Two decades ago, the genocide against the Tutsis in Rwanda led to the deaths of 1 million people, and the displacement of millions more. Injury and trauma were followed by the effects of a devastated health system and economy. In the years that followed, a new course set by a new government set into motion equity-oriented national policies focusing on social cohesion and people-centred development. Premature mortality rates have fallen precipitously in recent years, and life expectancy has doubled since the mid-1990s. Here we reflect on the lessons learned in rebuilding Rwanda’s health sector during the past two decades, as the country now prepares itself to take on new challenges in health-care delivery.

Introduction

In 1994, the genocide against the Tutsis in Rwanda led to the deaths of 1 million people in Rwanda (nearly 20% of the population at the time), as well as the displacement of millions more. During the 100 days after Easter, 1994, a bitter post-colonial divide linked to eugenic constructs of race rooted in a previous century—butgrimly familiar to those who remember the crimes of the Nazis—tore the country apart. Whether survivor, perpetrator, or member of the diaspora, no Rwandan emerged unaffected. Much of the rest of the world stood by.

The health effects of the genocide lasted long after the physical violence stopped that July. An estimated 250000 women had been raped, and thus HIV became a weapon of war.1 One of the 20th century’s largest cholera epidemics exploded in refugee camps along Rwanda’s western border.2 Fewer than one in four children were fully vaccinated against measles and polio in 1994.3 Rwanda’s under-5 mortality rate that year was the highest in the world; life expectancy at birth would remain the least of any country in Africa.4 Some development experts even advised withholding primary care services from children to stave off population growth and prevent what they called a “Malthusian abyss”.5,6 From the outside, it appeared that for years to come, Rwanda would be vulnerable to the donor community’s shifting whims and divergent prescriptions.

Progress was halting in the years immediately after the end of the genocide.7 In 1998, the new government launched a consultative process to create a national development plan, which led to a document called Vision 2020.8 The idea was to move from the disaster of the mid-1990s towards becoming a middle-income country by 2020. The plan invokes the principles of inclusive, people-centred development and social cohesion. Central to this vision was health equity. Prosperity would not be possible without substantial investments in public health and health-care delivery; recovery from the horrors of 1994 would not be possible without provision of some of the services long monopolised by those who controlled the ship of state. The Rwandan Constitution of 2003 formalised the inalienable right to health;9,10 by contrast with the decades of violence culminating in the 1994 genocide against the Tutsis, the decision now was to invest in life.

Rebuilding the health system

As reviewed elsewhere,11,12 early approaches to rebuilding the health system were developed by Rwandans and oriented towards ready access and accountability. The notion of solidarity was often invoked. Community-based health insurance and performance-based financing systems were piloted in three of the country’s districts and evaluated before being scaled up nationwide in 2004 and 2005, respectively. In each of Rwanda’s 14387 villages (spread across a country the size of Maryland or Wales), three community health workers are elected by village members, then trained and equipped by the
Development partners—from foreign governments and multilateral funders such as the Global Fund to Fight AIDS, Tuberculosis and Malaria, to international academic consortia and other non-governmental organisations—work in close coordination with the Ministry of Health. University partnerships are now helping to strengthen research capacity, health education, and clinical care. Most publications on health and illness in Rwanda are by Rwandan principal investigators. Some of the organisations that have declined to collaborate within the framework of Rwanda’s national strategic plan have been invited to work elsewhere.

A participatory policy-making approach has enabled swift implementation of new programmes, but also evidence-based changes to existing ones. For instance, from the time that the first national mutuelles de santé policy was published in 2004 through June, 2011, there was a flat premium for all but the wealthiest Rwandans. After an analysis of the 2005 and 2008 Demographic and Health Surveys showed that the most vulnerable remained disproportionately at risk of catastrophic health spending, the Ministry of Health revised its health financing policy in April, 2010, to institute a three-tiered premium system based on Rwanda’s socioeconomic assessment system known as ubudehe. With health systems strengthening grants from The Global Fund, the government has subsidised premiums and co-payments for around 2 million of the poorest Rwandans.

Where exclusion and division once defined Rwandan governance, civil society representatives now join ministers in parliamentary meetings at which proposals are discussed within frameworks of scientific evidence and universal access to new services. The Ministry of Health, as chair of the government’s Social Cluster, meets regularly with other ministries to review policies with overlapping interests and to harness cross-sectoral synergies.

The AIDS response as a catalyst

Since Rwanda received, only a decade ago, its first major international grants to begin treating HIV, tuberculosis, and malaria, the leadership of the health system has attempted to prioritise the simultaneous decentralisation and integration of services, and to increase domestic funding for health alongside external resources. Setting these priorities required resisting the so-called stove-piping of programmes according to the whims of funders, to avoid the centralising tendencies of all federal bureaucracies and to buck the trends of previous decades, during which many African nations had been pushed to invest less in public institutions (so-called structural adjustment programmes).

By 2010, 58-4% of foreign assistance to Rwanda was being channelled through national systems (compared with an average of 20·1% in a recent UN survey of foreign aid in post-conflict settings). This strengthening of public sector capacity is both cause and effect of a focus on national ownership and oversight; such an approach to shared accountability has also leveraged increasing investment from the Rwandan Government. Between 2000 and 2011, each annual increase of US$1·00 in foreign assistance for health in Rwanda was accompanied by $1·29 in additional government spending on health that
In a nationally representative survey, 82.7% of patients of 80% in 2009, the second nation in Africa to do so. The Rwandan Government has adopted a target of 90% of gross domestic product).8

The results of such a health systems approach have been impressive in a country that only 20 years ago lay in ruins. Today, more than 97% of Rwandan infants are vaccinated against ten different diseases (diphtheria, tetanus, pertussis, hepatitis B, *haemophilus influenzae* B, polio, measles, rubella, pneumococcus, and rotavirus; adolescent girls are also vaccinated against human papillomavirus)1,2 and 69% of births are attended by trained clinicians at health facilities4—health workers trained in programmes to prevent mother-to-child transmission deliver babies whether mothers are HIV-positive or not. Rates of under-5 mortality, maternal mortality, and deaths due to tuberculosis and malaria have fallen alongside the burden of HIV, and Rwanda is now on track for each of the health-related Millennium Development Goals (MDGs)10,20 (table).4,5,28,40

## Table: Progress toward Millennium Development Goals (MDGs) 4, 5, and 6 in Rwanda

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<tr>
<td>Under-5 mortality (deaths per 1000 livebirths)</td>
<td>151</td>
<td>182</td>
<td>55</td>
<td>10%</td>
<td>50</td>
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<tr>
<td>Maternal mortality (deaths per 100000 livebirths)</td>
<td>910</td>
<td>590</td>
<td>340*</td>
<td>9.0%</td>
<td>228</td>
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<tr>
<td>AIDS-related mortality (deaths per 100000 population)</td>
<td>121</td>
<td>272</td>
<td>49</td>
<td>14.3%</td>
<td>61</td>
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<tr>
<td>Tuberculosis mortality (deaths per 100000 population)</td>
<td>37</td>
<td>49</td>
<td>10</td>
<td>13.2%</td>
<td>19</td>
</tr>
<tr>
<td>Life expectancy at birth (years)</td>
<td>33</td>
<td>40</td>
<td>63</td>
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Child mortality data are from reference 4. Life expectancy and population data are from reference 5. AIDS death data are from reference 2B. Maternal mortality ratio and tuberculosis death data are from reference 40. AARR-average annual rate of reduction. *Latest available value for maternal mortality ratio is for 2010.
impli
cations for sustained economic development. Most notably, 44-7% of children were chronically malnourished in 2010; a national campaign launched in 2013 aims to reduce this number substantially. Non-communicable diseases (NCDs), mental illness, injuries, and neonatal disorders together constitute more than 50% of Rwanda’s burden of disease. A new national strategic plan for NCDs and the 2012 launch of a major health worker training partnership with 25 American medical institutions are important starts, but much work lies ahead.

Investing in the future
In the aftermath of one of the worst spasms of mass violence in recorded history, few imagined that Rwanda might one day serve as a model for other nations committed to health equity. Even a decade ago, few believed that Rwanda would meet any of the MDGs, nor that it would deploy its own peacekeepers with the goal of genocide prevention in other settings across the continent.

Today, at the mountaintop location of a former military base in Rwanda’s Northern Province, the first cancer treatment centre in rural Africa has treated more than a thousand patients in its first years of opening. These patients come from across Rwanda and neighbouring countries (many Rwandans remember what it means to be unable to return home and to be deprived of essential health services). The construction of Butaro District Hospital and its Cancer Center of Excellence (figure 4) has created hundreds of new jobs; dozens of small businesses have been established in the surrounding communities. It is premature, in the eyes of some, to deem this development as a swords-to-ploughshares parable. But, although the scars of 1994 remain, it would be cynical to deny that healing might accompany recovery from such social cataclysm.

Investment in health has stimulated shared economic growth as citizens live longer and with greater capacity to pursue lives they value. The lesson of the post-genocide period for Rwanda—and for countries around the world hoping for recovery from social upheaval of many kinds—is that a nation’s most precious resource is its people.

Contributors
AB and PEF conceived of the manuscript. All authors contributed to the programmes described, assisted with the analysis presented, and critically revised the manuscript for content.

Declaration of interests
All authors work or have worked in or with the Rwandan health sector; no specific competing interests exist.

Acknowledgments
This paper is dedicated to the health workers who lost their lives while delivering care during the 1994 genocide. We also thank the many individuals and development partners whose long-term commitment and solidarity have helped to rebuild Rwanda’s health sector in the two decades since.

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