

My elective placement was spent divided over two hospitals. King Faisal Hospital (KFH) is a well-equipped modern hospital located centrally in the capital, Kigali. It is a private, non-profit tertiary care centre with 12 specialist departments. I also visited University Central Hospital of Kigali (CHUK) for a week, a public 'referral' teaching hospital attended by the lower working class population.

In both sites, I stayed in the paediatric department where I observed mainly the medical cases.

What are the prevalent childhood diseases in Rwanda? How do they compare with the UK?

Contrary to my expectation, malaria was not one of the main debilitating diseases prevalent in the population. This was due to a government-led initiative aimed at combating malaria via the introduction of widespread use of insecticide-impregnated mosquito nets. Free mosquito nets were distributed routinely during immunization programmes for children under 5 years, in antenatal clinics for pregnant women and through household programs via community health networks.

Indoor residual spraying (insecticide) was also implemented across several districts nationwide where malaria transmission rates were particularly high with the campaign achieving 99.4% coverage. Masses of healthcare providers and lab technician were also trained in malaria management and the use of malaria rapid diagnostic test. The confirmed cases were treated with artemisinin-combined treatment.

The nationwide campaign saw a 70% decline in malaria incidence, 60% decline in outpatient cases and 54% decline in inpatient deaths between 2005 and 2010. A 2010 report also showed that 83% of households nationwide owned at least one mosquito net of any type and 82% owned at least one insecticide-treated net.

According to a ministry of health (MoH) 2010-2011 report, the main causes of child death (under 5 years of age) before 48 hours of hospitalisation were found to be respiratory infections (22%), other infections (septicaemia) and diarrhoea, each accounting for 13%, malnutrition (12%), and malaria(8%). It is acknowledged that child death in the community requires better reporting with hundreds of health providers receiving training in the delivery of 'verbal autopsy.'¹

Of the under 5 child deaths between 2010 and 2011, neonatal death accounted for 49%; 70% of deaths were infantile i.e. under age of one year. Of the neonatal deaths, the main causes of death were neonatal asphyxia (45%), neonatal infection (25%), other complications relating to prematurity (23%) and neonatal abnormalities (7%). The main risk factors for neonatal mortality are prematurity (47%) and low birth weight (51%).

A high prevalence of childhood malnutrition is seen across Rwanda and is a major focus of public health programs. According to the WHO childhood growth standards (2006 revised standard), reports for 2010 showed that in under 5 children, 44% were stunted (height for age), 3% wasted (weight for height), and 11% underweight (weight for height).

According to a MoH conducted report 2010, the leading causes of under 5 childhood *morbidity* and therefore attendance to a health centre (a community predominantly nurse-led service which may then refer to district hospitals led by GPs) are acute respiratory infections (34.4%), intestinal parasites (9.3%), diseases of bones and joints (8.7%), malaria (7.8%) and gastrointestinal disorders (6.9%).

The leading cause of death (all ages) in the community i.e. health centres and district hospital (*not* major hospitals) was found to be malaria, representing 13% of total deaths in 2010. A downward trend in rates must be appreciated owing to the strategic and robust public health interventions implemented from 2005. Mortality rates fell from 22% in 2009 and 16% in 2008 and look set to keep falling.

In CHUK, Kigali's main referral hospital, the leading causes of death (all ages) in 2010-2011 are TB (12.24%), HIV and AIDS (10.20%), Liver Disease NEC (6.38%), 'other disease of urinary system' (5.10) and 'other heart disease' (4.59%). Malaria was the 20th most common disease for admission but does not represent one of the top 10 causes for mortality.¹

From my observations, in KFH, one of the private tertiary referral hospitals, the common childhood diseases were predominantly asthma, acute bronchiolitis and acute gastroenteritis (mostly viral). Other common diseases include nephrotic syndrome and renal failure requiring dialysis and cases of urinary tract infections that may be precipitated by posterior urethral valve, a relatively common abnormality.

In the neonates, respiratory distress syndrome with/out lower respiratory tract infections was common. Neonatal sepsis was also very common and may manifest as neonatal jaundice or the result of respiratory tract infections. Prematurity is an important risk factor in NICU with most babies on ventilatory support and with persistent PDAs.

There were also cases of congenital anomalies such as Down's syndrome; cancers to include acute lymphocytic leukaemia and one case of cerebral malaria and various hydrocephalus cases.

In contrast, in CHUK there were numerous cases of cardiac diseases – predominantly rheumatic heart disease and its chronic complications e.g. arrhythmias and heart failure; congenital heart defects such as tetralogy of fallot and ventricular septal defects that were untreated at birth.

There were severe bronchopneumonias and gastroenteritis in HIV-positive children and severe hydrocephalus. There were also many malnourished children requiring hospitalization, juvenile and septic arthritis and UTIs secondary to posterior urethral valves. I saw a neonate with suspected pyloric stenosis and a 6 month old child with laryngomalacia with a loud stridor at rest. He was very irritable and unable to breastfeed due to the ensuing breathlessness. He was severely underweight for age, at below the 2% percentile.

There were also numerous children requiring oxygen therapy due to respiratory distress syndrome, chronic lung disease and pneumonias.

In the oncology ward were children with nephroblastomas, neuroblastomas, lymphomas and leukaemias. It was noted that the country has seen a significant rise in childhood cancer incidence in the

last 10 years and the reason unknown. To compound this problem, there are no recognized medical oncologists in the country.

A combination of two generic chemotherapeutic drug is usually used to treat the majority of these cancers but relapse rates are very high owing to the lack of effective drugs that are specific to the individual cancer diseases.

What healthcare services are in place to reduce childhood morbidity and mortality? How does this differ from the UK?

The most basic healthcare service provider is the health centre. This is a nurse-led practice where common uncomplicated diseases can be managed and immunization and other health promotion services can be provided.

Referrals can be made to district hospitals – community practices led by general practitioners who see a wide variety of simple and complicated diseases. Recently graduated doctors are based here and obtain their training for up to two years. The majority of cases are supposed to be seen here and should the patient require specialist input, they are sent to larger ‘referral’ hospitals such as CHUK.

CHUK would treat these complicated cases and should advanced investigations be required and deemed absolutely necessary (in the case of the lower working class patient), free referrals can be made to a private hospital such as KFH for expensive investigations such as MRIs. Full payment has to be made by the patient otherwise, who generally cannot afford it.

The Rwanda National Malaria programme has proved incredibly successful in reducing the incidence of malaria nationwide.

The Expanded Programme of Immunisation provides immunization coverage via selected health centre, outreach programmes for different catchment areas and catch-up campaigns. The trend of children with full vaccination by age 12-23 month is increasing with 75% in 2005, 80% in 2008 and 90% in 2010. ¹

Other programmes launched are vitamin A supplementation campaign for under 5s and deworming campaign for school age children.

In April 2011, a national HPV vaccine programme was launched nationwide to provide immunization to young girls in primary school (P6) and 12 year old girls out of school. The uptake was much higher among girls in school (97%) than those out of school (about 45% coverage). ¹

How accessible is healthcare to the general population (child health) in Rwanda? Are there social disparities in the access and consumption of healthcare services?

The national health policy requires everybody to purchase a community health insurance as the minimal health cover.

The payment itself ranges from 3000 to 7000 RWF per annum depending on socioeconomic class. Over 90% of the population can afford this whereas the other 10% are state funded. I understand this insurance grants them cover for health care in the community.

Healthcare in the public 'referral' hospital eg CHUK is subsidized by the government by about 85%. The remaining 15% would need to be paid by the patient if they require hospitalization. The hospital bill will include cost of medication and all investigations, some which are considerably more expensive than others. The poor often cannot afford to have blood tests done such as blood smears and culture results and sometimes, even Xrays although I'm told 85% of the cost is subsidized.

A parent in CHUK was required to pay 215RWF for a chest xray, something I consider relatively cheap but she could not afford this and often times, among the bottom economic class, treatments are commenced, sometimes blindly without the support of investigation results to inform the particular choice of treatment such as the class of antibiotics for example because the patient cannot afford investigation costs.

Some chronic conditions receive funding for therapy such as dialysis in end-stage renal failure and chemotherapeutic drugs in patients with cancer who are unable to afford it.

Inpatient admission to private hospitals such as KFH can be afforded by only about 10% of the national population; outpatient services is accessed by a wider population.

For inpatients, they are required to pay 15% of the hospital bill. The outstanding 85% is paid by the private health insurance providers they are affiliated with or they may pay the whole lump sum. If they work as certain civil servants, it is imperative to join a national insurance scheme called RAMA to which they pay a fraction of their monthly wage, about 7.5%. The company will then foot about 85% of the hospital bill. Other health insurance providers include the military and private companies. Other insurance providers are NGOs and charities that can pay on behalf on a child.

A child from an impoverished background may receive management in KFH usually investigations only if they have direct referral from one of the public referral hospitals such as CHUK.

According to reports conducted by the MoH in 2010, 89.6% of citizens reported being satisfied with cost of healthcare in the country and 70.2% were satisfied with the availability of medical staff. However only 54.3% were satisfied with the distance travelled to access healthcare services.¹

Residents of the capital city Kigali were the most dissatisfied about the cost of healthcare in hospitals at rate of 6.2% where the Northern county of Rwanda reported the most dissatisfied with the distance travelled to access healthcare at 31.2%.

The evaluation of health infrastructures in the community is as follows: 59.9% reported being satisfied and conversely, 30.8% were dissatisfied with the emergency ward; the rest did not know. 65.2% were satisfied with the hospital beds and 30.6% were dissatisfied.

References:

1. Ministry of Health Annual Report 2010-2011. Republic of Rwanda. www.moh.gov.rw
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