

Introduction

This analysis of the former, current, and future health care systems in South Africa begins with an introductory snapshot of the health system in South Africa as it relates to the Human Immunodeficiency Virus (HIV) epidemic and the current health system reform attempts. This is followed by an overview of the country's political history of apartheid and colonialism. Details about the country's geography, populations, and founding are then discussed, followed by an analysis of the health system's financing, governance, and outcomes. Lastly, there is a discussion of the current state and future of South African health care.

South Africa was chosen for this analysis because of the changing political landscape and numerous attempts at reforming historically divided and discriminatory health care and public health systems. Health reform efforts are always changing and evolving; however, this analysis is based on an interpretation of documentation available as of May 2018. The specific attempts to derive universal health care from a divisive public and private system should be evaluated to determine if there are aspects of South Africa's plan that should be adopted by other countries in similar positions, in the pursuit of universal health care for all.

Overview of South Africa

Population demographics

Spanning 470,900 square miles and comprised of a population of 54,841,552, South Africa is the largest, southernmost country in Southern Africa [1]. In 2014, almost two thirds of the population lived in urban areas, and the remaining one third lived in rural regions [1]. The income disparities in South Africa are stark. The Gini coefficient is a ratio used to describe the wealth distribution in a country. In 2014, the average Gini coefficient in Organization for Economic Cooperation and Development (OECD) countries was 0.381. According to the Central Intelligence Agency (CIA) Factbook, the Gini

coefficient estimate for South Africa in 2013 was the second highest in the world at 62.5 [2]. The 2011 South African Census revealed that about 80% of the South African population is black and almost 8% are white [3]. Most South Africans are Protestant or practice some form of Christianity [4]. South Africa is infamous for racial and ethnic discrimination laws that began in colonial times and have dominated the culture of South Africa since.

Colonial history

Dutch traders landed in South Africa in 1652 as they traveled along the spice trade route. The white settlers dispossessed the indigenous South African tribes of their land and cattle and imported slaves from Asian countries to support an economy dominated by migrant labor [5]. The Dutch East India Company held political control of South Africa until the 1800s, when Great Britain invaded, and South Africa became a British colony. The Anglo-Boer War (1899-1902) resulted in two Afrikaner Republics and two British colonies uniting and thus shaped the current provincial boundaries that exist today. In 1910, the original colonies became provinces, and the Union of South Africa was founded [1].

In the late 1800s, diamonds and gold were discovered in the Northern provinces, consequently shifting the economy's focus from agriculture to the mining industry. Mining controlled the economy, and black citizens were expected to supply the mining labor. Restrictive land possession policies from the colonial era remained in place and effectively forced all black miners to live in urban slums associated with poor health conditions due to the mines and the dangerous, unsanitary living area [5]. This is where the stark disparities in health outcomes and disease prevalence between black and white South Africans originated.

Health system history

In 2000, the World Health Organization (WHO) used eight measures to rank all countries on their health system. South Africa is ranked 160th [6]. South Africa has enacted progressive and equity-driven health policies throughout the last 100 years. The Bill of Rights in the Republic of South Africa's Constitution of 1996 established the right to health care, food, water, social security, life, and environment for all citizens [7]. In 2009, South Africa's Department of Health initiated a form of Social Health Insurance presented as a National Health Insurance plan that was developed to reduce disease burden, improve overall health, and make health care more accessible and affordable for South Africans [8]. The National Health Insurance plan is a form of Social Health Insurance in that it enforces contributions from employers and employees to partially fund the health system. Lack of stewardship, economic support, and action has left these forward-thinking policies in the implementation phase.

Health system financing

It is difficult to talk about the health care system in South Africa without addressing the disease burden HIV has placed on the health and economy of the country as a whole. South Africa has the largest HIV/Acquired Immunodeficiency Syndrome (AIDS) epidemic in the world, with 7.1 million (18.9%) South Africans having HIV and AIDS in 2016 [4]. South Africa's current health care focus is markedly different from most middle-income countries because of this continued epidemic. On average, US \$1.5 billion is spent annually to fund HIV and AIDS programs in South Africa [9]. This middle-income country has been forced to shift their attention to lowering the prevalence and incidence of HIV and AIDS and thus 6.5% of South African's health care expenditures, diverting the focus away from health care system reform [4].

Health expenditures and projected costs

In 2013, total health care expenditures in South Africa equaled US \$23 billion [10]. After the National Health Insurance project is fully implemented, the total health care costs are projected to be US \$111 billion in 2025-2026 [11]. This staggering difference displays the dire need for more health care revenue in South Africa.

Compared to other Sub-Saharan African countries, South African health care expenditures are low, but they consume a greater proportion of their GDP. Total health care expenditure per capita in 2014 was US \$570 for South Africa, which is approximately six times greater than the Sub-Saharan African country average of US \$98.24 [12]. In 2014, South Africa used 8.8% of their GDP on health care compared to the Sub-Saharan Africa average of 5.5% of GDP [12].

Public hospitals, tertiary care, and HIV treatment combined receive the most funds, approximately US \$2,300 [13]. Overall, 3.9% of the annual national health budget is spent on service delivery [14]. One of the crippling issues is the need for more physicians and health care providers. In 1940, there was an estimated one doctor per 3,600 majority white population and one doctor per 22,000 to 30,000 majority black mining population [5]. More recently, the vacancy rates were reported to be 56% of available physician positions are vacant and 46% for nurses [11]. Notably, about US \$44, or 1.8% of the annual national health budget, is spent on the administration of public health services, which likely accounts for the health care provider vacancy rates [15].

Allocation of health funds

Most of South African health care is funded by their National Revenue Fund, which is a collection of all payments to local, provincial, and federal government [16]. According to Chapter 12 Section 213 of the Constitution of the Republic of South Africa, the National Revenue Fund is a fund "into which all money received by the national government must be paid, except money reasonably excluded by an Act of Parliament" [17]. Decentralized distribution of public health care funds from federal to local municipalities is typical in South Africa. Between 88% and 91% of public health care expenditures in 2017 were for transfer of funds to municipalities and departmental agencies [14]. However, transfer of funds does not necessitate the transfers to be equitable or equal. The funding allocations for different provinces based on population size varied between US \$394,166.64 to US \$3,434,083.80 in 2017 [13]. The National Health Insurance initiative is planning to increase all forms of taxes by approximately 25.4% and create government-sponsored health insurance plans that would pool into a National Health Insurance Fund [18]. The aim of this program is to encourage the wealthiest to pay into the public

system and begin receiving their care from public sector providers and facilities [8].

Abuja Declaration

In 2001, the heads of state of the African Union member states met and agreed on the Abuja Declaration to increase their country's health expenditures to 15% of the GDP. They reviewed their progress in 2011 and found that South Africa was one of the 11 countries that had actually decreased health care expenditures as a percentage of GDP between 2001 and 2009 [19]. Despite failing to meet the Abuja Declaration goals, South Africa's health programs are allocated the second highest concentration of government funds (13.8% of the national budget) [15].

Public vs. private health coverage

South Africa spends more money than the surrounding Sub-Saharan African countries on health care. However, the distribution of these resources remains disproportionate. The current system is divided into private and public sectors with an uneven distribution of funds to different regions of the country. The private sector is made up of medical schemes or forms of voluntary health insurance designed to exclude black South Africans. These schemes were created for white miners that did not want to receive their health care with the black population. Not until 1970 were black citizens even allowed into medical schemes [5]. Currently, the cost of the medical schemes makes them inaccessible to most South Africans, and less than 15% of the population are covered by a scheme. The individuals under a medical scheme and their employers contribute an average premium of approximately US \$1,571 annually. The private sector has private providers and private hospitals, where providers typically station their offices [5]. The remainder of the population receives their care from the public sector with no formal coverage until the National Health Insurance plan is implemented [5]. The medical schemes paid and supported by the affluent members of the population leave a poorly funded public health care sector [10, 20].

Currently, low quality public health care is available for free to all citizens. In an attempt to combat the low quality and inaccessibility in the current system, the National Health Insurance scheme is scheduled to begin in 2026 and will implement new changes on the individual and societal level [11]. The federal government

plans to purchase health services directly from both public and private providers [18]. The current makeup of providers between sectors is around 70% private and 30% public due to poor working conditions in the public sector.

Health Care Regulation and Governance

South African governance can be described as corrupt, decentralized, and lacking stewardship. The impact of weak governance in South Africa is best displayed through an examination of how this country with the highest HIV/AIDS prevalence has responded to this disease crisis [4]. This pervasive problem has plagued South Africa for many years, and a lack of organized health care structure and cohesive politics have done little to address the problem at its source. The National Health Insurance scheme introduced by the federal Department of Health in 2009 intends to improve the health of all South Africans, regardless of race or poverty status. Poverty, corruption, and racial segregation are the overarching themes in South African politics and the decentralized public health care system.

Pre-National Health Insurance public health structure

The National Department of Health creates and implements national health policy. South Africa is divided into nine provinces and each province has a Department of Health that participates in public health delivery and provincial policy aligned with federal health policy. There are also local departments of health that are mostly responsible for health promotion and preventative services. Hospitals are organized into three tiers: tertiary, district and regional. The primary health care system is run by nurses in hospital clinics, district hospitals, and community-based health centers [5]. South Africa is similar to the United States with their shared tendency toward keeping a privatized health care system in conjunction with a disorganized public program structure [8].

The structure of the new National Health Insurance system is not clearly defined or organized as evidenced by the vacancy of the Director of National Health Insurance position [21]. However, prior to this new scheme, the structure of the Department of Health was as follows: The National Department of Health was the overarching government entity that created federal health policy and

was led by the Minister of Health, who is a member of the national cabinet.

Political denial of HIV/AIDS

Former South African President Thabo Mbeki (Presidency: June 16, 1999 - September 24, 2008) and his Minister of Health, Manto Tshabalala-Msimang, both actively denied the presence and impact of HIV/AIDS on the South African population for years [22]. President Mbeki argued that the antiretroviral effort was driven by Western influence and that the medications were toxic. Between 2000 and 2005, approximately 330,00 South Africans died from HIV and more than 35,000 babies were born with HIV; this could have been prevented if Mbeki had taken action to prevent new incidences and treat HIV [23]. Efforts to initiate HIV/AIDS treatment programs and schemes only began in 2009 when then-President Jacob Zuma was elected, and international pressure became overwhelming. After countless corruption scandals and intense pressure from the ruling African nationalist Congress Party, South African President Zuma resigned, and Cyril Ramaphosa became the new President in February 2018. In President Ramaphosa's State of the Country Address in February of 2018, he promised to have a National Health Insurance bill presented to parliament in the coming months and that South Africans would see progress on this plan soon [24].

Universalist transition

The National Health Insurance scheme is the first universalist policy from the ruling African Nationalist Congress party. There has been a shift to more socially cooperative governance that follows rule-of-law. The wealthiest South Africans earn 58% of the national income, and the lowest income population contribute 17% [25]. The end of Jacob Zuma's Presidency has introduced hope for an end to the crippling financial and political corruption in South Africa. President Ramaphosa's agenda and his approach to issues such as health care reform is promising; however, over time, South Africa will gain a clearer vision of how his plans for health care action pan out [26]. The relatively new South African health care system is intended to push those paying for medical scheme coverage into contributing and participating in the public-sector system.

Racial discrimination

The apartheid era (1948-1990) has left a lasting impact on the structure and accompanying policies of public programs. The unequal and discriminatory policies have led to unequal funding of public health care programs, which has in turn resulted in racial disparities in health status. For example, the infant mortality rate for whites is 7 per 1,000 population versus 67 per 1,000 population for blacks. Life expectancy is also markedly different between races: white women's life expectancy is 50% longer than that of black women's.

Health Outcomes

South Africa's low average life expectancy at birth and median age at death are telling outcomes when looking at the South African culture of health. In 2016, the overall median age at death for the population was 56.4 years (**Figure 1**) [27]. In August 2012, South Africa released their National Development Plan to promote a strong and capable country by 2030 with one of the key themes focusing on universal health care and improving health outcomes. Specifically, the National Development Plan sets a goal that life expectancy will be a minimum of 70 years by 2030. The main health goals of South Africa related to the low life expectancy can be categorized into maternal and child outcomes, patterns of diseases, and mortality outcomes.

National Development Plan

South Africa developed a democracy after the apartheid era but has continually struggled with unequal distribution of wealth, poverty, and overall lack of cohesion within the country. The National Development plan designed goals and areas for development "to make the future work" by 2030 [28]. The plan has a list of general objectives with associated benchmarks and list of core elements that define a decent standard of living, including universal health care as one of the nine elements seen in **Figure 2** [28].

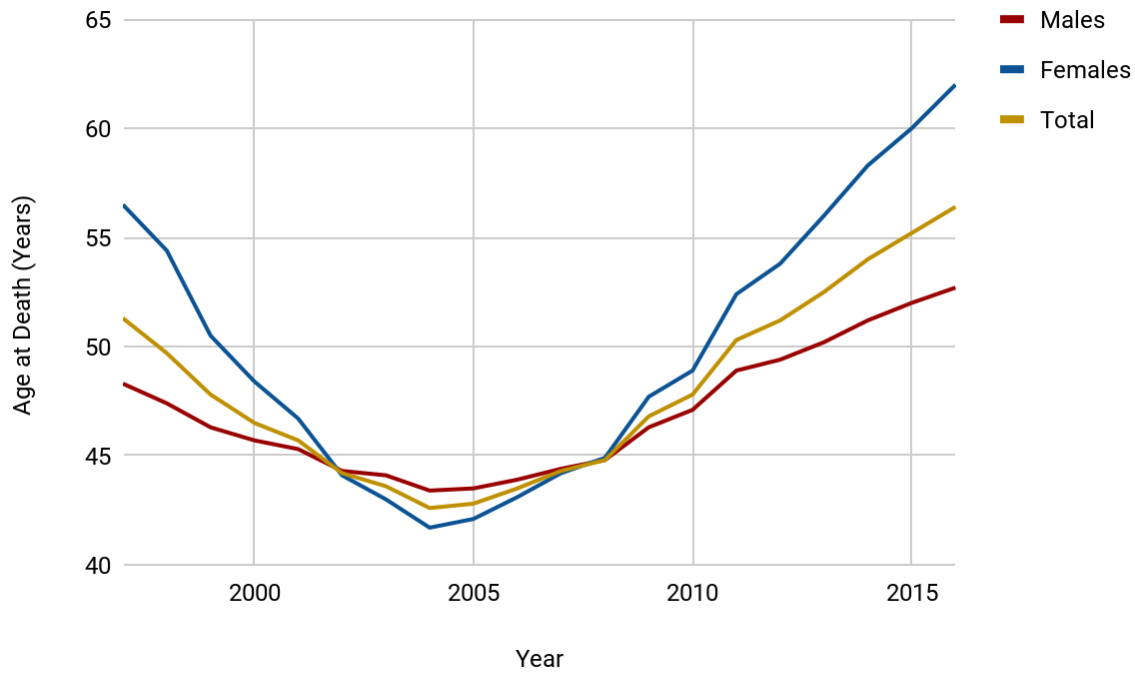


Figure 1: Author created using data from Statistics South Africa (2018) [26]. *Median ages at death by sex and year of death, 1997-2016.*

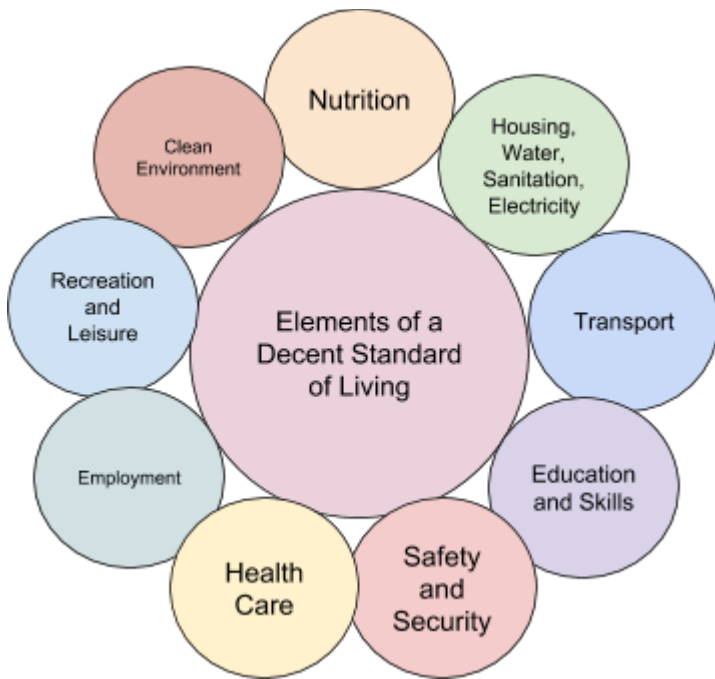


Figure 2: Author created using information from the National Development Plan 2030 (2012) [28]. *Core elements of a decent standard of living.*

Maternal and child outcomes

In order to address the growing child and infant mortality rates, the National Development Plan proposed to decrease the infant mortality ratio to less than 20 per 1,000 live births from the current 34.2 in 2016 [29]. Generally, the highest percentage of death occurs between the ages of 30 and 60 [27]. Another notable peak in age at death is age 0, showing the need to improve maternal, pregnancy, and infant care.

HIV/AIDS and tuberculosis

Combating HIV/AIDS continues to be a burden for South Africa. This country has the largest HIV/AIDS epidemic in the world, and 6.5% of their health care expenditures are used to treat and lower HIV/AIDS incidence [4]. About 19% of the South African population in 2016 had HIV/AIDS [4]. The National Development plan set a broad goal of having a “largely HIV free population under 20” and “combating the HIV and Tuberculosis epidemics” by 2030 [27].

Contrary to popular belief, the report on mortality and causes of death in South Africa found tuberculosis (TB) to be the largest killer and HIV/AIDS to be the 4th largest

cause of death in South Africa in 2016 [27]. Those infected with HIV have weakened and compromised immune systems that make them more susceptible to contracting TB [30, 31]. Cases of antibiotic resistant TB increased from 7,386 in 2010 to 14,161 in 2014 [25].

Racial and gender disparities in health outcomes and mortality

Social disparities in distribution and access to care leave a gap in mortality and death rates between races. The death rate in 2016 for blacks was 70%, while only 9% were deaths of whites [27]. According the 2011 South African Census, about 80% of the South African population is black and almost 8% are white [3]. Overall, the death rate per 1,000 people was 10.1 in 2015 [32]. The apartheid era may have ended but the land possession policies are still in place and have resulted in lasting social inequities,

particularly in health care, which is evident in the racial disparities in death rate. As seen in Figure 3, females and males have similar death rates from ages 0 to 24 and have the greatest difference in death distribution between ages 65-90+. Females death distribution is higher than males throughout ages 24 to 65 and falls after age 65.

Health care provider shortage

Physician shortage and vacancies in public health roles leave a gap in health care efficiency throughout South Africa. As previously mentioned, the vacancy rates are reported to be 56% for doctors and 46% for nurses [11]. Nurses and community health workers are taking on an emerging role in the development and making health care accessible to more South Africans [25].

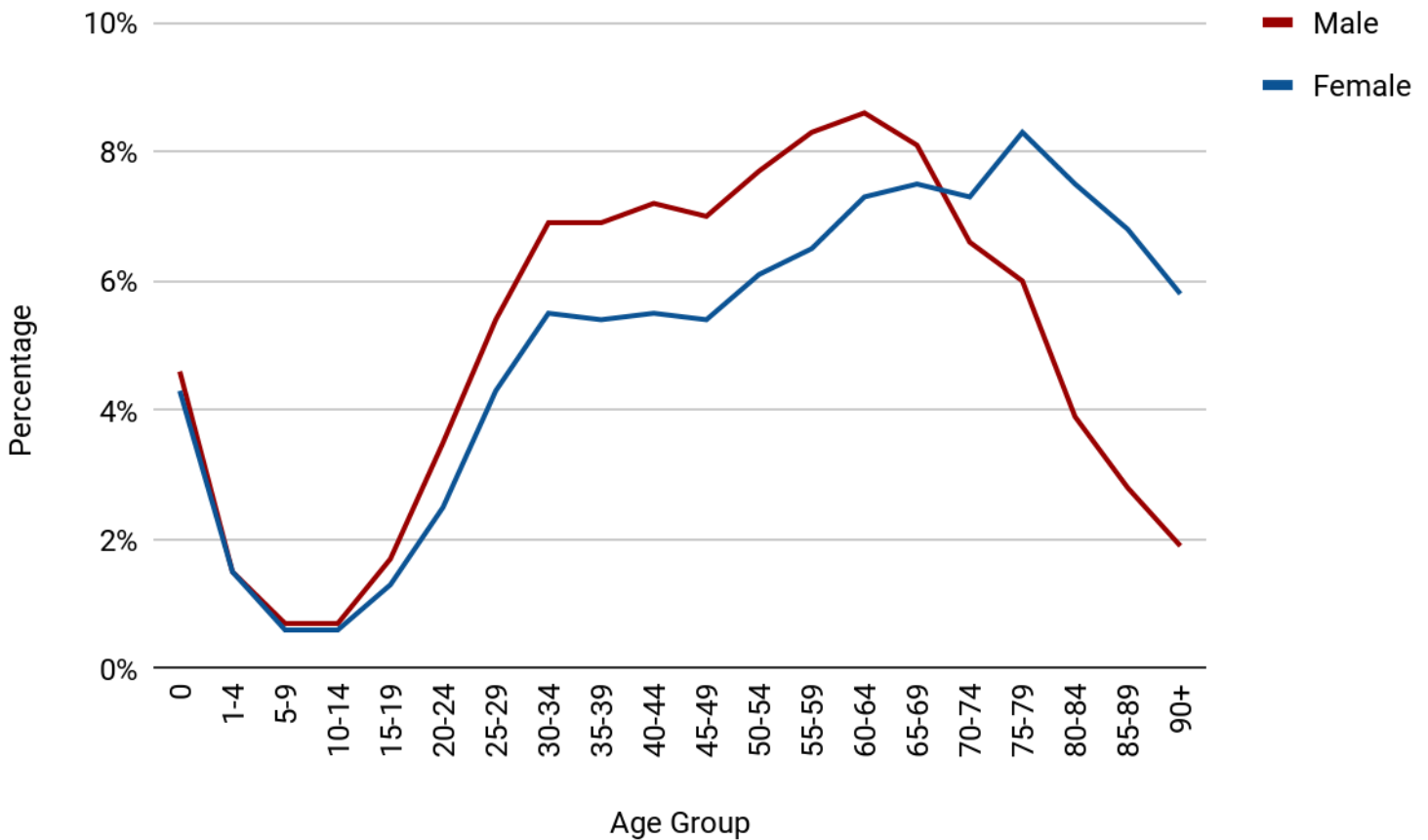


Figure 3: Author created using data from South Africa National Planning Commission (2012) [27]. *Percentage distribution of deaths by age and sex, 2016.*

Discussion

The current state of South African health care is fragmented and does not adequately meet the health care needs of its citizens in a comprehensive delivery system. The system is ill-equipped to handle catastrophic health situations. Some recent calamitous public health crises that have occurred in South Africa during the first couple months of 2018 include a nationwide water shortage, listeriosis outbreak in packaged meat, and a plague outbreak. The response to these crises has been varied. However, a defragmented system that emphasizes the safety and well-being of all citizens could prevent future catastrophes. In the nine years since the National Health Insurance Plan was introduced, there has been little legislative progress and the lack of funding needed to reach its goals has become apparent on the global stage. Beginning in 2011, the National Health Insurance program was piloted in ten districts, but no information on the successes or deficits is currently available [24].

The government's plan to fund the National Health Insurance reform is unrealistic based on the income disparities in the country. The proportion of the population that has the resources to collectively and adequately fund a national insurance program are currently part of medical schemes and will not be inclined to leave the private system to rebuild a public universal health coverage system. Future prospects for a more cohesive public health system could include more emphasis on community health workers and district-based service providers. South Africa could also learn from Germany's social health insurance financing model and shift more of the responsibility to the employers and assume a more realistic taxation plan to fund the National Health Insurance plan that could ensure universal coverage. The HIV epidemic, pervasive corruption, lack of revenue, and fragmented public and private health care systems are barriers to improved health and health care delivery to South Africans.

Conclusion

As a middle-income Sub-Saharan African country, the data and information on South Africa's health system and outcomes are limited due to the government's lack of transparency. Based on this limited information, South Africa needs to make long strides in the future to truly achieve universal health care and improved health outcomes for all South Africans. At first glance, the new

National Health Insurance plan appeared promising. However, a deeper analysis showed the reality of the financial specifics required of the program. Overall, the HIV epidemic response, history of racial discrimination, and lack of health and social services revenue highlight the missing governance and stewardship needed to effectively reform the two-tiered health care system.

Author Contact Information

Ann Conmy: conmy006@umn.edu

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