

Draft

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**AFRICA HEALTH TRENDS:
A 21ST CENTURY IMPERATIVE**

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Table of Contents

The Richness of Africa	3
Table 1: Key Indicators	4
An Overview of African Health Imperatives	4
<i>African Demographics</i>	4
<i>The Unfinished Agenda for Improved Maternal and Child Health</i>	5
<i>HIV/AIDS in Africa</i>	6
<i>Tuberculosis in Africa</i>	6
<i>Malaria</i>	7
<i>Natural Disasters and Conflict in Africa</i>	7
<i>Vulnerabilities and Fragile Systems</i>	8
<i>Poverty or Prosperity in the Next 50 Years – Africa at the Crossroads of Development</i>	9
Future trends in the Health of Africans: Four Transitions	10
<i>The Demographic Transition</i>	10
<i>The Epidemiologic Transition</i>	11
<i>The Urban Crucible – Opportunities and Challenges for Africa</i>	12
<i>The Nutrition Transition</i>	15
<i>Systems, Efficiencies, Partnerships, Realities</i>	16

This paper describes future trends in Africaⁱ in terms of African demographics; the unfinished agenda for maternal and child health; the widespread threat of HIV/AIDS, tuberculosis and malaria; the burden of natural disasters and conflict; system vulnerabilities; and, the demographic, epidemiologic, urban and nutrition transitions that will influence the health and health service delivery in Africa throughout the 21st century. The purpose of this paper is to present an overview of these trends and catalyze action to mitigate their adverse consequences.

The Richness of Africa

Human kind began in Africa over four million years ago. Its 47 countries reveal a continent rich in culture, tradition, commerce, religion, beauty and an abundance of natural resources. The Encyclopedia of Africa South of the Sahara lists more than 1,000 social groups and over 200 entries describing individual ethnic groups.¹ Estimates on the number of languages spoken in Africa range from 700 to 3,000, the majority of which have long-standing oral traditions, but few with written literatures². With over 24,000 square kilometers of landmass, Africa harbors snow-capped mountains, forests, deserts, savannahs, the world's second largest freshwater lake (Victoria), rivers, and a coastline with at least 53 seaports.³ Africa possesses abundant reserves of fossil fuels, diamonds, minerals, timber, arable land and water resources to fuel national economies throughout the continent. Cash crops such as cocoa and coffee are prime sources of external revenue in many countries. Untapped opportunities for electricity, business, the production of commodities, and the delivery of services offer great hope for the 725+ million residents of the continent. Clearly, Africa's development potential remains strong. However, the enormity of diversity across the continent puts enunciated a wide-range of cultural barriers and physical obstacles to health care provision. Africa's diversity is simultaneously a source of its strength and weakness.

When mapping the assets of Africa, we must consider past mistakes, present trends and future realities. Governance, leadership, demographics, disease, infrastructure, economics (including the public and private sectors), management efficiency, culture, and behavior figure prominently into Africa's future. Above all, African progress depends on African solutions to African problems. Success depends on Africans addressing problems on a continental scale, maximizing the diversity of the continent and supporting regional priorities among and between African states. Unselfish leadership and a unified vision are required to transform Africa into a key partner in the world's economy and reduce the unnecessary burden of disease that exists today.

Regrettably, Africa suffers from a dearth of services and vital statistics that are among the lowest in the world. A statistical profile of Africa is presented in Table 1.

ⁱ For this paper and the two accompanying papers, we consider Africa as Sub-Saharan Africa.

Table 1: Key Indicators⁴ – All indicators are for the region of Sub-Saharan Africa

Indicator	Total	Indicator	Total
Land area (thousands)	23,596 sq km	Life expectancy	46 years
Population 2004	726 million	Adult literacy	65%
Population 2030	1.45 billion	Primary pupil/teacher ratio	49
Population growth rate	2.5%	Under-5 mortality rate	174/1,000
Population under 15	43.7%	Adult mortality rate—female (2002-2004) ⁱⁱ	467/1,000
All roads ⁵	353,000 km	Estimated # of people living with HIV ⁶	24.5 million
Roads paved	12.5%	HIV deaths (2005) ⁷	2 million
Languages	~1,500 ⁸	HIV prevalence	7.2%
Social groups	~1,000 ⁹	Total HIV+ who are female	57.3%
GNI per capita	\$436.5	TB deaths 2005	81/100,000 ^{10 iii}
Per capita freshwater resources (2004)	5,353 cu.m.	TB incidence	363/100,000
Health expenditure as % of total GDP	6.1%	Total population undernourished	32%
Physicians per capita	0.1/1,000	Children (under 6 mo.) being exclusively breastfeed	28%
Total population living on less than \$1/day	44%	Total households consuming iodized salt	56%
Per capita health expenditure	\$36	Children (6-59 mo.) receiving vitamin A supplements	62%

An Overview of African Health Imperatives

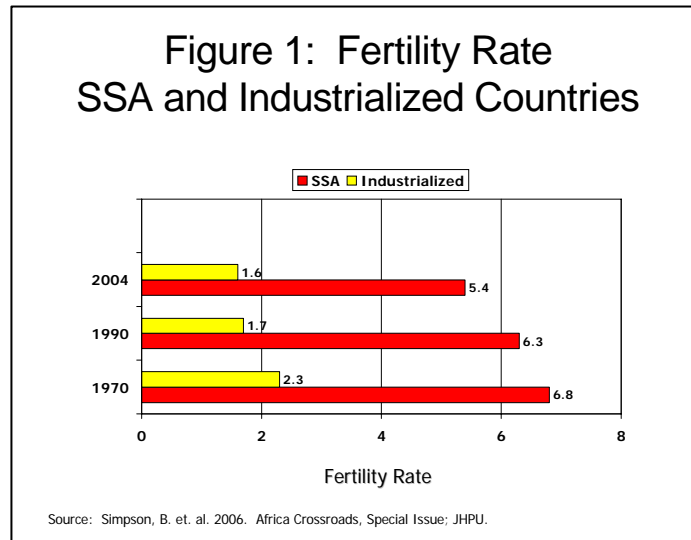
African Demographics

Demographic momentum, influenced by a slowly declining fertility rate, implies Africa's population could swell to about 1.45 billion by 2030. Although fertility has declined from 6.8 in 1970 to 5.4 in 2004 (Figure 1)¹¹, Africa faces significant challenges in terms of population growth, natural resource availability, education, urban migration and employment. Population growth in rural and urban areas will influence a broad variety of development challenges and opportunities. African governments, international donors, and private sector colleagues need to recognize inevitable epidemiological, social and economic trends and consequent points of no return. Policies, resources and key

ⁱⁱ Adult mortality rate is the probability of dying between the ages of 15 and 60, or the probability of a 15 year old dying before reaching 60

ⁱⁱⁱ This number is for the WHO Africa region

interventions such as the education of girls and reducing under-five mortality will require consistent and long-term commitments to minimize the negative impacts of population growth and the distribution of populations.



The Unfinished Agenda for Improved Maternal and Child Health

Africa bears a disproportionate share of the global disease burden. Infectious and chronic diseases will continue to cause significant morbidity and mortality in the future. Limiting disease distribution, frequency, and severity is a key element for Africa’s development progress and prosperity. The unfinished agenda for maternal and child health in Africa is a tragic consequence of limited and fragile systems, poor management, pro-rich policies, and corruption.^{iv} These are the troubling realities of the region, but also represent opportunities for feasible interventions.

Over the past 20 years, under-five mortality in Africa has hovered around 175-200/1,000 live births. Nine of the ten countries with the highest under-five mortality are in Africa.¹² Variations exist continent-wide with Niger and Angola having the highest under-five mortality and South Africa having the lowest. Infant mortality is also the highest worldwide (Figure 2).¹³ Neonatal deaths (deaths in the first month and first week of life) present difficult challenges in terms of identification and action. Maternal mortality is a similar story. Maternal mortality rates in rural areas average about 500/100,000 live births, reflecting poor recognition of high-risk births, limited maternal education, poor referral, and inadequate service delivery. Access varies in urban, peri-urban and rural areas with rural areas consistently underserved.

^{iv} The “unfinished agenda” focuses on reducing the mortality and morbidity from the common killers of children and women. Diarrheal diseases, respiratory diseases, vaccine-preventable diseases, peri-natal causes of death, pregnancy-related deaths (from bleeding, eclampsia, unsafe abortion, infection, etc.), malaria and other parasitic diseases characterize the “unfinished agenda”.



HIV/AIDS in Africa

Africa is the nexus of HIV/AIDS worldwide. Although it comprises only about 15% of the world’s population, over 60% of the world’s HIV/AIDS infections are in Africa. Over 50%, almost 14 million, of those infected are women. Sadly, incidence has not decreased. About 2.7 million Africans are infected with the virus each year and about 2.8 million died in 2005¹⁴, 68% of worldwide AIDS deaths. HIV/AIDS is weakening the fabric of national economies, threatens to destroy the health sector and will likely take a generational toll on African development and progress. Clearly, HIV/AIDS has to remain high on Africa’s development agenda. However, we must remember HIV/AIDS is only one of many health problems Africa and Africans must face in the 21st century. We cannot address HIV/AIDS without also extending efforts in good governance, system strengthening and sustainable development.

Tuberculosis in Africa

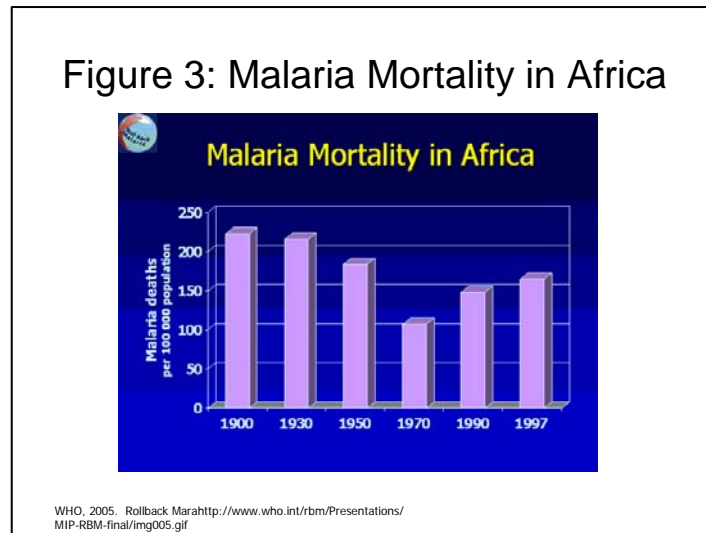
Over one-third of the world’s population is infected with tuberculosis (TB). TB is second to HIV/AIDS as a cause of death worldwide with 1.6 million deaths annually. Seventy-five percent of the TB infections and deaths occur in the most productive, 15-54 year age group.¹⁵ There are about 8.9 million new cases of TB each year. About 425,000 of the new cases are multi-drug-resistant.¹⁶

TB kills 500,000 Africans each year; 1,500 deaths per day.¹⁷ Africa has the highest estimated incidence of TB with an estimated 350 cases per 100,000 population. This translates into 2.5 million new infections annually.¹⁸ It is the only continent where incidence is increasing; primarily due to HIV/AIDS as a co-factor of transmission and active infection. Typically, a TB patient loses 3-4 months per year due to illness and an estimated 20%-30% of annual household income. In South Africa, lost earnings are estimated at 16% of the nation’s GDP.¹⁹

Tuberculosis represents a model for African cooperation and action. In August 2005, 46 Ministers of Health declared TB an African emergency. The declaration calls for the acceleration of diagnosis and treatment efforts; scaling up linked TB-HIV control efforts; improving the quality of health care (TB) providers; and, expanding national public and private partnerships for TB control.²⁰ The declaration builds on commitments made by the African Union and G8 world leaders. However, translating policy into action remains challenging. African Ministers of Health represent the vanguard of action and must convince Ministers of Finance and Heads of State to commit to sustained TB treatment and control over the next 20 years. We can learn important lessons from the TB model of political advocacy, technical strategy and operational control.

Malaria

Malaria remains endemic in Africa and kills almost 900,000 Africans annually; 750,000 of whom are children. Inadequate diagnosis, lack of access to prevention and treatment, poor adherence, ineffective drug regulation, and drug resistance contribute to malaria's hold on the continent. Although mortality declined in the 20th century in the late 1970s Africa witnessed a resurgence of malaria mortality, which continues today (Figure 3). Clearly, malaria in Africa is both a cause and result of poverty. It is a development imperative that demands the broad and effective application of existing and new tools for control, prevention and case management. A concerted effort to reduce malaria mortality and morbidity is essential to Africa's future.

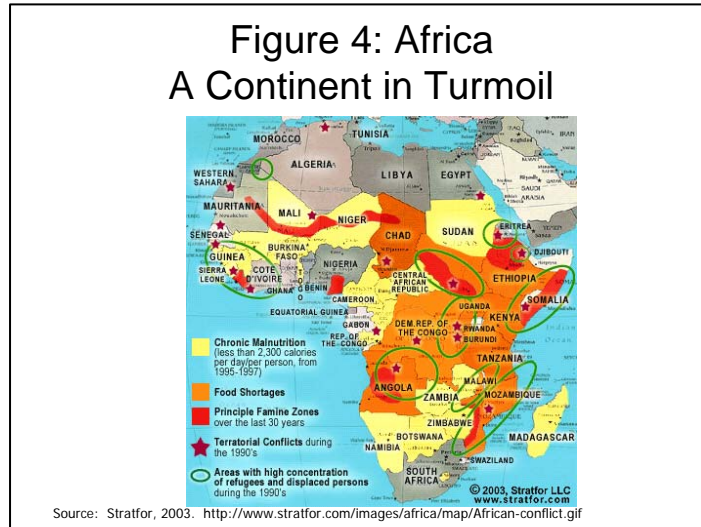


Natural Disasters and Conflict in Africa

Beyond the unfinished agenda for maternal and child health, famines, floods, droughts, and conflicts have plagued African states, interrupted development, challenged leaders and compromised political stability from South Africa to Sudan (Figure 4). Millions have died, tens of millions are homeless and hundreds of millions have been economically and psychosocially affected. Unfortunately, prudence indicates future

humanitarian emergencies are imminent and effective disaster preparedness is required. Too often leaders and donors respond sluggishly and with inadequate resources and capacity. Darfur is a sad reminder of the human tragedy that results and continues from ambivalence, politics and neglect. Who hears the voices of the poor and afflicted? Who will help them in the future? Where does blame and responsibility lie? Affected and donor countries alike cannot ignore the sores of apathy and complacency. Africa and the world must find practical and sustainable ways to reduce the risk of conflict and natural disasters in the future and mitigate their effects.

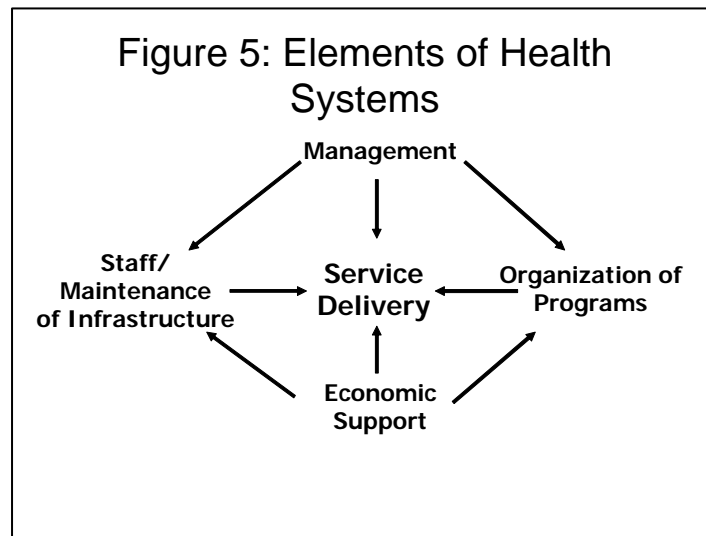
Figure 4: Africa
A Continent in Turmoil



Vulnerabilities and Fragile Systems

Poor management and fragile health systems characterize service delivery in many African countries; thus limiting services to large portions of the population. Pro-rich policies encourage those with means to access to basic services such as immunizations and safe births. Such policies leave behind the poorer segments of African society. In both rural and urban settings, those in the lower income quintiles are consistently underserved. Furthermore, comparatively low per capita spending for health by the public sector (on average \$5-\$8 per person per year) (ref) limits system outreach and referral. Complementary services provided by faith-based and other nongovernmental organizations fill some of the service delivery gap, but not completely. System efficiencies need to be improved, including management, organization, resources and staff (Figure 5)²¹. Improving, operationalizing and sustaining these elements remain a challenge.

Human resource capacity is perhaps first among the needs for improved service delivery. A new cadre of trained providers is necessary. Recognizing “brain drain potentials”, we must establish a new paradigm for training and staff retainment. Appropriate remuneration and other incentives are required to retain physicians, nurses and public health workers in peri-urban and rural areas. Simultaneously, Africa must increase the number and quality of health care providers. Here lies the dilemma.



Clearly, an evolution of public-private sector partnerships is in order to expand and maintain the outreach through the public, private for profit, NGO, FBO, civil society and the corporate sectors. African leaders and systems need to prepare for increasing chronic and noncommunicable disease management requirements, and balance these needs with the unfinished agenda of infectious and communicable diseases.

Lastly, accountability and honest resource management are required to expand outreach to underserved populations. Accountability is required to deliver services in an efficient and cost-effective manner. The power to hire and fire public sector employees based on job descriptions, competencies and performance is a key element to system success and resilience. Corruption is a reality worldwide; Africa is no different. Leaders at national, provincial/state, district and community levels, in both the public and private sectors, must deliver services honestly and competently. If they do not, health status will continue to stagnate, mired in the inadequate, distrusted and underutilized provision of prevention, care and treatment.

Poverty or Prosperity in the Next 50 Years – Africa at the Crossroads of Development

Creating prosperity will entail a complex mix of governance, financing (including micro-finance), security, culture, infrastructure and health.²² Understandably, leadership is central to forging a sound social contract to improve the life of Africa’s citizens. Nevertheless, the citizens themselves need to demand prosperity and cease to accept the status quo. Education is a building block of development and prosperity. Africa’s children, especially girls must have access to primary and middle school education to empower their decision-making, knowledge and practice relative to healthy choices and economic power. Indeed, the Millennium Development Goals reflect this priority. There is a great potential for Africa to move forward towards prosperity, but a common vision, between and within African states is required. A regional integration of markets could expand investment, stabilize pricing and buffer foreign control.²³ Regionalization of

issues and priorities, including health, can help Africa further define itself in the next 25-50 years. However, this will require a clear identification of common ground and a mutual commitment to mobilize internal and external resources to each issue. Health represents a universal priority for the people and Africa must discern how to deliver and promote health in new ways.

The partnership between public and private sector providers, as well as the roles of civil society, and the informal and traditional sectors in health promotion and care requires redefinition. There are points of no return in Africa concerning population, disease, urbanization, and nutrition. Recognizing 21st century changes in the dynamics of health in Africa will require African leadership and sound governance. Speaking and acting as a conglomerate of 47 nations rather than individual nation-states will promote a regional development vision for health and economics that could pull Africa back from the brink of points of no return. Africa must define its own vision for development, not rely on a western vision that may or may not be applicable. Africa can prosper in the 21st century, but that prosperity will depend on unified leadership, priority setting and commitment by African nations and donors alike.

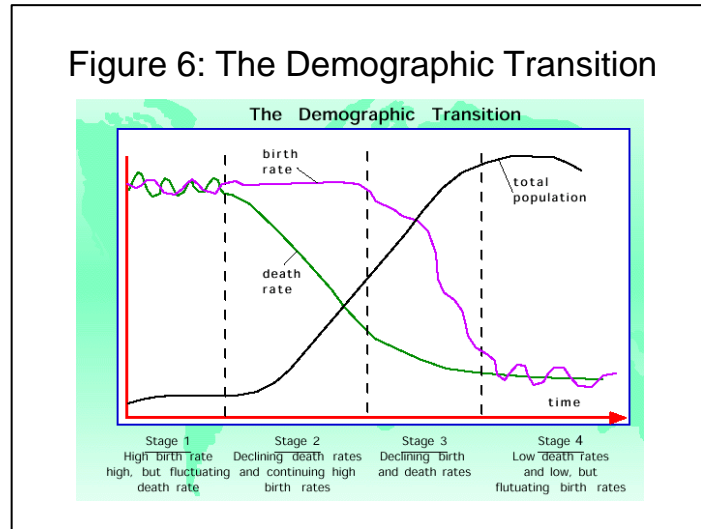
Future trends in the Health of Africans: Four Transitions

The Demographic Transition

Prior to the industrialization of the world in the mid 19th century, world population growth was slow; births replaced deaths. With the advent of industrialization and advances in medicine and public health, death rates began to decline and more people survived to have children of their own. The widening gap between birth and death rates fueled population growth worldwide to an estimated 6.55 billion today.²⁴ Previously, sub-Saharan Africa lagged behind the rest of the world in population. Currently 97% of the increase in world population will come from developing countries and Africa's share of global population will increase from 13% today to 22% by 2050.²⁵ Africa faces a population growth of 734 million that projects a doubled population in the next 30 years. Indeed, even in the face of HIV/AIDS, Africa's population will triple before it starts to decline. The demographic transition characteristically has four stages (Figure 6).²⁶

Stage one presents high birth and death rates, which provide for slow, stable growth. Stage two witnesses declining death rates with continuing high birth rates and accelerated growth. Stage three forecasts declining birth and death rates. Stage four maintains low death rates with fluctuating birth rates and a stable population. Africa is in the second stage and moving toward stage three. Thus, there are profound health and development implications of the demographic transition. First, the demographic momentum implies continued births by more parents, even though fertility may decline. There are simply more people having babies. Second, population age structures will begin to change, and more Africans will be in older segments of the population.

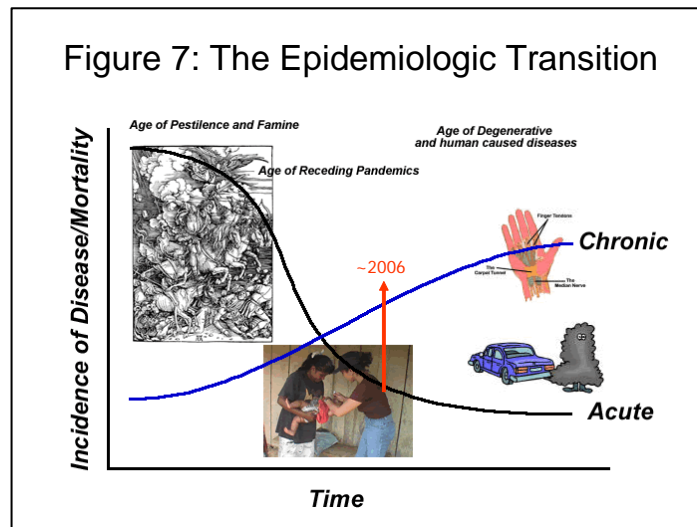
Figure 6: The Demographic Transition



Health care needs will likewise change and a greater need for chronic disease management will emerge. Coupled with high rates of urban growth (see below), and African planners, politicians and public health experts have much to consider. Sound management of the demographic transition will require an in depth assessment of future costs for a growing and aging population. Over the next 25 years, African governments, donors and nongovernmental partners will have to derive an effective and operational balance between the infectious disease burdens of poverty and the growing proportion of noncommunicable diseases affecting older populations in both rural and urban areas. Africa should consider practical policies and programs to stabilize population and cope with the inevitable repercussions of demographic momentum and the demographic transition.

The Epidemiologic Transition

The epidemiologic transition is progressing in the developed world and developing world alike. Africa is no exception. Simply defined, the epidemiologic transition is a shift from infectious diseases to chronic, noncommunicable diseases as the major causes of morbidity and mortality. In 1971, Omran eloquently defined three phases of the epidemiologic transition: the “age of pestilence and famine”; the “age of receding pandemics” and the “age of degenerative and manmade diseases” (Figure 7).²⁷ Worldwide, chronic diseases cause about 60% of all deaths. Africa faces a double burden of disease because both infectious and chronic diseases cause significant mortality and morbidity. Infectious diseases still account for about two-thirds of all deaths in Africa, but chronic diseases are gaining ground. Indeed, Africa faces a quadruple threat if we consider the HIV/AIDS pandemic and the growing rate of deaths and disabilities from injuries in addition to the chronic and infectious causes of death.



Africa is in the second stage of the epidemiologic transition, but degenerative diseases such as cardiovascular disease, strokes, diabetes and cancers are gaining traction and placing additional burdens on the health sector. For example, in 2000, diabetes prevalence was 171 million worldwide (2.8% of the world's population). In 2030, diabetes prevalence may reach 6.5% affecting 366 million people, 81% of whom live in developing countries.²⁸ In the next 25 years, diabetes will increase 161% in Africa alone.

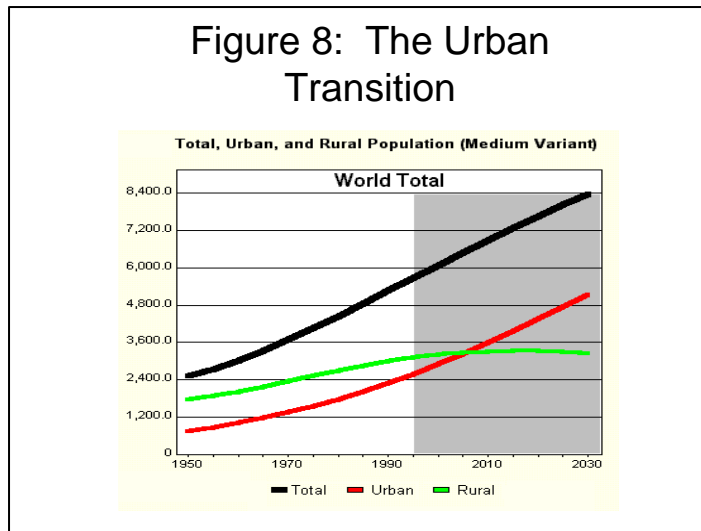
The quadruple threat to Africa over the next 25-50 years is real and will overburden unprepared health systems rapidly. Beginning now, African nations must collectively recognize this impending public health quagmire and begin expanded and new efforts to mitigate the adverse health impacts associated with the epidemiologic transition. The public and private sectors should further define specific roles of government and nongovernmental organizations in the delivery of care and enable true partnerships. Private shareholders and/or multi-national corporations could franchise secondary and tertiary facilities to expand referral care and chronic disease management. Governments and the private sector could institute tiered pricing schemes for medicines and medical equipment via insurance and/or health maintenance organizations so rich and poor populations have access to the services they require. Companies could lower the prices of branded drugs and increase the production and distribution of generics to expand delivery.^v In order to meet future needs, Africa must recognize the imperative and the epidemiological window of opportunity associated with the epidemiologic transition. The young and old of Africa can ill-afford complacency, indecision or neglect.

The Urban Crucible – Opportunities and Challenges for Africa

The world is urbanizing and over 50% of the world's population will live in urban areas by 2030 (Figure 8). Characteristically, urban environments grow at higher rates than rural areas due to migration plus natural rates of increase. On average, urban growth is

^v This would require regulation and control to insure the proper use of branded drugs and limit filtration to black markets and/or non-regulated sales outlets.

about 5% worldwide. This implies a doubling time of about 14 years. Much of the urban growth worldwide will be in slum populations, which comprise 40%-60% of urban environs. Tens of millions of the underserved populate these slums.

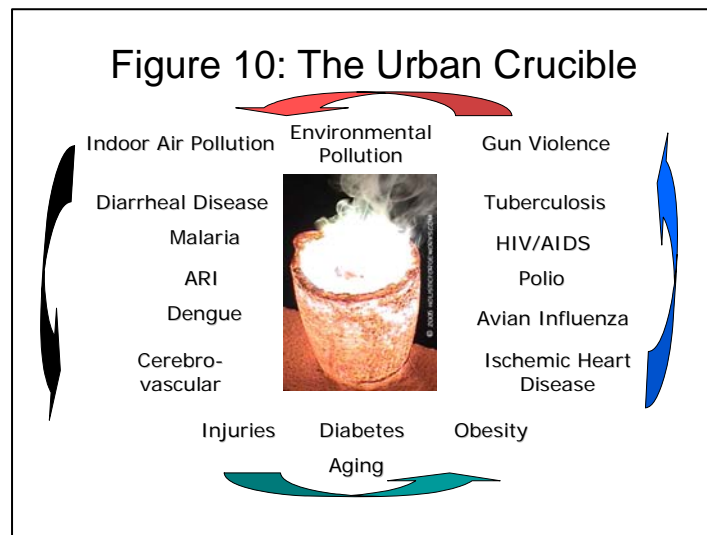


Understandably, Africa is no exception to the trend in urbanization. In 2000, Africa was 38% urban (about 297 million). By 2030, about 53% of Africa will be urban with over 700 million urban residents. Worldwide, the highest rates of urban growth will be in African cities and agglomerates.²⁹ Essential needs for water, sanitation, food, education and other basic services will increase rapidly. The potential for adverse social, cultural, political and economic conditions is clear. Figure 9 presents conservative population estimates for major African cities. These estimates may underestimate the true numbers living as squatters and/or in slums. By 2020, Nairobi, Johannesburg and Abidjan could exceed 10 million and 77 African cities could have populations greater than one million.³⁰ Furthermore, we must consider urban sprawl and the emergence of urban agglomerates. For example, by 2015, greater Lagos could have a population of 23.2 million people; the population within the city limit today is 8.9 million.

Figure 9: Major African Cities

City	Population (Millions)
Lagos	8.9
Kinshasa	7.8
Abidjan	3.7
Kano	3.6
Cape Town	3.4
Durban	3.1
Luanda	2.8
Addis Ababa	2.8
Om Durman (+Khartoum)	2.8
Nairobi	2.7
Mogadishu	2.6

The urban environment represents a crucible in many respects (Figure 10). Varied elements of the environment collide and interact, forming new cultural, social, epidemiological, economic and organizational processes. Infectious diseases such as diarrhea, respiratory disease, vaccine-preventable diseases, HIV/AIDS, tuberculosis and vector-borne diseases will continue in urban Africa. However, environmental and chronic diseases, and social conditions such as indoor air pollution, obesity, diabetes, cardiovascular disease, injuries and gun violence will also increase across all economic quintiles. The poorest of the poor will suffer most, and their growing demographic will put tens of millions at risk and test the resilience of fragile political and service delivery systems.



The “urban crucible” presents new challenges to be sure, but also potentially new solutions. Physical proximity of services to large numbers of the underserved could facilitate service delivery by public and nongovernmental institutions. Greater opportunities for communication in the urban environment also exist through mass media and telecommunications. Quasi-accessible referral networks also exist and strengthening those primary and secondary service delivery sites through innovative public-private sector programming such as franchising, tiered pricing and/or tiered insurance plans may be considered. Local and international pharmaceutical companies may consider drug subsidies for the urban poor. The public sector may consider expanding fees for services that are traditionally free such as immunizations and family planning because populations in urban centers usually have more expendable income. Retaining fees generated at specific facilities may also provide incentives for care providers and promote improved and sustained services. However, lower economic quintiles of urban populations will require special consideration. Pro-poor policies must target equitable access to and quality of services to lower quintiles of the urban population.

The urban environment is the first battleground. Successful urban interventions and partnerships could be modified to expand rural service delivery. Both the public and

private sectors need to commit to sharing the responsibilities for health care delivery. Each must recognize and exploit their respective niches for preventive and curative service delivery. **We must establish viable, mutually supporting partnerships and decide who can do what, where, and at what costs?** Addressing urban health in Africa requires a robust and honest policy dialogue among the public and private sector stakeholders. Catalyzing this dialogue is a first priority.

The Nutrition Transition

In October 2004, the BBC reported:

*“Obesity rates are escalating everywhere. More than 300 million adults worldwide are overweight and most of them are suffering from weight-related illnesses like diabetes, heart disease and sleeping disorders. ...the developed and developing world will not be able to cope with treating people with diseases linked to obesity.”*³¹

There is a consensus that overnutrition is becoming an increasingly important issue in many developing countries. Experts believe a more rapid shift to overnutrition is apparent among populations in moderate- and low-income countries.³² The demographic and epidemiologic transitions are pre- or at least co-factors in the nutrition transition. Links to the urban transition are also clear. In the 20th century, we witnessed large shifts in dietary behavior, physical activity, the habits of food consumption, and types of foods available and consumed. The consumption of saturated fats, sugar and processed foods characterizes the nutrition transition in wealthier countries. An increase in the body mass index of populations and consequent increases in overweight and obesity followed. In the 21st century, some countries, such as the United States, have 20% of the adult population overweight.

Worldwide trends indicate less developed countries are experiencing higher proportions of overweight and obesity. We observe higher rates of overweight in the upper socio-economic tiers, but increasingly poorer populations are also at risk. Overweight prevalence in children has increased in Brazil, China and the United States.³³ The association of overweight and obesity to chronic diseases such as diabetes and cardiovascular disease is clear. These trends and their consequences demand attention in the future.

In Africa, the nutrition transition is incipient. However, higher rates of overweight are emerging in wealthier segments of urban populations. The World Health Organization predicts that by 2015 30% of men and 41% of women in Africa will be overweight.³⁴ These projections demonstrate the need to look forward. The nutrition transition is beginning to become visible in South Africa. South Africa’s 1998 Demographic and Health Survey data indicate that about 29% of men and 56% of women are overweight including 9% and 29% who are respectively obese.³⁵ Seventeen percent of South Africans under 20 years of age are overweight with the highest rates in the white and Indian populations. This implies a direct relationship between socio-economic status, overweight and obesity. Processed foods, changes in diet, changes in physical activity and social attitudes towards nutrition, food availability and consumption patters promote

these trends. Africa is not immune to overnutrition and a window of opportunity exists to avoid the costs and consequences of obesity. Africa needs to consider the nutrition transition in the 21st century and appropriately balance investments in undernutrition and overnutrition in the future.

Systems, Efficiencies, Partnerships, Realities

African health care delivery systems are fragile and under increasing stress. Growing populations, increased demand, changing demographics, epidemiologic shifts and urbanization all demand innovation and sustained system support. The future paradigm for health in Africa will require strengthening the systems to meet old and new challenges, but also will require improved management, new partnerships and the skilled provision of care. Accountability, authority and honesty are the pillars of efficient service delivery. The paradigm will include true partnerships between the public and private sectors and all the stakeholders in-between. Governments, state/provincial/district level administrators, municipalities, villages, clergy, NGOs, FBOs, community-based organizations, civil society, for-profit providers, national/multi-national corporations and bi- and multilateral donors must seek common ground and forge sustainable partnerships. These partnerships require fair policies and adequate resources. Cascading momentums and points-of-no-return are real and attention is required now. Africa, as a continent, must be the clarion of change.

There is no illusion about the realities of change in Africa and the impediments to that change. There cannot be any illusion about the great potential Africa possesses. The time has come to acknowledge the present and future needs of hundreds of millions of Africans and pursue policies and partnerships that will address those urgent needs before it is too late.

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