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Political Leadership in South Africa: National Health Insurance

"HIV/AIDS is an important medical problem, and we can't drop it, but NHI is the mother of all of the programs. If you want to solve all of your health care problems, including HIV/AIDS, you've got to go that way."
—Aaron Motsoaledi, Minister of Health of South Africa

In May 2015, South African Minister of Health Aaron Motsoaledi was still waiting for the presidential cabinet's feedback on a policy paper outlining his ideas for implementing national health insurance (NHI)—a mandate from the African National Congress political party—and strengthening primary health care.

Motsoaledi's team had started rolling out the proposed primary care reforms, with plans to reach all 3,507 public primary health care facilities by April 2018. Impact data were limited, although initial implementation sites had demonstrated improvement in priority reform areas (e.g., human resource capacity, infrastructure) and health outcomes (e.g., incidence of pneumonia, tuberculosis cure rate). Motsoaledi hoped that getting approval of the policy paper and improving primary health care would address critics' concerns. NHI had proven to be a divisive issue, with private health insurance companies and service providers voicing apprehension about their future role in the health system and several academics and government officials questioning the model's feasibility. Would the primary care reforms and policy paper revisions be enough to convince everyone that NHI was the way forward?

Overview of South Africa

The Republic of South Africa (South Africa) is the southernmost country in Africa (see **Exhibit 1** for country map). Indigenous peoples were its primary inhabitants until 1652, when Dutch settlers arrived.[1] British colonists began settling the country in the early 1800s and fought with the Dutch and indigenous groups for land ownership.[2] Britain formed the Union of South Africa in 1910 and established a national

Amy Madore, Hisham Yousif, Julie Rosenberg, Chris Desmond, and Rebecca Weintraub prepared this teaching case, with assistance from Patrick Brooks, for the purpose of classroom discussion rather than to illustrate either effective or ineffective health care delivery practice.

government led by white Europeans. More than 75% of the population was black or *colored*, a South African term for mixed race.[3]

During the 20th century, the South African government entrenched policies restricting black citizens' freedoms. In 1948, the National Party came to power and introduced apartheid, an official system of racial discrimination and segregation.[2] Apartheid legislation separated black South Africans from other groups by designating areas for them called *homelands*. Homelands were densely populated; nearly 80% of the population lived on less than 10% of South African land.[4] The national government coopted traditional leadership structures to exercise authority in the homelands. It prioritized spending in white communities, leaving black South Africans with limited access to health, education, and other basic services. Black South Africans were not allowed to run in national elections.[2,4]

A network of organizations, including the African National Congress (ANC) political party, resisted apartheid.[5,6] Other countries and international organizations condemned apartheid and pressured the government to end it by imposing economic sanctions and banning South African teams from major sporting events.[7]

In 1994, the nation's first multiracial, democratic election ended apartheid and made ANC leader Nelson Mandela the first black president of South Africa.[8] Approximately 16% of South Africa's population was white, down from more than 20% during apartheid.[9] Mandela repealed apartheid policies and introduced new legislation aimed at increasing equality. Despite the political emancipation of black South Africans, economic inequality persisted.[10] The ANC party's Thabo Mbeki was president from 1999 until 2008, when he lost party support and resigned. One of Mbeki's former deputy presidents, Jacob Zuma, won the presidential election in May 2009.

The ruling political party in each of South Africa's nine provinces appointed a premier to govern the province. Each premier, in turn, appointed Members of the Executive Council (MECs) to oversee implementation of national policy in specific areas (e.g., health, education, agriculture).

Demographics

In 2009, South Africa's population of 50 million lived on 1.2 million square kilometers of land, an area roughly twice the size of France (see **Exhibit 2** for table of demographic and socioeconomic data).[11] A majority of the population was black (79.2%), followed by colored (8.9%), white (8.9%), and Indian or Asian (2.5%). There were 11 nationally recognized languages; the top-five first languages were Zulu (22.7%), Xhosa (16%), Afrikaans (13.5%), English (9.6%), and Sepedi (9.1%).[12] Two-thirds of black South Africans identified with the Nguni group, one of four major ethnic groups in the country.[12,13] Nearly 80% of South Africans identified as Christians, while 15% had no religious affiliation.[14]

In 2009, South Africa was an upper-middle-income country, based on its gross national income per capita, and had the largest economy in Africa.[15] Affluent areas of major cities resembled cities in high-income countries; however, poverty and inequality were widespread.[16] Poverty was concentrated in rural settlements outside major cities where legal homelands had existed during apartheid. Demographic, socioeconomic, and health metrics differed considerably among the country's nine provinces (see **Exhibit 3** for a comparison of indicators by province).

In 2009, approximately 52.5% of 15- to 24-year-olds were unemployed.[17] According to the 2011 census, average annual household income was ZAR 103,204 (USD 14,271).* On average, white households earned

* Conversions were performed using the average exchange rate for the given year using http://www.oanda.com/currency/historical-rates. From 2009 through 2014, the average annual exchange rate for USD 1 ranged from ZAR 7.2313 (2011) to ZAR 10.835 (2014).

six times more than black households and three times more than colored households.[18] At the same time, inequality was increasing within ethnic groups, particularly among black South Africans.[19]

Health in South Africa

During the 2000s, the Mbeki administration's insistence that HIV did not cause AIDS, and that antiretroviral treatment (ART) was ineffective and unsafe, led to explosive growth in South Africa's HIV/AIDS epidemic. By 2009, 18.9% of 15- to 49-year-olds were HIV-positive,[20] and more than 70% of HIV/AIDS patients were co-infected with TB.[21,22] Researchers believed that HIV/AIDS and TB were the major causes of mortality and morbidity in South Africa in 2008, followed by road traffic accidents and violence (see **Exhibit 4** for more epidemiologic and health system indicators).[23] Black and colored people experienced higher rates of infectious disease and mental illness than white people.[24] Life expectancy at birth in 2009 was 57.[25]

Governance

The post-apartheid government consolidated the former homelands' health administrations and 400 independent local health authorities into nine provincial health care systems responsible for delivering health care in the late 1990s.[24,26] The minister of health was a member of the president's national cabinet and oversaw the National Department of Health (NDoH), which developed national policies and programs and provided technical assistance to the provinces. General government revenues were the NDoH's primary funding source.[27] The National Treasury's chief director for health and social development worked closely with the NDoH on budgeting.

The National Treasury disbursed what it called an "equitable share allocation" to each province annually based on demographic and socioeconomic characteristics. There were no provincial taxes. The allocation included a health budget based on a province's epidemiological profile, public hospital use, and health insurance enrollment.[28] The National Treasury also managed national procurement contracts, while provinces were responsible for paying suppliers and coordinating between clinics and supply depots. The National Health Laboratory Service (NHLS) was responsible for processing diagnostics.

Health Infrastructure and Human Resources

The denial of health and other basic services to black South Africans during apartheid led to the development of a two-tiered health system. Facilities in non-white areas were outdated and rundown, whereas wealthy, white areas offered convenient access to modern private facilities known for delivering high-quality, technologically advanced care.[29,30]

The public health system, which provided care for the majority of the population, consisted of clinics, community health centers, and hospitals. Clinics provided routine primary health care and some urgent care. Community health centers offered primary care, emergency services, and 24-hour maternity care. Nurses and other health professionals staffed clinics and community health centers; doctors visited occasionally to provide more advanced care.[31] In 2004, almost 25% of public clinics did not have piped water, and 10% of public clinics lacked electricity.[31] Public facilities were understaffed and overcrowded.[24]

Public hospitals included district hospitals, general and specialized regional hospitals, and general and specialized tertiary hospitals. Except in emergencies, patients needed a referral to attend a regional or tertiary hospital.[31]

Although patients could obtain free medicines from public pharmacies, some preferred to use private community pharmacies because they had shorter waiting times and were easier to access.[32] In 2010, two-thirds of pharmacies were private community pharmacies; the rest were a mix of public community and hospital pharmacies, as well as manufacturing, wholesale, and private hospital pharmacies.[32]

Financing

In 2009, total health spending as a percentage of GDP was 8.7%.[33,34] Private health expenditure made up 53% of total health spending (see **Exhibit 5** for private and public health care spending as a percentage of GDP).[34] Primary health care in the public sector was free for all South Africans starting in 2006.[35]

The private health insurance market had seen many changes. It took off in the 1990s, with more than 200 plans operating by the end of the decade.[36] Rising costs and limited price regulation made private health care unaffordable for a majority of South Africans.[37] Private health insurance plans—commonly referred to as *medical aid schemes* in South Africa—provided premium-paying members financial coverage for specific health conditions and services. People who could not afford private health insurance premiums could purchase lower-cost, short-term insurance that protected against a limited number of catastrophic health events (e.g., disability, dismemberment) or offset the cost of hospital stays.

The government attempted to control rising private health costs by tightening regulations for private providers and insurers. It introduced a community rating system, restructured the minimum benefits package to reduce the likelihood of patients being denied treatment coverage for more serious illnesses, and increased the power of the regulatory oversight body, the Council for Medical Schemes.[38] The minister of health chaired the council's board and appointed its 15 members.

The government began offering subsidies to public-sector employees in the late 1990s to assist them in purchasing private insurance. Only half of employees participated in the program.[39] In 2005, the government discontinued the subsidies, and an interdepartmental working group devised a health insurance plan for government employees called the Government Employees Medical Scheme (GEMS).[40] In 2009, GEMS had 1.15 million members.[41] The legislative and judicial branches of government used different health insurance plans.

The number of private insurance providers decreased over time, with industry consolidation and increased government regulations. In 2009, eight million people, or 16% of the population, belonged to one of approximately 90 private health insurance schemes.[41] About 74.4% of white people, 9.0% of black people, 21.4% of colored people, and 42.6% of Indians/Asians had private insurance coverage.[42] Participation in private insurance plans varied considerably across provinces (see **Exhibit 6** for insurance coverage by province). Approximately 2 million South Africans purchased the lower cost, short-term/hospital insurance.

The NDoH suggested a lower percentage of the population utilized private health care than private-sector leaders believed. In 2010, WHO reported that 16% of South Africans used private doctors and hospitals covered by their private health insurance, while another 16% of the population used the public sector for hospital care and paid out of pocket for private primary care.[43]

National Health Insurance Debate in South Africa

Conceptions of a national, government-sponsored health insurance program guaranteeing health care access to all South Africans began during the 1940s, when the government was exploring avenues for decreasing anti-British sentiment following World War II (see **Exhibit 7** for timeline of health insurance

policy formation).[44] Planning came to a halt, however, when the National Party gained power in 1948 and instituted apartheid.

In 1994 the end of apartheid spurred discussions about how to address South Africa's two-tier health system. The debate focused on two potential avenues: national health insurance (NHI) and social health insurance. NHI would be a single-payer pooled insurance fund financed by taxpayers and administered by the NDoH entitling all South Africans to benefits. Social health insurance would use a multipayer scheme and offer a benefits package to taxpayers and the formally employed, with plans for gradual expansion to the entire population (see **Exhibit 8** for a table comparing health insurance policy proposals, 1994–2002).[45]

Stakeholders disagreed on whether NHI was financially and politically feasible. Some believed with NHI, all doctors would essentially be working for the government, and that consumers would not be able to purchase additional health insurance coverage to supplement their government-sponsored benefits.[46] As a result, social health insurance became their preferred option.[47] Multiple social health insurance proposals were put forth between 1995 and 2002. Discord about technical details prevented any from being implemented.

In preparation for upcoming general elections, the incumbent ruling party, the African National Congress (ANC), organized a political convention in 2007 in the city of Polokwane. During the conference, the ANC health and education subcommittee began drafting a 10-point plan for improving the health system. Several ANC party members, including the health and education subcommittee chair, advocated putting NHI on the party agenda. The Congress of South African Trade Unions (COSATU) also lobbied the ANC to make NHI a priority, believing it would help address racial inequities in the health system.

The ANC passed a resolution in support of NHI, making it a priority for new party leader Jacob Zuma,[48] and formed an NHI Task Team to develop the concept. ANC party member and former NDoH director-general Olive Shisana had been an NHI proponent since the 1990s and was asked to lead the Task Team.[46] Zuma appointed Dr. Aaron Motsoaledi as minister of health.

Aaron Motsoaledi as Minister of Health

Professional Background

Motsoaledi had a legacy of family activism. His uncle was a well-regarded anti-apartheid advocate who was imprisoned in 1964. Witnessing the 1976 Soweto student uprising against apartheid policies inspired Motsoaledi to attend the University of the North. "Most political leaders of our time attended the university," he said, "so there was that rich history at the university, and I wanted to become a part of that." In the late 1970s he began medical school and continued anti-apartheid organizing, holding various student leadership positions.

Motsoaledi completed his medical internship at a rural surgery clinic in the community where he grew up.[49] While practicing medicine in the public and private sectors, he continued to support the anti-apartheid movement and became involved in the ANC. In 1994, he became a provincial legislator and the MEC for education in his province. ANC party members told him that it was a political post. Motsoaledi later served as the MEC for transport and the MEC for agriculture, land, and environment.

When the ANC declared education and health its priorities for the next five years at the national 2007 convention, Motsoaledi joined a new subcommittee dedicated to the two topics. "The Polokwane convention was a decisive, brave moment to say, this has all been coming for ages, and let's do it," Motsoaledi said. The subcommittee began drafting a 10-point plan for improving South Africa's health system (see **Exhibit 9** for the plan).

After Zuma appointed Motsoaledi minister of health in May 2009, Democratic Alliance party members questioned the decision to enlist a former MEC of education to work on health. Civil society leaders expressed concern that he was not well known by health advocates and providers.

When Motsoaledi took office, Zuma and other ANC leaders instructed Motsoaledi to focus on tackling HIV/AIDS and establishing a national health insurance system. Motsoaledi quickly noted that despite substantial investment in health care, South Africa consistently underperformed compared to other lower- and upper-middle-income countries. He was shocked to learn that South Africa was experiencing a quadruple burden of disease—localized epidemics of HIV/AIDS and TB, maternal and child mortality, noncommunicable diseases (NCDs), and injury and violence.[50] "Brazil spends 9% of its GDP on health, but Brazil has a lot to show for it," Motsoaledi said. "We spend more than Russia, China, and India, but in terms of outcomes, we are behind all of them." Life expectancy at birth in these countries was between 12 and 22 years higher than in South Africa (53) in 2009.[51] The quality of public-sector services was lower than private-sector services, Motsoaledi noted, but he believed that private-sector costs were too high.

Motsoaledi saw the ANC party's mandate to merge the public and private health systems through one national insurance program as the solution. He believed it would alleviate some of the inequities in health care and optimize the quality and efficiency of care delivery.

First Months in Office

In June 2009, the NHI Task Team's draft proposal was leaked to the media.[52] It was unclear who had released the material. Opposition parties,[53] private health insurance schemes, private health care providers,[52] associations of health professionals, and academics[52] were critical of the proposal. They claimed that NHI would unduly raise taxes on the middle class and disrupt the health system by minimizing the private sector's role. Many were concerned that NHI would lower the quality of public and private health care and weaken the economy. Some argued that NHI was only feasible for wealthy countries with large tax bases, and that the NDoH's reimbursement rates would not be high enough to attract and retain private doctors.[52]

Motsoaledi responded quickly through television interviews and press statements to "cool the climate," as he put it. He and Shisana defended NHI on a local TV series, "The Big Debate," in July. Other panelists included two health economists; the leader of an HIV/AIDS advocacy organization; a specialist physician from the private sector; and the CEO of the country's largest private health insurance company. They expressed concern about the government's readiness to implement NHI given current weaknesses in the public health system. The private-sector CEO noted that private insurers and service providers had been excluded from discussions of the government's plans.

Fallout from the leak continued. Two university professors wrote in a national daily newspaper, "The NHI proposal can be taken seriously only once a proper analysis of its costs, fiscal consequences and affordability has been undertaken. The current proposal is beyond what the country can afford."[54] Motsoaledi found it difficult to respond to these and other criticisms of NHI. "We were not given a chance to come up with a concept of NHI and announce it to the public. That's not how it happened," he said. "We started with our backs against the wall immediately."

Ministerial Advisory Committee

In November 2009, Motsoaledi formed a Ministerial Advisory Committee (MAC) to help him develop a white paper that presented his ideas for the policy. Motsoaledi hoped that the document would address criticisms of NHI and inform the development of future legislation. He designated Shisana as chair and made his chief director of health financing and planning, Anban Pillay, PhD, responsible for coordinating

the committee (see **Exhibit 10** for an organizational chart of the NDoH). He recruited 25 members, including staff from the National Treasury and the NDoH, academics, international organizations, a private hospital, a private actuarial consulting firm, and health economists who provided preliminary NHI cost estimates (see **Exhibit 11** for MAC members). Many MAC members also sat on the ANC NHI Task Team, which continued to meet separately. The overlap in membership facilitated "cross-pollination" of ideas between the two groups, one NDoH technical specialist noted. There were no representatives of private health insurance companies on the MAC.

Some, including the deputy minister of health and private insurance company leaders, felt the private health sector was an important ally with unmatched technical expertise.[55] Others, including the Congress of South African Trade Unions, worried the private sector would seek to protect its own interests and pushed to keep them out of NHI discussions.[56] Motsoaledi and his team believed private insurers and their members had an interest in maintaining the existing health care system. "Whenever you bring the poor into the mainstream, those who are well-to-do get scared," Motsoaledi said.

The Green Paper

When the MAC completed a draft of the white paper, Motsoaledi shared it with the ANC NHI Task Team and presidential cabinet. Motsoaledi's fellow cabinet members advised him to make the document less formal by calling it a green paper—a government report of policy proposals for preliminary debate and discussion—rather than a white paper, which was considered the precursor to new legislation, and to invite public commentary. They also directed him to include estimations of costs over time.

MAC members spent the following months revising the green paper. Health economists on the committee worked with US-based consulting firm PricewaterhouseCoopers to perform costing analyses on the feasibility of NHI. They estimated it would cost 125 billion South African Rand (ZAR) in 2012, ZAR 214 billion in 2020, and ZAR 255 billion in 2025. By comparison, they noted that South Africa spent more than ZAR 227 billion on health in 2010, of which private health insurance contributions accounted for ZAR 92 billion. They found that South African households spent, on average, between 5.5% and 14% of their income on private health insurance, with lower-income members spending a larger proportion than higher-income members.[57]

Motsoaledi presented a revised green paper to the cabinet and received approval to publish it online in August 2011.[†] The paper proposed a general framework to support the roll-out of NHI over a 14-year period, beginning in 2012. Its central feature was a single-payer NHI fund—managed by the government—that would purchase a package of services from private and public health care providers. It also proposed to re-engineer the public health system and primary health care (PHC) services through district, municipal, hospital, and school-based health initiatives.

Per the green paper, the NDoH planned to introduce 10 NHI pilot districts to test NHI financing and service delivery models.[57] NHI pilot districts were supposed to work toward solving complex technical issues related to NHI implementation, such as determining the best public-private split of services, experimenting with payment models, and understanding how best to incorporate general practitioners in service delivery. The green paper excluded details on the complete package of services, precise financing mechanisms, the exact role of private medical insurance schemes, and implementation.

Both government and non-governmental actors criticized the vague nature of the green paper. One of the paper's strongest academic critics was a prominent health economist and health insurance expert who

[†] http://www.hst.org.za/sites/default/files/2bcce61d2d1b8d972af41ab0e2c8a4ab.pdf

identified several data and citation errors and found the document difficult to understand. Private providers and insurance companies disputed some of the statistics cited in the paper, particularly the fact that the private health sector accounted for half of total health spending in South Africa but served only 16% of the population.[57] They argued that the private sector served closer to one-third of South Africans. Private hospital groups were displeased with the costing analysis; they argued that the projected cost of NHI should be higher.

Members of civil society and the ANC's main opposition party, the Democratic Alliance, again raised concerns about the affordability of NHI. Zackie Achmat, the cofounder of a prominent HIV/AIDS treatment advocacy organization, explained,

> I think the danger is you have a working class and poor communities that are suffering enormously because of unequal distribution of health care resources, and you have a middle class who is already double-taxed. Patients in these communities have to get HIV treatment in the public sector and then have private health care insurance to visit a private clinic for osteoarthritis and mental health services. So there is a double tax on lower class people.

Some believed Motsoaledi was focusing too little on the specifics of financing NHI. Private providers and health insurance companies preferred to see more in-depth financial analysis. Many were reluctant to comment on the green paper for fear of public backlash from the NDoH. One private insurance company representative said, "The response to anyone in the private sector or anybody anywhere who was even vaguely negative was extremely aggressive and hostile … We just stopped talking about NHI. We're totally behind the principles and objectives, but we need to see the detail before we comment anymore." Motsoaledi maintained he had an open door policy vis-à-vis private insurers and providers. "We are shaping a new policy," Motsoaledi explained, "and it is going to change people's lives. It is going to change everybody—there is no question about it. Some it might change negatively, others positively."

To regain control of the debate, in December 2011 the NDoH held an open NHI conference aimed at guiding policy formation by drawing from other countries' experiences, such as Korea, Thailand, Turkey, Australia, and the United Kingdom (UK). Academics, members of civil society, private-sector representatives, bilateral and multilateral organizations, and health and finance government officials from South Africa and beyond attended the conference.[58]

Motsoaledi dissolved the MAC and enlisted Anban Pillay—who had been promoted to deputy director-general for health regulation and compliance—and two NDoH health insurance technical specialists to work with him on the white paper. Motsoaledi promised to release a white paper detailing implementation plans within months of the green paper.

The White Paper

Motsoaledi wanted to use the white paper to lay the groundwork for a single-payer insurance model, which he and his team maintained was necessary to control inefficiencies and high costs in the private health sector. Their goal was for a countrywide, government-administered NHI fund to be the sole insurer of a comprehensive package of health services.

The National Treasury wanted to ensure the political and financial viability of NHI. Treasury leaders met with Motsoaledi and his team and suggested a multipayer insurance model with a private insurance option as a possible alternative. This approach would allow people with private insurance—who were accustomed to high per capita spending and premium benefit packages—to keep their medical insurance schemes and contribute to the NHI fund through a solidarity tax. The National Treasury posited that

designing a model with choice would allow consumers to pay for higher quality health care while the government worked to improve the quality of public-sector care.

Private insurance companies anxiously waited to see their future role explained in the white paper. Many stakeholders believed the middle class and 2 million civil servants—1.8 million of whom had private medical insurance—would strongly oppose a policy not covering private benefits. A private health insurance company representative commented, "There will be no guarantee that those previously paying for medical schemes will get anything like what they had before. They will see themselves as being deprived of private health care access, which is what will be the reality."

Motsoaledi also hoped to use the white paper to outline his plan for improving the public health system. He deployed staff teams to observe health care delivery and identify quality issues in the provinces, and he sent academics to learn from developing and developed countries' health systems, including their approaches to emergency care.

One NDoH deputy director-general, Yogan Pillay, PhD, shared examples of universal insurance health coverage in the UK, Thailand, and Austria. Pillay advised Motsoaledi, "It took Austria 200 years and Thailand 13 years to get universal health coverage. We don't have 200 years—we don't even have 13 years. The question is, what can we learn from these examples to get from where we are to where we want to be?"

Motsoaledi and his team visited with health care professionals to survey their reactions to upcoming health system changes he planned to introduce in the white paper. For example, they held a clinical service integration workshop for nurses in rural clinics. Service delivery at the clinics was fragmented; if patients co-infected with HIV/TB visited a clinic on "HIV day," nurses often treated them for HIV but told them to return on "TB day" or visit another clinic to receive TB care. Motsoaledi's team explained to the nurses that the public system could move toward integrated services. "We had to convince them in the workshops that this was the best way to work," Motsoaledi said, "and that we were going to do it. There was no point in writing it in the white paper when they're not even going to follow up or be enthusiastic about it, you know? It's not something that you could do overnight."

As the March 2012 deadline for delivering on the green paper's commitment to implement 10 pilot districts approached, Motsoaledi put the white paper on hold. He turned his focus to improving public health care and primary care delivery. "The basic goal was to improve the health care system; we're not rushing into the financing," he said.

NHI Pilot Districts

The NDoH identified 10 pilot districts (later expanded to 11) and sent teams to assess their public facilities for cleanliness, safety and security, drug inventory, patient wait times, staff attitudes, and other quality indicators. Motsoaledi convinced the National Treasury to allocate funding for the pilot districts via the NDoH rather than sending money directly to the provinces (see **Exhibit 12** for a figure showing pilot district populations and funding distribution). The Treasury agreed to disburse the money to the NDoH so that Motsoaledi could provide conditional grants to the pilot districts.

Motsoaledi assigned members of his staff to liaise with and advise the pilot districts. Staff met with assigned district management teams to discuss local health services. Provincial leaders ultimately made the financing and hiring decisions, however, and often disregarded NDoH staff advice. Some NDoH employees postulated that several local departments did not fully cooperate because it was a national program.

Under South African law, Motsoaledi did not have the direct authority to intervene. "What you have are local and regional interests that trump national interests, and that creates enormous difficulty for the

Minister," a member of Parliament said. "Priorities are set nationally, but the money, in the end, is spent by the provinces."

Many questioned the effectiveness and purpose of the pilots, including members of Motsoaledi's team and the National Treasury.[59] The provinces may have been unclear as well, as one NDoH staff member explained: "I don't think the provinces and the districts understand what we are trying to achieve. You have to balance expectations between political pronouncements, and communication has not been effective."

One provincial health minister in a pilot district sought help from a private medical scheme in reforming the district's health data information systems. Hospital, district, and provincial managers were excited to use the new system as a management tool; however, ANC party members intervened and ended the partnership.[60]

NHI pilot districts found it difficult to recruit and retain general practitioners (GPs) in private practice. In March 2013, Motsoaledi's team launched an effort to attract 600 private sector GPs within one year to work part-time in pilot district PHC facilities. Their goal was to increase patient access to PHC. Motsoaledi proposed paying contractors the same rate he paid public-sector GPs—typically less than private-sector pay.

Motsoaledi sought assistance from the UK's National Health System (NHS) to establish a government agency, the Office of Health Standards Compliance, to accredit service providers interested in participating in NHI. "I'm very much attracted to the NHS," Motsoaledi remarked. "And they have been helping us a lot." The NHS provided input on accreditation standards and trained staff in facility inspections.

Motsoaledi was frustrated by the slow and disparate progress in the pilot districts. An independent review found that the districts were struggling to improve quality of care and build capacity (see **Exhibit 13** for progress indicators).[61] Wealthier, more developed provinces such as Western Cape—where most white South Africans lived and the Democratic Alliance was the ruling party—Gauteng, and KwaZulu-Natal had stronger infrastructure and human resources for health. Poorer provinces such as Limpopo, Mpumalanga, and North West had weaker infrastructure and fewer skilled health professionals. Motsoaledi explained, "I can come up with a policy that is good. If one province fails, or they are not enthusiastic about implementation, it is a problem. That's why NHI, unfortunately, has suffered greatly. We've got to agree at the national level, but ultimately we depend on the provinces—who might have their own ideas—to do it."

What districts and provinces were missing, Motsoaledi believed, was a blueprint for improving public clinics. He wanted to provide them with an "Ideal Clinic" model to guide spending and standardize health care delivery across the country.

The Ideal Clinic Model

In July 2013, the NDoH launched the Ideal Clinic initiative and selected 10 PHC clinics to serve as "learning sites." Two-person teams—a doctor and a nurse—visited each site to study inefficiencies and work with clinic, district, and provincial managers to prototype solutions. The NDoH used the team's observations over an eight-month period to identify 10 "components" and 32 "subcomponents" with 196 elements that clinics needed to function optimally, and developed a standardized form by which the performance of any public PHC facility could be assessed (see **Exhibit 14** for list of Ideal Clinic components and subcomponents). One of their goals was for clinics to use the criteria to track progress toward becoming an Ideal Clinic.

Motsoaledi contemplated how to use the preliminary data from learning sites to create and scale up an Ideal Clinic model. He had heard about the Malaysian government's Big Fast Results (BFR) approach to achieving public-sector and economic reforms and attended a workshop on it. "They argued that most government policies are good, but they're flying at 30,000 feet from the people," he said. "You need to bring

them to three feet in order for everybody to feel them and be part of them." Motsoaledi learned that BFR involved bringing together a diverse group of stakeholders in "laboratories" to conduct intensive, detailed planning for six to eight weeks.

Motsoaledi debriefed with Zuma and recommended they use BFR to develop his Ideal Clinic initiative. Zuma had also studied BFR and decided to adapt the model to realize the government's National Development Plan 2030 goals.

At the same time, Motsoaledi defended the NDoH's inability to contract private physicians to work in pilot district clinics. He and members of his staff provided a status update to members of the parliamentary appropriations committee in March 2014. The NDoH had only contracted 96 physicians in the last year because doctors believed the hourly rate—the highest the government allowed for public-sector workers—was too low, they explained.[62] Motsoaledi's deputy director-general for primary health care reported improvement in several health indicators across the pilot districts, namely, incidence of pneumonia, severe malnutrition in children under five, inpatient deaths of children under one and children under five, cervical cancer screening rates, and TB cure rates.[63]

In July 2014, Zuma publicly announced that the Ideal Clinic model would launch at the end of the year. He called the overall effort Operation Phakisa (*phakisa* meant "hurry up" in Sesotho, one of South Africa's official languages).[64] In October, Motsoaledi and his team convened 164 people for a six-week period to devise a plan for achieving Ideal Clinic status in all public PHC facilities. Participants included senior managers from national, provincial, and local government and leaders from civil society organizations, the private sector, organized labor, and academia.[65] The government hired a global consulting firm to facilitate the BFR process. They set up eight "laboratories" covering different aspects of the health system: service delivery, waiting times, supply chain management, human resources, infrastructure, financial management, institutional arrangements, and scale-up and sustainability. The groups brought their ideas together to outline and prioritize 46 initiatives that facilities needed to undertake to achieve success across the Ideal Clinic components (see **Exhibit 15** for a list of the 46 initiatives). The NDoH categorized each initiative as a "quick win," "breakthrough initiative," or "major delivery fix."[66]

Zuma invited private company board members and other prominent stakeholders in the health system to learn about the Ideal Clinic model over lunch. Leaders of the eight teams presented their analysis and proposals for what needed to be done. "We think this is going to be a game changer in improving the quality of public health care," Motsoaledi said.

Motsoaledi hoped the Ideal Clinic model would address long waiting times in public facilities: "The biggest complaint is that people have to wait longer in public clinics … If you go back to 2004, we had 400,000 people on ARVs. Ten years later, we have 2.7 million people, but the same number of clinics and health workers." He visited several clinics and believed the public health sector's paper-based medical record systems were chiefly to blame for lengthy waiting times. Further, none of the existing electronic databases at public clinics were compatible. He purchased computers for hundreds of clinics in the NHI pilot districts and hired a technology research agency to study the existing databases and recommend which to discard to increase interoperability.

The NDoH also understood the Ideal Clinic program needed to strengthen the infrastructure of public clinics. Motsoaledi said, "We installed 10,000-liter drums so that they will not run out of water. In addition, an Ideal Clinic must not run out of electricity; it must have a huge generator that cannot be stolen or uprooted. Given the high incidence of TB, an Ideal Clinic also must have an open, well-ventilated space in the waiting room."

The NDoH aimed for all 3,507 public PHC facilities to meet Ideal Clinic model standards by April 1, 2018. The NDoH established key performance indicators and targets for each of the 46 initiatives that were measured at different levels of government, ranging from facility and district managers to provincial chief financial officers and the NDoH. For example, facility managers were charged with reducing patient wait times to three hours or less by 2018, while the NDoH was responsible for reporting that 90% or more of patients reported satisfaction with waiting times by 2018.[66] For most indicators, either there were no baseline data or the baseline results were "0" or "0%" (e.g., number of service providers trained in change management, percentage of PHC facilities refurbished, percentage of facilities with reviewed staff job descriptions, percentage of PHC facilities submitting monthly expenditure reports).

White Paper Delays

Motsoaledi and his staff periodically met with staff from the National Treasury. The Treasury was working simultaneously on a 100-page internal financing paper outlining options for an NHI fund. "That's how committed we are to its success," the Treasury's chief director for health and social development explained. The Treasury continued to discuss with Motsoaledi's team the role of private insurers and providers in NHI and the possibility of allowing South Africans to continue using private insurance if that was their preference. The NDoH and National Treasury decided to start inviting experts to present data and recommendations on these and other complex issues at their meetings.

Motsoaledi worried that the white paper draft was too academic. He recalled,

> There were activists who told me to go out and explain NHI to people in the street. I was very reluctant; it was a very abstract concept. I would quote what WHO said in Alma Ata about equity in health. It was very difficult. The reason that we delayed the white paper was that we want to make it very practical and very simple, so that every South African can understand it.

Motsoaledi asked Anban Pillay to help rewrite the white paper, defining terms such as "risk selection" and "moral hazard" and replacing technical language with lay language. "Our difficulty was that we were trying to structure a white paper that would address all of the criticisms and issues that had been raised about the green paper, and writing that in simple language would just add fuel to the fire of our critics," Pillay said. "When you oversimplify something, it attracts a different type of criticism." He suggested Motsoaledi consider producing two versions: one for the general public and one for the government and academic readers who had expressed concerns about the vagueness of the green paper. Motsoaledi and his team spent evenings and weekends revising drafts of the white paper.

Motsoaledi presented the fifteenth draft of the white paper to the ANC NHI Task Team in 2014. After reading the first chapter, one committee member said, "Guys, can you tell me, what is the nature of NHI? Based on what you've said, I still don't know what NHI is." Pillay worked on revising the draft, adding more definitions of technical terms. Motsoaledi publicly reassured South Africans, through speeches and interviews, that the white paper's release was imminent. The National Treasury worked simultaneously to finalize its NHI financing proposal to be released alongside the white paper.

The leader of a not-for-profit clinicians' association remarked, "When it comes to NHI, I think Minister Motsoaledi was dealt this poison chalice, trying to come up with a health insurance model and implement it in the face of multiple vested interests—NGOs, unions, politicians, pharmaceutical companies, managed health care companies … It's a phenomenally complicated political landscape."

Moving Forward

In the spring of 2015, the NDoH hosted workshops in every province to introduce PHC facility staff and district and provincial managers to the Ideal Clinic program and train them on its software program for monitoring progress. The program was available for free on the NDoH website and on a new website dedicated to the Ideal Clinic program.‡ Providers had to log in to access the software. The NDoH instructed each provincial and district health department to appoint a team responsible for assessing the Ideal Clinic components at their respective PHC facilities and increasing utilization of the software's quality improvement report. Clinic staff could generate reports as soon as assessment data was entered into the system. Anyone with a user account—including clinic, district, provincial, and national staff and leaders; MECs; and NGO partners—could view data and generate reports in the system. The reports indicated progress in several facilities, but the public did not have access to the data. The NDoH planned to add a publically accessible Ideal Clinic dashboard to the website in the fall so that anyone could view overall progress at the provincial level and see a list of top-performing districts (see **Exhibit 16** for a screenshot of the website).

The most recent data available on the Ideal Clinic website in 2015 was from late 2013; it reported that the average performance rating for Ideal Clinic learning sites increased from 55% in September 2013 to 68% in November 2013. Motsoaledi's team was still in the process of estimating how much it would cost provinces to upgrade their facilities to achieve Ideal Clinic standards.

As of August 2015, Motsoaledi had finalized the nineteenth internal draft of the white paper and anticipated the cabinet would review and then present it to the National Assembly for release by the end of December 2015.[67–69] "I'm just praying that when it comes out, I don't get the same questions again, because I'll be so discouraged after so much work," Motsoaledi said. Anban Pillay reflected on the delay, saying, "The big challenge is that there was a momentum that was driving progress on NHI, and now I think the public interest has died down. People are asking, 'Is NHI still on the agenda?'"

Meanwhile, Motsoaledi awaited the results of the South African economic regulatory body's investigation into private-sector pricing. It was unclear how private providers priced their services or why private health care costs had been rising.[70,71] The ongoing investigation prevented private health insurance company representatives from even discussing pricing in meetings with government officials.

Motsoaledi was determined to achieve universal health coverage in South Africa and remained committed to a single-payer NHI and to expanding the Ideal Clinic model. He said,

> We don't have any choice. Universal health coverage is becoming a global phenomenon. The World Health Organization and the United Nations have adopted resolutions on universal health coverage. It's in our national development plan, and we're acutely aware of what is going to happen at the United Nations in September. When the Millennium Development Goals end, sustainable development goals are going to be set, and we know that one is going to be universal health coverage, which is NHI.

Almost one year into his second term, Motsoaledi contemplated how he could accelerate the NHI conversation while strengthening the public health system. Had he involved the right players? He reflected on what he had learned about being a good leader: "If you want to walk fast, you walk alone. But if you want to bring everyone on board, you must understand that it will be a slower process. You must strike a balance and ask, *Do I want prioritize speed or reaching consensus?*"

Had Motsoaledi made the right tradeoffs in addressing NHI? Would the Ideal Clinic be a national success and move the country more quickly toward universal health coverage?

‡ https://www.idealclinic.org.za

Exhibit 1 *Map of South Africa and Its Provinces*

Source: Wikimedia Commons.

Exhibit 2 *Basic Socioeconomic and Demographic Indicators*

INDICATOR		YEAR
UN Human Development Index ranking	118 out of 187	2013
Population (thousands)	54,002	2014
Urban population (%)	64	2014
Drinking water coverage (%)	95	2012
Poverty (% living on less than USD 1.90 per day)	16.6	2011
Gini index	63.1	2013
GDP per capita in PPP (current international dollars)	13,046	2014
GDP per capita (current USD)	6,478	2014
Literacy (total/female/male)	94, 93, 95	2015

Source: These data were compiled from the following sources: UNDP, UNESCO, World Bank, WHO.

Exhibit 3 *Socioeconomic and Health Profile of South Africa's Nine Provinces*

	Eastern Cape	Free State	Gauteng	KwaZulu-Natal	Limpopo	Mpuma-langa	Northern Cape	North West	Western Cape
Population (millions, 2014)	6.8	2.8	12.9	10.7	5.6	4.2	1.2	3.7	6.1
Population density per km² (2011)	38.3	21.1	675.1	108.8	43.0	52.8	3.1	33.5	45.0
Race (% black, % colored, % white, 2011)	86.3 8.3 4.7	87.6 3.1 8.7	77.4 3.5 15.6	86.8 9.3 4.2	96.7 0.3 2.6	90.7 0.9 7.5	50.4 40.3 7.1	89.8 2.0 7.3	32.9 48.8 15.7
Poverty rate (2011)	60.8	41.2	22.9	56.6	63.8	52.1	46.8	50.5	24.7
Avg. annual household income (2011)	64,539	75,312	156,243	83,053	56,844	77,609	86,175	69,955	143,460
GDP as % of national GDP (2013)	7.7	5.1	33.8	16.0	7.3	7.6	2.0	6.8	13.7
Life expectancy (2014)	56.0	52.2	64.7	56.9	60.4	58.5	55.2	57.6	65.8
Public-sector physicians per 100,000 people (2014)	24.5	31	34.9	38.1	23.1	24.5	45	20.2	33.9
Health care spending (millions, 2014)	8,308	1,460	18,406	20,698	5,289	2,607	274	2,062	5,056

Note: All financial data are in South African Rand (ZAR).

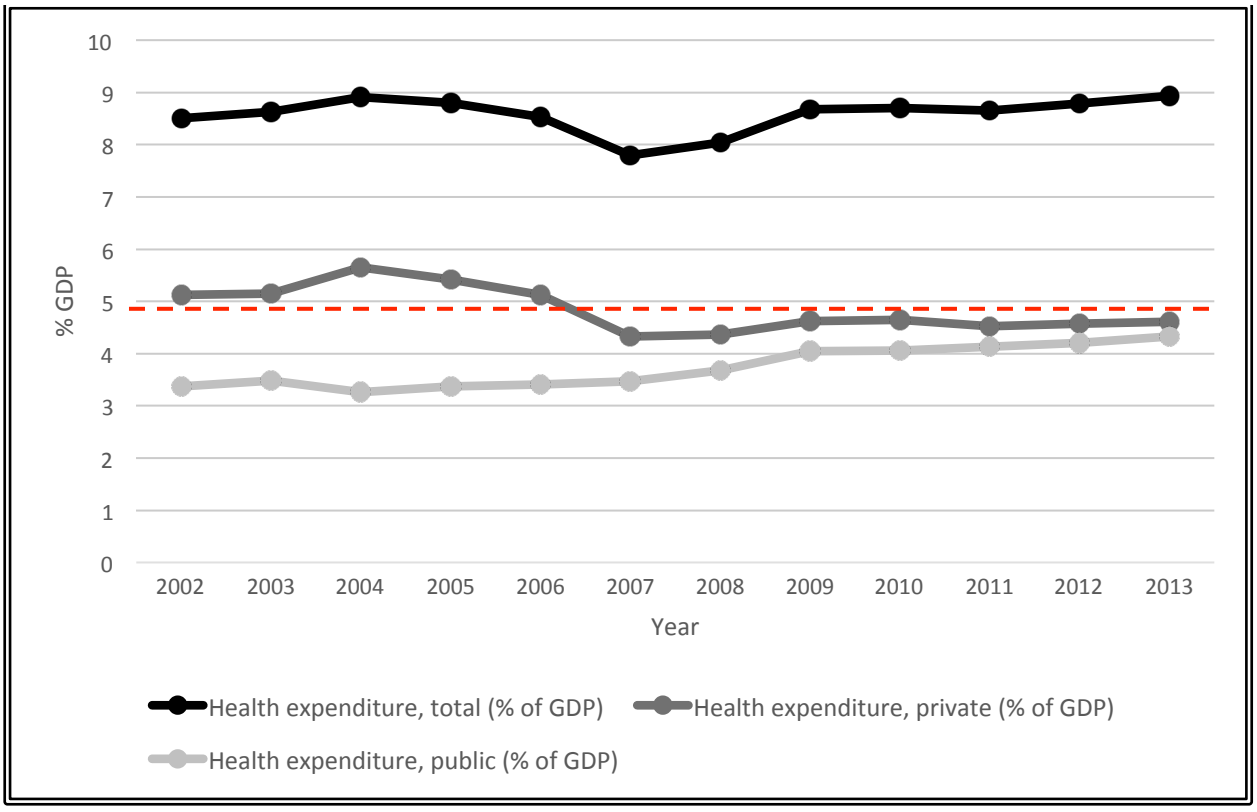
Source: This exhibit was created using data from the South African governmental statistical agency, the South African NDoH, and National Treasury.

Exhibit 4 *Health System and Epidemiologic Indicators*

INDICATOR		YEAR
Average life expectancy at birth (total/female/male)	60, 64, 57	2013
Maternal mortality ratio (per 100,000 live births)	138	2015
Under-five mortality rate (per 1,000 live births)	41	2015
Infant mortality rate (per 1,000 live births)	34	2015
Vaccination rates (% of DTP3 coverage)	70	2014
Undernourished (%)	<5	2015
Adult (15–49 years) HIV prevalence (per 100,000)	18,900	2014
HIV antiretroviral therapy coverage (%)	42	2013
Tuberculosis prevalence (per 100,000)	715	2013
DOTS coverage (%)	100	2007
Reported confirmed malaria cases	8,645	2013
Government expenditure on health as % of total government expenditure	14	2013
Total health expenditure per capita (current USD)	593	2013
Physician density (per 10,000)	7.76	2013
Nursing and midwifery density (per 10,000)	51.14	2013
Number of hospital beds (per 10,000)	23	2012

Source: These data were compiled from the following sources: UNAIDS, World Bank, WHO, FAO, and South Africa's National Department of Health (hospital bed data)[72].

Exhibit 5 *Health Spending in South Africa as a Percentage of Gross Domestic Product (GDP)*



Note: Dashed line represents unofficial WHO recommendation that countries spend around 5% of their GDP on health care.

Source: World Bank Development Indicator Database.

Exhibit 6 *Medical Aid Plan Participation by Province (%), 2009*

Province	GHS	CMS
Eastern Cape	11.4	10.4
Free State	18.0	13.1
Gauteng	26.6	27.6
KwaZulu-Natal	12.5	11.8
Limpopo	8.7	7.3
Mpumalanga	13.3	15.3
Northern Cape	15.4	14.7
North West	13.7	12.8
Western Cape	25.5	24.2
South Africa	16.9	16.4

Note: This table presents two sources of medical aid scheme coverage: (1) the 2009 General Household Survey (GHS), administered and analyzed by Statistics South Africa; (2) the Council for Medical Schemes (CMS) Annual Report 2009–2010.

Source: Medical scheme coverage (%), http://indicators.hst.org.za/healthstats/77/data.

Exhibit 7 *Timeline of Health Insurance Policy Formation in South Africa*

Year	Event
1940	South African Parliament forms the Gluckman National Health Service Commission; it proposes a "national health tax" to finance free health care for all South Africans, regardless of socioeconomic status or race.
1948	Apartheid begins, stalling implementation of national health tax.
1955	Anti-apartheid civil society groups adopt South African Freedom Charter promoting equal rights for all South Africans and a "preventive health scheme" run by the state.
1994	Apartheid ends with South Africa's first democratic, multi-racial election; African National Congress (ANC) party leader and anti-apartheid activist Nelson Mandela is elected president.
	ANC Health Plan of 1994 passes, calling for a "single, comprehensive, equitable and integrated National Health System" managed by a "single government structure dealing with health" that coordinates health care delivery in the public and private sectors.
1995	NDoH forms a Health Care Finance Committee, recommends a multipayer health insurance plan providing public and private hospital-based service coverage for formal-sector workers and their dependents.
	NDoH forms the Committee of Inquiry on National Health Insurance to explore feasibility of social or national health insurance; its recommendations are similar the 1994 Health Care Finance Committee's and criticized for being unfavorable to private-sector interests and incomplete coverage.
1996	Newly ratified South African Constitution includes universal health care in Bill of Rights, guarantees free health care for pregnant women and children under age six.
1997	Minister of Health releases white paper outlining plans to improve primary health care.
1998	Parliament passes the Medical Schemes Act tightening regulation of private health sector pricing, risk pooling, and benefit packages.
2002	NDoH forms the Taylor Committee of Inquiry into a Comprehensive System of Social Security and recommends developing a social health insurance system within the social security framework. Key recommendations include mandatory enrollment of formal employees earning above a certain tax threshold, levying a tax dedicated to health care on formal-employee incomes, and movement toward establishing a national health insurance fund.
	NDoH forms Ministerial Task Team to deliberate Taylor Committee proposals and makes a series of recommendations. Given unpopularity and lack of support of social health insurance, implementation of recommendations stall.
2004	Parliament passes the National Health Act, establishing a rights-based, ethical framework for delivering health care to all South Africans; promises multiple reforms, including mandatory provision of emergency medical treatment and introduction of informed consent for patients.
2005	Government Employees Medical Scheme (GEMS) is created for government employees.
2006	Government extends free primary care in the public health sector to all South Africans,

	regardless of socioeconomic status.
2007	The ANC adopts implementation of National Health Insurance (NHI) as a party objective at the ANC national convention.
2007–2009	ANC creates subcommittee to explore ANC priorities for health and education, forms NHI Task Team to research and promote NHI implementation.
Motsoaledi Becomes Minister of Health	
May 2009	Newly elected president and ANC party leader Jacob Zuma appoints Aaron Motsoaledi, MD, as minister of health.
Jun 2009	ANC NHI Task Team's draft NHI proposals are leaked to the public.
Nov 2009	Motsoaledi forms Ministerial Advisory Committee, begins drafting NHI green paper.
Feb 2011	Motsoaledi announces at a public lecture that the green paper will be presented to the presidential cabinet soon and subsequently made available for public comment.
Aug 2011	NDoH releases green paper for public comment, with plans to release a white paper shortly thereafter. Extensive criticism from opposition parties, the private sector, and academia follows.
Dec 2011	NDoH hosts multisectoral NHI conference to quell criticisms and stimulate further discourse on NHI.
Apr 2012	Motsoaledi launches 11 "pilot districts" to test NHI care delivery and costing schemes.
Mar 2013	NDoH launches effort to contract 600 general practitioners to work in NHI pilot districts.
May 2013	Motsoaledi announces at press briefing that white paper will be released for public comment soon.
Jul 2013	NDoH launches Ideal Clinic initiative at 10 primary health care clinic "learning sites."
Jan 2014	Motsoaledi announces the white paper will be published soon, accompanied by a financing proposal from the National Treasury.
Mar 2014	NDoH reports that 96 private-sector general practitioners have been recruited to work in NHI pilot districts.
Apr 2014	South African economic regulatory body launches inquiry into costs in private health sector.
Jul 2014	Zuma announces Ideal Clinic initiative expansion (Operation Phakisa) will begin at the end of the year.
Oct 2014	Motsoaledi convenes 164 stakeholders for six weeks to design a plan for scaling up and sustaining the Ideal Clinic initiative.
Mar 2015	Motsoaledi announces the white paper will be sent to the presidential cabinet for review in the next month and will be ready for parliamentary discussion by the end of the year.

Source: This exhibit was created by case writers from resources made publicly available online.

Exhibit 8 *Comparison of Social Health Insurance Plans, 1994–2002*

	Source of Revenue	Benefit Package	Provision
Health Finance Committee (1994)	All formal-sector employees	Primary care and hospital services	Mainly public, but small role for private primary care providers
Shisana/Broomberg Committee of Inquiry (1995)	All formal-sector employees	Public hospital services	Choice of provider, competition between public and private hospitals
Department of Health SHI Working Group (1997)	Formal-sector employees over income tax threshold, but not those that belong to medical schemes	Public hospital services	Public hospitals for state fund, choice for privately insured
Taylor Committee of Inquiry (2002)	Formal-sector employees over income tax threshold, voluntary contribution for low income	Primary care, chronic illness, and hospital care	Public facilities for non-contributors, choice for privately insured
SHI Ministerial Task Team (2002)	All taxpayers through social security tax	Primary care and prescribed medical benefits	Public facilities for non-contributors and low-income payers of SHI tax, choice for privately insured

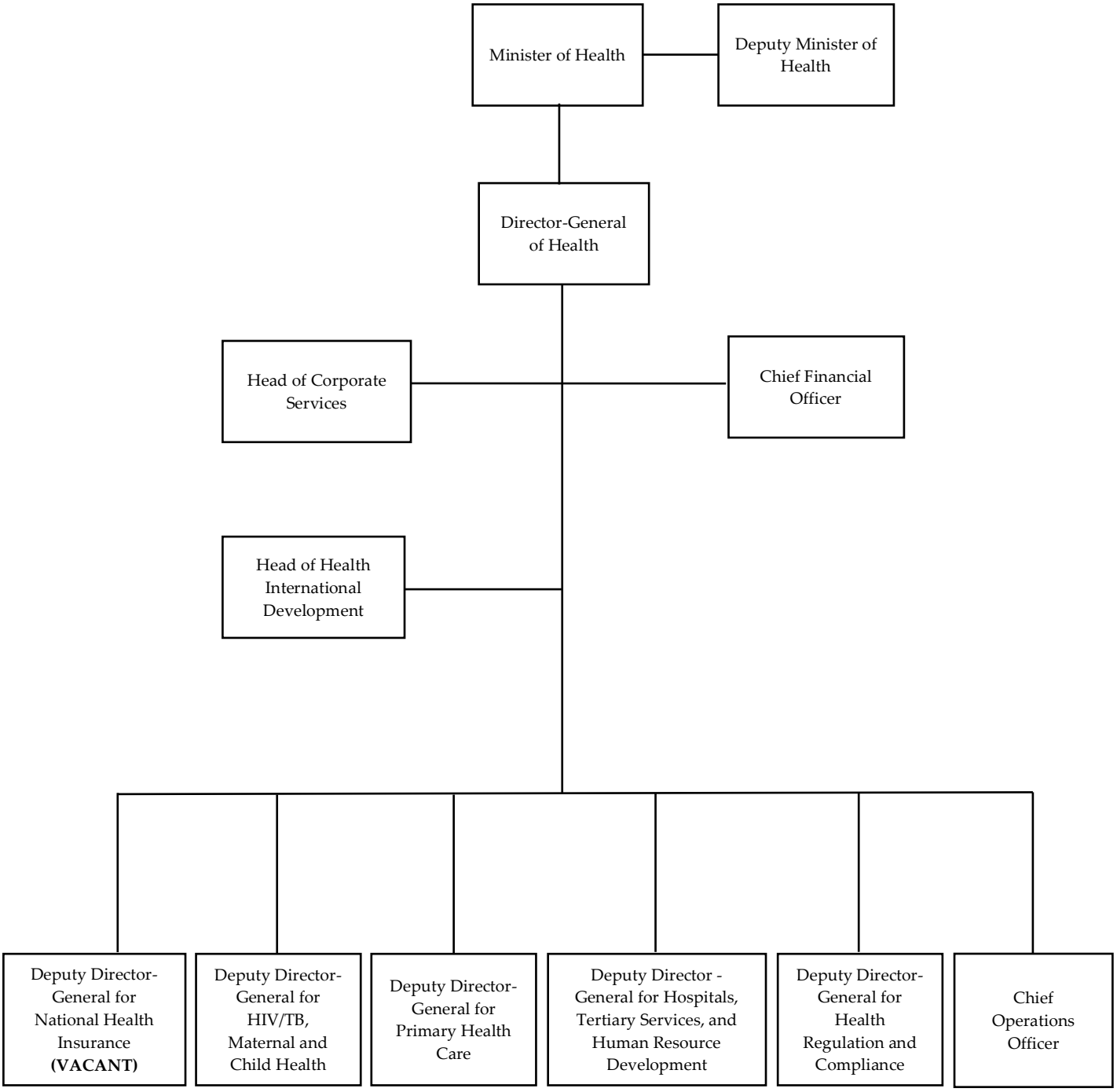
Source: Adapted from EQUINET Discussion Paper Series 84 Health Economics Unit (UCT), ISER Rhodes University. *Private sector involvement in funding and providing health services in South Africa: Implications for equity and access to health care*, July 2010.

Exhibit 9 *Ten-Point Plan to Improve the South African Health Sector, 2009–2014*

1. Provision of strategic leadership and creation of a social compact for better health outcomes.
2. Implementation of National Health Insurance (NHI).
3. Improving the quality of health services.
4. Overhauling the health care system and improving its management.
5. Improving human resources management, planning, and development.
6. Revitalization of health infrastructure.
7. Accelerated implementation of the National HIV&AIDS and STI National Strategic Plan (2007–2011) and increased focus on TB and other communicable diseases.
8. Mass mobilization for better health for the population.
9. Review of the drug policy.
10. Strengthening research and development.

Source: South African National Department of Health, July 2009.

Exhibit 10 *National Department of Health Organizational Chart, 2015*



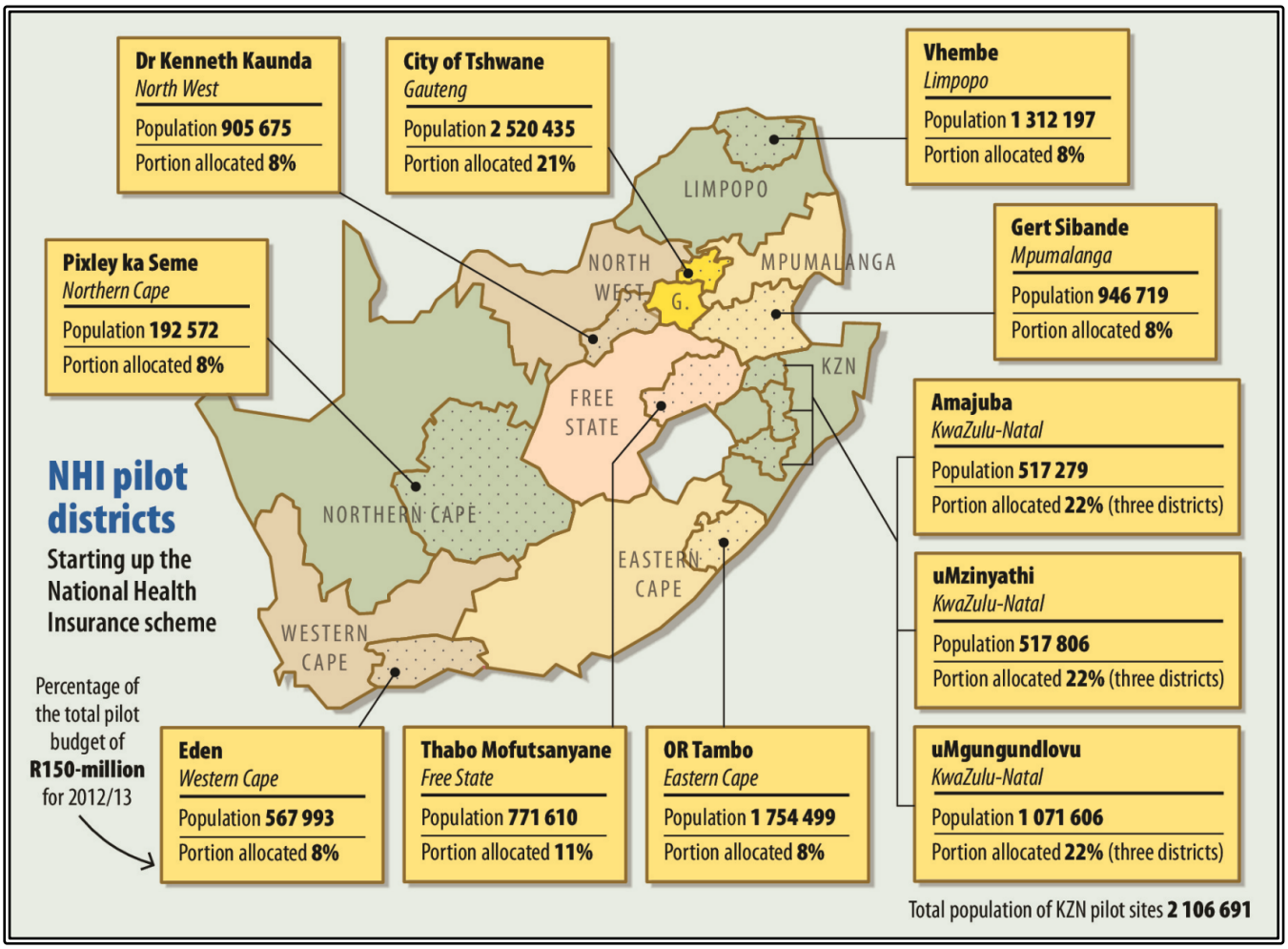
Source: National Department of Health, South Africa.

Exhibit 11 *Ministerial Advisory Committee Membership*

Local Members	International Members
• Committee Chair (health policy expert and former NDoH Director-General) • Health economists (3) • Social worker • Actuarial consultant • Senior provincial health department manager • Civil society organization leader • Pharmaceutical company representatives (3) • Nurse union representative • Private hospital group representative • Private practitioners (2) • Lawyer and former head of NDoH legal unit • Government communications executive • South African tax revenue service representative • Department of Defense medical services representative • National Treasury representative • NDoH's Deputy Director-General of HIV/AIDS, TB, and STIs • Department of Communications and Trade representative	• US-based, WHO-affiliated health economist with health system financing expertise; previously advised developing and developed countries • US-based academic with economic and social development background; previous clients included the US National Institutes of Health, Transparency International, and the World Bank • Canada-based academic with epidemiology and global health economics background; former WHO senior scientist

Source: Minister of Health Aaron Motsoaledi's speech on the appointment of the Ministerial Advisory Committee on National Health Insurance, 2009.

Exhibit 12 *NHI Pilot District Funding and Population Distribution, 2012–2013*



Source: Mail & Guardian Centre for Health Journalism, Bhekisisa.

Exhibit 13 *Indicators for Assessing Progress in NHI Pilot Districts, 2012–2014*

Each indicator was assessed according to the following scale in each pilot district:

- ❖ Nearly or completely achieved (where numerical data available >75%)
- ❖ Partially achieved (where numerical data available = 25-75%)
- ❖ Minimally or not achieved (where numerical data available <25%)
- ❖ Data not available
- ❖ Data not applicable (where assessment question not verified in a particular year = NA)

I. Governance

- **NHI Management Structure in Place**
  - Full-time NHI Project Manager in post
  - NHI Project Manager post delegated pro-tem
  - District NHI task force team in post
  - Coordination mechanisms in place
- **District Health Management Teams (DHMTs)**
  - DHMT organogram number of posts
  - Organogram posts filled (%)
  - NHI training for DHMT members
  - Quarterly review meetings taking place
  - Annual district health expenditure review
  - District health plan
  - District NHI master plan
  - Clinic committees established (#)
  - Clinic committees functioning (%)
- **Hospital Reform**
  - District hospitals redesignated (ratio)
  - Full-time CEOs in post (ratio)
  - Full-time CEOs oriented at Leadership Management Academy (ratio)
  - Hospital boards established ICD10 (International Classification of Diseases and Related Health Problems, 10th Edition) coding in place (ratio)
  - Patient satisfaction survey past 12 months (ratio)
- **NHI Conditional Grants**
  - Expenditure to 31 December 2012, Q1, Q2, Q3 (%)
  - Actual expenditure to 31 March 2013, Q1–Q4 (%)
  - Actual plus committed expenditure, Q1–Q4 plus committed (%)
- **Quality Improvement**
  - Facility Inspection Teams (FITs) in place
  - FIT plan available
  - Quality Assurance coordinator in post
  - Quality Assurance team in place
  - Quality Improvement plan developed
  - Quality Improvement plan monitored
  - User feedback/complaints drive improvement
- **Office for Health Standards Compliance (OHSC) Inspections**

- OHSC overall score for primary health care (PHC) facilities inspected (%)
- OHSC overall score for hospitals inspected (%)

- **Ideal Clinics**
  - District Team for Ideal Clinic Project roll-out in place
  - District implementation plan for Ideal Clinic Project roll-out in place

II. Human Resources for Health

- **Hospitals**
  - Doctors (% of posts filled)
  - Nurses (% of posts filled)
  - Managers (% of posts filled)
- **Community Health Centers**
  - Doctors (% of posts filled)
  - Nurses (% of posts filled)
- **PHC Facilities**
  - Nurses (% of posts filled)
- **WHO Workload Indicator of Staffing Need (WISN) Norms and Standards**
  - Training received
  - Implementation of WISN software norms
- **Human resource implementation plans**
  - District HR implementation plan in place
  - HR plan for nurses in place
- **Data Capturers and District Information Officers (DIOs)**
  - Requisite no data capturers in post (%)
  - Requisite no DIOs in post (%)
- **Skills Development/Continuing Professional Development (CPD)**
  - Skills development for nurses in place

III. Primary Health Care Re-Engineering

- **District Clinical Specialist Teams (DCSTs)**
  - Number of DCST members in post (7 posts)
  - Number of doctors in DCST (4 posts)
  - DCST attended orientation training
  - Additional training modules completed (#)
  - DCST has action plan
  - Essential Strategy for the Management of Obstetric Emergencies (ESMoE) implementation
- **Ward-based PHC Outreach Teams**
  - Teams in place
  - Required number of teams in place (%)
  - Required number of CHWs in post
  - Required number of CHWs re-trained
- **School Health Services**
  - School health teams in place
  - Required number of teams established (%)
  - All targeted schools reached (%)
  - Mobile school health units operating (ratio)
  - HPV roll-out plan in place (if applicable)
- **General Practitioners (GPs) in a National Contract**

- Ministerial Roadshow with GPs (May–July 2012)
- GPs working in PHC facilities on NDoH contract (#)
- GP Performance Monitoring in place
- GP System for CPD in place

IV. Referral Systems

- Referral system protocols developed
- Referral system protocols in place
- Planned patient transport system in place
- Emergency transport system in place

V. Equipment

- **Equipment Meets NDoH Standards**
  - PHC facilities equipment meets NDoH standards
  - Number of facilities fully equipped as per EEL
  - Capital acquisition plan in place

VI. Infrastructure

- **Refurbishment (past 12 months)**
  - Facility maintenance plans in place
- **Hospitals**
  - Minor refurbishment (ratio)
  - Major refurbishment (ratio)
  - Complete overhaul (ratio)
- **Primary Health Care Facilities**
  - Minor refurbishment (ratio)
  - Major refurbishment (ratio)
  - Complete overhaul (ratio)
- **PHC Facilities to be Staffed by GPs**
  - PHC clinics assessed by Clinton Health Access Initiative (CHAI) as ready for GPs (%)
- **Nursing Colleges**
  - Nursing colleges refurbished/equipped (ratio)

VII. Health Information Management

- Demographic and Health Survey (DHS) data reaches province within 15 days
- Districts have received training on National Health Information Reporting and Database Warehouse (NHIRD)
- Districts accessing NHIRD

Source: http://www.sarrahsouthafrica.org/LinkClick.aspx?fileticket=BgZO9UkGcyg%3D&tabid=2635

Exhibit 14 *Components and Subcomponents of the Ideal Clinic Model*

Components	1. Administration	2. ICSM/ICDM	3. Mecicines, Supplies, and Laboratory Services	4. Human Resources for Health	5. Support Services	6. Infrastructure	7. Health Information Management	8. Communication	9. District Health System Support	10. Implementing Partners and Stakeholders
Sub-Components	1) Signage and notices	5) Clinical service provision	12) Medicines and supplies	14) Staff allocation and use	17) Finance and SCM	21) Physical space and routine maintenance	25) DHS	26) Internal communication	28) DHS support	31) Implementing partners support
	2) Staff identity and dress code	6) Management of clinical appointments	13) Management of laboratory services	15) Professional standards and PMDS	18) Hygiene and cleanliness	22) Essential equipment and furniture		27) Community engagement	29) Planned and emergency patient transport	32) Multi-sectoral collaboration
	3) Client service organization	7) Coordination of PHC services		16) Availability of medical, mental health and allied health practitioners	19) Security	23) Bulk supplies			30) Referral system	
	4) Management of client records	8) Clinical guidelines and protocols			20) Disaster preparedness	24) ICT infrastructure and hardware				
		9) Infection prevention and control								
		10) Client waiting times								
		11) Patient experience of care								

Source: National Department of Health, South Africa.

Exhibit 15 *Ideal Clinic Realization and Maintenance Initiatives*

Quick Wins	• Implement electronic queue management systems • Communicate clear expectations for waiting time and process of care • Update standards for the shape, size and quality of public health clinics • Involve facility managers in budgeting process • Improve adherence to national directives on the funding of non-negotiables • Finalize provincialization* • Rapidly roll out elements of the dashboard that can be implemented independently • Launch branding and communications for ICRM roll-out • Stakeholder engagement plan to ensure ongoing support • Change management plan to achieve successful transformation

Breakthrough Initiatives	• Implement a functional appointment system for non-emergency patients
	• Establish provincial health call centers to provide advice and reduce unnecessary burden on clinics
	• Evaluate, improve, and communicate patient experience of care and waiting times as a key performance area
	• Implement innovative medicine dispensing
	• Roll out standardized and integrated automated health management information system (HMIS) to all clinics
	• Create and maintain integrated provincial asset registers to quantify, categorize, and prioritize all PHC facilities
	• Create and implement a detailed roll out of the Ideal Clinic infrastructure program
	• Establish clinic maintenance hubs—dedicated roving clinic maintenance units—for each district
	• "Bring Back" South Africa's health professionals to the public sector
	• Ensure facilities have minimum numbers of essential non-clinical staff
	• Empower facility managers to support the scale-up of the ICRM
	• Secure stocks in the clinics through an innovative approach to supply chain management
	  o Standardize catalogue for supplies and services
	  o Implement transversal convenience contracts to capture savings
	  o Rationalize distribution through warehouses, cross-docks, etc.
	  o Introduce demand forecasting to push standard stock items to the clinic

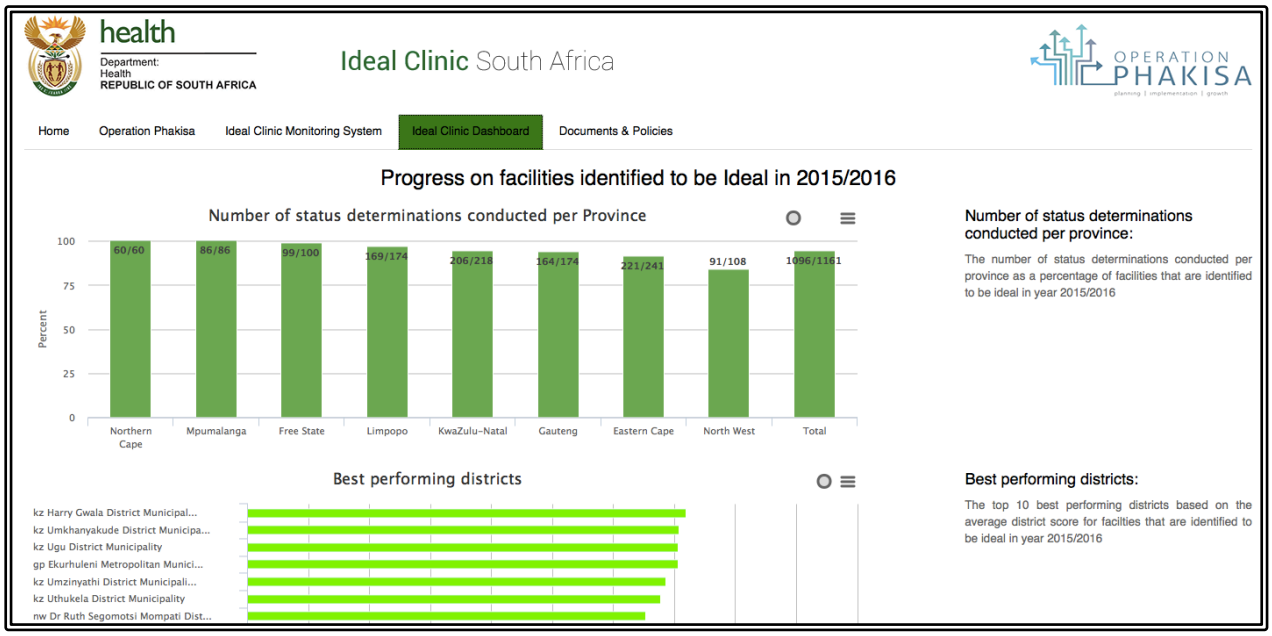
Major Delivery Fixes	• Improve health services: facility reclassification, revised package of services and referrals • Integrate district service delivery platform and promote uniformity of DMT structure and profile • Roll out cleaning guidelines and IPC protocols • Set up an SMS-based communication platform • Improve efficiency of patient flow • Standardize paper filing processes • Support clinics in adjusting hours/days of operation • Design and implement a central oversight unit • Ensure optimal redistribution of staff • Implement task shifting and task sharing

	• Streamline recruitment processes • Expand contracting of specialist/GP and other skills from private sector • Ensure equitable implementation of community service policy to support under-resourced areas • Enhance non-clinical staff competencies in front-line customer care services • Align the planning and budgeting cycle • Move to equitable and activity-based budgeting process (with province) • Consistently implement national policies • Improve public accountability and transparency by establishing PHCos, DHCs, and committees • Increase responsiveness at the point of service delivery through review and implementation of standardized delegations, to the lowest possible level of management • Develop a fully costed scale-up plan, including identification of easy improvements at clinic level • Sustainability framework (including monitoring and evaluation) to prevent regression and to ensure that the momentum of the Ideal Clinic is sustained

Note: Provincialization refers to the consolidation of all primary health care services under one government entity, the province, in order to reduce duplication and inefficiency in the delivery of health services.

Source: *Operation Phakisa, Ideal Clinic Realisation and Maintenance: Final Lab Report*. Republic of South Africa: May 2015.

Exhibit 16 *Screenshot of the Ideal Clinic Website*



Source: https://www.idealclinic.org.za

Appendix *Commonly Used Abbreviations*

ANC	African National Congress
BFR	Big Fast Results
COSATU	Congress of South African Trade Unions
GP	General practitioner
MAC	Ministerial Advisory Committee on NHI
NGO	Non-governmental organization
NDoH	National Department of Health
NHI	National Health Insurance
PHC	Primary health care
USD	United States Dollars
WHO	World Health Organization
ZAR	South African Rand

References

1. Government of South Africa. History. http://www.gov.za/about-sa/history#british_colonial_era. Accessed June 11, 2015.
2. South African History Online. SA history timeline. http://www.sahistory.org.za/timelines/sa-history-timeline. Accessed June 11, 2015.
3. Hancock W. *Smuts I: The Sanguine Years 1870-1919*. Cambridge: Cambridge University Press; 1962.
4. South African History Online. The introduction of new administration and laws. http://www.sahistory.org.za/article/introduction-new-administration-and-laws. Accessed June 12, 2015.
5. Gurney C. A great cause: The origins of the anti-apartheid movement. *J South Afr Stud*. 2005;26(1):123-144.
6. Arianna L. The anti-apartheid movement, Britain and South Africa: Anti-apartheid protest vs. real politik. African National Congress. http://www.anc.org.za/show.php?id=5695. Published September 15, 2000. Accessed June 11, 2015.
7. Griffiths A, Barnes C. International Isolation and Pressure for Change in South Africa. In: *Powers of Persuasion: Incentives, Sanctions and Conditionality in Peacemaking*. Conciliation Resources: Accord, an International Review of Peace Initiatives. London: Conciliation Resources; 2008:36-39. http://www.c-r.org/sites/default/files/19_Powers%20of%20persuasion_2008_ENG_F.pdf. Accessed June 26, 2015.
8. South African History Online. The South African general elections: 1994. http://www.sahistory.org.za/article/south-african-general-elections-1994. Accessed June 12, 2015.
9. Johnston A. *South Africa (Inventing the Nation)*. 1st ed. London: Bloomsbury Academic; 2014.
10. Hoogeveen J, Ozler B. Not separate, not equal: Poverty and inequality in post-apartheid South Africa. January 2005. http://wdi.umich.edu/files/publications/workingpapers/wp739.pdf. Accessed June 12, 2015.
11. World Bank. Population, total. http://data.worldbank.org/indicator/SP.POP.TOTL/countries/ZA?display=graph.
12. Statistics South Africa. *South Africa Census 2011 in Brief*. Pretoria: Statistics South Africa; 2012:1-102. http://www.statssa.gov.za/census/census_2011/census_products/Census_2011_Census_in_brief.pdf. Accessed June 12, 2015.
13. South African History Online. Zulu. http://www.sahistory.org.za/people-south-africa/zulu. Accessed June 18, 2015.
14. Central Intelligence Agency World Factbook. South Africa. https://www.cia.gov/library/publications/the-world-factbook/geos/sf.html. Published 2014. Accessed October 27, 2014.
15. World Bank. World Bank: South Africa Country Profile. http://data.worldbank.org/country/south-africa. Accessed October 27, 2014.
16. United Nations Development Programme. *Human Development Report 2013: The Rise of the South*. New York: United Nations; 2013. http://hdr.undp.org/sites/default/files/reports/14/hdr2013_en_complete.pdf. Accessed June 3, 2015.

17. World Bank. Unemployment, youth total (% of total labor force ages 15-24) (modeled ILO estimate). http://data.worldbank.org/indicator/SL.UEM.1524.ZS. Accessed June 12, 2015.

18. Statistics South Africa. *South Africa Census 2011*. Pretoria: Statistics South Africa; 2012:1-82. http://www.statssa.gov.za/publications/P03014/P030142011.pdf. Accessed June 12, 2015.

19. Bhorat H, van der Westhuizen C. *Economic Growth, Poverty and Inequality in South Africa: The First Decade of Democracy*. Development Policy Research Unit, University of Cape Town; 2012. http://www.humanities.uct.ac.za/sites/default/files/image_tool/images/36/DPRU%20WP12-151.pdf.

20. World Bank. Prevalence of HIV, total (% of population ages 15-49) | Data | Table. http://data.worldbank.org/indicator/SH.DYN.AIDS.ZS?page=1&order=wbapi_data_value_2010%20wbapi_data_value%20wbapi_data_value-first&sort=asc. Accessed March 31, 2015.

21. Karim S, Churchyard G, Karim Q, Lawn S. HIV infection and tuberculosis in South Africa: An urgent need to escalate the public health response. *The Lancet*. 2009;374(9693):921-933. doi:http://dx.doi.org/10.1016/S0140-6736(09)60916-8.

22. The Presidency. Address by Deputy President Kgalema Motlanthe during the World AIDS Day. http://www.sanews.gov.za/world/address-deputy-president-kgalema-motlanthe-during-world-aids-day. Published December 1, 2010. Accessed March 31, 2015.

23. Schaay N, Sanders D. *South African Health Review 2008*. Durban: Health Systems Trust; 2008. http://www.hst.org.za/uploads/files/sahr2008.pdf.

24. Coovadia H, Jewkes R, Barron P, Sanders D, McIntyre D. The health and health system of South Africa: Historical roots of current public health challenges. *Lancet*. 2009;374:817-834. doi:10.1016/S0140- 6736(09)60951-X.

25. Statistics South Africa. *Mid-Year Population Estimates*. Pretoria: Statistics South Africa; 2014. http://beta2.statssa.gov.za/publications/P0302/P03022014.pdf. Accessed April 2, 2015.

26. Scrubb V. Political systems and health inequity: Connecting apartheid policies to the HIV/AIDS epidemic in South Africa. *J Glob Health*. http://www.ghjournal.org/political-systems-and-health-inequity-connecting-apartheid-policies-to-the-hivaids-epidemic-in-south-africa/.

27. National Treasury. *South Africa Budget Review 2015*. Pretoria: National Treasury; 2015. http://www.treasury.gov.za/documents/national%20budget/2015/review/FullReview.pdf.

28. National Treasury. *Explanatory Memorandum to the Division of Revenue: Annexure to the 2014 Budget Review*. Pretoria: National Treasury; 2014:1-47. http://www.treasury.gov.za/documents/national%20budget/2014/review/Annexure%20W1.pdf. Accessed June 15, 2015.

29. Mayosi BM, Lawn JE, van Niekerk A, Bradshaw D, Abdool Karim SS, Coovadia HM. Health in South Africa: changes and challenges since 2009. *The Lancet*. 2012;380(9858):2029-2043. doi:10.1016/S0140-6736(12)61814-5.

30. Oxford Business Group. Health Interview: Interview with Discovery Holdings CEO Adrian Gore. In: *The Report: South Africa 2012*. Vol 1. London: Oxford Business Group; 2012:236.

31. Cullinan K. *Health Services in South Africa: A Basic Introduction*. South Africa: Health-e News; 2006. http://www.health-e.org.za/wp-content/uploads/2013/04/Health_services_briefing_doc.pdf.

32. Ward K, Sanders K, Leng H, Pollock A. Assessing equity in the geographical distribution of community pharmacies in South Africa in preparation for a national health insurance scheme. *Bull World Health Organ*. 2014;92:482-489. doi:http://dx.doi.org/10.2471/BLT.13.130005.

33. World Bank. Health expenditure, total (% of GDP) | Data | Table. http://data.worldbank.org/indicator/SH.XPD.TOTL.ZS?page=1. Accessed June 19, 2015.

34. World Bank. Health expenditure, public (% of total health expenditure) | Data | Table. http://data.worldbank.org/indicator/SH.XPD.PUBL. Published 2013. Accessed June 16, 2015.

35. Harrison D. *An Overview of Health and Health Care in South Africa 1994 – 2010: Priorities, Progress and Prospects for New Gains*. Muldersdrift: Henry J. Kaiser Family Foundation; 2009:1-40. http://ftp.bhfglobal.com/files/bhf/overview1994-2010.pdf. Accessed June 15, 2015.

36. C. De Beer, J. Broomberg. Financing Health Care for all – is National Health Insurance the First Step? *S Afr Med J*. 1990;78:144-147.

37. Conradie E. Comment: Restore medical aids to good health. Mail & Guardian. http://mg.co.za/article/2014-08-07-comment-restore-medical-aids-to-good-health. Published August 8, 2014. Accessed June 16, 2015.

38. Pearmain D. *South African Health Review 2007: Health Policy and Legislation*. Durban: Health Systems Trust; 2007:19-31. http://www.hst.org.za/uploads/files/chap2_07.pdf. Accessed June 16, 2015.

39. McLeod H, Shivani R. Medical Schemes. In: Harrison S, Bhana R, Ntuli A, eds. *South African Health Review 2007*. Durban: Health Systems Trust; 2007. http://www.hst.org.za/uploads/files/chap4_07.pdf.

40. Government Employees Medical Scheme. GEMS: Government Employees Medical Scheme. https://www.gems.gov.za/default.aspx?eYKBZfmnxQQhqfXsNJG15Neg8VzCNLco. Accessed June 17, 2015.

41. Council for Medical Schemes. *Council for Medical Schemes Annual Report 2009-2010*. Johannesburg: Council for Medical Schemes; 2009:336. http://www.medicalschemes.com/files/Annual%20Reports/CMSAR2009_2010.pdf. Accessed June 15, 2015.

42. Statistics South Africa. *South Africa General Household Survey 2009*. Pretoria: Statistics South Africa; 2011. http://www.statssa.gov.za/publications/P0318/P03182009.pdf. Accessed May 4, 2015.

43. Keeton C. Bridging the gap in South Africa. *Bull World Health Organ*. 2010;88(11):797-876.

44. Phillips H. The 1945 Gluckman Report and the establishment of South Africa's health centers. *Am J Public Health*. 1993;83(7):1037-1039. doi:10.2105/AJPH.83.7.1037.

45. Department of Health, South Africa. South Africa National Health Insurance Green Paper. August 2011:59.

46. Shisana O. Social health insurance and tax-based funding of health. *S Afr Med J*. 2001;91(12):1048-1053.

47. Neil Soderlund, Gillian Schierhout, Alex van den Heever. Private Health Care in South Africa. *Health Syst Trust*. 1998;13(South African Health Review 1998):1-45.

48. African National Congress. Jacob Zuma launches ANC's 2009 manifesto. http://www.politicsweb.co.za/politicsweb/view/politicsweb/en/page71619?oid=114025&sn=Detail. Published January 10, 2009. Accessed March 31, 2015.

49. Department of Health, South Africa. Minister of Health. http://archive-za.com/page/1792142/http://www.doh.gov.za/show.php?id=1633.

50. The Lancet. Health in South Africa. http://www.thelancet.com/series/health-in-south-africa. Published August 24, 2009. Accessed July 8, 2015.

51. World Bank. Life expectancy at birth, total (years). http://data.worldbank.org/indicator/SP.DYN.LE00.IN?display=default. Published 2013. Accessed June 15, 2015.

52. Bateman C. Mandatory health insurance: A gathering storm. *S Afr Med J*. 2009;99(8):562-564.

53. Waters M. The National Health Insurance plan: Why the DA opposes it. http://www.da.org.za/archive/the-national-health-insurance-plan-why-the-da-opposes-it/. Published June 10, 2009. Accessed March 31, 2015.

54. Van Der Berg S, Mcleod H. Crude NHI plan threatens to make a bad situation worse. BDlive. http://www.bdlive.co.za/articles/2009/09/04/crude-nhi-plan-threatens-to-make-a-bad-situation-worse. Published September 4, 2009. Accessed July 6, 2015.

55. NHI needs combined private, public efforts | SA News. http://www.sanews.gov.za/features/nhi-needs-combined-private-public-efforts. Published September 2, 2009. Accessed April 7, 2015.

56. COSATU. Speech of COSATU General Secretary, Zwelinzima Vavi, to the DENOSA KZN Congress,. http://www.cosatu.org.za/docs/cosatu2day/2014/pr0801b.html. Accessed April 7, 2015.

57. National Department of Health. *South Africa National Health Insurance Green Paper*. Pretoria: Government of South Africa; 2011. http://www.hst.org.za/sites/default/files/2bcce61d2d1b8d972af41ab0e2c8a4ab.pdf. Accessed March 31, 2015.

58. Department of Health, South Africa. *National Health Insurance Conference "Lessons for South Africa" National Consultative Health Forum (NCHF)*. Pretoria: Department of Health, South Africa; 2011. http://www.sarrahsouthafrica.org/LinkClick.aspx?fileticket=s4ZrCqe2X5Y%3D&tabid=2321. Accessed April 7, 2015.

59. Kahn T. Why the NHI pilot programme is failing. *Rand Daily Mail*. http://www.rdm.co.za/business/2015/03/26/why-the-nhi-pilot-programme-is-failing. Published March 26, 2015. Accessed April 16, 2015.

60. Barry H. Brokers are "fundamental", says Discovery chief | RISKSA. http://www.risksa.com/brokers-are-fundamental-says-discovery-chief/. Published September 6, 2013. Accessed April 7, 2015.

61. SARRAH South Africa. *Status of NHI Pilot Districts: 12-Month Progress Report*.; 2014. http://www.sarrahsouthafrica.org/LinkClick.aspx?fileticket=BgZO9UkGcyg%3D&tabid=2635.

62. Kahn T. Doctors too greedy for NHI, says Motsoaledi. *Business Day*. http://www.bdlive.co.za/national/health/2014/03/06/doctors-too-greedy-for-nhi-says-motsoaledi. Published March 6, 2014. Accessed March 31, 2015.

63. Parliamentary Monitoring Group. *NHI Pilot Phase Progress; Health Conditional Grants: Report by Minister of Health*. Cape Town; 2014. https://pmg.org.za/committee-meeting/17036. Accessed September 1, 2015.

64. Operation Phakisa to move SA forward. *SA Government News Service*. http://www.sanews.gov.za/south-africa/operation-phakisa-move-sa-forward. Published July 19, 2014. Accessed July 7, 2015.

65. Operation Phakisa to transform public clinics | SA News. http://www.sanews.gov.za/south-africa/operation-phakisa-transform-public-clinics. Published November 18, 2014. Accessed March 31, 2015.

66. National Department of Health. *Operation Phakisa Ideal Clinic Realisation and Maintenance: Final Lab Report*. Republic of South Africa; 2015.

67. Kahn T. Motsoaledi pledges NHI white paper is "imminent." *Business Day*. http://www.bdlive.co.za/national/health/2014/01/30/motsoaledi-pledges-nhi-white-paper-is-imminent-. Published January 30, 2014. Accessed April 7, 2015.

68. Kahn T. NHI white paper out soon, says Motsoaledi. *Business Day*. http://www.bdlive.co.za/national/health/2013/05/15/nhi-white-paper-out-soon-says-motsoaledi. Published May 15, 2013. Accessed April 7, 2015.

69. Motsoaledi A. White Paper on NHI to be tabled by Dec 2015. *Politicsweb*. http://www.politicsweb.co.za/politicsweb/view/politicsweb/en/page71654?oid=1016400&sn=Detail&pid=71654. Published March 19, 2015. Accessed March 31, 2015.

70. SECTION27. *The Competition Commission's Market Inquiry into the Private Health Care Sector*. Johannesburg: Section27; 2014. http://www.section27.org.za/wp-content/uploads/2014/04/Market-Inquiry-into-the-Private-Health-Care-Sector-Factsheet.pdf.

71. Makholwa A. Motsoaledi to reform private health care. *Financial Mail*. http://www.financialmail.co.za/fm/CoverStory/2013/07/04/motsoaledi-to-reform-private-health-care. Published July 8, 2013. Accessed October 8, 2015.

72. Department of Health, South Africa. *Annual Health Statistics 2012*. Pretoria http://indicators.hst.org.za/indicators/DoH/AnnualHealthStatistics2012_Aug2013_web.pdf.