastern Cape

Having access to high quality care in rural areas has proven to be a global challenge. **People living in these areas face large distances to clinics, geographical barriers, poor infrastructure, lack of running water, and fewer resources.** The high cost of transportation affects routine medication access and patient utilization of care. Within the Zithulele rural community:

- 81% of the population is unemployed
- The average household income is R14,600 each year
- Only 6% of the population has water provided by local or regional services
- 34% do not have access to a toilet or a latrine

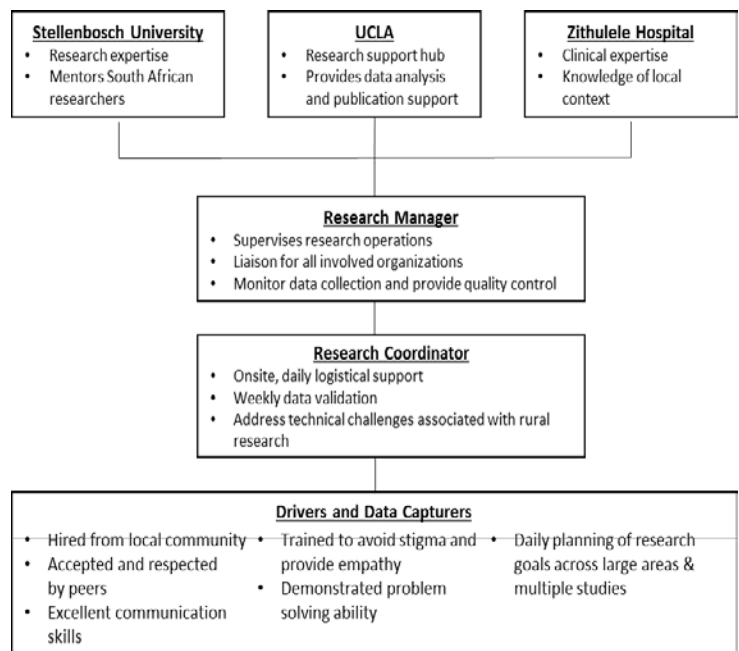
Research in the Rural South Africa

There are few places in rural South Africa that collect and report on health data in the community. When it exists, data from the Eastern Cape is often particularly flawed. Zithulele Research utilizes the combination of an incredibly hard working and dedicated field team and mobile technology. Programmed mobile phones allow data collectors to interview and record participants' responses and GPS coordinates in real time.

However, using technology in a rural setting presents a unique experience. Zithulele often faces power outages and limited internet availability. Despite these barriers the Zithulele research team has had tremendous success in recruiting pregnant mothers in each of the studies and conducting follow up assessments.



Collaborative Research Team Model



ZiBFUS: Zithulele Births Follow-Up Study

Families living in rural communities face multiple obstacles, the Zithulele Births Follow Up Study set out to gather information about infants in the first four years of life. From 2013 to 2017, this study followed a cohort of 470 mothers and gathered in depth data on topics such as access to health care, immunizations, feeding practices, HIV status and care, social support, maternal mental health, food security, and infant disease mortality.

Preliminary ZiBFUS findings:

- 99% of mothers receive antenatal care
- 63% of pregnancies are unplanned
- 80% of mothers are unemployed
- 16% of mothers are in school
- 29% are mothers living with HIV
- 92% of families rely on government grants
- 59% of mothers plan to exclusively breastfeed
- Only 22% of mothers are exclusively breastfeeding at 3 months
- 66% of mothers add Nestum or baby porridge to infant formula



Le Roux, K., Akin-Olugbade, O., Katzen, L. S., Laurenzi, C., Mercer, N., Tomlinson, M., & Rotheram-Borus, M. J. (2016). Immunisation coverage in the rural Eastern Cape — are we getting the basics of primary care right? Results from a longitudinal prospective cohort study. *South African Medical Journal*, 107(1), 52–55.

Le Roux, K., Christodoulou, J., Katzen, L. S., Dippenaar, E., Tomlinson, M., Le Roux, I., & Rotheram-Borus, M. J. (in press). Child outcomes based on maternal depression in rural South Africa. *Archives of Women's Mental Health*.

Le Roux, K., Christodoulou, J., Katzen, L. S., Dippenaar, E., Tomlinson, M., Le Roux, I., & Rotheram-Borus, M. J. (in revision). Maternal and Child Outcomes from Birth to Two Years: A Longitudinal Cohort Study of Adolescent vs Adult South African Mothers. *Euro J of Public Health*.



ZiMBA: Zithulele Mothers-to-Be Assessment

Families living in rural areas face different challenges than those living in peri-urban communities. The Philani Mentor Mother Program has been successful in improving maternal and child health outcomes in Cape Town, but it is unclear if Mentor Mothers have the same success in the rural Eastern Cape.

ZiMBA compares the health outcomes of mothers and infants who are visited by Philani Mentor Mothers to those who are receiving standard care. The data gathered from this study will be used to learn about the effectiveness of the Mentor Mother Program in a rural setting with hopes to improve maternal and infant health care in these particularly vulnerable areas.

Le Roux, Karl, Ingrid M. le Roux, Nokwanele Mbewu and Emily Davis. The Role of Community Health Workers in the Re-Engineering of Primary Health Care in Rural Eastern Cape. *South African Family Practice*, 57, no. 2 (2015): 116-120.

ECSS: Eastern Cape Supervision Study

Paraprofessional, government-sponsored, home-visiting community health workers (CHW) have been employed in the Eastern Cape since XXXX to help mitigate the shortage of professional healthcare workers in rural areas. However, the CHW have often operated with very little training and oversight. Many CHW do not go on home visits due to work required in clinics, lack of transport, or simply because there is no supervision.

ECSS is a randomized controlled trial that evaluates whether additional supervision and support for these CHW will improve maternal and child health outcomes. All 37 CHW stationed at 8 different clinics surrounding Zithulele Hospital received six weeks of comprehensive training. In addition to the training, the CHW in the ECSS intervention group also receive on going training and support from two supervisors.

Rotheram-Borus, M.J., Le Roux, K., Le Roux, I. M., Christodoulou, J., Laurenzi, C., Mbewu, N., & Tomlinson, M. (2017). To evaluate if increased supervision and support of South African Government health workers' home visits improves maternal and child outcomes: study protocol for a randomized control trial. *Trials*, 18, 368.



