The Ruben Centre
Fighting Malnutrition in Kenyan Slums
Che Hooper

The Context: Life in Mukuru slums
Dozens of mothers line up outside the Ruben Centre, holding their little babies. They file into the Nutrition Clinic, four at a time, where their babies are undressed, weighed, measured, and redressed in the span of less than a minute. It is a well-oiled conveyor-belt like process, and it has to be - there’s no time to waste as more mothers and babies wait outside. The Ruben Centre sees hundreds of babies a day.

Many of these mothers have walked kilometres through the haphazard streets of the Mukuru slums. They walk past compact corrugated iron houses, where families are cooking meals inside on wooden stoves. The smoke filling up the unventilated rooms is bad enough to make their eyes water. Most of these houses do not have electricity. Those that do are connected through live wires that insert directly into the metal walls, meaning that in the rain, touching the sides of these shacks is an electrocution risk.

Babies slung across their bodies, the mothers navigate unsteady terrain. Careful where they walk lest they step in garbage or faeces (hopefully animal), or trip on a decaying carcass of one of the many deceased animals. When it rains and the water turns the place to mud, it’s like wading through a sewer.

The 600,000 people living in the Mukuru slums, located on the outskirts of Nairobi, live below the poverty line. Many have come from far off rural areas of Kenya in search of work in the capital. Unfortunately most of them are uneducated and
unskilled, and despite their best efforts, remain jobless. Health literacy is poor and access to healthcare is even poorer.

The Problem: Childhood malnutrition
Childhood malnutrition is a significant issue in Mukuru. Malnutrition can be measured in three main ways: stunting, which refers to a measure of height-for-age; wasting, a measure of weight-for-height; and underweight, a measure of weight-for-age. The stunting, wasting and underweight percentages of children under five in Mukuru are 40.6%, 13.3%, and 30.5% respectively.[2] These percentages are more than double those for the whole of Nairobi, and higher than the national average for Kenya. Based on the World Health Organisation’s descriptors, the prevalence of stunting and wasting of children under 5 in the Mukuru community is very high and high, respectively,[3] indicating a huge need for an organisation like the Ruben Centre to find a solution in this area.

The solutions to malnutrition in children are multifactorial, diverse, and complex. UNICEF’s Conceptual Framework of the Determinants of Maternal and Childhood Nutrition [5] explores the requirements of good nutrition in children as an interplay of adequate food, adequate feeding, and a
healthy environment. This includes not only nutrient-rich, age appropriate foods prepared in a sanitary manner, but also a healthy living environment and access to health and nutrition services. These factors will contribute to a sufficient diet and reduction in morbidity, ultimately resulting in improved nutrition.

Looking firstly at the contributing factor of adequate food in the Mukuru slums, it is apparent that food security is an issue. Weekly food expenditure by households in Mukuru equates to around 42% of total household expenditure; [7] compared to 17% of total household expenditure in Australia [8]. In response to this food insecurity, 69% of households interviewed by Amendah D et al. [7] described eating fewer meals per day due to lack of money to purchase food, 27% of households had to take out a loan to purchase food, 16% reported spending a full day without eating, and 7% resorted to begging for money or food.[7]

Another study of 150 households in the Mukuru slums found that 80% had reported a lack of food in the past month [9] and “although a large proportion of the households have an average dietary diversity score, the diet consists mainly of carbohydrates and minimally of protein”, [9] which may further contribute to malnutrition.

A healthy environment is also vital for proper nutrition as poor sanitation and food preparation practices increases the spread of communicable and food-borne illnesses, leading to increased morbidity. The Mukuru slum has no system of waste disposal and upon walking the ‘streets’ surrounding the Ruben Centre, it is obvious that household waste is dumped in the nearby river or on the street where people walk and children play. Muoki M et al. [10] found that 55% of households they interviewed in Mukuru used ‘flying toilets’, where human waste is “disposed into polythene bags and thrown [into] garbage dumps, nearby rivers or near the houses”,[10 p. 391] 42.5% of households disposed of garbage very close to their homes and 47.5% did not wash their hands when preparing food. Muoki also suggests that within the children in the Mukuru slums, there is strong correlation between their morbidity and nutrition status.[2] Those children with illnesses such as malaria, diarrhoeal, or febrile diseases were more likely to be malnourished. Hence, food security and proper sanitation may be factors contributing to the high numbers of malnourished children in Mukuru.

The Potential Solution: The Ruben Centre

The Ruben Centre was first established in 1986,[1]
when it started as a school for a few dozen children in the slums. Since then, it has grown to include a hospital, secondary school, community garden, and radio station. The Ruben Hospital has a maternity wing, antenatal clinic, pharmacy, a TB and HIV clinic, pathology lab, a small emergency department, and a physiotherapist. They provide education and healthcare at low-cost or free to the hundreds of thousands of people living in the Mukuru slums.

In order to tackle the huge numbers of malnourished children in Mukuru, one of the projects run by the Ruben Centre addresses some of the factors that may be contributing to malnutrition. The Ruben Centre runs a supplemental feeding program which provides additional food to those struggling with food security and includes a strong educational component which aims to increase the community’s health literacy when it comes to nutrition.

Babies are screened for malnutrition using their length, weight, and arm circumference. If a child is found to be moderately or severely malnourished, the child and their family are provided with a calorie dense ‘peanut paste’ and corn/soy flour blend which is high in protein and calories. The child is reviewed regularly to ensure they are progressing and these follow-ups at the clinic allow for further supplemental food, education, and healthcare to be provided to the child and their carer. Education is provided on nutrition, sanitation, and appropriate food preparation, with the aim to educate the carers on how to increase nutritional intake and reduce the spread of communicable diseases. Immunisations, multivitamins, and vitamin A supplements are also given to the children. The Ruben Centre treats between 30 and 80 malnourished children per month and their work is vital to the strength of the local community.

A similar program run by another organisation in Mukuru, which combines provision of the corn/soy flour blend with nutritional education for the caregivers, showed positive increases in stunting, wasting, and weight-for-age Z-scores for the children involved in the program.[10] Looking at global randomised controlled trials of supplemental feeding programs with or without education, Bhutta Z et al. [11] reports that education alone is sufficient to decrease malnutrition in food secure populations, but that in non-food secure populations (such as Mukuru), food supplementation is of most benefit when combined with education, providing hope that the Ruben Centre’s program will show positive outcomes.

Whilst the effects of the supplemental feeding program at the Ruben Centre have not been quantified, the combination of increasing food security, providing nutritional education, and educating carers on appropriate sanitation and preparation of food aligns with what we know about successful supplemental feeding programs. These initiatives show promise in addressing the factors that affect the malnutrition of
children within the Mukuru population. The Ruben Centre provides valuable health care to a very disadvantaged community in Kenya. The work they do is significant and life-saving for the thousands of children who, without the work of the Ruben Centre, would be left without healthcare and support.

Ubuntu Through Health, a not-for-profit charity founded and run entirely by Griffith University medical students, funds the nutrition clinic at the Ruben Centre, and has done so since 2013.[12] They enable the Ruben Centre to purchase the corn/soy flour blend. A 2 kg bag costs around AUD $15 and is provided free to families at the clinic. One bag provides supplementary food to a family for a week. Every year, Ubuntu Through Health raises money through their Annual Fundraising Dinner. In 2019, they raised over AUD $6000 for the centre, which equates to supporting around 40 families for 10 weeks.

The Twist: Navigating COVID-19
Ubuntu Through Health is particularly worried about the Ruben Centre, given the unfolding situation of COVID-19. Fundraising activities have been severely affected, meaning that financial support will be lacking this year. More importantly, the Mukuru community will undoubtedly be incredibly affected by the impact of coronavirus. Given the population density of the community, social distancing is an impossibility. Poor health, health literacy, and access to health care will mean that this community will struggle in the coming months as COVID-19 continues to unravel and seep through borders.

COVID-19 has already reached and affected the Kenyan population with 1192 reported cases of COVID-19 as of 24th May 2020.[13] Although this number may seem small, it may be an underestimation due to a combination of: the lack of resources to test, and general fear of being tested. Currently, Kenya has tested less than 50,000 people - far less than 1% of their population.[14] There are also reports of people refusing to be tested out of fear that they will then be forced to quarantine at their own expense, an expense which many cannot afford.[14] The World Health Organisation is concerned that Africa will suffer a prolonged outbreak over a number of years, with up to 190,000 Africans dying in the first year of the pandemic.[14] It may be a long time before we know the full impact this pandemic has had on the African continent, and Kenya specifically. What we do know is that COVID-19 is already present in Kenya and, just like it has worldwide, it will spread and affect the lives of hundreds of thousands of people.

The Ruben Centre has reported that in response to the threat of COVID-19, as of Monday 27th April 2020, the gates to the centre will remain closed and there will be no general medical services for the people of Mukuru.[15] The Ruben Centre has made such incredible inroads into fighting malnutrition in the Mukuru slums, but if mothers cannot attend the clinic with their babies, children at risk of malnutrition will not be identified and they will not be able to access supplementary food or education. The Ruben Centre reports that hundreds of people are already lining up outside the closed gates, forced to ask for help to feed their families as most have lost their income with the closure of non-essential businesses.[15] It is too early to say how badly this is going to impact on the nutrition status of the Mukuru community, but it seems fair to assume that it is going to be disastrous.

The Ruben Centre does significant work, but they are no match for COVID-19. Hundreds of thousands of people in Mukuru will dive deeper into poverty, go hungry, and potentially die. We can only hope that once the immediate threat of this pandemic has passed, places like the Ruben Centre are not forgotten and are supported to return to the life-saving work they were doing so that communities like Mukuru can repair, rebuild and recover.

Author's Note
Ubuntu Through Health is a not-for-profit charity run by a group of Griffith University Medical Students. Ubuntu Through Health was founded in 2010 and their vision is to promote positive health outcomes in developing regions and assist in the realisation of health equality. In late 2019, Ubuntu Through Health sent three students to The Ruben Centre in Nairobi, Kenya. The Ruben Centre was established in 1986.
as a school for children living in the surrounding Mukuru slums, which is home to around 600,000 people. Since then, the Ruben Centre has grown to include providing basic healthcare to this incredibly disadvantaged population. Since 2013, Ubuntu Through Health has been funding the nutrition clinic at the Ruben Centre. The funds that Ubuntu Through Health provides to the nutrition clinic each year equates to providing 40 families with supplemental food for 10 weeks. This allows the Ruben Centre to carry out their life-saving programs.

About the Author
Che Hooper is a third year medical student at Griffith University. With a long passion for global health, she is part of Ubuntu Through Health, a not-for-profit that aims to promote positive health outcomes in developing regions and assist in the realisation of health equality. In 2019, alongside two fellow Griffith University students, she visited the Ruben Centre in Kenya, which provides healthcare to the Mukuru slums of Nairobi Kenya. Ubuntu Through Health has been funding the nutrition clinic at the centre since 2013.

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Conflicts of Interest
N/A

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Images
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4. Ahembe Muok M. Effects of Dietary Intake and Hygienic Practices of Nutritional Status of Children Under Five Years in Mukuru Nyayo Slums, Nairobi [master’s thesis]. Nairobi, Kenya: Kenyatta University. Figure 4.3, A comparison between the study findings, the provincial and national figures for malnutrition in children under five years in Mukuru Nyayo slums; p. 70.