Public Health Training in the Democratic Republic of Congo: A Case Study of the Kinshasa School of Public Health

By

Nancy Mock, PhD
Elke de Buhr, PhD
Munyanga Mukungo, DrPH
Okitolonda Wemakoy, DrPH

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EXECUTIVE SUMMARY

The Democratic Republic of Congo (DRC), formerly Zaire, presents one of the most challenging environments for health development in Sub-Saharan Africa (SSA). Within SSA it is the second largest country in land area, has the third largest population, is challenged by high levels and a wide spectrum of infectious diseases, and relies upon a physical and human health infrastructure that has suffered more than four decades of neglect, a recent decade of conflict and the economic collapse of the country. Consequently, infant mortality rates in DRC are among the highest in Africa. Previously controlled diseases such as African Trypanosomiasis have reappeared, and many areas of the country remain inaccessible due to poor infrastructure or security threats.

On the other hand, DRC has a legacy of a well-organized and functioning "district" health primary care and referral system. While the central Ministry of Health (MoH has not been influential until recent times, DRC has articulated Health Zones (HZ) over the years with clearly identified organizations, norms and functions. Since colonial times religious missions have acted as major implementing agencies in the health and education sectors, and the DRC now also has a thriving non-profit indigenous network of health care providers who are major partners in the management of the HZ system.

The HZ –based primary care and referral system and the support of major donors to this initiative in the 80's gave rise to a clear demand for graduate level public health training. Initially, public health training needs were addressed through short term training or overseas masters level public health training in Europe and the United States. However, by 1983, USAID was committed to the establishment of a public health school in DRC (then Zaire). The mission was convinced that a local school would lead to more effective and efficient production of public health professionals and also provide on-going support to health development through applied research. Training also was mostly targeted at Provincial level health inspectors and district health doctors (medecins chefs du zone).

The Kinshasa School of Public Health (KSPH) is one of the oldest modern public health schools in Sub-Saharan Africa built on the American model of problem-oriented and experiential learning. The KSPH was primarily supported by USAID and to a lesser extent the Belgian Cooperation. USAID awarded a 6.3 million dollar grant to a Tulane University-lead consortium that included Harvard University and the University of Alabama to develop the KSPH. The USAID program was planned to be a 10 year program. The budget provided for all key elements of institutional development including faculty training abroad, master's level tuitions, physical rehabilitation of infrastructure and the support of ICT and administrative systems.

The KSPH enjoyed generous support, including several long term expatriate faculty posts, a substantial budget for short term faculty exchanges and doctoral training funds for eight faculty members. Consequently, the School rapidly developed and implemented a master's level public health training program, several short term certificate courses and the capacity to undertake applied research.

The School endured and survived remarkable challenges, including the withdrawal of USAID and Belgian assistance in the early 90's and a decade of collapsed governance. Despite this situation, the KSPH was able to mobilize support from a foundation set up by Tulane to support the School and also the World Health Organization (WHO) and European Transition Support (TAP). In 2000, USAID was able, through a regional project, to provide some assistance to the KSPH).

Since 2003, USAID is funding again the KSPH as is the Belgian Cooperation. The School also has captured National Institutes of Health (NIH) funding through collaboration with University of North Carolina (UNC).

The context of Congo also is changing. Already, the country has experienced a large infusion of funds from the World Bank, Global Fund, GAVI and bi-lateral donors. If stability persists and improves, the in-flow of resources will be even more dramatic, including significant private sector funding.

a. Achievements

The KSPH has achieved major contributions to the health development of Congo and it is positioning itself as a leader in the Central African region. It was the first public health school to be developed in francophone Africa oriented by an American model. It has greatly contributed to national leadership and to the mid-level management of the primary care system by producing more than 400 masters' level professionals who largely remain and practice in the DRC. The KSPH is a key partner of the Ministry of Health (MoH) and many partner organizations in the country, providing targeted training, consultation and applied research. The School has been instrumental in contributing to knowledge about HIV/AIDS epidemiology and management through participation in basic and applied research about this disease. All full-time faculty members have national as well as international degrees (MPH, PhD), extensive international experience and are competent in several languages (including French and English).

On the other hand, the manpower needs of this vast country with 60+ million inhabitants are enormous. The health system already is greatly decentralized, so the pressure to produce large numbers of individuals to man its 515 health zone system is large. The School is now being joined by

two more schools, which it is helping to develop. However, the education and training needs, including the need for continuing education to its graduates and other MoH and implementing partners will require further development within the School and among schools.

b. Capacity

The KSPH has successfully expanded its teaching capacity through the addition of junior faculty and adjunct faculty/alumnae and by developing linkages with other departments within the University, most notably the Department of Economics. It now offers successfully three masters degree programs, an MPH equivalent program, masters in health economics, and an executive format masters of public health degree.

The KSPH has been successful at training and retaining faculty. Through its partnerships with Tulane University and the Belgian Cooperation, the KSPH was able to train 12 permanent faculty members in the 1980's at Tulane University (8) and in Belgium (4). Only four of these faculty have moved on to other careers (related to African public health-two remain in Kinshasa) and all maintain ties to the KSPH, except for two who have passed away. More recently, 14 assistant professors have been recruited into a sandwich doctoral degree program at Tulane University.

The School's existing faculty is well prepared to cover the basic public health competencies and disciplines required for its teaching programs. Its faculty development program was planned for this outcome. At least two faculty members can teach each of the module curricular material. However, the heavy teaching burden results in trade off in the School's research and publication output.

Currently 14 junior faculty members are in training. They will complete PhDs offered through Tulane University's innovative sandwich PhD program in International Development. This program enables students to complete one third of their credits at Tulane, one third in DRC, and one third in a local regional training center. The PhD in International Development emphasizes leadership skills, such as planning, budgeting, management and analytical skills, as well as concentration expertise in a public health related discipline.

c. Leadership and Accountability

The Kinshasa School of Public Health has been blessed with high quality and stable leadership and continuity of leadership both internally and within its key partner, Tulane University. This is especially striking in light of the

challenging environment that the School has faced over the years. No director of the School has served less than a five year term and the senior faculty members have been working effectively together since the inception of the School. The US partner, Tulane University, has provided a leader who is exceptionally entrepreneurial and flexible, a trait uncommon in US universities, but essential in environments like that of the DRC.

Still, there is indication among the younger and some senior faculty that decision processes are controlled by a small number of senior faculty and that somewhat excluded from decision-making, which suggests some need for improved communications and the need for some more regular mechanisms for team building.

Also, if the country stabilizes and resources rush in to the country, then the style of leadership needed to optimize the institution's growth may change and more leadership surge capacity may be warranted(external university partner support, possibly).

d. Finances and Administration

Within the DRC context, the KSPH has been remarkably financially solvent, even during years when its major donor stopped funding its activities. That is, the KSPH has demonstrated financial sustainability. While the School relies still to a large degree on USAID, it is increasingly utilizing USAID funds for investment-such as faculty development-as opposed to recurrent costs. It has begun to accept private students; it has diversified its funding base, especially to expand its tuition streams and research programs.

The KSPH's major needs with respect to financial health are in the areas of endowment, which it does not have, and also the establishment of a certified indirect cost rate, which will allow it to more successfully and sustainably assume its basic operating costs.

The KSPH's relevance is enhanced through its intersectoral technical management committee. The Committee is headed by the Ministry of Higher Education and the Deputy is the Ministry of Health. A variety of key stakeholders participate in the Committee. The Committee meets quarterly and also is responsible for the recruitment and selection of students.

f. Research Activity

Over the years, the School has gained a solid reputation for its excellent work in applied health sector research. Its capacity in this regard comes from its early heritage and the emphasis of faculty development investment. More recently, the School is directly engaged in NIH research, in collaboration with the University of North Carolina.

Research is an area of the School's development that was internally identified as an area to be strengthened. Particularly, faculty members were concerned about the low publication rate of faculty and the need for more systematic upgrading of faculty research skills and topical area knowledge. The relatively high work load of faculty also is, in large part, responsible for this situation. Faculty teaching loads are very high and they are typically teaching year round. At the same time, sponsored applied research does not automatically result in a publication, but rather a contribution to grey literature. Lastly, the language barrier of English writing fluency also plays a role.

For all of these reasons, the current situation is very understandable. Creative approaches and some financing for research will be required in order to improve research productivity. The faculty members are systematically given grantsmanship courses. Faculty twinning with research active US faculty partners might be one way to begin to address this problem in the near term.

g. Sustainability

The KSPH is a sustainability success story. It is one of the few institutions that survived the withdrawal of its major donors for nearly a decade. At the same time, it has maintained remarkable stability in leadership and staffing. It now has an alumnae network of more than 150 professionals around the country and more than 400 graduates.

The School's success can be attributed to leadership (creativity, entrepreneurial, flexible), relevance, and commitment of its staff and main collaborating partner, Tulane University.

h. International Cooperation

International cooperation is at the core of the development of the Kinshasa School of Public Health and has played a critical role in the School's

inception, growth and development. The nature of international cooperation has changed over the years. At first, the Tulane University-lead consortium played a major role in the design of the KESP, which featured a full-fledged institutional development program. When US, Belgian and foreign assistance was largely removed from Congo and the country experienced an economic crisis, the Zaire Foundation, an American NGO set up by Tulane University, provided critical support to cushion faculty from financial ruin. Some USAID support to the School also was provided though a regional project. The Belgian Cooperation has consistently provided scholarships and teaching faculty over the years before and after the one decade hiatus and this also has been the case with the US Government. In 1992, the World Health Organization began to provide scholarships for MPH students.

USAID and the Belgian Cooperation are the key donors for faculty development. WHO, USAID and the Belgians also are the most reliable and largest donors for MPH tuition waivers.

A number of international organizations partner with the KESP for applied research. These include the Centers for Disease Control (CDC), FOMETRO, and the European Union. The NIH, through University of North Carolina (UNC) is undertaking epidemiologic research in the area of vertical HIV/AIDS transmission.

i. Recommendations

The KSPH is well poised as a major actor in DRC's health development. The enormity of DRC's public health capacity needs, however, combined with the likely influx of external resources when stability improves in the country, argue for some important reformulation of the strategic vision of the KSPH. For example, it might be important to differentiate its three degree programs to target distinct manpower gaps such as central level policy and regulatory needs; district strategic and operational management skills; and the strategic and operational needs of non-for-profit organizations.

To address the vast public health skills needs (some for at least each of the four person HZ team), it is important also to develop a strategy for strengthening public health training in the nursing schools at the undergraduate and graduate level. The KSPH should be involved in the articulation of nurses training, possibly by increased recruitment of nursing faculty among its masters programs and also, possibly, through direct assistance in the development of nursing public health curriculum and in providing targeted training to the nursing school faculty.

Other areas of future work might focus on bachelors' degrees in public health, combined MD/MPH programs, certificate programs and other ways to

address the large manpower training needs. In addition, the Congo KSPH and Rwanda School of Public Health might collaborate more closely to support manpower development in Eastern Congo. This strategy is particularly viable given the fact that both the School of Public Health in Kinshasa and Rwanda are supported primarily by Tulane University.

The School might increase production and dissemination of packaged and modularized training materials, possibly by creating a knowledge center to be shared among its sister schools. It also would benefit from a larger initiative or regional/sub-regional cooperative to enhance the availability of training resources.

Finally, an impact evaluation of the KSPH on actual health management improvement has never been done. After 20 years of programming, an impact evaluation is both warranted and desirable.

ACRONYMS

AFEMOCO	Association des Femmes Médecins Oeuvrant en République Démocratique du Congo
AIDS	Acquired Immune Deficiency Syndrome
ALO	Association Liaison Office for University Cooperation in Development
ARV	Anti-retroviral
BCG	Bacillus Calmette-Guérin (a vaccine for tuberculosis)
BOM	Billings Ovulation Method
CARPE	Central African Regional Program for the Environment
CDC	Centers for Disease Control and Prevention
CEPLANUT	Centre National de Planification de Nutrition Humaine
CIA	Central Intelligence Agency
CNPP	Centre Neuro-Psycho-Pathologique
DC	Developing Country
DHS	Demographic and Health Survey
CHW	Community Health Worker
DOM	Direction des Oeuvres Médicales
DOTS	Directly Observed Treatment, Short-course (TB control strategy)
DPT	Diphtheria, Pertussis, Tetanus vaccines
DRC	Democratic Republic of Congo
DTCoq3	Tetanus vaccine
ECC	Eglise du Christ au Congo
ESP	Ecole de Santé Publique
EU	European Union
FOMETRO	Fonds Médical Tropical
FY	Fiscal Year
GAVI	Global Alliance for Vaccines and Immunization
GDA	Global Development Alliance
GDRC	Global Development Research Center
GDP	Gross Domestic Product
HIPC	Heavily Indebted Poor Countries
HIV	Human Immunodeficiency Virus
HPN	Humanitarian Practice Network
HZ	Health Zone
IDA	International Development Association
INGO	International Non-Governmental Organization
IRC	International Rescue Committee
ISTM	Higher Institutes of Medical Technology
IO	International Organization
IMA	Interchurch Medical Assistance
IMF	International Monetary Fund
KESP	Kinshasa Ecole de Santé Publique
KSPH	Kinshasa School of Public Health
MD	Medical Doctor
MDG	UN Millennium Development Goals

MICS	Multiple Indicator Cluster Survey
MMWR	Morbidity and Mortality Weekly Report
MoH	DRC Ministry of Health
MONUC	Mission de l' Organization des Nations Unies en République Démocratique du Congo / United Nations Mission in the Democratic Republic of Congo
MPH	Master of Public Health
NGO	Non-Governmental Organization
NIH	National Institute of Health
ONG	Organization Non Gouvernementals
OXFAM	Oxford Committee for Famine Relief
PhD	Doctor of Philosophy
PRGF	Poverty Reduction and Growth Facility
PVO	Private voluntary organization
SANRU	Santé Rurale (Rural Health Program in DRC)
SD	Standard Deviation
SPH	School of Public Health
SO	Strategic Objective
SSA	Sub-Saharan Africa
SWOT	Strengths, Weaknesses, Opportunities, and Threats
TB	Tuberculosis
TMI	Technical Medical Institute
UN	United Nations
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNDP	United Nations Development Programme
UNFPA	United Nations Fund for Population Activities
UNICEF	United Nations Children's Fund
UNIKIN	University of Kinshasa
UNOCHA	United Nations Office for the Coordination of Humanitarian Affairs
ULB	Université Libre de Bruxelles
ULG	Université de Liège
US	United States
USAID	United States Agency for International Development
USD	US Dollar
WB	World Bank
WHO	World Health Organization

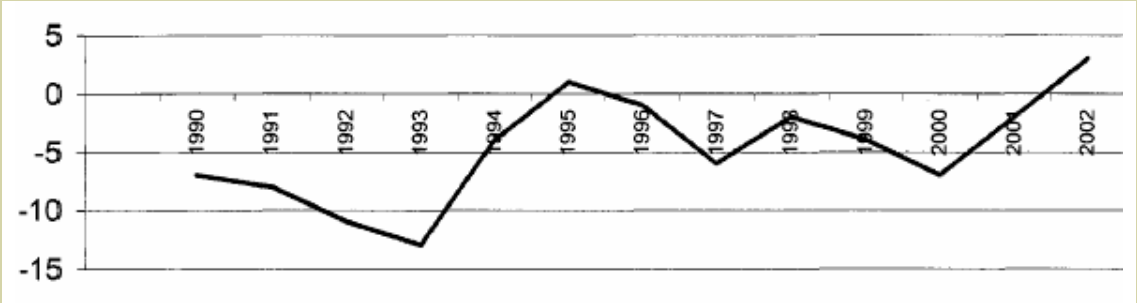
1. INTRODUCTION AND CONTEXT

The Democratic Republic of Congo (DRC) is the second largest country in Sub-Saharan Africa in terms of land area, more than 2.3 million square kilometers (CIA World Factbook 2006), which makes it nearly equivalent to the United States east of the Mississippi. It also is the third largest country in terms of total population, behind Nigeria and Ethiopia, currently estimated to be more than 62 million. Congo has experienced a particularly difficult transition from colonialism. After independence in 1960, the country soon came under the rule of corrupt leader Mobutu Sese Seko, who stayed in power for 32 years until being overthrown by Laurent Kabila in the late 1990's.

In the early 90's the country's economy collapsed under a burden of hyper-inflation, political and economic crisis (World Bank 2004). A rebel movement supported by neighboring countries started an offensive that led to the fall of Kinshasa in 1997. Laurent Kabila, one of the rebel leaders, became head of state. But his rule was quickly challenged by rebel groups supported by foreign governments. In July 1999, the Lusaka Accord was signed by the major warring factions; however, active conflict persisted in the Eastern part of the country, where it is estimated that more than 3.9 million excess deaths are associated with the conflict between 1998 and 2004 (Coghlan et al. 2006). Peaceful transition has been gradual and remains uncertain, requiring a series of bi-lateral agreements leading to withdrawal of foreign troops and the presence of the UN Peacekeeping forces (MONUC). Laurent Kabila was assassinated and succeeded by his son in January 2001.

The Government's military has been restructured and downsized. In 2003, a transitional government of national unity was established for a 24 month period leading to elections. Although these were originally planned for June 2005, they have been postponed and are currently planned for July 2006. Some optimism remains about the prospects of a longer term peaceful transition to democracy.

Figure 1: GDP growth rate since 1990 in percent, DRC



Source: World Bank, 2004

Even though the DRC is rich in minerals and other natural resources, its economic development has been weak since independence and plummeted during the initial quarter of the decade of destabilization. The GDP growth rate was largely negative between 1990 and 2000 (see figure above). Average per capita income decreased from 307 USD/capita in 1970 to 107 USD/capita in 2001[1] (IMF/IDA 2004). With the decline of conflict, signs of economic progress are prominent (see above). Most recently, the GDP growth rate is estimated to be 6.5% (CIA, 2006).

a. Financing and Donor Activities

Congo has recently seen the re-appearance of considerable external support in addition to burgeoning humanitarian support. Humanitarian Assistance to the DRC in 2003 amounted to more than 158,000,000[2]. As early as 2001, the IMF began preparation of a Poverty Reduction and Growth Facility (PRGF). In June 2002, the IMF signed a three year USD 860 million PRGF (World Bank 2004). The DRC prepared an Interim Poverty Reduction Strategy Paper and was granted debt relief under HIPC in July of 2003 (World Bank 2004).

The World Bank currently has nine active projects totaling approximately 1.5 billion in commitments[3], of which direct health programming represents approximately 252,000.000 USD. Within the health sector, the primary donors are the World Bank, USAID, the Belgian Cooperation, the European Union, Canada, Italy, Germany and UNICEF (USAID 2005), though there are more than 20 donors to the health sector. Bi-lateral donors to the higher education sector include the French, Belgians, and USA. Many of the larger donors to the health sector began to reinstitute or initiate support to rebuilding the health sector in 2002. As part of an IDA program, the Emergency Multisector Rehabilitation and Reconstruction, DRC received 44 million towards health sector recovery in 2002 (World Bank 2005). The Global Fund also has committed more than 210 million dollars for HIV, malaria and TB work during the past few years (see table below).

[1] The IMF/IDA report caveats these figures with the fact that population based data is virtually inexistant in Congo. They present a strong case for the institution of a Living Standards Measurement Survey Program.
[2] UNOCHA CAP, 2003.
[3] World Bank website:
http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/AFRICAEXT/CONGODEMOCRATICEXTN/0,,menuPK:349476~pagePK:141132~piPK:141107~theSitePK:349466,00.html

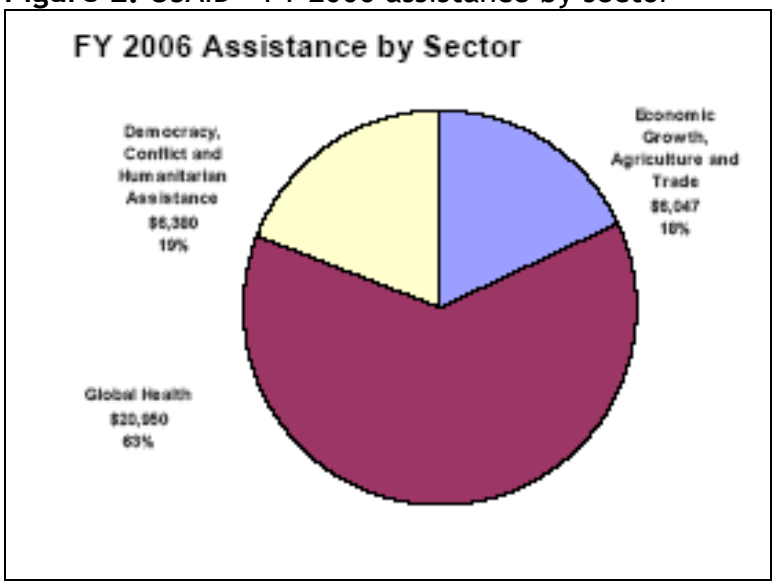
Table 1: Major health donors in DRC: Illustrative resources available

Donor	Period	Amount	Program emphasis
USAID[4] CDC[5]	FY 2006 FY 2003	20,950,000 1,800,000	▪Health Zones ▪Child Survival ▪Reproductive health ▪HIV/AIDS ▪Infectious Disease
World Bank[6]HPN MAP	2006-2011 2004-2011	150,000,000$ 102,000,000$	▪Health Zones ▪Malaria control ▪Management capacity ▪HIV/AIDS
Global Fund[7]	2002-2005	211,443,400	▪HIV ▪Malaria ▪TB
EU[8]	1998-2005	45,000,000 EU	▪Health Zones ▪HIV/AIDS
Belgian Cooperation[9]	2004	10,090,904 EU 11,000,000+ Humanitarian	▪HZ Bas Congo ▪HIV/AIDS ▪Institutional support MOH ▪National TB program ▪Human African Trypanosomiasis
GAVI[10]	2003-2008	93,369,500$	▪Immunization/vaccines

Health is the largest component of USAID's DRC program. FY 2006 obligations devoted to the health Strategic Objective (SO) represented more than 60% of the portfolio. USAID has traditionally strongly supported the health sector since the 1970's and it was a key actor in the elaboration and support of the health zone model of health care organization. USAID also provided the start up support for the University of Kinshasa's School of Public Health and it remains today to be the most important contributor.

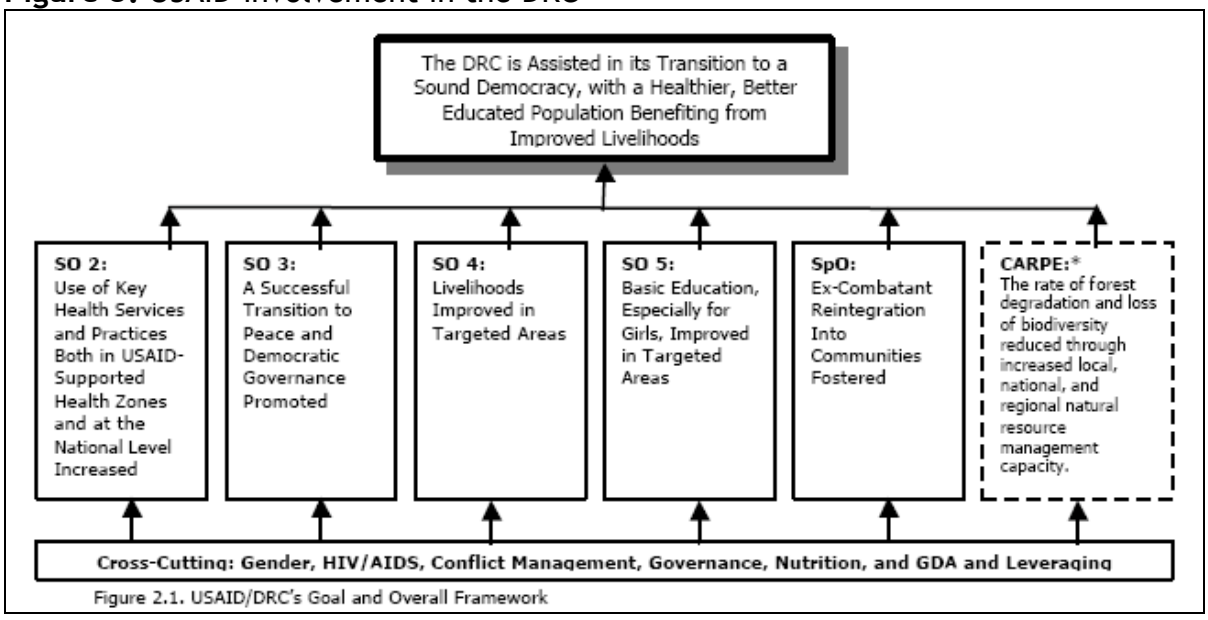
[4] USAID Budget, http://www.usaid.gov/policy/budget/cbj2006/afr/cd.html
[5] http://www.cdc.gov/nchstp/od/gap/countries/docs/DRC%20FY2003%20Final.pdf
[6] World Bank, 2005
[7] http://www.theglobalfund.org/en/about/how/
[8] Delamalle, 2004
[9] DGDC, http://www.dgcd.be/en/partner_countries/congo/ODA_BE_DRCONGO.xls
[10] http://www.gavialliance.org/resources/5yr_commitment_Dec05.xls

Figure 2: USAID - FY 2006 assistance by sector



Source: USAID

Figure 3: USAID involvement in the DRC



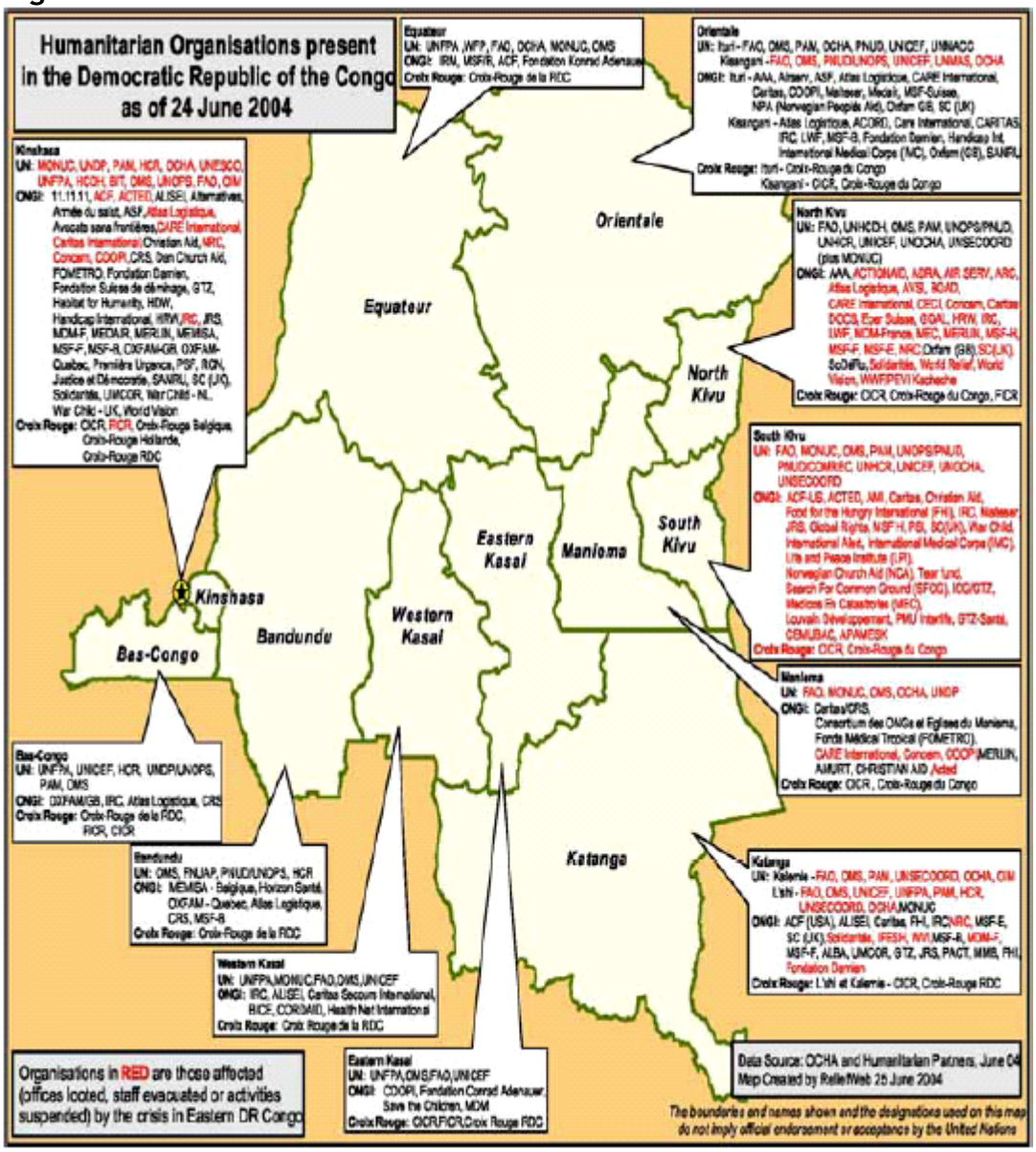
Source: USAID website

Given the Health Zone system and large geographic area to be covered in DRC, the major donors have provided support based upon both theme (central level reforms) and geographic coverage of integrated primary services through the HZs. For example, in 2005, USAID covered 91 Health Zones. The new World Bank sector loan envisions support of more than 80 zones. The EU portfolio also focuses on specific health zones. USAID has estimated in 2004 that more than 54% of all health zones were covered by donors (USAID 2004).

Private sector organizations have always been an important part of the health system fabric in the Congo. Since colonial times, missionary health care providers had a national network of primary and tertiary care programs and also provided a substantial share of the country's educational programs.

With independence, the government attempted to take over the organizations run by missionaries with the result that the church-based organizations were increasingly administered by Congolese. Over the years, a strong associative sector of private non-profit organizations has developed. In the absence of a strong government, this system has persisted and grown. The emergence of a florid humanitarian crisis in Eastern Congo also resulted in stronger engagement by International Non-Governmental Organizations (INGOs) as can be seen in the figure below.

Figure 4: Humanitarian Presence in the DRC in June 2004



Source: UNOCHA 2005

The USAID's flagship primary health care program (SANRU III) is actually administered through a Christian INGO, Interchurch Medical Assistance (IMA), and local protestant church umbrella (ECC). The Catholic Church and its Medical Arm (BOM) and the Kimbanguists (an African Christian denomination) are also important providers within the health care system. Thus, Congo has a vibrant local and INGO private sector. Throughout the

years until recently, most donors channeled funding directly through these groups in an attempt to circumvent the corruption and low administrative competence of the government sector.

b. Evidence-Base in the Democratic Republic of Congo

The DRC is a vast country that has never, since independence, had reliable and valid routine or periodic statistical data at the national level. While some small area data may be of high caliber, its generalizability across a land as vast as DRC is highly questionable. The only notable national survey data available comes from the UNICEF Multiple Indicator Cluster Survey (MICS) that were implemented in 1995 and 2001 and two International Rescue Committee Mortality surveys that were implemented in 2003 and 2004. These surveys were focused on health related measures and are of a rapid assessment orientation, which means that their information content is rather limited. For example, there has not been a single national study of poverty or expenditure/consumption.

Similarly, the health care system developed as a decentralized system, which combined with variable support to HZs throughout the country, resulted in the absence of routine statistical data related to health (as well as other social issues).

c. The University of Kinshasa School of Public Health

After independence in 1960, the medical and public health system of the Democratic Republic of Congo (DRC) - or Zaire as it was known under the rule of Mobutu Sese Seko - was grossly inadequate and there was no functioning training program for public health personnel in place. USAID's commitment to the decentralized model for primary care delivery gave rise to the recognition of the need for an institution that could support and produce mid-level managers of the zonal health system and could also provide local expertise to support assessment, evaluation and operations research related to health zone (HZ) components. An initial calculation by the USAID-sponsored primary care initiative Sante Rurale, or SANRU planners, suggested that at least 400 additional public health trained physicians were needed to effectively cover the country.

In the 1980s, a convergence of circumstances lead to the birth of the University of Kinshasa (UNIKIN) School of Public Health project, initially funded by USAID in 1984 at a level of 6.3 million dollars, for the first five years of a ten year project. Technical support was provided by Tulane University and other US-based and European universities. This case study examines the development of the Kinshasa School of Public Health from its

inception to 2005 with the objective of analyzing the adequacy of the UNIKIN/KSPH for addressing DRC's health challenges and also to identify strategies for strengthening public health capacity in the DRC .

d. Study Objectives

This study of the Kinshasa School of Public Health is part of a larger study of Schools of Public Health in sub-Saharan Africa that covers Ghana, Uganda, and the Democratic Republic of Congo. The objective of the research is to:

a. Assess the present public health environment,
b. Determine the needs for additional public health skills in the delivery of health services and assess the capacity of the existing structures to meet needs identified, and
c. Set out options and recommendations to strengthen public health training.

The scope of work for the case study of the Kinshasa School of Public Health in the Democratic Republic of Congo is to:

a. Assess the public health environment in the DRC,
b. Assess current capacities of the NGOs and public sector to meet existing needs,
c. Consider the evolution of health needs in the near and medium term future, and how public health personnel requirements would be affected,
d. Evaluate the current structure and capacity of the KSPH to meet current needs, and support the Ministry of Health and other health organizations in the DRC,
e. Determine who are the major customers for KSPH graduates and the perceptions of the quality of training, and additional skills required,
f. Identify key areas where additional public health training is required,
g. Characterize the current faculty at the KSPH in terms of capacity and coverage of the public health curriculum, and
h. Assess the links between the KSPH and other organizations within and outside DRC which contribute to the capacity of KSPH.

e. Methodology

This case study employs semi-structured interviews with key stakeholder groups and extensive desk review of grey literature, including KSPH

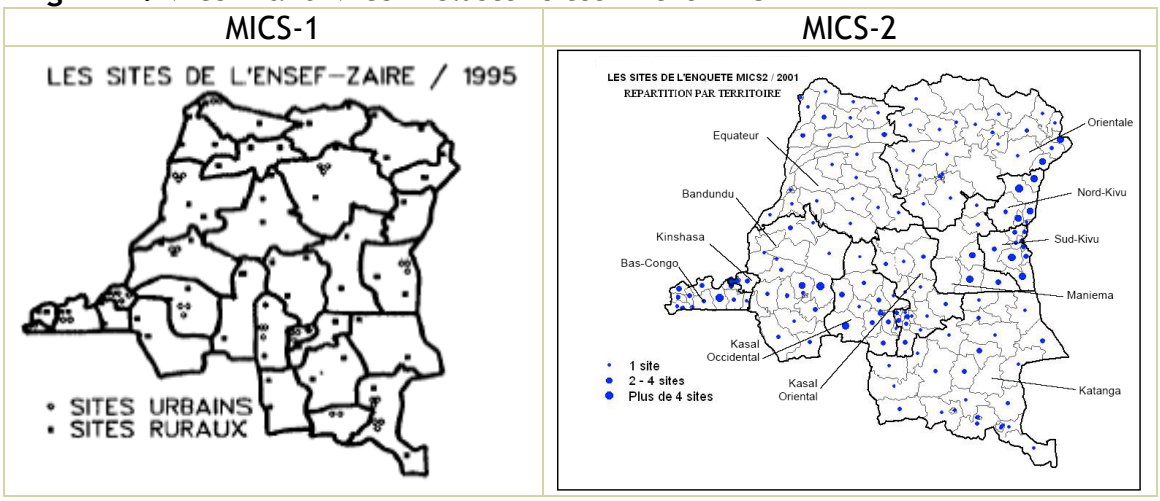
administrative documents, and peer-reviewed journal articles. Interviews were conducted at the Kinshasa School of Public Health and with various stakeholder groups:

a. KSPH faculty (professors and assistants),
b. Ministry of Health (MoH) of the Democratic Republic of Congo,
c. Central administration of the University of Kinshasa,
d. Other university faculty (directors of departments),
e. National and international NGOs, and
f. Donor organizations.

2. HEALTH STATUS AND TRENDS IN THE DEMOCRATIC REPUBLIC OF CONGO

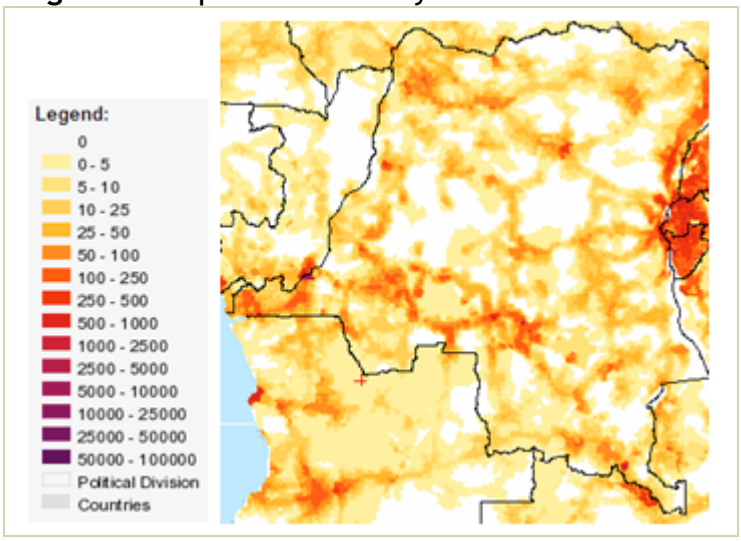
Official data measuring the state of public health in the Democratic Republic of Congo is scarce. Neither the national government nor local authorities systematically collect health data from the population. The major source of the health indicators summarized in this section is the UNICEF Multiple Indicators Cluster Survey (MICS) from 2001 and an earlier MICS from 1995. The two MICS may well present the largest scale systematic data collection effort in the health sector in more than a decade (see figures below for MICS cluster sites as they correspond to DRC population density).

Figure 5: MICS-1 and MICS-2 cluster sites in the DRC



Source: UNICEF 1996 and 2001a

Figure 6: Population density in the DRC

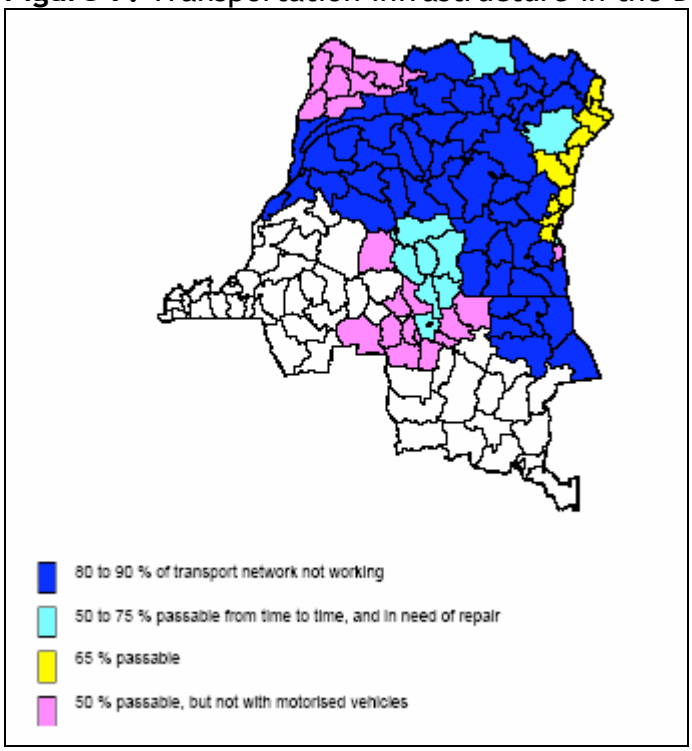


Source: UNEP African Population Density Maps (2006)

The health status of the Congolese people ranks among the worst in sub-Saharan Africa after decades of political instability and violent conflict, the breakdown of infrastructure and long periods of economic decline. The often disastrous impact of complex emergencies on public health has been widely documented. As UNAIDS points out, "populations fleeing complex emergencies such as armed conflicts generally face destitution and food shortages. Their situation is made worse because they often have no access to health care, either because systems have collapsed or simply do not exist in refugee hosting areas. For example, in the 1998–2001 war in the Democratic Republic of Congo, 80% of the estimated 2.5 million 'excess deaths' resulted from malnutrition, communicable diseases and other factors aggravated by the violent conflict" (UNAIDS 2004, p. 175). A MSF survey from 2001 found that in frontline zones like Basankusu "approximately 10 per cent of the total population and 25 per cent of the under-five population had perished in the year before the survey" (Van Herp et al. 2003, p. 141).

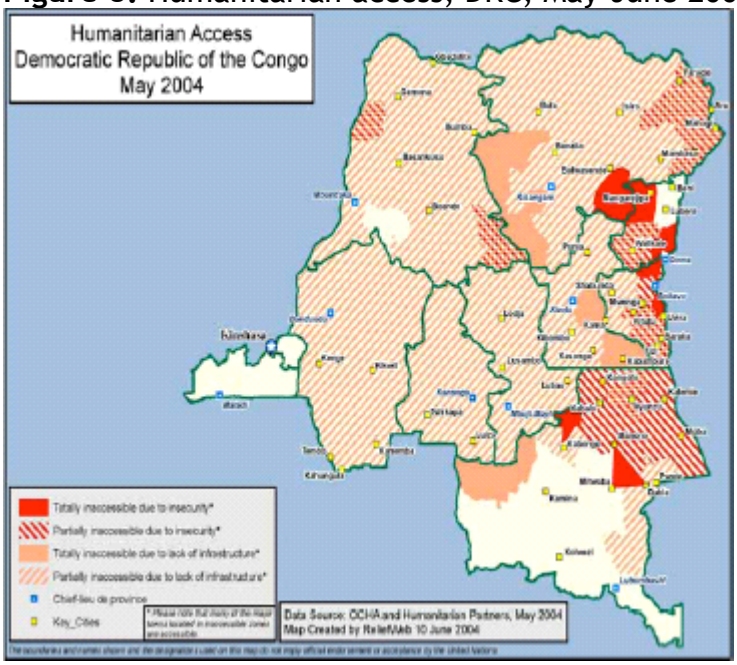
It is important to note that for most health indicators, Kinshasa and Bas-Congo show a relatively better level than other parts of the country. This can be explained at least in part by the combination of very poor infrastructure and the effects of the conflict in Eastern Congo (see figures below). It is interesting to note that poor infrastructure and conflict risk do not completely overlap. For example parts of Kivu have relatively good road access, but have been areas of high insecurity in the recent past.

Figure 7: Transportation infrastructure in the DRC



Source: UNICEF

Figure 8: Humanitarian access, DRC, May-June 2004

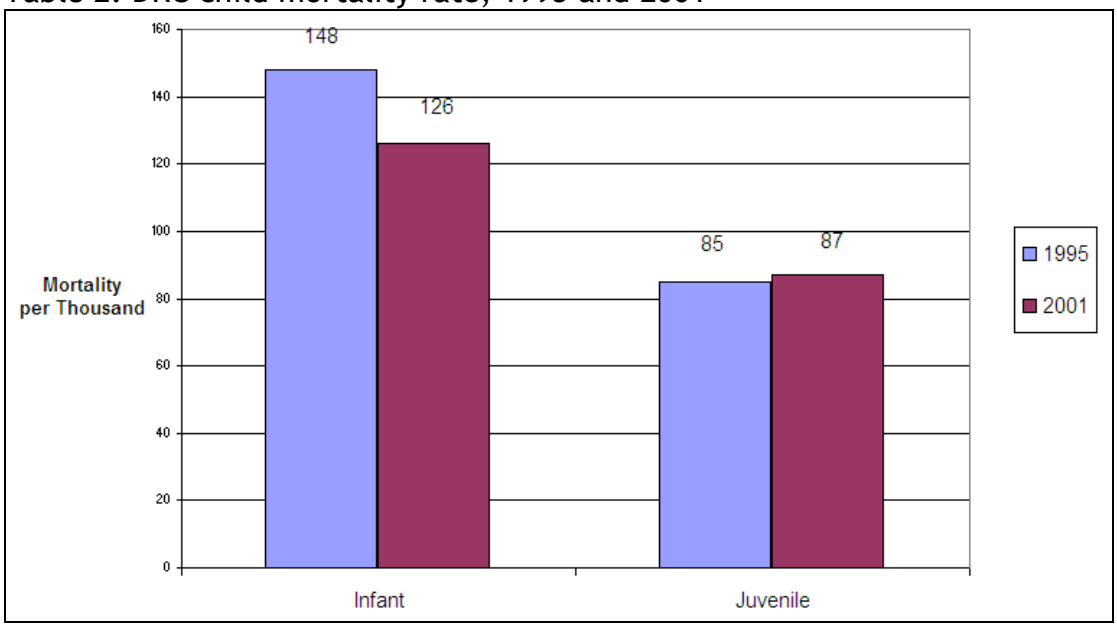


Source: OCHA and Humanitarian Partners 2004

a. Childhood Illnesses and Immunization Coverage

World Bank data from 2002 indicates that both infant mortality (129 per 1,000 live births) and under-5 mortality (205 per 1,000 live births) are very high (World Bank 2004c). Comparing MICS 1995 and MICS 2001 data, the infant mortality rate decreased slightly from 1995 until 2001 while the mortality rate of juveniles showed a slight increase (see figures below).

Table 2: DRC child mortality rate, 1995 and 2001



Source: UNICEF 1996 and UNICEF 2001a.

The MICS data also shows that in 2001 roughly half of the children in the DRC had been immunized against various childhood diseases at any time before their first birthday with major differences in immunization coverage with regard to different diseases. Only 14.2% of the children were fully immunized while 18% had received no immunization. If several immunizations were required to immunize against a disease, the percentage of children that received the immunization dropped considerably with each round (UNICEF 2001b, p. 56).

Table 3: Percentage of children 12-23 months immunized against childhood diseases at any time before the survey and before the first birthday, Democratic Republic of Congo, 2001

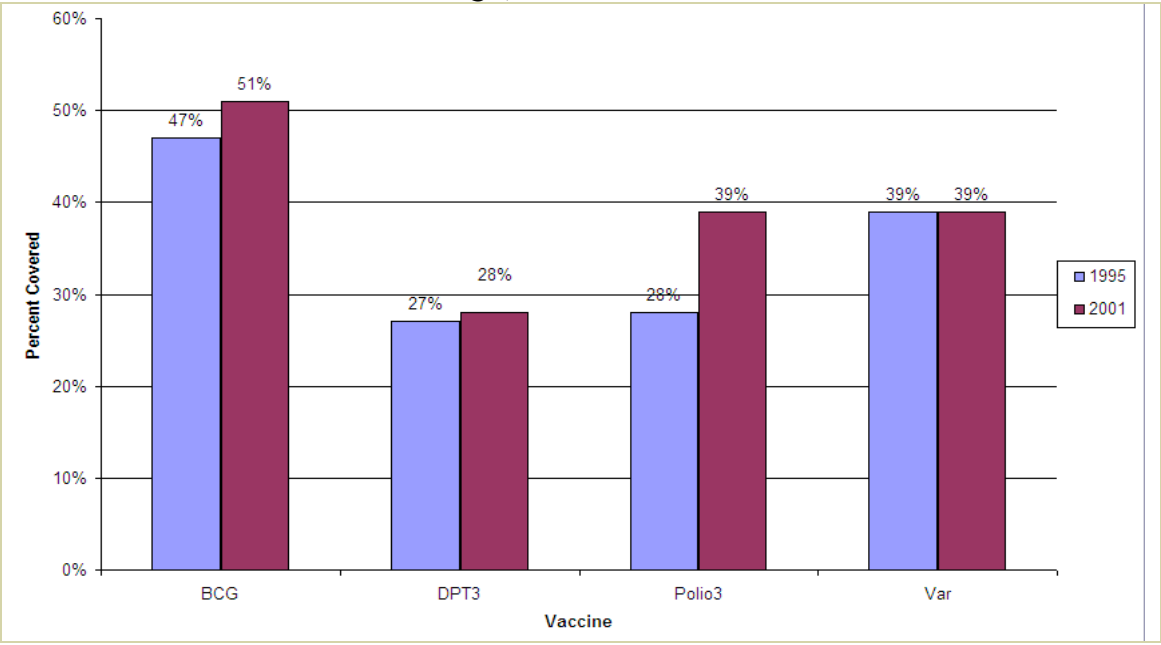
	BCG	DPT 1	DPT 2	DPT 3	Polio 0	Polio 1	Polio 2	Polio 3	Measles	All	None	Number of children
Vaccination card	16.4	18.6	17.4	16.1	12.5	18.4	17.6	15.6	15.3	10.8	.0	2059.8
Mother's report	40.0	34.8	24.8	14.5	24.8	55.1	44.6	26.9	32.8	12.0	18.0	2059.8
Either	56.4	53.5	42.2	30.7	37.3	73.5	62.3	42.5	48.0	22.8	18.0	2059.8
Vaccinated by 12 months of age	54.7	48.6	39.5	28.1	35.8	68.0	58.1	39.4	40.7	14.2	18.0	2059.8

Source: UNICEF 2001b, p. 56.

In addition, there are major differences in immunization coverage, in particular with regard to socio-economic status and place of residence. In the MICS 2001, the richest quintile of the population was about twice as likely to have their children immunized as the poorest quintile of the population. In addition, urban families - especially families in Kinshasa - were much more likely to immunize their children than rural families. The level of education of the mother and the level of education of the head of household as well as age and sex of the head of household also made some difference with children with older caregivers and/or female caregivers being more frequently immunized. Differently, the sex of the child does not seem to play a major role even though boys were slightly more likely to be immunized than girls (UNICEF 2001b, pp. 57, 58). Between 1995 and 2001,

immunization coverage appears to have slightly increased for some diseases while the data remain unchanged for others (see figures below).

Table 4: DRC vaccination coverage, 1995 and 2001



Source: UNICEF 1996 and UNICEF 2001a.

Among the MICS 2001 population, an illness during the previous two weeks was reported for 58.3% of the children (UNICEF 2001b, p. 71). The percentage of children with an acute respiratory infection was 10.7% for all children under 5 (UNICEF 2001b, p. 68). 22.4% of the children under 5 had an episode of diarrhea in this period of time (UNICEF 2001b, p. 60).

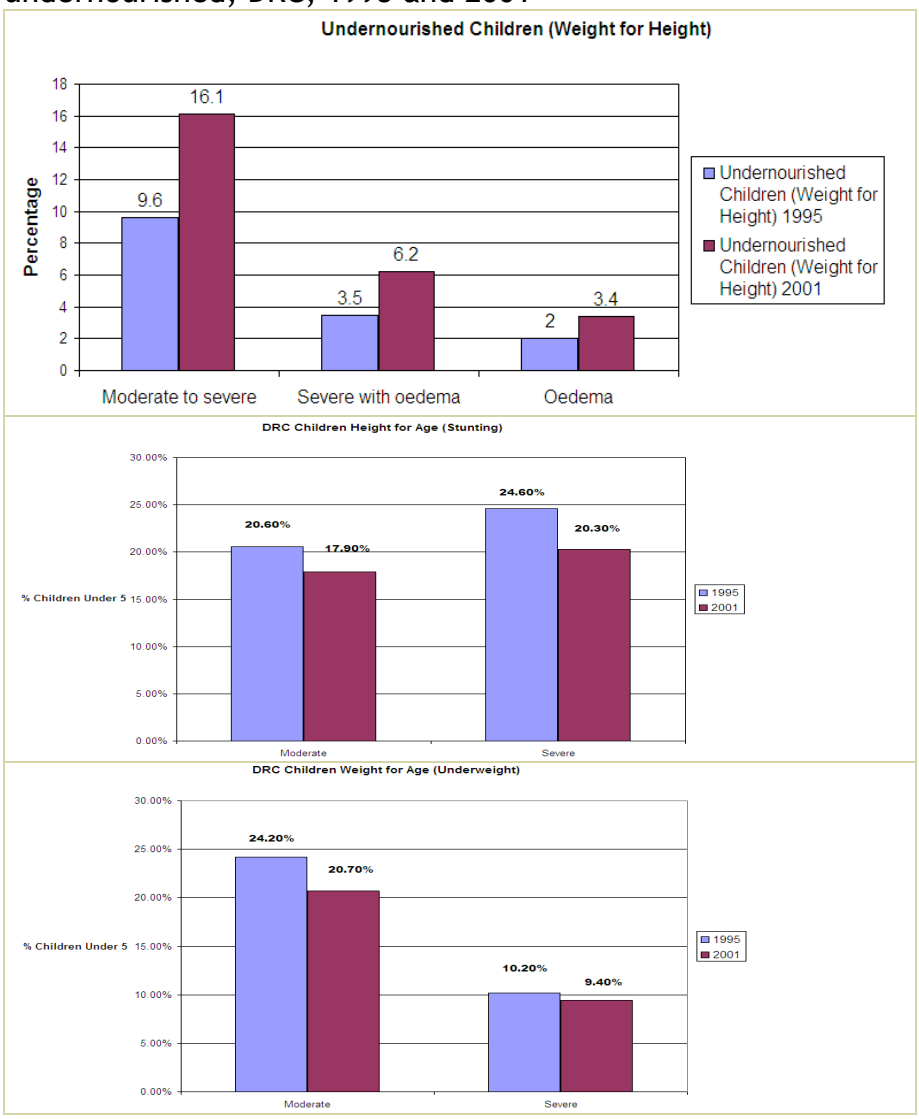
b. Nutritional Status

A large percentage of the children in the Democratic Republic of Congo are malnourished and undernourished, especially those population living outside the city of Kinshasa. In 2001, 31.1% of all children under 5 were underweight for their age (<-2 SD weight/age) and 38.2% were nutritionally stunted (<-2 SD height/length-for-age). In addition, 13.4% of the children under 5 were acutely malnourished or moderately wasted (<-2 SD weight/length or height) and 3.2% were severely wasted (-<3 SD). There was a considerable difference between children in urban environments (22.0% underweight, 28.9% too small for age) and children in rural environments (35.5% underweight, 42.6% too small for age) (UNICEF 2001b, p. 41).

In addition, the MICS survey found significant levels of oedema, which means that severe malnutrition levels are even higher and vary significantly regionally. The overall level of acute malnutrition stood at 16.1% nationally and severe malnutrition at 6.2%. It is notable that oedema levels were greater than 3% nationally and were in excess of 6% in the Kivu Provinces.

The 2001 data demonstrated a humanitarian emergency at the national level in 2001, with particular concern in the Eastern part of the country. It also is interesting to note that while many health indicators did not change greatly between the 1995 and 2001 MICS surveys, acute malnutrition was higher in 2001 (UNICEF 2001a, p. 130) (see figures below).

Figure 9: Percentage of under-five children who are severely or moderately undernourished, DRC, 1995 and 2001



Source: UNICEF 1996 and 2001a.

Similarly, a study of Porignon et al. also suggests that the nutritional status of children in the DRC has worsened considerably since the end of the 1980s in particular in rural areas (Porignon et al. 2000, p. 6). Studies like Bentley et al. (1999), suggest that many rural populations experience annual hunger seasons, that women tend to suffer from nutritional stress more than men, and that food taboos also may compromise nutritional intake. With regard to drinking water, 45% of the population in the DRC used improved drinking water sources in 2001. Again, this percentage was much higher in urban environments (83.9%) than in rural environments (28.5%) (UNICEF 2001b, p. 36).

c. Maternal Mortality

In the Democratic Republic of Congo, life expectancy at birth has fallen from 51.5 years in 1990 to only 45.3 years in 2002 (World Bank 2004c). The total fertility rate was 6.7 in 2002, and the maternal mortality ratio very high with 990 cases per 100,000 live births in 2000 (UNAIDS/WHO 2004, World Bank 2004c).

The MICS 2001 data indicates that antenatal care was delivered by a doctor for 7.7% of the women ages 15 to 49 with a birth in the previous year, by a nurse/midwife for 38.4% of the women, by an auxiliary midwife for 22.2% of the women and by a traditional birth attendant for 3.2% of the women. 27.4% of the women report that they did not receive any antenatal care. There also were major differences with regard to economic status. While 28.9% of the richest quintile saw a doctor, only 2.9% of the poorest quintile did the same. At the same time, 11.0% of the richest quintile did not receive any antenatal care but 37.0% of the poorest quintile. The percentage of women who received antenatal care is much higher in Kinshasa (36.2%) than the rest of the country. The level of education of the mother also increased chances of receiving antenatal care. (UNICEF 2001b, p. 95).

At delivery, the women were assisted for most part by an auxiliary midwife (37.0%), a traditional birth attendant (21.1%) or a nurse/midwife (20.3%). Just 3.4% of the women were assisted by a doctor with the percentage in Kinshasa being the highest with 19.3%. Differently, a traditional birth attendant assisted in only 1.1% of the cases in Kinshasa but in more than 27% of the cases on the countryside. At the same time, 9.8% of the women received assistance by a relative/friend and 6.5% received no assistance. (UNICEF 2001b, pp. 97-98).

The MICS 2001 data also indicates that 17.7% of the women not currently pregnant were malnourished according to their body mass index. There were major differences in nutritional status with respect to economic status, level of education and place of residence (UNICEF 2001b, p. 42). In average, 50.4% of the women with a birth in the last 12 months were protected against neonatal tetanus (UNICEF 2001b, p. 94) and 20% of the women received a high dose of vitamin A supplement before the infant was 8 weeks old (UNICEF 2001b, p. 52).

d. Malaria

Malaria is a major concern in the Democratic Republic of Congo, especially malaria in children. Kadazi et al. show an increase in malaria prevalence in

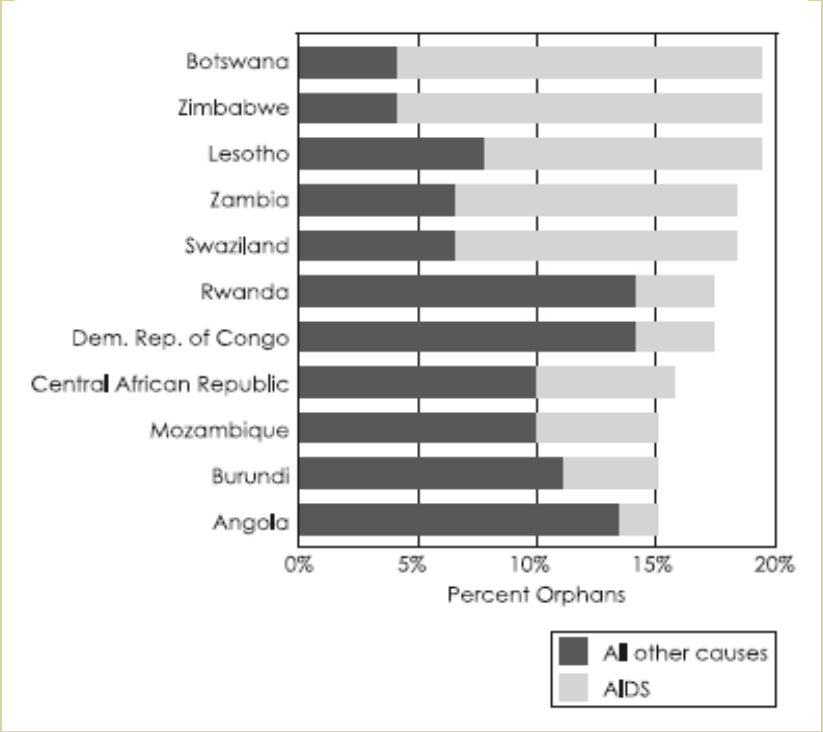
Kinshasa between 1980 and today (Kazadi et al. 2004). According to Breman, a study from the early 1980s found a mean *Plasmodium. falciparum* parasite rate (PR) of 17% among 5 to 15 year old children while a study from 2000 found a mean PR of 34% among children between 5 and 9 years. The increase in malaria incidence in Kinshasa has been attributed to the difficult political situation of the country that affects the ability of authorities and other agencies to provide control and prevention measures (Breman et al. 2004, p. 7).

Overall, 41.1% of the children that were covered by the MICS 2001 research were found to have had a fever in the previous two weeks. Most of the children received Paracetamol (61.2%), followed by Chloroquine (45.0%) in response (UNICEF 2001b, p. 76). According to the research findings, 52.0% of the children ill with fever received an appropriate anti-malaria drug (UNICEF 2001b, p. 78). Children from wealthier and better educated families and children in urban centers were more likely to be treated adequately (UNICEF 2001b, p. 77). However, most children did not sleep under a bednet, and if they did the bednet was almost never impregnated with insecticide. Only 11.8% of the children under 5 slept under a bednet and only 0.7% of the bed nets were impregnated (UNICEF 2001b, p. 74). The highest percentage of bednet use was found in Kinshasa (27.5%) and the highest number of insecticide-impregnated bed nets was found in Kinshasa as well (4.5%) (UNICEF 2001b, p. 73).

e. HIV/AIDS

HIV/AIDS infection rates are estimated to be moderately high in the Democratic Republic of Congo. It has been suggested that 1.1 million adults and children were living with HIV in the DRC in 2003 (UNAIDS 2004, p. 190). The estimated rate of HIV infection among adults between 15 and 49 years was 4.2% (UNAIDS 2004, p. 191). One hundred thousand people were assumed to have died from AIDS in 2003, and there were an estimated 770,000 children between 0 and 17 year that have lost one or both of their parents to AIDS (UNAIDS 2004, p. 193). The DRC is among the countries with the worldwide highest percentage of orphans (>15% of all children). About 20% of all orphaned children are believed to be AIDS orphans (see figure below).

Table 5: Percent of children orphaned by AIDS versus all other causes, DRC compared with other African countries with more than 15% orphans



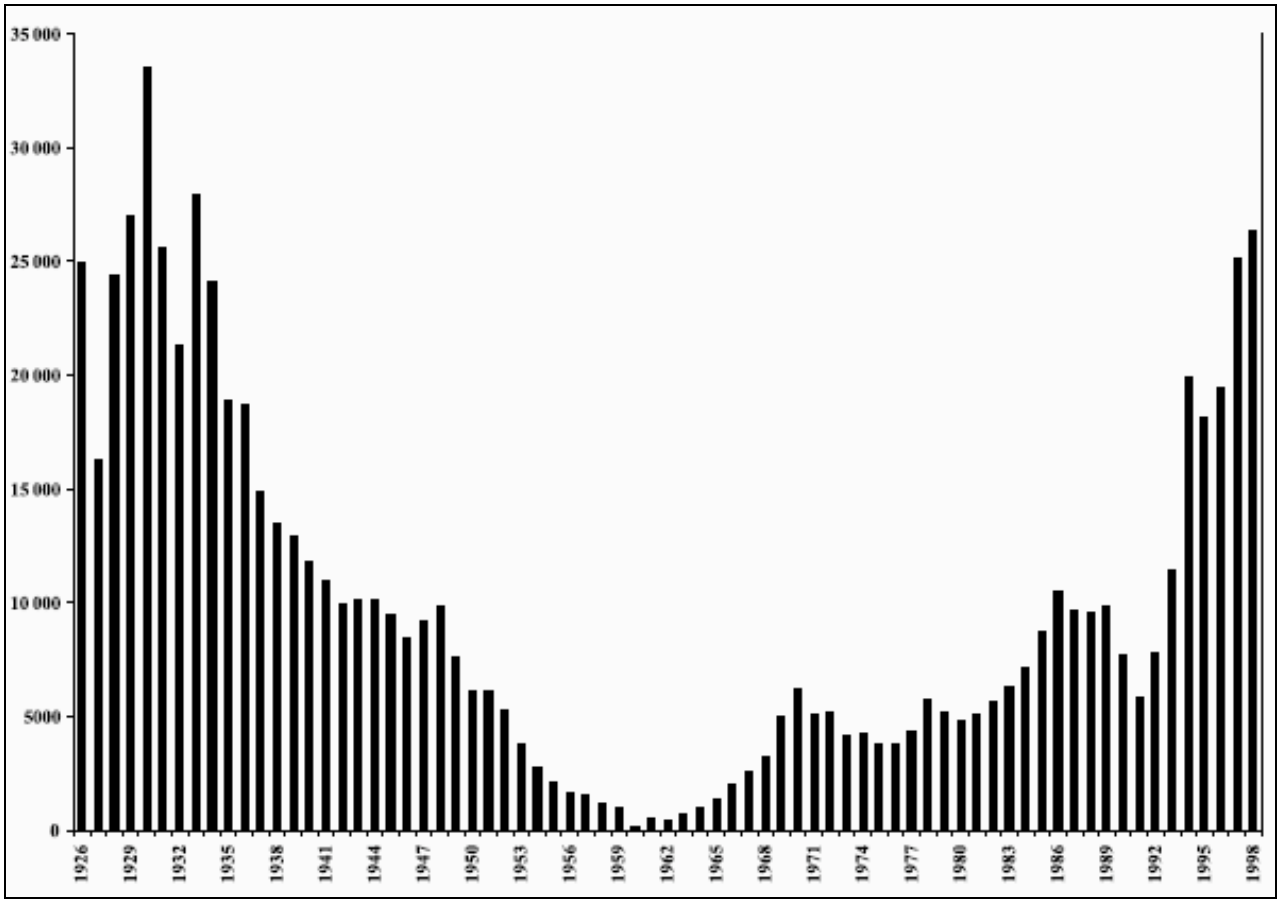
Source: UNICEF/UNAIDS/USAID 2004, p. 8.

The MICS 2001 did not test for HIV infection but it assessed knowledge about HIV/AIDS prevention methods. The research found that the vast majority (91.8%) of the interviewed women between 15 and 49 had heard of AIDS. However, only 40% of the population knew three main ways of preventing HIV transmission and only 28.7% were able to correctly identify three common misconceptions about HIV transmission. Overall, just 14% were judged to have sufficient knowledge about HIV/AIDS transmission (UNICEF 2001, p. 87).

f. Human African Trypanosomiasis

Human African trypanosomiasis has apparently shown a resurgence during the past decade to levels seen in the 1920's, when it was considered epidemic (see figure below). A study of Lutumba et al. (2005) found that the number of detected cases of Human African trypanosomiasis (sleeping sickness) in the DRC decreased from 26,000 new cases in 1998 to 11,000 new cases in 2003. Because of the seriousness of this disease, this pattern has triggered some donors to develop research and national policy work on this problem, principally the Belgian and Dutch Cooperation.

Figure 10: Number of detected sleeping sickness cases per year in the DRC, 1926-1998



Source: Van Nieuwenhove 2001

g. Other Epidemic Threats

While there are numerous other epidemic threats in the Democratic Republic of Congo including tuberculosis, pneumonic plague, typhoid, cholera, leprosy, Ebola and Marburg viruses, relatively little systematic information is available about the extent of the problem. Infection rates may far exceed the reported cases:

- In terms of **tuberculosis**, the Democratic Republic of the Congo had nearly 220,000 reported TB cases in 2003 making it one of the 10 countries with the worldwide highest TB burden (and even admittedly under-reported). According to WHO data, this translates into a reported incidence rate of 412 cases per 100,000 people (USAID 2005c).
- A **pneumonic plague** outbreak killed at least 43 people in the Eastern DRC in early 2005 (IRIN 02/22/2005).
- Acute **typhoid fever** killed 16 and infected 144 in Kinshasa in late 2004 (IRIN 11/23/2004).
- In a **cholera** outbreak in Mbuji-Mayi and Kasai Oriental in 2002/2003, 5,008 people were infected and 263 died (IFRC 2003).

- According to Milanga et al. (1999), the DRC "remains the foremost country for **leprosy** in Africa, with a total of 4,877 registered cases, of which 4,573 are new cases since 1997."
- Outbreaks of the **Ebola** and **Marburg viruses** have also been reported. The Ebola virus killed 220 people in the Congo in 1995, and an outbreak of the Marburg virus left at least 61 dead in 1999 (BBC 1999).

3. HEALTH SYSTEM IN THE DEMOCRATIC REPUBLIC OF CONGO

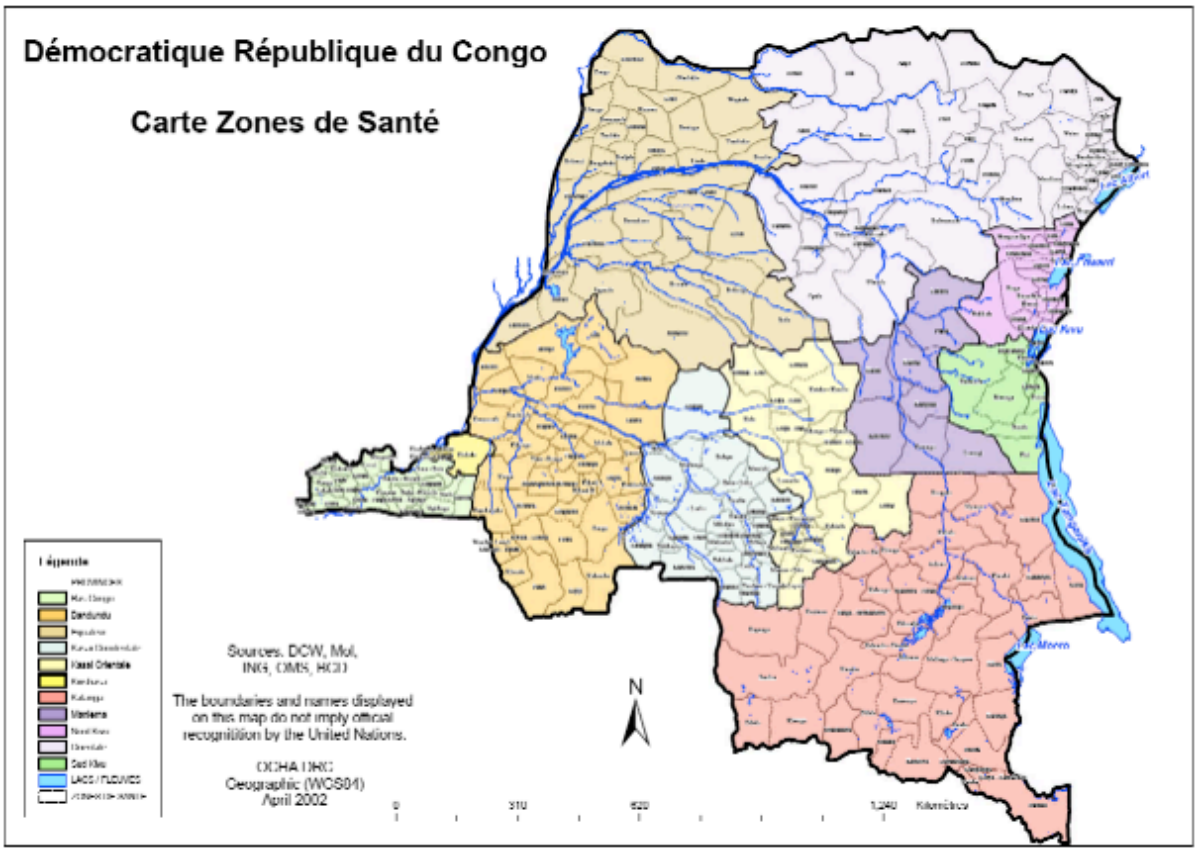
Before independence, DRC had one of the most developed colonial health systems in Sub-Saharan Africa; however, this system, almost entirely dependent on Belgian financed support was lead by expatriates, and collapsed soon after independence (Mock et al, 1990). DRC (then Zaire) ironically was an innovator in the development of primary health care and a decentralized model of delivery of essential health services and referral. It introduced the concept of the Health Zone, the base of its primary care "system" in 1975, which was subsequently adopted by other African countries and even utilized as input into the Alma Ata 1978 process. The HZ model caught on and in the early eighties there were more than 300 HZ's in the country, though they were not all functional. A HZ is a well defined geographical area with a total population of 50,000-100,000 people in rural areas and 100,000 to 250,000 people in urban areas. HZ's typically have between 10-20 Health Centers and 200 communities. In the 80's, 60% of the 300+ HZ's were co-managed with religious organizations. Decomposition of the HZ's in 2002 resulted in a total of 515 HZ's in 2005 (WB 2005).

Table 6: Number of health zones and population per zone, DRC, 1986 and 2004

Province	Number of Health Zones in 1986	Number of Health Zones in 2004	Population per Zone in 2004
Kinshasa	22	35	140 038
Bas-Congo	27	31	80 982
Bandundu	38	52	144 515
Equateur	33	69	109 150
Kasaï Oriental	27	49	168 875
Kasaï Occidental	31	43	142 223
Katanga	40	67	128 692
Province Orientale	47	83	98 052
Nord-Kivu	19	34	142 020
Sud-Kivu	14	34	133 226
Maniema	8	18	95 295
Total	306	515	111 006

Source: DRC Ministry of Health

Figure 11: Health zones in the DRC



Source: UNOCHA 2002

The HZ integrates primary health care services and a first reference hospital. Each health zone is managed by a Medical Inspector of the Health Zone ("Médecin Chef de Zone de Santé") who is in charge of the HZ Office, which houses a team of MCZ, an administrator, one/two nurse supervisors and a pharmacist[11]. HZ's are divided in to areas that service between 5,000 and 10,000 persons in rural areas and 15,000 to 30,000 in urban areas. Each area is served by a Health Center, staffed by a head nurse and assistant and one midwife; and a number of health posts and community health workers (CHWs). Communities participate through community management committees. A reference hospital serves each HZ, providing first referral services such as basic surgery and emergency obstetrical care. Each reference hospital is to offer at least four services: internal medicine, surgery, pediatrics and obstetrics.

It is important to note that training norms and policies exist for these teams. For example, the loi cadre secteur sanitaire specifies the numbers and types of personnel at different levels. While it is utilized by the health sector/MOH, it has yet to be formally adopted at the cabinet level. However, the norms also specify that MCZ's should have graduate public health degrees.

[11] personal communications and unpublished loi cadre de secteur de sante

According to the Ministry of Health of the Democratic Republic of Congo, the health system in the DRC is organized on three levels: (a) the national level, (b) the intermediate level, and (c) the peripheral level.

The national level of the Ministry of Health consists of:

a. the minister and his cabinet,
b. the secretary general of health and his cabinet,
c. seven central authorities (each led by a central director), and
d. forty-two special programs.

Figure 12: Organigram of the Ministry of Health (national level)

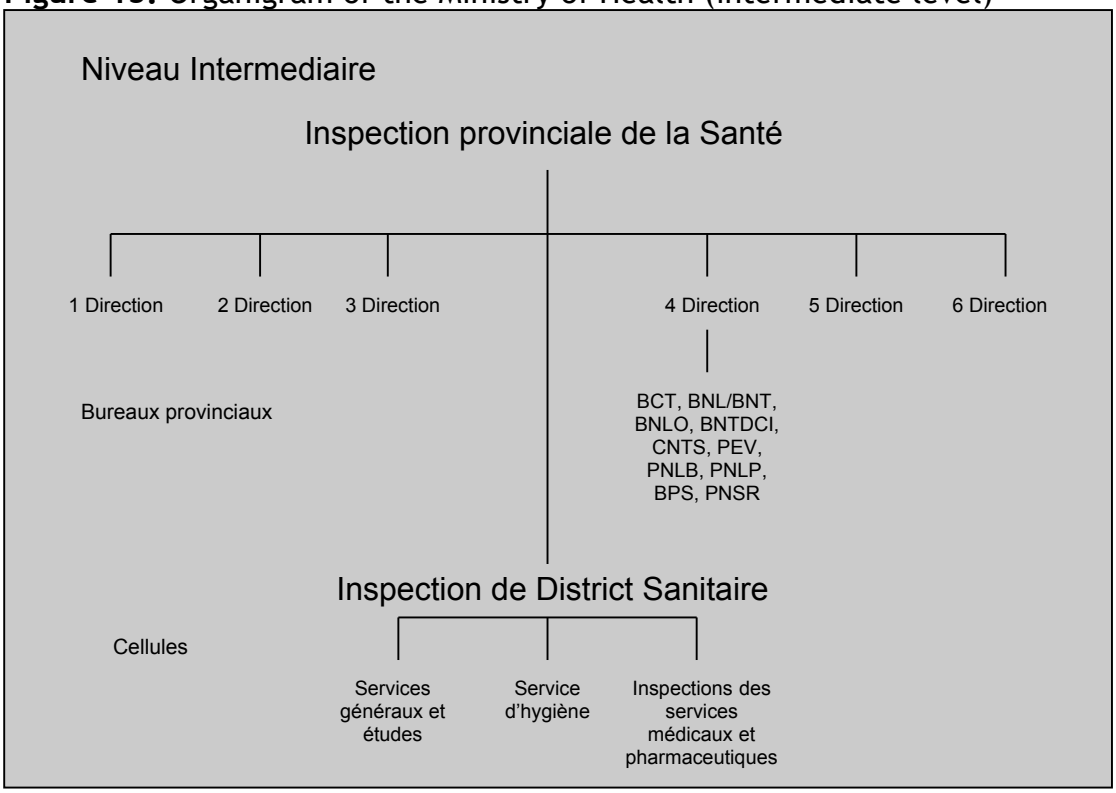
Source: Ministry of Health (2003b), Organigramme du Ministère, March 2003. http://www.minisanterdc.cd/leministere/organigramme.htm

The national level is described as the conceptual level that elaborates the strategies and norms and that defines the overall orientation of the national health policy (MoH 2003a).

The intermediate level of the Ministry of Health is subdivided into:

a. Eleven provincial divisions (originally, provincial health inspections), each with 7 offices. The provincial divisions are managed by Provincial Medical Inspectors.
b. Some provinces, for reasons of accessibility, are further subdivided into sanitary districts. There are 41 sanitary districts managed by District Inspectors.
c. In some of the larger cities, other than Kinshasa, an urban provincial division exists directed by a Medical Urban Inspector.

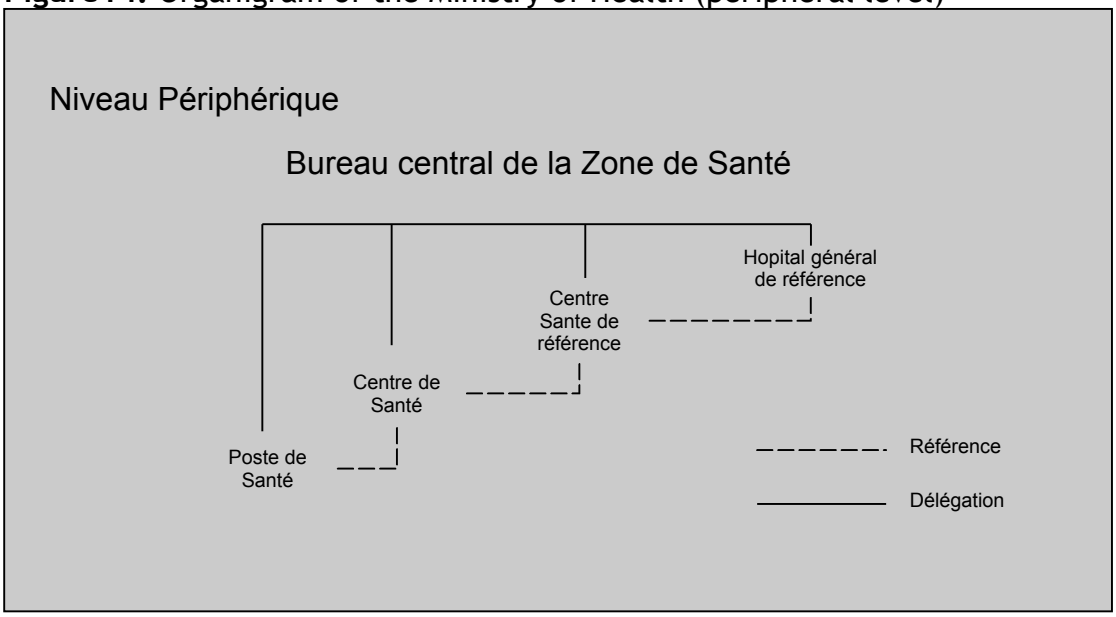
Figure 13: Organigram of the Ministry of Health (intermediate level)



Source: Ministry of Health (2003b), Organigramme du Ministère, March 2003. http://www.minisanterdc.cd/leministere/organigramme.htm

The peripheral (or health zone) level is described as the operational unit in planning and developing health activities.

Figure14: Organigram of the Ministry of Health (peripheral level)



Source: Ministry of Health (2003b), Organigramme du Ministère, March 2003. http://www.minisanterdc.cd/leministere/organigramme.htm

a. Health Policy and National Initiatives

DRC is in a period of active policy reform. While primary health care and a health zone-based model of service delivery has been strong in Congo since the 1980s; there are numerous and considerable policy challenges that inhibit their effectiveness and also the delivery of effective health care in the DRC (World Bank, 2005) which resulted in priorities in the new health sector program to include:

- Improving the capacity of the MoH to regularly pay personnel fair wages through establishment of a pay rate schedule and gradually expanding coverage of regular payment to the provinces.
- Redefinition of sector financing through increased allocation to the health sector from the public budget, improved geographic allocation of resources, implementation of mechanisms to improve budget execution.
- Defining administrative, regulatory and financial framework for effective engagement with the NGOs. This will require that law is revised to reflect a planning and regulatory rather than an implementing function for the state; implementation of the new performance based contractual arrangement with implementing agencies and developing coordination capacity to ensure that all HZs receive support and quality services.
- Rationalizing health administration at the central and intermediate levels of the health care system to ensure a more functional structure, improve staffing and personnel qualifications and transfer resources to provinces. For example, there are over 40 vertical programs currently within the MoH (Parent et al, 2004).

- ❖ Continuing to define and refine policies and norms related to high priority health problems such as HIV/AIDS, malaria and TB.

b. Manpower Resources

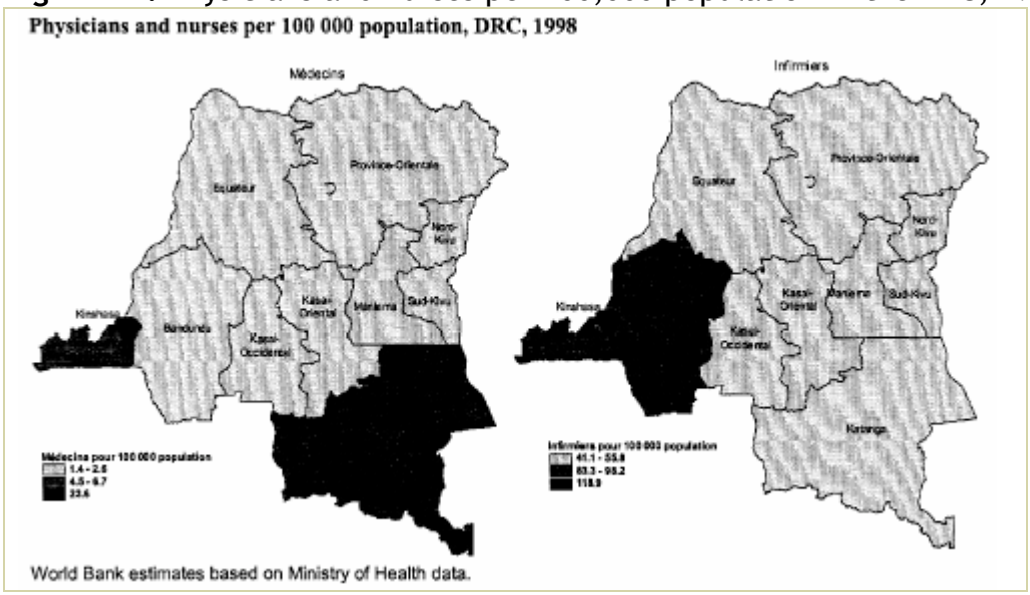
There is widespread agreement that the current number of public health professionals in the DRC is inadequate and that there is additional need for all types of personnel in the health sector and in all parts of the country. The DRC has been identified by WHO as a country with a critical health manpower shortage (WHO 2006). WHO Core Health Indicator data as well as a recent analysis of Ministry of Health data by the World Bank indicates that the ratio of key health personnel/capita is grossly inadequate in most of the country (see table and figure below) and that the ratio of 2 (doctors/wives/midwives)/1000 inhabitants is far from attainable without dramatic increases in personnel. It is also noteworthy that in 1970, when the Department of Public Health was created within the School of Medicine in the University of Kinshasa, there was only one Medical Faculty member who had advanced training in public health. The manpower resources also are greatly skewed, with 80% of the manpower resources living in the urban areas that serve 20% of the population.

Table 7: Health personnel in the DRC, 2004

	Number	**Per 1,000 population**
Physicians	5,827	0.1
Nurses	28,789	0.5
Dentists	159	0.0
Pharmacists	1,200	0.0
Lab technicians	512	0.0
Other health workers	1,042	0.0
Health management and support workers	15,013	0.3

Source: WHO Core Health Indicators Database 2006

Figure 15: Physicians and nurses per 100,000 population in the DRC, 1998



Source: World Bank 2005

The country currently has four medical schools (UNIKIN, University of Lubumbashi, University of Kisangani and the Catholic University of Bukavu). Nurses are trained in provinces throughout the country at Technical Medical Institutes (TMI), Medical Education Institutes for the secondary level, and Higher Institutes of Medical Technology (ISTM) for higher levels (Parent et al. 2004). The combined number of TMI and ISTM were more than 300 in 1998 and there were 254 nurses' schools at the secondary level. These schools are under the authority of the Ministry of Health and Parent and colleagues (2004) argue that the lack of standards and quality management have resulted in poor performance of the system, evidenced by high unemployment rates and the requirement by most agencies providing quality services for in-service internships before nurses are able to deliver care. There is currently only one pharmacy school in the country.

While the KSPH was the only school of public health in the country until recently, a new school is opening in Lubumbashi and another school in Kisangani is planned. The KSPH currently offers three degrees, each with approximately 30 students per cohort. The traditional MPH graduates one cohort per year, the health economics program operates on a 15 month cycle and the executive masters program cycles a cohort every two years.

A large number of gaps in skills of current health professionals working in the country are observed by many interview partners. This includes gaps in various skills that may be beneficial to the Ministry of Health, NGOs and other parties. The list is long as per the various stakeholders interviewed and it also relates to the interests of particularly stakeholders to some degree. There was general agreement of the need for basic planning and management skills as a priority. Health economics also was frequently mentioned as a gap. Many indicated that public health disaster management and epidemiology/epidemic control were areas of need. Because of the emergence of ARV therapy, there is a new and compelling need for laboratory administration and policy. Community development and

behavioral change were frequently mentioned by NGOs. Basic epidemiologic/program evaluation skills also were commonly mentioned. The training of new professors should be a priority "to meet the teaching and training needs of the near future[12]." In addition, "training MPH candidates from the health zones are the top priority need for improving health capacities. This is where the skill set [planning, monitoring, evaluating, responding to health emergencies] is most needed" (CDC).

c. Inter-Relationships Among Health System Components

The DRC health system is relatively unique in Sub-Saharan Africa in the extent to which it is decentralized and privatized. Because of this, there has been a strong coalescence of external donor resources and country resources around the HZ. Currently, the KSPH is well integrated within the health system, albeit under the direction of the Ministry of Higher Education. Integration also is facilitated by a intersectoral steering committee, which is chaired by the Minister of Higher Education, co-Chaired by the Minister of Health, and populated by key stakeholders.

There is some lack of overall coordination and harmonization of manpower training in the DRC. Although Medical, Pharmaceutical and Graduate Public Health training are coordinated and managed by the Ministry of Higher Education, nursing education is directed by the Ministry of Health. Academic articulation of undergraduate and health sciences education has yet to occur[13]. However, the KSPH steering committee does provide a possible model for initiating a process to achieve this goal.

Another problematic aspect of the DRC health system is relatively low level of community participation in recent years due to the decline of the health system. This is likely to be temporary, though, as the HZ has had a strong track record in attracting community participation in the past, and as resources are beginning to return to the HZs, community management is foreseen and community participation should return.

[12] CDC field representative
[13] Based upon interview data

4. HISTORY OF THE KINSHASA SCHOOL OF PUBLIC HEALTH

The University of Kinshasa (then: Universite Lovanium de Kinshasa) was founded in 1954 as the country's first institution of higher learning. The university was created along the lines of Belgian universities granting degrees on the levels of "license", "diplome d'etudes superieures" and "doctorat." In 1969, a Department of Public Health was established within the Faculty of Medicine at the University of Kinshasa.

The history of the KSPH is organic in the sense that it was a convergence of a good idea together with luck, to some degree. In the mid-70's a large number of Congolese professionals were sent to the US for graduate education in public health. Several of these went to Tulane University, completed their MPH degrees in the late 70's and returned to Congo. In the early 80's SANRU was heavily engaged in capacity building. They initially tried to meet their HZ leadership public health training needs with short term in-country training, but SANRU leadership soon discovered that this short term training was not adequate to confer the competencies needed to run districts. Two of SANRU's senior African staff had been trained at Tulane and were hired by the SANRU program (also led by a Tulane graduate) in the early 80's. At the same time, an active Tulane faculty (Dr. William Bertrand) had been involved with the National Nutrition Planning Program (CEPLANUT). The combination of the felt needs by those running the new SANRU program, their experience with Tulane MPH education, and the vision of Dr. Bertrand and his USAID health sector colleagues, gave birth to the idea of creating a school of public health, after the American model, in the Congo.

Between 1982 and 1983, the faculty of the Department of Public Health within the Medical School, together with staff from the Department of Higher Education and Research and support from Tulane University, approached USAID for support for an expanded program to train health professionals to manage health zones throughout the country and run the services and programs of the Ministry of Public Health. As a result of these negotiations, the Kinshasa School of Public Health (then: Zaire School of Public Health) was created.

In 1985, USAID awarded $6.3 million to Tulane University and the University of Kinshasa for the first five years of the School development program. Between 1986 and 1991, the KSPH produced five successive graduating classes of professionals. During this time, the one-year MPH equivalent training was completed by 91 health professionals and several assistants had been sent to foreign countries, particularly the US and Belgium, to complete their doctoral studies and replace foreign faculty at the School.

In 1988, Dr. Bertrand founded the Foundation for the Support of Health and Development in Zaire. This Foundation was set up with the intent of providing a vehicle for hard currency support to the School. The School was able to deposit its earnings from grants and contracts into a US Bank Account, that was managed by a small Board of Directors. Over time, this Foundation has grown in mission. It proved to be particularly instrumental in buffering the School against the political and economic turbulence of the 90's.

The KSPH contract was renewed by USAID in 1990, however, a breakdown of order following the army mutiny of 1991, led to the evacuation of most USAID staff and the suspension of most of the USAID development activities in the country. Only a small staff remained to monitor the residual activities and coordinate the humanitarian relief. In 1992, the funding of the KSPH was terminated together with a wide range of other programs. In 1993, USAID announced the closure of its mission in the upcoming year.

It is interesting to note that the disintegration of donor support also was the catalyst for Government policy action that actually improved the long term sustainability of the School. In 1991, the degrees offered by the School were officially sanctioned and written in to law. In 1992, the School also was officially recognized as an autonomous school with all of the rights, authority and responsibilities of an autonomous school within the University. The early faculty felt that the formalization of the School's structure and function was a direct outcome of the threatened environment, as the School had been trying unsuccessfully to achieve these outcomes since its inception.

The KSPH was affected by the further disintegration of the country and the termination of funding. Course offerings were suspended for a year but in 1994 full activities resumed in partial support by the Rockefeller Foundation and the Foundation. Based upon this initial accomplishment, KSPH was able to garner support from WHO and the European Union's Transition Assistance Program. The KSPH was able to maintain a productive quality training program, producing over 60 graduates during the post-USAID pullout with four cohorts graduating between 1991 and 1997. It also, was able to continue to undertake applied research during the decade of the 90's and managed to maintain its faculty, by and large.

In 1996, the KSPH Alumnae Association was established and there are now more than 150 members. These members have formed a social network, as is evidenced by their participation in student recruitment and grants/contract opportunities.

After Mubuto Sese Seko was overthrown in May 1997 by Laurent Kabila, USAID returned to the Democratic Republic of Congo and resumed connections to the Kinshasa School of Public Health as "the country's foremost center of epidemiology" (USAID 2005b). However, the USAID mission had fewer resources and the situation remained unstable.

After fighting broke out in August 1998, USAID and the US embassy were again evacuated. Several months later, the US staff returned. In 1999, USAID started operating under a transition strategy entitled “Staying Engaged” (USAID 2005b). Work continued on a limited scope, with the idea that activities would expand when conditions improved. In 2001, the US mission evacuated once more, temporarily, after the assassination of Laurent Kabila.

However, the KSPH continued to receive financial support by USAID and the operation and output remained relatively stable. By August 2004, 392 health workers had received their Master of Public Health from the Kinshasa School of Public Health and a small number of PhD students had also graduated. In addition, since 1999 over 320 participants of different professional levels, disciplines and nationalities have been trained during intensive short courses. Recently, the MPH program was complemented by an executive MPH program and a new program in Health Economics.

Another land mark for the School was the establishment of an NIH research program in 2003 in collaboration with University of North Carolina. This collaboration grew from an earlier relationship that the KSPH had had with the Centers for Disease Control in the mid-80’s. The then CDC country field director subsequently became a faculty member at UNC and developed a collaborative research program with the School. Although this program has experienced some growing pains, it ultimately provides an opportunity for the School to move beyond applied research and in to the realm of world class research.

The history and development of the School can not be understood without an appreciation for the institutional development strategy of the creators of this effort. From the start, the KSPH program was conceived of as an institutional development project. The goal of the initial USAID project was to create a sustainable full service school of public health. The initial design of the USAID assistance package envisioned a faculty development component, support for the immediate implementation of the masters program and targeted short courses and support for administrative development of the School. Ten faculty were financed for doctoral training. The creation of a critical mass of faculty was felt by many to be a vital factor in the sustainability of the School. It also is important to note that faculty members were trained in all of the key public health disciplines so that the MPH training program modules would be covered by at least two faculty members.

5. CURRENT CAPACITIES OF THE KINSHASA SCHOOL OF PUBLIC HEALTH

a. Objectives/Mission

The objectives and mission of the Kinshasa School of Public Health have changed relatively little since its creation in the mid-1980s with the exception of the potential regional role of the School and the recent assumption of service delivery responsibilities. According to an internal document from 1984, the central task of the KSPH is the training of health professionals to manage health zones throughout the country and provide technical support to the services and programs of the Ministry of Health.

The School always has placed great priority on its education mission. Its masters in public health equivalent (diplome en sante publique) has been offered since 1986 and is largely unchanged in basic structure. In recent years, the School greatly expanded its graduate degree training options, tripling the number of students enrolled in programs by adding two new degree programs.

The School also served a regional training function during its earlier years, accepting students from outside the country into its master program but also offering state-of-the-art short courses in topics such as nutrition and HIV/AIDS surveillance, computer applications, operations research and evaluation. In fact, the School had ambitions to become a regional institution. According to an internal document from 1992, "the mission of the SPH is to prepare a cadre of public health practitioners for leadership roles in the nation and the central African region."

In 1992, the KSPH stated its objectives to be:

- preparing individuals to administer and manage public health programs providing primary health care,
- participating directly in research on the prevention and control of diseases of public health importance,
- participating in the development of model public health programs and services to improve health and quality of life,
- serving as clearing house and information resource on the control and prevention of diseases of importance in central Africa, and
- providing consultation for planning and evaluation of public health services and related research in Zaire and Africa.

Starting in 1992, the breakdown of order and the Congo war led to the withdrawal of many international actors and the DRC was largely isolated

even from its immediate neighbors. The regional ambitions of the KSPH suffered a setback as a result.

Most recently, the KSPH has been given management responsibilities for a small number of health facilities that it will use as teaching laboratories. In a recent document from 2004, the KSPH formulated five objectives for the School, "which cumulatively seek to improve the health of the Congolese people and promote development" that include:

- Train and educate undergraduate and post-graduate health professionals in public health;
- Update the knowledge and skills of Congolese health professionals as needed to address health management priorities;
- Enhance disease surveillance, health research and operations research to gather and evaluate health data and programs in the DRC;
- Offer quality, direct health services to the community including management of maternal and child health services; and
- Provide leadership and training to health program managers and policy makers in the DRC on the use of information technology.

Most recently, the possibility of the School serving as a regional education, research and practice resource has been reopened, pending funding and continued stabilization of the country.

b. Faculty

The faculty of the KSPH have changed relatively little over time compared to other institutions and taking into account the difficult situation of the country. In fact, the current core faculty has remained unchanged for more than 5 years. The first directors (Co-Directors) of the School were William Bertrand of Tulane University and Kashala Tumba Diong. Initially, in the mid 80's, four ex-patriate faculty were resident and numerous temporary assignment faculty from the consortium supporting the development of the KSPH offered the curriculum to students. Over the years the faculty of the KSPH grew and the American involvement became less pronounced. By 1992, the School had four key faculty members: Tumba Diong Kashala (Director), Lusamba Dikassa (Coordinator of Academic Affairs), Wemakoy Okitolonda (Coordinator of Research), and Ngo Bebe (Coordinator of Educational Training).

With a special doctorate program in cooperation with Tulane University, the School systematically developed its faculty. Several cohorts of faculty received doctoral degrees from Tulane University and UAB in Belgium in order to become part of the KSPH faculty. Most of the early cohorts were trained at Tulane University, returned to their home country and are still with the School. Only one of the initial cohort dropped out of the program and four left the KSPH, three of them to work in DRC's health sector. One

left the KSPH to work for USAID in Kinshasa, another to work for CDC and the other two became regional technical staff for WHO/AFRO. One of these is WHO/AFRO's principal epidemiologist (he is now second in command at WHO).

By 1997, the KSPH supported twelve faculty members and a small administrative staff. Among the faculty of twelve, ten held MPH/PhDs degrees and have been trained as part of the USAID/KSPH project. More recently, several European universities are also involved in the training of faculty members.

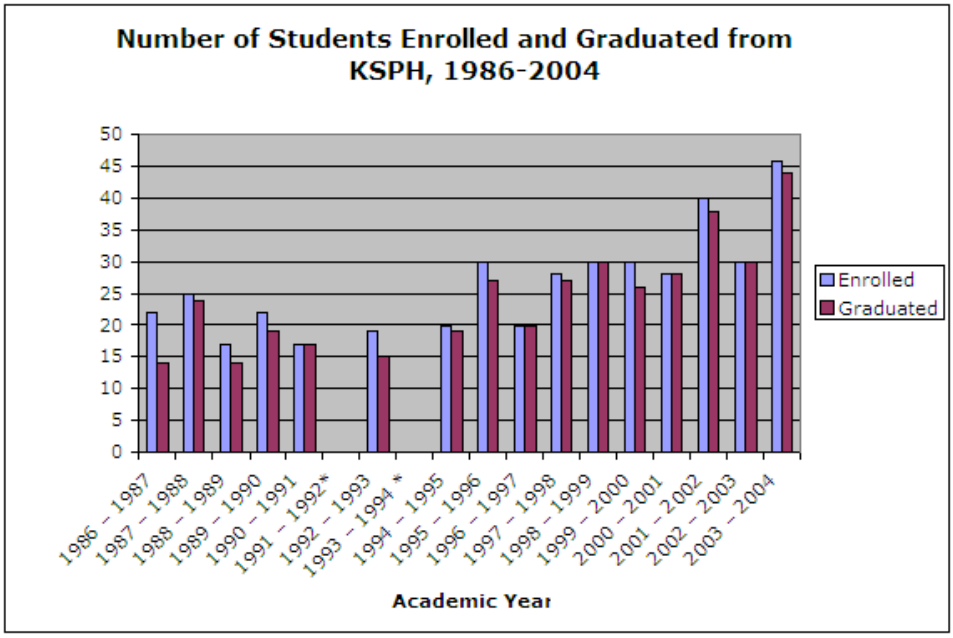
Today, the KSPH has 8 full-time regular faculty members, fourteen assistants and more than 20 part-time and 20 associated faculty members. Remarkably, all of the senior faculty were trained during the initial years of the School's development. The current Director of the School is Munyanga Mukungu, who replaced Wemakoy Okitolonda in 2005, though Professor Okitolonda maintains a seat on the senior management team of the KSPH. The School is run by collaborative leadership with a steering committee consisting of four core members: Munyanga Mukungu (Director), Okitolonda Wemakoy (former Director), Kiyombo Mbela (Academic Affairs and Training), and Kayembe Kalambay (Secretary for Research). Among the eight members of the core faculty, seven are male and all are older than 50 years.

The most recent faculty development initiative was to recruit and train two cohorts of young faculty who will enhance and eventually replace its senior faculty. Fourtenn young assistants are currently working towards a PhD. It is intended that most of these assistants will become full faculty members within the next few years. Another cohort of ten is also envisioned.

c. Students

The number of MPH students at the Kinshasa School of Public Health remained relatively constant and started only to increase in the later part of the 1990's. About 15 to 30 students graduated from the KSPH per year between the mid-1980's and 2000. Two cohorts were lost when no classes could be held due to the breakdown of order in 1991-1992 and in 1993-1994. Recently the number of graduates increased to 94 in 2004-05 after the introduction of two new programs in 2004.

Figure 16: Number of students enrolled and graduated from MPH program (KSPH 2005)



*Due to the conflict, KSPH did not have courses.

At the time of data collection (in the summer months of 2005), 34 traditional MPH students, 30 students in the new Executive MPH program, and 30 students in the new Health Economics program were enrolled in the School. In addition, 12-14 post-graduate students were also in the process of being trained. 90% of the current students are male and all have Congolese nationality. Most of the students hold a bachelor degree in medicine with some pharmacists, health administrators, social scientists, nurses and students with other backgrounds. Most MPH students have previous work experience as administrators in public health. Typically they have been District Officers and some Provincial Medical Officers with at least three years of experience working in health-related institutions. A smaller number of students were sent by NGOs to participate in the training. The MPH students come from all provinces of the country and usually return to their provinces after graduation. The vast majority of students enrolled in the program successfully graduate. As of today, more than 400 health workers have received their masters equivalent degree. Estimates of the percentage of these working for NGOs range from 10 to 40[14].

The demand for masters training is very high. In 2005, there were over 300 applications for 30 student places in the most recent cohort. The Steering Committee actually serves as the admissions committee. Criteria for selection include traditional academic criteria, but also gender, age, previous work experience, professional position, and manpower needs.

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d. Teaching/ Programs Offered

The KSPH currently offers 3 degree programs: (a) the traditional MPH program (conducted since its inception with the exception of two two-year interruptions), (b) the Executive MPH program and (c) a special diploma in Health Economics. The Executive MPH program and the Health Economics program both started in October/November 2004. The traditional MPH program is a one-year residential program with a strong field applications component. The Executive MPH program is a weekend format two year program. The Health Economics program also is residential and requires 15 months to complete. It is offered in collaboration with the Faculty of Economics of the University of Kinshasa and the Ministry for Health. Each of these programs enrolls approximately 30 students/cohort including largely sponsored but some self-financed students. The tuition levels are 7,000 USD equivalent for the traditional program; 5800 for the executive format program and 8000 for the masters in economics (Belgian-sponsored). The programs are all in high demand and well subscribed.

The most established program - the Master in Public Health - is offered to MD holders and other professionals working in the health sector. MPH students spend one academic year living and studying at the School. Since the mid-1980s, instructional materials are organized into four content blocks[15], see annex for detailed curriculum:

- Block 1: Methodology for public health (learning methodology, demography, statistics for public health, epidemiology, health economics)
- Block 2: Administration and management of Health Services (structure and organization of health services, financial resource management, management of pharmaceutical resources, human resource management, health planning)
- Block 3: Family and community health (environmental health, laboratory in public health, maternal and child health, nutrition and dietetics, health of special groups)
- Block 4: Information and research (health information systems and microcomputers, operational research, community health education, behavioral sciences in public health) (KSPH internal document)

In addition, field training is a central element of the curriculum. At the end of each block, the course moves to a field setting and field projects are undertaken. Both faculty and students participate in the two-week field component of the project. The masters program is 820 hours of instruction.

Most students receive financial support by USAID or a national sponsor. This includes expenses for books and other educational materials as well as housing, transportation and meals while staying at the School. Short courses

[15] KSPH internal documents

are offered additionally and cover topics such as health education and the use of information and communication technology.

Blocks are managed by the academic program manager. Each course within the block is taught by a minimum of two instructors, one of these is from the core senior faculty. The second can be from other faculties or the practice community (including former faculty who are now working elsewhere in Kinshasa). Core senior faculty were initially chosen and trained such that all of the course content areas could be covered at the graduate level with senior faculty. In most areas, at least two faculty members were trained for each.

The new cohorts of assistants are being trained in the innovative sandwich PhD in international development. This 48 hour program allows students to train in-service. They are only required to spend one-third of their program, or 18 hours (one to two semesters) at Tulane. The second third can be taken via distance learning from Kinshasa, and one-third can be taken elsewhere in the region. Tulane, for example, operates a summer institute that offers nine credits at a time during a six week period.

The degree in International Development stresses the development of leadership competencies. Students take courses in organizational leadership, proposal and project development, finance and economics, learning to learn.

The sandwich program has a number of advantages. It allows faculty to obtain their degrees while in-service; it is roughly half the cost of a traditional program, and the program is more relevant to the challenges of the environments that schools face (for example, drastic funding shifts by donors, increasing opportunities for health and other development activities to be linked). The major disadvantage of the Program is that students report it to be difficult to undertake course work while on the job. Some students felt that the degree does not provide for sufficient credits to allow specialization.

e. Research

Faculty and students of the KSPH have completed a large number of research studies. Until recently, most of the research has been applied research. Research activities have touched a wide range of topics such as health systems management, water quality, malaria prevention, HIV/AIDS, behavior change, immunizations, nutrition, and child health.

As part of their research activities, the KSPH has cooperated with many international and national partners. According to the in-country CDC representative, “the KSPH is an excellent resource to the donor community for conducting special studies and analysis. Clients have included the

University of North Carolina (NIH), CDC, USAID, the Belgian Cooperation, World Bank, Global Fund, the European Union, WHO, and various NGOs. CDC has worked with the KSPH in major studies including the ANC HIV Prevalence Survey 2004, STI Clinic Review, 2004, BSS+ 2005, Congo River Study 2005. In addition, CDC has a formal Cooperative Agreement with the KSPH to address the control of infectious diseases including HIV, Malaria, etc. CDC and KSPH recently expanded their collaboration in establishing the Centre for HIV Strategic Information and an accelerated plan for HIV laboratory services. CDC also relies upon the KSPH for local IRB ethics review of study protocols" (interview data).

Perhaps the most important recent development in research is the partnership that the School has developed with the University of North Carolina to undertake NIH (National Institutes of Health)-funded research related to HIV/AIDS. This partnership began in 2003 and is growing, generating several hundred thousand dollars a year of direct costs for research to the School.

KSPH faculty critiqued to some degree the research program as being driven by international requirements as opposed to KSPH's own research agenda. And while a large amount of data are collected, publications often lag behind. The low rate of publications was mentioned by many faculty members as a weakness of the KSPH to date. It should be noted that publication rate is generally lower among the Francophone public health institutions, possibly a function of the generally smaller academic manpower pool and also English language capability.

f. Administration

The KSPH currently is internally managed by a directorate committee composed of four members: Munyanga Mukunku (Director), Okitolonda Wemakoy, Kiyombo Mbela and Kayembe Kalambayi. The decision-making process of the directorate committee is described as "consensus after thorough discussions."

A Steering Committee composed of key donors and stakeholders (approximately 15 at any time) meets each trimester. It is headed by the Minister of Higher Education and Co-Directed by the Ministry of Health. This Committee is directly involved in the selection of masters students and it serves as advisory to the School. On academic matters, the Director, Co-director, Academic Coordinator, coordinators of the instructional blocs (academic terms), and representatives from the Ministry of Health make up a pedagogical committee which is responsible for curriculum development, program monitoring, and student certification and evaluation. Additional faculty serve as course organizers and facilitators, with responsibility for instruction and coordination of student faculty interaction in the academic blocs and field work.

Corruption is an obvious potential problem that the KSPH faces. During the early days of the KSPH, the School was managed with a Co-Director structure. A Congolese and American director co-managed all activities and co-signature was required on all official transactions. The School also maintained an accountant. During the past year, the School has installed an intranet system with a centralized project management information system, which is just being introduced[16].

g. Physical Infrastructure

Soon after its creation, the KSPH moved into an 8,100 square meter complex located at the University of Kinshasa at Mount Amba. The complex was renovated at the cost of $1.4 million between 1986 and 1987. The KSPH complex provides dormitory style housing for 25 students and 10 visiting faculty as well as offices for faculty and staff members. The facilities also include classrooms, a conference room, meeting rooms, two environmental/public health laboratories, a library and reading room, computer laboratories, research space, a cafeteria and laundry, as well as class and patient facilities for the University of Kinshasa nursing program.

Current interviews with faculty members of the Kinshasa School of Public Health and stakeholder groups indicate that the infrastructure of the KSPH is aging and that it is increasingly insufficient to support the further expansion of the program.

h. Financial Resources

While all major stakeholders reported that the KSPH had a strong track record of managing financial resources, it was not possible during this study to develop a clear picture of the specific financial contributions of various clients to the income streams of the KSPH. International donors, primarily, USAID (more than 10 million dollars since the inception of the KSPH and approximately 3 million since 2002) and secondarily the Belgian Cooperation, have been the greatest and most consistent source of support to the KSPH. During the past few years, the University of North Carolina has brought NIH grants to the KSPH for the study of HIV/AIDS. However, the overhead rate associated with these grants is only 8%. Currently, USAID only provides resources to the School in the form of direct costs through a sub-contract from Tulane University. No overhead or indirect costs are paid even though the KSPH is entirely autonomous from the University with the exception of the small faculty salaries.

[16] personal communication, Director

Faculty salaries currently paid by the government are approximately 600/month for senior professors (this is very recent, historically salaries were approximately 50 dollars/month and not predictably paid). These are supplemented by approximately 1000/month from grants that the School obtains. Adjunct teaching fees range from 5 to 15 USD/hour, depending on seniority.

However, USAID is not the only source of funding and the dependency is not absolute. When USAID funding failed in the mid-1990s. "the faculty moved collectively to create the appropriate environment for sustaining activity by engaging in short term consulting activity and research projects to maintain their income levels, recruiting a class of paying Master's students using international agency support and adjusting the training to the least expensive model possible" (internal document). In addition, the School received some support by the Rockefeller Foundation from 1994 to 1996.

In 1997, funding came from "internal residual funds, financial support of WHO through student grants and scholarships, assistance provided in small amounts by a US-based foundation supported by Tulane University" (internal document) and European Union support. In 2005, the KSPH received about US$ 658,000 from USAID and the Belgian Cooperation (mostly from USAID) in financing of the programs.

6. SWOT ANALYSIS OF THE KINSHASA SCHOOL OF PUBLIC HEALTH

Based on interviews with KSPH faculty members and various stakeholder groups, this section summarizes the perceived strengths, weaknesses, opportunities and threats (SWOT) of the KSPH, and the quality of its training, research and community service activities. The School's relationships with other institutions are also discussed as well as the employment prospects of the KSPH graduates and suggestions for future directions.

a. SWOT Assessment of Kinshasa School of Public Health

Strengths

There is broad-based consensus among all stakeholders that the KSPH is a valuable asset to the health development of Congo. The KSPH faculty are highly regarded as being highly professional, knowledgeable and having relevant skills and competencies for the Congolese settings. Faculty are highly sought after as consultants by the Ministry of Health, INGOs and multi-lateral organizations.

The relevant and high quality graduate training is another strength universally mentioned by stakeholders. All feel that the training provides great value-added and that graduates are sought after because of their practical skills and competencies related to health development management and applied research. For example, one stakeholder who has had direct supervisory relationships with district medical officers said that "you can count on the KSPH graduates to be able to effectively develop and monitor health zone plans"[17].

Another strength of the School is its relative human resource stability and esprit de corps among senior faculty members. There has been minimal brain drain of faculty outside the country and the few that have left have moved on to regional public health leadership positions. All faculty, past and present, maintain a relationship with the School and those living in Kinshasa continue to teach for the School. The faculty also is being infused with a new generation of assistants, who now number 14, and are in training for PhDs. This will ensure some critical mass of faculty in the future.

A related strength is the now large alumnae network throughout the country. More than 150 official members participate in the alumnae association and the network of KSPH alumnae in country is more than 300. Many of these are in influential posts and also are in locations that provide field practical experience for students. The alumnae network provides great opportunities for the School to expand its research and training activities. For example, alumnae can supervise field practicums of students. Excellent alumnae can be recruited to train others. Alumnae could be identified to help conduct comparative research in a sample of HZ's, for example.

All stakeholders interviewed felt that the School had good capacity in the area of applied research and that this asset is well appreciated by the health sector community. A number of stakeholders expressed their views that applied behavioral and health services research undertaken by the KSPH was both professional and good value.

[17] direct quote from a SANRU executive

The KSPH is considered to be a relevant and adaptive institution. The quality of the KSPH infrastructure is also mentioned frequently by non-KSPH faculty reflecting the flagship role of the School in the country and the fact that the School, even though modest in international comparison, is far better equipped than the rest of the university. Many stakeholders mention computer resources as important assets.

The KSPH does not have an established and certified overhead rate. This is a constraint to the long term sustainability of the institution. As an autonomous institution, an indirect cost rate will be necessary to ensure the maintenance of facilities and administration. In order to quality for sizable grants and contracts, a certified indirect rate is necessary[18].

Weaknesses

Weaknesses of the KSPH include the relatively small impact of the program on the large problems and geographic scope of DRC. While the programs are viewed as strong programs, the current output of graduates is insufficient to address the needs of a vast country with 515 health zones. The lack of a direct link with other allied health profession schools –(e.g. nursing, pharmacy) also is related to this weakness. It might be possible, for example, with closer linkages, to extend public health training in a coordinated way across a range of manpower development streams. Non-traditional training programs have begun to be included, (e.g.the executive master's degree) however, these are relatively new and the School has little experience in managing and developing non-traditional programs.

Another weakness of the KSPH is its lack of research "productivity" in terms of publications and faculty generated grants. This weakness was particularly felt by faculty of the KSPH and was less noted by donors and other stakeholders who did not have an academic mission. Faculty felt that the lack of research outputs affect their ability to be regionally competitive.

In addition, the KSPH is dependent on a relatively small number of major donors. The USAID and Belgian Cooperation are the School's major donors and the money provided supports many of the development and operating costs of the KSPH, including a substantial percentage of master's tuitions. This weakness is particularly important in an unstable environment where donor resources could disappear quite rapidly. The lack of a certified indirect cost rate makes it difficult for the KSPH to recover legitimate general operating costs. Without an endowment, the KSPH is particularly sensitive to the environment, which is volatile.

[18] discussions with at least one large donor indicate that the KSPH had not been awarded funding because it lacked this type of certification.

An aging physical and human infrastructure also was mentioned. The leadership of the School is moving towards retirement. At the same time, the physical infrastructure has not been updated in 20 years, libraries and labs are out of date, and the size of the facilities is too small for current training volume.

The senior management team was found to be somewhat exclusionary by other faculty members at the School who felt somewhat disenfranchised from the KSPH decision-making. Many faculty members felt that resource management was exclusively done by the management team with no input requested. Related to this concern was that decisions taken were not systematically communicated to faculty.

Opportunities

Perhaps the greatest opportunities relate to the "peace dividend" or the influx of resources and reform opportunities that will accompany successful elections and continued transition to peace across the country. Even prior to elections, major donor investments already have been occurring since 2002. These include Global Fund, the World Bank Health Sector program, GAVI, the European Union, among others. Given DRC's strategic value and the long track record of the KSPH, the opportunities for the SPH to capture dramatically increased funding are very real. The KSPH represents one of a very small number of high quality public sector institutions. It is well positioned to capture donor in-flows of resources. Even the potential to raise endowment is likely to increase with peace. HIV, malaria, and Tuberculosis are all specific diseases that attract donor funding. At the same time, most of the large programs also have applied research and capacity development components.

The reform of donor support to the health sector through the Global Fund, the various US Presidential Initiatives and major Private Foundations, such as the Gates Foundation, also provide new opportunities for the KSPH, again being among a relatively small number of internationally competitive local institutions.

While INGOs have not been prominent in DRC in the past due to its strong indigenous private sector organizations, the crisis in Eastern Congo has attracted substantial humanitarian assistance and organizations to DRC. The KSPH has yet a new cadre of potential clients for training and applied research capacity.

Another important opportunity is the possibility to address Eastern Congo health development training and research needs through a partnership with the Rwandan School Public Health in Kigali. Tulane University is the main partner in both of these Schools and some of the faculty of these two Schools have trained together. A regional health initiative is currently feasible and desirable.

Recently, the problem of human resources and organizational capacity as a constraint to health development has come into focus among international donors. While there has been less emphasis on organizational development within the higher education sector, there are tremendous opportunities for the KSPH to become engaged as a key training institution for nursing schools for example. Another important role is in the area of impact evaluation related to human capacity initiatives.

Another potential threat is the emergence of the new Schools of Public Health in other parts of the country. This might possibly affect the KSPH's ability to generate substantial work in Eastern Congo, for example.

UNIKIN politics also could shift, resulting in unfair levees on KSPH resources. While this has not happened to date, this is the type of policy that can change precipitously in the university context.

b. Perceived Quality of Graduates and Training Gaps

The quality of training at the KSPH is perceived as good to excellent by the majority of the interviewed parties. The KSPH faculty members are positive about their work, but most stakeholders also seem satisfied. However, regardless the overall good perception of training quality, some shortcoming and gaps are also observed. The problem most frequently mentioned by stakeholder groups is the relatively small number of graduates that is "insufficient for the needs of 57 million people."

The KSPH faculty members stress the hardships of training. The UNIKIN salaries are low while living expenses are high in Kinshasa compared to other African cities, and their income needs to be supplemented by second and third jobs. In addition, while infrastructure and access to resources are good at the KSPH compared to other university departments, there is a need for more staff, classrooms, vehicles and data projectors.

NGOs and INGOs list a number of perceived training gaps. The KSPH curriculum was judged to be relatively stronger in epidemiology and strategic management and somewhat weaker in operational management, including budgeting and personnel management. Some stakeholders felt that the KSPH could more effectively incorporate the modular training curriculum for the management of health zones developed initially by CDC for the EPI program and subsequently updated periodically, most recently by WHO.

According to FOMETRO and AFEMOCO, there are new skills required that are not currently taught at the KSPH including negotiation and contracts,

program management, organizational management, and health management on district, province and national level. Health economy is also identified as a training gap, even though economic skills are now being taught at the KSPH in an entire new program. One NGO criticizes the "personal ambitions" of some of the graduates that not necessarily correspond with "national needs." The NGO also suggests that any changes to the program should be discussed with the MoH, partners and other organizations that employ graduates and that training should continue as part of employment after graduation.

On the side of the international NGOs, disaster management, post-conflict management, and evaluation are mentioned as additional skill sets required. One INGO criticizes that the KSPH selection criteria privilege students from the provinces, and that the Health Economics program focuses on economic development rather than poverty eradication. According to this INGO, it may also be desirable to teach some modules in the provinces.

There seems to be agreement that increasing the number of graduates and updating and expanding the MPH curriculum are the most important challenges in the training area in the medium-term future. There also is agreement that the KSPH has "shown that it is capable of training the skill sets required" and that "additional resources are necessary" to enable the School to meet these challenges and to continue to provide high quality training.

c. Perceived Quality of Research and Practice

Compared with the KSPH performance in training, the performance in research and community service is viewed more critical by the KSPH faculty members. While the KSPH is involved in a wide range of research activities, almost all of them are financed by international partners often hiring the School for data collection but giving the participating professors little freedom in designing the research and following their own research interests. Many KSPH professors stress that they would like to do more research but that they are burdened with teaching and consultancy work and that they experience difficulties in attracting the necessary funding. Another aspect mentioned is that while a large amount of data is collected, research results are not always published and that there is a need for more publications.

With respect to community service, KSPH faculty members often describe the project of a Model Health Zone that the School plans to establish in the immediate surrounding of the University of Kinshasa. This model health zone is envisioned to become a blueprint for health service delivery in other Kinshasa neighborhoods and the rest of the country. However, while ideas seem to be in place, progress has been slow at least in part due to lack of resources.

In difference to some KSPH faculty members, the questioned stakeholders appear more positive about the research activities of the School. CDC, for example, stresses a range of cooperative activities of the KSPH in research with international partners and describes the School as a "good, excellent resource." However, it may be the critical aspect that the School should be – (and many of the KSPH professors desire to be) more than a resource but also implement their own research agendas.

Overall, while the research performance of the School appears good by national standards, measured at international standards, more could be done. As a research environment, the DRC offers unique opportunities and the need for quality research as well as the need for translating research findings into practice are immense. The KSPH is in a unique position to be involved in these activities if the necessary efforts are made to attract funding and further expand research and community involvement.

d. Relationships with Other Institutions

The KSPH has a large number in national and international relationships with other institutions. Most critical for the evolution of the School have been American and Belgian partners but some regional collaborators exist as well. Nationally, the School has strong relationships with the Ministry of Health

and partnerships with a range of NGO, INGO and other actors in development.

Since its creation in the mid-1980s, the KSPH cooperates very closely with Tulane University of New Orleans. One Tulane faculty member, William E. Bertrand, was essential in the initiative of creating the School and has served as a KSPH co-director for many years. The KSPH-Tulane cooperation has remained strong over the years and continues today. Other international partners of the School include Leuven Catholic University and Antwerpen Institute in Belgium, the University of North Carolina, CordAid in the Netherlands, CDC Atlanta, and the World Health Organization (WHO).

Nationally, the KSPH has close ties to the Ministry of Health that are described as very good by both sides. With the majority of the KSPH alumni working in government positions, the relations of the School with health authorities are only likely to continue to grow. The KSPH not only trains Ministry of Health employees but also supports the MoH in research and evaluation (but it is not receiving financial support from the MoH in return as has been criticized by KSPH faculty).

The KSPH also cooperates with a range of NGOs and INGOs in Kinshasa on research projects, and non-state actors frequently provide employment to KSPH graduates as well. Cooperation with some key American donor organizations (USAID and CDC in particular) are naturally strong. Generally, the School profits from the need of international actors to cooperate with local partners in research activities and the implementation of projects on the ground. At the same time, the School is very much dependent on these relationships. International partners are essential for any institution working in a constrained environment like the DRC.

In terms of academic cooperation, the KSPH has a special position as an autonomous unit within the university; still, relationships with the UNIKIN directorate are described as good. The KSPH is a flagship institution within the university and the university administration is generally supportive. Regarding relationships with other UNIKIN departments, there are some work relationships with quite a number of professors from other faculties cooperating with the School on the teaching of some courses. Besides the role of the KSPH as an employer, the other UNIKIN departments appear to look at the School with some envy as well. Sometimes it is felt that the KSPH is too autonomous and that there should be more opportunities for other departments as well.

Within the broader region of Central Africa, the role of the School is less pronounced. Some loose contacts exist with other schools of public health in Africa, including contacts with schools in Benin and Uganda. The KSPH also used to have close contacts with the School of Public Health in neighboring Brazzaville in the Republic of Congo; however the school in Brazzaville was destroyed during the 1997 civil war and never reopened. The KSPH presently provides support to the new School of Public Health in Lubumbashi in the south-eastern DRC.

It is clear that the regional role of the KSPH has been negatively affected by the violent conflict and relative isolation of the country, its poor infrastructure and its status as one of the least developed countries. There are not any international students at the School at this time and there generally are few pull factors that may help to attract students from neighboring countries. Some hope remains - and is expressed by KSPH faculty - that this may change with the transition process and that the KSPH will be able to play a larger regional role in the not so distant future.

e. Employment of Graduates

Though no alumnae tracking system is in place, graduates of the Kinshasa School of Public Health often return to their previous positions as health professionals in the provinces or in the city of Kinshasa. A smaller number remain with the School in the PhD program or start working with local NGOs, international organizations or other actors in development. Even though the KSPH maintains close contacts with its alumni, information about the employment of MPH graduates is not systematically collected. The current director of the School estimates that about 45% of the KSPH graduates work for the MoH, 30% work for non-governmental organizations and 10% work outside the country. The former director assumes that 80-90% of the graduates are with the Ministry of Health while about 10% work for NGOs. Most of the younger faculty at the School consists of former graduates as well.

7. RECOMMENDATIONS

a. Specific to the KSPH

In light of the findings of this review and SWOT, the KSPH is well poised as a major actor in DRC's health development. The enormity of DRC's public health capacity needs, however, combined with the likely influx of external resources when stability improves in the country and the already changed landscape of donors and organizations, argue for important reformulation of the strategic vision of the KSPH. For example, more critical analysis of how the KSPH can address the country's public health capacity needs might lead to fine tuning of its three degree programs both in terms of curriculum, format and target training audiences. It might be useful to differentiate its three degree programs to target distinct manpower gaps such as central level policy and regulatory needs; district strategic and operational management skills; and the strategic and operational needs of non-for-profit organizations. It also is important that the KSPH be formally tasked to develop the two emerging and any future new schools of public health in Congo.

To address the vast public health skills needs (some for at least each of the four person HZ team), it is important also to develop a strategy for strengthening public health training in the nursing schools at the undergraduate and graduate level. The KSPH should be involved in the articulation of nurses training, possibly by increased recruitment of nursing faculty among its masters programs and also, possibly, through direct assistance in the development of nursing public health curriculum and in providing targeted training to the nursing school faculty.

Other areas of future work might focus on bachelors' degrees in public health, combined MD/MPH programs, certificate programs and other ways to address the large manpower training needs.

In addition, the Congo KSPH and Rwanda School of Public Health might collaborate more closely to support manpower development and applied research in Eastern Congo. This strategy is particularly viable given the fact that both the School of Public Health in Kinshasa and Rwanda are supported primarily by Tulane University.

The School might increase production and dissemination of packaged and modularized training materials, possibly by creating a knowledge center to be shared among its sister schools. It also would benefit from a larger initiative or regional/sub-regional cooperative to enhance the availability of training resources.

Finally, an impact evaluation of the KSPH on actual health management improvement has never been done. After 20 years of programming, an impact evaluation is both warranted and desirable.

b. lessons for development of Schools outside Congo

The Kinshasa experience underlines several important factors that should be considered in designing and implementing schools of public health. First, is the issue of relevance. Relevance may be the most important determinant of the overall success and sustainability. While that might seem to be common sense, historically, many academic programs have been developed without systematic assessment of stakeholders, market analysis and other analytical activities to gauge country manpower development needs. The unique experience of KSPH was that its development was a direct result of a health system initiative to implement a health zone system model. The KSPH was initially set up specifically to address that need. The curriculum and much of the research activities were focused on this need. Therefore, there was and is a very clear demand for the School's services, as evidenced by the high number of applicants and the high degree of sponsorship.

The lessons that this experience provides include the need to focus programs and curriculum on strategic and operational management of health sector on one hand and by undertaking key stakeholder priorities on the other. Gauging demand through stakeholder analysis or other methods is an essential activity in planning public health schools. The programs, curriculum and format of program delivery should be based upon health sector needs. The educational programs should begin by targeting very practical public health needs, or a generalist management curriculum, initially with specialty training programs developed to meet priority program needs, probably linked to major funded donor initiatives (such as HIV/AIDS, Tuberculosis, malaria).

The Kinshasa experience also highlights the importance of long term strategic alliances with donors and other universities. KSPH enjoyed a long term partnership with Tulane University and this was particularly guaranteed because of individual faculty commitment. That is, when donors pulled out of DRC, individual level faculty commitment sustained the KSPH through difficult times. The importance of long term commitment to institutional development requires that both donors and partner universities understand institutional development and that they have long term vested interests in continued collaboration. Both USAID and Tulane University have been partners with KSPH from the start of the School.

Developing a School of Public Health requires a coherent institutional development strategy. This should include education/training programs; faculty development; research programs; and administrative/management systems development. The KSPH embraced all of these areas to some degree. Quite clearly, its development of financial systems is an area that has been somewhat underdeveloped and it is the lack of development in that area that has prevented its growth and development to a larger and more well-funded entity.

Faculty in the DRC context in contrast to faculty in the developed world, must have a strong generalist public health and development background in addition to having a public health area of specialization. The small numbers of faculty mean that available faculty must teach across a number of public health discipline/problem areas. Given the resource constraints, facuty

must be particularly entrepreneurial in order to identify and secure research opportunities.

Similarly, for both faculty and students, strong information management skills are a must, including information/communications technology. Providing for both infrastructure and training in this area is essential to a successful institutional development initiative.

Financial management is an area that has been particularly weak in academia in general, but it is of critical importance in the African setting. Schools must both prove the capacity to manage financially and also develop indirect cost rates and achieve certification for these. This activity must be built in to the work plan of a School project.

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ANNEXES

Annex 1: MPH Students, 1986-1987

Name	Title	Post	Origin
Alimasi Okoko	L2 Chemistry	C.T.	UNIKIN
Bahati Rushura	Medical Dr.	MCZ	Businga
Bwanga Nkolo	Medical Dr.	MSR	Bas-Fleuve
Ebutha Anangi	Medical Dr.	MCZ	Kirotshe
Ekwanzala Mosiana	Medical Dr.	MIR	Kananga
Gahungu wa Sanzo	L2 GIS	OMK	Kinshasa
Kabeya Duda	Medical Dr.	MCZ	Panzi
Kabeya Kalala	Medical Dr.	MCZ	Kitambo
Kalume Mushagale	Medical Dr.	MCZ	Rutshuru
Kambamba Sola Ami	L2 Pediatrics	C.T.	IPN
Kande Betu Kumesu	Medical Dr.	MSR	Gemena
Krubwa Foemi	Teacher in Medicine	Professor	UNIKIN
Kwata Ewando	Medical Dr.	MCZ	Kikongo
Lahaye Jean Pierre	Medical Dr.	MCZ	Kindu
Lokonga Nzeyabe	Medical Dr.	MCZ	Bosobe
Mavindi Thumbudila	Medical Dr.	MD	Maduda
Milenge Kibwa	Medical Dr.	MCZ	Mangembo
Ndakakanu Kisiwu	Medical Dr.	MCZ	Tshuapa
Ngombo Mukendi	L2 Pharmaceuticals	C.T.	UNIKIN
Nyamula Gronikowska	Medical Dr.	Assistant	UNIKIN
Tshioko Kweteminga	Medical Dr.	MCZ	Mushenge
Umba	Medical Dr.	MCZ	Kongola

Kabondo			

Annex 2: MPH Students, 2001-2002

N°	NOMS & POSTNOMS	TITRE	FONCTION	ORIGINE
01	*AKAMITUNA NDOLO*	Dr Méd	MCZ MOSANGO	BANDUNDU
02	*AMURI MUDJANA*	Dr Méd	MD/HGR	BANDUNDU
03	ARUNA ABEDI	Dr Méd	MCZ BOSOBE	BANDUNDU
04	ATUA MATINDII	Dr Méd	*MIP*	P. ORIENTAL
05	BAHUNGA KASHOKY	L2 GIS	C. B /Insp.S.P.	NORD-KIVU
06	BOLATEY NTANG'E NKOY	Dr Méd	MD HGR BOLOBO	BANDUNDU
07	BONSONGA POLE POLE	Dr Méd	MID/TSHUAPA	EQUATEUR
08	BUSHABU MINGA MALAK	Dr Méd	MCZS MUSHENGE	K.OCCID.
09	BWANAISSA SHABANI	Dr Méd	MCZ/PUNIA	MANIEMA
10	DIKAMBA MADIYA	Dr Méd	ASSISTANTE	UNIKIN
11	EPUMBA EPONDO	Dr Méd	MCZ/INGENDE	EQUATEUR
12	FARAY ASSUMANY	Dr Méd	MCZS KINDU	MANIEMA
13	FOFOLO MULEMBU	L2 Statistique	Bibliothécaire	UNIKIN
14	GOMO DJAGA	Dr Méd	Coord. Prov. SIDA	P. ORIENTAL
15	ILUNGA MULEYA KIKAYA	Dr Méd	Médecin	KINSHASA
16	ISSA ALONI	Dr Méd	MID Ht Katanga	KATANGA
17	KALAMBAYI KABAMBA	Dr Méd	MCZ/KASANGA	K.ORIENTAL
18	KALONJI NTUMBA	Dr Méd	MCZ/LUBONDAYI	K.OCCID.
19	KASHALA TSHISHIMBI	Dr Méd	MCZ/LUSANGI	MANIEMA
20	KASIAM LA'SI ON'KIN	Dr Méd	CHEF de TRAVAUX	UNIKIN
21	KIKUNGU MUBI	Dr Méd	Médecin	KINSHASA
22	KOKOLOMAMI HYYOMBO TAMBWE	Dr Méd	MCZS Kole	K.ORIENTAL
23	KOMBO IKWILILI	L2 GIS	AG BONDEKO	KINSHASA
24	LOHOMBO EKOMBA	L2 Biol-Méd	ASSISTANTE/ ISTM	KINSHASA
25	MALUTAMA MIZILA	Dr Méd.Dent	Dent. CMBD	KINSHASA
26	MAMBIDI KOLOBORO J.M.	Dr Méd	MD/Clin. l'Est ISIRO	P. ORIENTAL
27	MANSIANGI MANKADI	L2 Biologie	ASSISTANT	UNIKIN
28	MAYATEZULUA SALANGA	Dr Méd	MDA HGR/KIKONZI	BAS CONGO
29	MBU NKOLOMONYI	Dr Méd	MD/HGR LUEBO	K.OCCID.
30	MBUMBA KINSAKU	Dr Méd	Méd.Trait.Hôp.Kitambo	KINSHASA
31	MUMBERE MUSIVIRWA	Dr Méd	MCZ/LUBERO	NORD-KIVU
32	MUYER MUEL TELO	Dr Méd	Méd. CHMA	KINSHASA
33	NGANTSUI BENI	Dr Méd	MCZS/MALUKU II	KINSHASA
34	NSIANGANI NZAMA	Dr Méd	MDA CHMA	KINSHASA
35	NSIMBA DIAKIESE	Dr Méd	MCZ Kwilu-Ngongo	BAS CONGO
36	ONEMA TSHONDA	L2 Economie	Assistant/ESP	UNIKIN
37	PALUKU KAPITULA NGANZA	Dr Méd	MCZ/GOMA	NORD-KIVU
38	SUMAILI KYANDINDI	L2 SI	Infir.Sup. ZS KIKIMI	KINSHASA
39	VIVE SEBISE	L2 Anthrop.	CONSERV./Musée	UNIKIN
40	WAT'SENGA TEZZO NSIMBA	L2 Biologie	Biologiste INRB.	KINSHASA
41	YOKA EBENGO	Dr Méd	MID	EQUATEUR