Elective Grant Report

Rwamagana Hospital

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Rwamagana Hospital
Rwamagana, Rwanda

"Madeline, be big, bigger than the past, because your country needs you." In 1995 this was the message from a father to his daughter, 13-year-old Madeline Mukeshimana, who now resides as Director of Rwamagana Hospital. The message to "be big" was not an easy one to follow for anyone in Rwanda in 1995.

This was the year after one of the most horrific periods of ethic fuelled violence in world history. In 1994, a genocide in which 1 million Rwandans were slaughtered in under 100 days devastated the country. After decades of building animosity, the violence was initiated after a plane carrying the Rwandan President was shot down, sparking an organised cleansing of those who were identified as Tutsis by the Hutus. Within hours of the plane crashing, road blocks were set up and the killings were initiated. Neighbours who had laughed and shared lunch that day took to each other with machetes. This is a history that Rwanda cannot deny, but they are actively trying to accept it, learn from it and make sure it never happens again. The country is doing a fantastic job of rising from the ashes of its past, however, the devastation of the genocide has stalled Rwanda's growth. This is particularly true for its health care sector.

Rwanda is broken into five major provinces. The largest and most populated is the Eastern Province and this is where I undertook my medical elective, at Rwamagana Provincial Hospital. The Hospital services 16 health centres and one prison. It is the largest hospital in the region and is the final port of call before being sent to the tertiary referral hospitals in the capital. The Hospital is heavily understaffed employing only five specialist physicians, five general practitioners and five intern doctors for the 300 beds it services.

The pathway for admission to the Hospital was a filtration system starting out in the villages with a basically trained healthcare worker. These healthcare workers are trained in basic first aid and walk through the community going to houses and addressing basic health issues such as childhood respiratory illness and fevers.

It is important to note that in much of the country, Western medicine is still seen as evil and traditional healers are often sought many times before health care workers are approached.

Individuals who are deemed sick by the healthcare worker then have access to the local health centre. The centre is serviced mainly by nurses and occasionally one GP. The health centre runs vaccination programs and can also take blood and provide basic antibiotics to patients. These healthcare centres are a valuable gateway for the sick to access district and provincial hospitals which have a better chance of treating the very ill. However, many individuals never seek help past the health centre for many reasons, including access, cost and faith in traditional healers.

Because of this, many who fall sick stay sick and subsequently death is a large part of Rwandan life. With the chance of dying before the age of 15 being 23%, a large part of the country has experienced the death of a close family member.

As the filtering system works currently, only those who are very sick make their way to the provincial hospital where I was situated. Getting to the hospital was a struggle in itself. It was usually by an ambulance, which has no medical staff present as some journeys take hours on poor dirt roads and they cannot afford to take much time away from the hospital. The other option is to walk to the hospital, which can also take hours. Many sick

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A newborn on a water bottle CPAP set-up

Newborns sharing an incubator whilst receiving phototherapy for jaundice

Attending a community gathering focused on the heavy burden of malnutrition in the district and providing easy ways for locals to prepare food to ensure their children are healthy

patients must march up and down the many hills in the blistering sun and tropical downpours to get to the hospital. Once at the hospital, the individuals must wait with their family members to be admitted. Their income determines the cost of their admission; the poorest pay nothing for admission, whilst the more wealthy can pay up to 10% of their bill, with the government covering the rest.

On day one, my friend Arthur and I were guided around the hospital by a new Intern, Propser, who answered all our questions with a great smile even though he had just finished working a 16 hour night shift. My first impressions of the hospital were that it was absolutely bustling with people, not only were individuals sharing beds, but there were crowds of people, usually women, waiting all day outside the buildings. I asked one of the doctors if they were patients. He proceeded to tell me that they were the families of the sick and that when someone is in hospital, the family may have nowhere to go, as they were relying on the sick person's work to provide shelter.

Additionally, when in hospital, food and cleaning is not provided, so it is up to the family to keep their loved one fed and clean. It was quite a shock on day one and a contrast to Australia, where families come at designated visiting hours and food is provided, although often complained about.

I spent the majority of my 4 week elective in the Neonatology department, under the guidance of a team of two nurses, a Nigerian neonatal tech volunteer and specialist physician Dr Rosine, whose services were also stretched across ED and paediatrics. I had just completed my paediatric rotation in Australia a few days prior to leaving and felt that it would be fresh in my mind and I would be able to immerse myself quite quickly. However, I soon learned this would not be the case and I still had a lot to learn.

On my first day I approached a small incubator with a bed sheet over the top and blue light shining out the sides. Inside were three small babies receiving phototherapy for jaundice. I asked when the triplets were born. Dr Rosine and the nurses laughed at me and told me the babies were not related and that there was only one working phototherapy light that day. I looked back at the incubator, the power went out and I knew I was in for an interesting few weeks.

As the days turned over, I was constantly taking notes from Dr Rosine on how to treat the different presentations that came, many of which I had never seen in Australia. The typical presentation was a young mother who would come in after having a baby at home or on the way to the hospital. The baby would be unwell and have jaundice, the mother would not have seen a doctor up until this point, her HIV status was often unknown, as there had been no antenatal screening, no vaccinations and no record of conception date. The majority of the children that presented like this were born premature and were suffering from a neonatal infection. They would all get the same therapy; antibiotics, nasogastric tube feeding and fluids. The cause of the infection was never investigated, not because they did not have the machine, but because they did not have the reagent or money to run the machine.

I found this was a common trend throughout the Hospital. They had the machines and the knowledge to run the machines, however when any of them broke down or ran out of reagent, they were then unable to use it and the machine would go to the wayside.

One example of this was the abundance of CPAP machines in the neonatal unit. There were seven machines, however we could only use one, as the others had stopped working a long time ago and were considered as space wasters. Instead, we had to use makeshift water bottles and air compressors. A major issue was that these machines had been donated from all around the world. The neonatal tech, Max from Nigeria, could fix the English CPAP machine, but not the ones donated from France or Germany. On a similar vein, the laboratory could measure many of the important blood parameters, however, although the machine could measure thyroid or electrolyte levels, the Hospital could not afford the reagent.

This lack of resources and understaffing, has forced the doctors to develop great clinical judgment, which is especially needed in situations like diabetic ketoacidosis, where the electrolyte level can easily fluctuate and result in death. The MIGA Medical Support Grant was incredibly valuable to provide basic equipment and has allowed the Hospital to access some of the needed reagents to measure electrolytes, furthermore, it has allowed for the purchase of a printer to print patient results and protocols.

The life of a doctor in Rwanda is challenging and demanding; they strive to do their best every day not only for their patients but also for their country. There is a strong belief amongst all Rwandans from the rich to the poor that they can make a difference and if they work hard enough the country will change for the better. They know it may not benefit their generation but they do work hard so future generations will not endure the horror and hardships they have faced. This is cemented in 'Umaganda' which occurs on the last Saturday of every month, it means; 'coming together in common purpose to achieve an outcome'. Everyone aged 18 to 65 spends half the day helping build a better community, regardless of their status or wealth. Projects can include milling gardens, cleaning rubbish from the streets and building houses.

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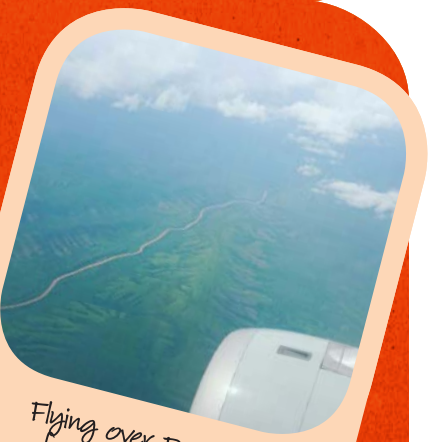

Flying over Rwanda for the first time

Arthur and I

View from one of my strolls through Rwamagana

The hospital director, Dr Madeline Mukeshimana, told me that when a patient walks into your clinic, treat them with patience and that is how to be a good doctor. I believe we need to do the same with Rwanda, we need to listen and understand the country's problems and continue to help and "be big". We must also realise that change will not happen overnight, but that does not mean it will not happen.

Facts	Australia	Rwanda
Population	23.13 million	11.28 million
Land mass	7,692,024 km^2	26,338 km^2
Native language	English	Kinyarwandan
Life expectancy (M/F)	80/85	64/67
Average annual salary	$41,000 AUD	$600 AUD
Chance of dying before 15 years of age	<1%	23%
Number of doctors registered	90,000	750
Doctors per 1,000 individuals	3	0.05
Number of medical schools	20	1
Number of doctors graduating in 2015	3,777	68
Cases of malaria 2014-2015	400	1,610,812
HIV positive individuals	27,150	210,000