

What the Global Health Community Can Learn from Africa

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Introduction

“...We would like to express our extreme concern over the attitude of the medical profession, particularly the student body, towards elective periods spent abroad in developing countries. The misconception that the purpose of an elective is to *practise* one's unpolished skills on an unsuspecting 'bunch of natives', before returning to begin properly, is widespread within the student community. Some even go as far as to assume that the recipient countries ought to be grateful for the help provided by elective students.”¹

This quote from St George's Hospital Medical School in London summarizes the somewhat fraught relationship Western medicine has had with the rest of the world including Africa. Indeed, the history of medicine in Africa is one that is entrenched in colonialism; global health efforts on the continent have often secured and continue securing Western interests. European medicine was often used to enforce Western hegemony by lessening the resistance of colonized African populations.² Unfortunately, the legacy of medical colonialism still lingers; for instance, there exists a real concern as to the efficacy of short-term experiences in global health (STEGHs) offered to undergraduate, medical and postgraduate students who might lack the necessary technical skills and cultural competency to positively affect local community health systems in host countries.³ By failing to recognize the agency and medical knowledge of African nations, the international community has often exacerbated health conditions on the continent. Moreover, it has become clear that the global disease burden can only be reduced if Western countries recognize the active participation of Africa. Therefore, to counter arguments of Africa's incompetence and neediness, this paper will highlight two different yet important health-related successes on the continent: Rwanda's efforts to eradicate cervical cancer, and Elimination 8 (E8), a project to eliminate malaria in 8 African countries (Angola, Botswana, Mozambique, Namibia; South Africa, Swaziland, Zambia and Zimbabwe).

Rwanda: cervical cancer eradication

To appreciate why Rwanda's goals to reduce cervical cancer incidence to zero are just short of a miracle, it is necessary to understand its history. A small Eastern country of roughly 11 million, Rwanda was colonized by Belgium, which imposed a framework whereby Tutsis, one of the main ethnic groups, were considered racially and culturally superior to the two other major groups, Hutus and Twas. During that period, Tutsis were afforded economic and socio-political advantages, creating a strong resentment in their Hutu counterparts.^{4,5}

Upon independence in 1959, Hutus gained more political power and, throughout the years, strengthened their rule by crushing Tutsi-led dissents. In 1994, matters came to a head when the plane of Juvénal Habyarimana, the then president, was mysteriously shot. Feeling vindicated in their hatred of Tutsis, extremists Hutus went on to massacre Tutsis and moderate Hutus.⁶ Hundreds of thousands of Tutsis and moderate Hutus were systematically killed and, the Tutsi population suffered a 77% decline.⁷

The genocide exacerbated an already troubled Rwandan health sector; international aid from UN agencies and other NGOs was therefore welcome. Yet, the health services provided by those agencies were often unsustainable, cost-inefficient and inappropriate since they failed to account for the Rwandan socio-economic and political context.⁸ Feeling the need to protect its population, the Rwandan government went on to create one of the best healthcare systems in the developing world, the national Mutuelle de Santé, which by 2010 covered more than 90% of the population.⁹ Similar coverage rates have been achieved in the United States (US), where 91.2% of the population was insured in 2016.¹⁰ Through this well-oiled machine, Rwanda is on its way to eradicating cervical cancer, one of the most common forms of cancer among women.¹¹

Human papillomavirus (HPV), which causes one of the most common sexually transmitted diseases, has been associated with the development of cervical cancer in women.¹² About 70% of all cervical cancer cases are caused by HPV strains 16 and 18.¹³ In 2012, there were 527,600 cases of cervical cancer worldwide and, 99,000 cases were in Africa. Almost half of all new cases on the African continent were found in East Africa. Additionally, 28,200 deaths out of the 60,100 deaths due to cervical cancer in Africa were concentrated in the same region.¹⁴ In Rwanda, cervical cancer is the most prevalent form of cancer among all women.¹⁵ In 2012, cervical cancer incidence was 41.8 per 100,000 while the mortality rate was 26.2 per 100,000.¹⁶ To lessen the burden of the disease on the Rwandan female population and eventually eradicate it, the government decided to implement prevention, care and control programs.¹⁷

In 2011, the Rwandan Ministry of Health in cooperation with Merck, initiated an intensive HPV vaccination campaign that reached 93,888 girls in the sixth grade.¹⁸ By 2012, 96.6% of all eligible girls in the country were able to receive the 3-dose Gardasil vaccine.¹⁷ The campaign was effective because the Rwandan healthcare sector had a proven record of tackling infectious diseases.^{18,19} To allow for a smoother implementation of the vaccination program, a multidisciplinary approach was adopted. Different sectors of Rwandan socio-political life (educators, community leaders, health workers...) were involved and, the US Center of Diseases Control (CDC) and the International Center for AIDS Care and Treatment (ICAP) provided technical support.¹⁸ Furthermore, cheaper HPV and cervical cancer screening methods were used for early detection.^{17,20} Detecting cancer at earlier stages allowed for the use of more affordable and effective treatment methods such as loop electrosurgery excision procedure and cryotherapy.^{17,21}

Another essential aspect of HPV and cervical cancer prevention programs is the sexual education of school-aged children and adolescents. Early age at first intercourse, the number of sexual partners and a previous history of STDs are associated with an increased risk of HPV transmission and cervical cancer.²² Health education that promotes safe sex measures including condom use has been shown to reduce the risk of transmission.²³ In 2016, the Rwandan Education Board implemented a comprehensive sexuality educational curriculum to empower the youth in making appropriate choices regarding their sexuality.²⁴ In comparison, the US

favors and heavily funds “abstinence only until marriage” despite evidence of its inefficacy in limiting unsafe sexual behaviors.²⁵

By working tirelessly towards eliminating cervical cancer in the country, Rwanda has become an example to follow for developing and developed countries alike. From 2008 to 2012, the rate of cervical carcinomas in women in the US was 7.4 per 100,000. Disparities were even more pronounced by ethnicity, with white women (7.1 per 100,000) being less likely to have cervical cancer compared to black (9.2 per 100,000) and Hispanic women (9.7 per 100,000).²⁶ From 2006-2010, the incidence rate of cervical cancer in Delaware was 8.9 per 100,000.²⁷

Interestingly, despite HPV vaccines being safe and available, in 2011, only 34.8% of adolescents between the ages of 13-17 in the country and 46.8% in Delaware received ≥ 3 dose of the vaccine.^{27,28} The US and other nations could definitely benefit from Rwanda’s strategic approach to vaccinating school girls given Rwanda’s achievement of more than 90% of coverage within a limited amount of time and with modest resources.

Elimination 8: Towards a malaria-free Southern Africa

In 2016, an estimated 216 million people suffered from malaria worldwide; the vast majority (90%) of those cases were found in Africa. In 2016, almost all cases of malaria in Africa (99%) were attributed to *Plasmodium falciparum*.²⁹ *P. falciparum*, the deadliest type of malaria-causing parasites, can cause complications such as renal dysfunction, seizures and lactic acidosis.^{30,31} Consequently, 91% of all deaths due to malaria are found in Africa.²⁹ Considering the severity of the effects of the disease on the continent, the African Union (AU) launched a campaign to eliminate malaria on the continent. That same year, the Southern African Community (SADC), an intra-governmental organization comprised of 15 Southern African states, joined the AU in its pledge to eradicate the disease in the region. Thus, Elimination 8 (E8) was created.^{32,33}

E8 is a regional partnership whose vision is to have a malaria-free Southern Africa by reducing local transmission to zero in 4 countries (Botswana, Namibia, South Africa and Swaziland) by 2020. In fact, the World Health Organization (WHO) considers Botswana, South Africa and Namibia to be E-20 countries because they are on the verge of eliminating malaria by 2020.^{29,33} Understanding the realities of geography and human migratory patterns, E8 paired the 4 frontline countries, which have been successful in reducing malaria rates with 4 highly endemic neighboring countries, namely Angola, Mozambique, Zambia and Zimbabwe. A successful elimination of malaria within these 8 countries will lay the foundation for a gradual eradication of the disease within the SADC region.³³

To achieve sustainability, E8 has positioned the organization as donor-independent, financing itself through the private sector, development of endowment funds and dedication of tax revenues to the organization.³³ So far, the strategy seems to work; over the years, Botswana, Namibia, South Africa and Swaziland’s funding of malaria endeavors became less reliant on international aid. In fact, from 2014 to 2016, the large majority of monies dedicated to malaria in those 4 countries were of national origin. On the health-related front, in 2016, Botswana and South Africa were on the verge of attaining a 20-40% reduction by 2020. In contrast, Namibia and Swaziland seem to struggle: the number of cases increased by 45 fold from 2010 to 2016 in Namibia, and Swaziland experienced a 30% increase during that same timeframe.²⁹ These results strengthen the argument for stronger regional cooperation to avoid resurgence and decrease transmission in neighboring countries. Indeed, despite tremendous reduction in other regions of the country, Namibia has witnessed a concentration of malaria cases in the northern border

region with Angola.³⁴ In its 2016, E8 recognized that eradication was lagging behind schedule. As a result, E8 aims for better surveillance, prevention and treatment programs. E8 also seeks to prevent cross-border transmission by using a more aggressive approach to controlling and preventing the disease in secondline countries (Angola, Mozambique, Zambia and Zimbabwe). Additionally, E8 encourages a greater participation of African scientists in the development and administration of novel control and therapeutic methods.³⁵

Conclusions

Over time, Africa has come to recognize the need for political and societal commitment to eradicate diseases. Rwanda's approach to get rid of HPV-associated cervical cancer provides valuable lessons about incorporating all aspects of society to solve healthcare problems. Though accessible and affordable prevention and treatment options are paramount to eradicating STDs, sexual education should be the first line of defense against them. Sadly, Rwanda, with its comprehensive sexuality education, seems to be miles ahead of the US in educating its youth about the benefits of a healthy and responsible sexuality. The fact that wealthy nations like the US are still not HPV- and cervical cancer-free should have them reevaluate their strategies and, potentially, use Rwanda's approaches as a blueprint.

Additionally, E8 creation demonstrates the need for more globalist and cooperative approaches to fighting diseases. Limiting the sharing of resources and restricting movement of populations do not lower transmission. The SADC through E8 demonstrated that developing a more human solution to migrant health issues is critical. The ongoing success of E8 shows that Africa can be self-reliant when Africans work collaboratively with adequate resources. These case studies demonstrate the need for the general discourse around African healthcare to move beyond the stereotypical narratives of dependency and mismanagement. The global health community should acknowledge the enormous potential of the continent and understand that it has much to learn from it. Only then will there be a path towards global disease elimination.

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