HEALTH SYSTEMS, PUBLIC HEALTH AND RESEARCH CAPACITY STRENGTHENING IN SOUTH AFRICA: ONGOING LITERATURE SEARCH and REVIEW

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March 2010 DRAFT

This paper includes results of literature searches related to public health capacity, health systems strengthening, and health research capacity in Africa, emphasizing South Africa and links to HIV/AIDS interventions. This draft presents the search strategy and results (Part 1), a brief discussion of health systems strengthening frameworks, and an annotated review of some of the literature according to the framework (Part 2), p 27 in this version. The introductory/framing paragraph is copied below to help orient the user of this document. We welcome additions and comments to this living document. This literature search was supported by the “Human capacity development to address HIV and AIDS in South Africa” project, funded by PEPFAR through CDC, CDC-RFA-PS07-719.

Framework:

“Health systems” refers to all the activities whose primary purpose is to promote, restore and maintain health. One framework emphasizes four functions of stewardship, resource mobilisation, service provision and financing (WHO). Marchal et al’s (2009) article helps us to question health systems strengthening definition and strategies in the context of the Global Health initiatives which claim to be strengthening health systems yet some of their activities weaken health systems to some extent. This literature review presents original research studies, commentaries and conceptual frameworks from both published and gray literature on strengthening health systems in South African in the context of HIV and AIDS. It uses Yu et al’s (2008) framework of analysis of HSS in the developing countries published in an article, “Investment in HIV/AIDS programs: does it help strengthen health systems in developing countries” and another Hanson et al (2003)’s framework on the analysis of the relationship between injecting funding to HIV programmes and the effect it has on health systems in general. In an analysis of whether HIV programs strengthen or weaken health systems, Yu et al (2008) ask six questions whose answers help to monitor and evaluate the performance of HIV and AIDS programmes’ in relation to health systems strengthening. The following questions will be asked as well in this paper:

1. Has health service delivery been expanded?
2. Have health sector human resources been expanded?
3. Has the health information system been strengthened?
4. Have procurement and supply management been strengthened?
5. Has health financing been improved?
6. Have leadership and governance for health been improved?
PART 1: THE SEARCH STRATEGY AND RESULTS

A search of the Ebscohost electronic database was the major method used to get journal articles for this review. The following databases were searched through the ebscohost search engine: Academic Search Premier, Information Science & Technology, Rehabilitation & Sports Medicine Source, Africa-Wide Information, Business Source Complete, CINAHL, CINAHL with Full Text, ERIC, Family & Society Studies Worldwide, Health Source - Consumer Edition, Health Source: Nursing/Academic Edition, International Pharmaceutical Abstracts, MasterFILE Premier, MEDLINE, PsycARTICLES, SociINDEX, Women’s Studies International. To be as inclusive as possible, the search was set to include a cross section of the journals in the social sciences, development together with health journals. Both full text and abstract only were sought. We searched original research papers, commentaries, responses to already published papers, books/monographs, published systematic reviews. Only peer reviewed journals were searched by this search engine. A Google scholar search was also conducted using the same search terms as used in the ebsco search. The articles were checked for duplications in the different databases searched.

The following search terms were used to guide the search: “strengthening health human resources capacity in Africa”, “health capacity development”, “health and organizational development” and “health research capacity strengthening”. Articles containing these terms in their subjects and or text were included. The search was commanded to cover articles reporting on Africa only. No dates were set to limit the year the papers were published. Only articles published in English were included.

The search found more than 1340 articles. After reading the titles of the papers to check the relevance and reference to Africa a number of papers were dropped. This left a total of 304 journal articles and 30 books and reports. We used the African Journals on line (AJOL) list of registered journals in Africa to mark the journal articles published in Africa. We found that 23 out of 334 (12.3%) articles were published in journals in Africa while the rest were published in international journals and journals outside Africa.

A further web search from government and nongovernmental organizations’ websites and databases was conducted using the same search terms mentioned above. The search resulted in 90 papers, reports, books and monographs both published and unpublished. These are mainly reporting
on South Africa and most of them published in South Africa and are managed by websites or organizations based in South Africa.

List of searches based on EBSCOHOST search


2. From research to control: Translating research findings into health policies, operational guidelines and health products. Citation Only Available (eng; includes abstract) By Kilama W, Acta Tropica [Acta Trop], ISSN: 1873-6254, 2009 Nov; Vol. 112 Suppl 1, pp. S91-S101; PMID: 19686696

3. Strengthening capacity, collaboration and quality of clinical research in Africa: EDCTP Networks of Excellence. Citation Only Available By: Kitua, A Y; Corrah, T; Herbst, K; Nyamenda, T; Agwae, S; Makanga, M; Mgone, C S. Tanzania journal of health research, 11(1): pp. 51-4 ; Jan 2009. (AN: 19445106)

4. Human resource development and antiretroviral treatment in Free State province, South Africa. Citation Only Available (eng; includes abstract) By van Rensburg DH, Steyn F, Schneider H, Loffstadt L, Human Resources For Health [Hum Resour Health], ISSN: 1478-4491, 2008; Vol. 6, pp. 15; PMID: 18662390

5. Achieving effective cervical screening coverage in South Africa through human resources and health systems development. Citation Only Available By: Kawonga, Mary; Fonn, Sharon. Reproductive Health Matters, 16(32): pp. 32-40; Nov 2008. (AN: 19027620)

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PART 2: ANNOTATED DISCUSSION OF THE LITERATURE

INTRODUCTION AND FRAMEWORK

“Health systems” refers to all the activities whose primary purpose is to promote, restore and maintain health. One framework emphasizes four functions of stewardship, resource mobilisation, service provision and financing (WHO). Marchal et al’s (2009) article helps us to question health systems strengthening definition and strategies in the context of the Global Health initiatives which claim to be strengthening health systems yet some of their activities weaken health systems to some extent. This literature review presents original research studies, commentaries and conceptual frameworks from both published and gray literature on strengthening health systems in South African in the context of HIV and AIDS. It uses Yu et al’s (2008) framework of analysis of HSS in the developing countries published in an article, “Investment in HIV/AIDS programs: does it help strengthen health systems in developing countries” and another Hanson et al (2003)’s framework on the analysis of the relationship between injecting funding to HIV programmes and the effect it has on health systems in general. In an analysis of whether HIV programs strengthen or weaken health systems, Yu et al (2008) ask six questions whose answers help to monitor and evaluate the performance of HIV and AIDS programmes’ in relation to health systems strengthening. The following questions will be asked as well in this paper:

1. Has health service delivery been expanded?
2. Have health sector human resources been expanded?
3. Has the health information system been strengthened?
4. Have procurement and supply management been strengthened?
5. Has health financing been improved?
6. Have leadership and governance for health been improved?


This literature review also discusses the literature in the context of the operational plan for HIV and AIDS in South Africa. The germination of the “operational plan for comprehensive HIV and AIDS care, management and treatment for south Africa” also called the “Comprehensive Plan” dates back to
the Strategic Plan for HIV / AIDS in 2000 which identified and sought to encourage research and programming on 4 main areas of intervention, that is, prevention; treatment, care and support; research monitoring and surveillance; legal and human rights. The Comprehensive plan’s two main areas are to establish a minimum of one HIV and AIDS service point in every health district by the end of the first year of the plan’s implementation and to provide all South Africans and permanent residents with comprehensive and equitable access to care and treatment within their locale within 5 years. The comprehensive plan paid significant amount of attention to health system strengthening in a section on “Strengthening the National Health System” which provided the following six items,

1. Providing significant investments to strengthen the overall national health delivery system
2. Adding professional health workers to strengthen the health system as a whole in which HIV and AIDS patients will be treated
3. Upgrading the skills base and competencies of health care workers within the public health system
4. Improving physical infrastructure
5. Improving access to laboratory services
6. Making investments to upgrade the national drug distribution system and the patient and health information systems at all levels of the health care system

It is therefore fair to discuss health systems strengthening in South Africa in the context of Yu et al’s framework of analysis which is an analysis that seemingly asks if South Africa managed to implement the Comprehensive Plan as planned or wished. Like Yu et al (2008) observed for most countries in the developing countries, many arguments on the relationship between HIV programming and health systems dynamics are based on anecdotal, speculating and limited evidence, since many programmes are still rolling and have not been fully evaluated. Other evidence has been based on small pilots or on early stages of the projects whilst a number of systematic impact studies are still underway (eg the early evaluation of the Rural Allowance in South Africa). An attempt has been made to classify different papers under the thematic questions asked by Yu et al (2008).


The publication is a collective effort of different authors worldwide on the interactions between the GHIs and country health systems in the developing world. The authors contribute to ongoing debate
on whether the GHIs strengthen or weaken country health systems. A number of examples are
drawn from HIV programmes in Sub-Saharan Africa. There exist about 100 Global Health Initiatives
(GHIs) currently although the major ones are only a few. In this analysis, four GHIs were discussed
(GAVI, Global Fund, PEPFAR and World Bank MAP). The Health systems in the LDCs were already
weak due to HIV and AIDS when the millennium development goals (MDGs) were proposed in 2000
and the GHIs emerged in that context. No robust studies of the partnership between GHIs and
health systems have so far been done. Large GHIs were formed within 10 years ago and it is too
early to assess their impact on health systems of countries. Also arrangements for increasing their
impact on health systems were not made hence there is no robust data to assess the relationship of
the two. Thirdly the scientific society has been too slow to realise the need to scrutinise the
relationship.

**Health system definition** - “more than the pyramid of publicly owned facilities that deliver personal
health services”. These include faith based organisations (FBOs), nongovernmental organisations
(NGOs), and other non state sectors because 40-70% of health care in Sub Saharan Africa is provided
by FBOs. There is no commonly agreed framework to assess and understand interactions of GHIs in
health systems. In this analysis the authors worked out the criteria to analyse the GHIs and
relationship with health systems, that is, it identifies distinct functions of health systems or their
building blocks – and another framework that analyses how the GHIs interact with health systems in
these building blocks (governance, finance, health workforce, HIS and supply and management
systems). Each of these is interlinked to the 6th item of service delivery. The central role of the
community is considered in the analysis although only recognised but not included in the six points
of interaction are the social, economic, political, environmental factors.

Health service delivery

This is the major aim of any health system and so GHIs activities should be assessed for this, that is,
if their goal is to strengthen health systems is leading to service delivery. Service delivery depends on
the other building blocks of health systems mentioned above. It is analysed by way of assessing
access, coverage, equity in services and quality.

Access: increased tenfold for ART in low income and middle income countries and it was 3million by
programmes the rate of detection rose from an all time 40-50% in 2002 to 56% in 2006. Supplies to
malarial control programmes of bed nets were enough to protect 26% of the people in 37 countries
in Africa in 2006. In 18 countries in Africa 34% households owned an insecticide treated bed net and
the number of children sleeping under a bed net rose from 3% in 2001 to 23% in 2006. Immunisation for Hepatitis B nearly doubled from 2002 to 2006 (32% to 60%). However it cannot be claimed that these increases were due to GHI activities only as there are also many forces that played. Increase in access to targeted health services has been faster than to non targeted services, thereby creating a health inequity.

Equity: The GHIs consistently mention equity of access as one of their key objectives. Equity refers to access to health for those in need, whether they live in rural, urban areas with no discrimination based on sex or socio-economic status). [The PEPFAR analysis is based on four GHIs – Global Fund, GAVI, PEPFAR and World Bank MAP] that is whole article. There is an overall increase in equity in access and outcomes for GHIs targeted interventions like HIV/ AIDS and TB. But countries inequity exists in some countries. The use of targets may create inequity in the sense that urban areas targets can be reached early and easily compared to rural areas resulting in funding flowing into urban areas. Equity has been realised in Ukraine when the Global Fund provided funding for 11000 injecting drug users, 15000 sex workers, 7 000 MSM and 29 000 prisoners. Although GHIs have equitably addressed funding issues on health and sex equity issues, a lot remains to be done relating to directly addressing social determinants of health and factors that provide health inequity. GHIs have tried to ensure no user fees are charged to clients for health systems. They also engage civil society in planning and delivery of health systems which increases uptake of services in vulnerable and socio economically disadvantaged communities.

Quality: Quality is maintained through focussing on few interventions, provisions of standardised guidelines for prevention, treatment and care. Pre-qualification of drugs, standardised packaging of commodities and global procurement contribute to universal standards of care. However, pressure to meet numerical targets interfered with quality of care in Nicaragua by the Global Fund. Anecdotal evidence suggests that countries submit proposals even if they did not have capacity to implement projects and others provide substantial quality services in order to meet targets but do not report this. Poor quality is shown in emergence drug resistant TB and HIV whilst good quality is shown in the decrease in infant mortality linked to expanded coverage of vaccines and insectcide treated bed nets.

FINANCING

Amount: Overseas development assistance (ODA) in health doubled between 2001 and 2006 from $5.6bn to 13.8bn per year. A third (32%) of ODA between 2002 and 2006 went into HIV/AIDS mainly through GHIs for HIV, Malaria, TB and Childhood Immunisation including polio.
Domestic budget allocations: there is no evidence on whether national allocations to targeted diseases /programmes by GHIs reduced, rose or did not change. In Kenya, Zambia, Rwanda, Malawi and Tanzania between 2002 and 2006 funding from donors accounted for 75% of HIV targeted expenditures.

Out of pocket expenditure: studies still show that poor people pay at points of delivery for treatments and services and this represents the most widespread means of financing health care in poor countries. It accounts for 60% of total health care spending compared to 20% of health care spending in the developed countries. In Zambia people living with HIV spent 485% more out of pocket in 2002 compared to 23% in 2006. In Rwanda it decreased from 257% to 28%, whilst in Tanzania it went down from 136% to 75%.

GOVERNANCE:

Planning and coordination: GHIs have specific countrywide coordinating systems but poor alignment between plans has been reported. Their focussed intensive planning processes with tight application deadlines and heavy implementation conditionalities distract government leaders and planners from their general duties and responsibilities. In many countries time frames for application for grants were different from fiscal year budgeting, auditing and expenditure leading to incurring heavy transaction costs. The GHIs’ strict measures also helped the countries to note that their health systems were weak and needed strengthening. However, most of the planning by GHIs has been independent of country plans leading to duplication, sub-optimum communication and absence of trust between government and NGO sectors. This suggests that the disease specific focus of the main GHIs continues to put pressure on governments to meet the increasing demands of donors and health services for HIV/AIDS. However, in some countries GHIs’ programmes have been integrated into the country’s programmes (Rwanda). In other countries their planning led to innovative ways and easing of regulatory frameworks in human resources for health such as task shifting in Malawi, Zambia and Ethiopia – nurses could prescribe ARVs. GAVIs health system component for example, includes requirements for sectoral oversight and for coordination and for the management of the application process from the MOH’s planning department.

Community involvement: GHIs have improved community participation such as nongovernmental actors (NGOs, FBOs). Almost 20% grants money from the Global Fund’s seventh round of funding was channelled through NGOs whilst non state actors accounted for 50% of principal recipients or
sub recipients. In 2005 prime partners received 40% of funding while 70% went to sub-partners. “Non-state, not for profit organisations have been effective recipients of GHI funds and have done better than government recipients”. The proliferation of NGOs amid huge funds being channelled to them coupled with decentralisation of health care services have raised concern in many countries. In Uganda and South Africa, civil society has been very active in expanding service delivery.

HEALTH WORK FORCE

1.5 million new workers are needed in Africa and 4 million needed in the world. In 2004 93% of beds in a primary hospital in Botswana were HIV related but after the introduction of ART this reduced to 52% in 2006. Disease specific interventions burden the already overstretched health workforce. Most of the proposals sent to GAVI for health system strengthening mentioned workforce. However, the proposals mainly include short-term training and salary allowances and little demand for long term interventions such as building and sustaining health workers, retention, planning and production were presented. GHIs have greatly contributed to in disease specific service training. PEPFAR is known for championing task-shifting and disease specific training and creating mid level cadres thereby increasing the human resources. GHIs have encouraged and trained informal cadres such as community health workers (CHWs) with sometimes salaries and allowances outside national payroll. In Kenya and Haiti GHIs have managed to improve integration of CHWs and the formal health sector.

Distribution: the training of workers for disease specific interventions creates maldistribution of health service workforce in the country in terms of equitable distribution of skills, targeted diseases and geography. PEPFAR injected financial and non financial incentives (housing, transportation, hardship and education) to promote improved distribution of health workers and underserved areas (but increases in staff have only been recognised in urban areas in Zambia.

Retention: 43% of deaths or medical retirement in Mozambique, Zimbabwe, Ethiopia, Kenya and Malawi were known or suspected to be from HIV and AIDS. 3-4% of all nurses in Swaziland are lost from work due to HIV deaths. In Kenya HIV/AIDS in the health workforce is twice the national average. GHIs have supported programmes that included health workers. In some countries, 50% of sites do not have basic infrastructure and supplies like soap, running water, gloves and post exposure prophylaxis for HIV prevention. These are some of the issues associated with health worker retention. Many health workers’ lives were saved in Malawi by ARVs. There is no data to show that treatment of HIV infected health workers and declining HIV prevalence are having a positive effect on retention.
HEALTH INFORMATION SYSTEMS

GHIs insist on linking inputs to quantifiable results which depend on functioning health systems.

Availability and accuracy: the biases in information on prevalence of HIV led PEPFAR to sponsor national population based surveys of seroprevalence using national sampling frames. This led to a downward trend in the number of HIV/AIDS infections globally. Information usually does not include general state of health services and health in general since they are not disease specific.

Use and demand: GHIs have revealed the shortcomings of national health information systems which led to efforts to strengthen them in many countries, especially those related to HIV. 20% ($120m) of funds requested by countries in round 8 of Global Fund applications were for improving monitoring and evaluation systems. GHIs still pursue independent health information systems despite efforts to harmonise and integrate country health information systems that are underway in some countries. PEPFAR uses national HISs but maintains a separate HISs which also asks for more information. This results in information burdens, system wide inefficiency and “failure to invest in a rational, robust, efficient and independent framework for common data”. In Mali, a campaign specific HIS for monitoring a neglected tropical disease resulted in 12 new forms for drug supply management and 15 new forms for follow up and assessments of the distribution process. It resulted in one more report per village, one per health centre and one per district every week for each drug distributed. The performance based funding results in health workforce reporting only on GHI programmes and leaving other crucial national programmes behind. There are reports of matching GHI indicators with national programme indicators for monitoring and evaluation.

Innovation: Anecdotal evidence shows that new electronic patient records are improving the provider-patient interaction. In Malawi a manual paper based system was replaced by an electronic system. In Rwanda TRACnet has been extended from HIV only to TB and malaria in tracking patients and keeping records. Smart cards in Zambia as from 2005 allow access to up-to-date medical information for over 60 000 patients. It enables them to compile end of month reports faster than paper records and also prevents patients from shifting from the first to second line drugs which are expensive. Tracking pharmaceutical and other essential supplies has been enabled by innovative HISs. Tendency towards concentrating on data gathering as opposed to data use calls for investing in health information workers.

SUPPLY MANAGEMENT SYSTEMS
Procurement and distribution: GHIs have created a huge demand for bed nets, ARVs, vaccines, drugs, laboratory materials, etc and have contributed to funding the procurement of these supplies as well as strengthening the country’s procurement systems – leading to reduction in some prices of some drugs (TB, HIV, Malaria and onchocerciasis). Bulk or pooled procurement mechanisms have led to increased affordability of commodities like vaccines but not ARVs. Increase in the supplies shipped to countries has not been matched by improvements in distribution of supplies.

Procurement and distribution: There are reports of GHIs and country systems working together and also in some instances GHIs have duplicated and displaced country supply chains, poor coordination leading to elevated operational costs. Poor coordination in planning between national medical storage facilities but with no coordination has been reported in some instances in other countries leading to poor storage planning. At districts levels parallel procurement systems lead to high workloads for workers including opportunity costs and real costs for the health system.

Quality: GHIs increase country’s access to quality drugs.

RECOMMENDATIONS:

1. Infuse the HSS agenda with the sense of ambition and speed that has characterised the GHIs.
2. Extend the targets of GHIs and agree on indicators for HSS
3. Improve alignment of planning processes and resource allocations among GHIs and between GHIs and country heath systems
4. Generate more reliable data for the costs and benefits of strengthening health systems and evidence to inform additional and complementary investments to those of GHIs
5. Ensure a rise in national and global health financing and in more predictable financing to support the sustainable and equitable growth of health systems.

Saving the lives of South Africa’s mothers, babies, and children: can the health system deliver?


In this second paper of a series of six papers in the Lancet devoted to South Africa’s health system, authors analyse the high infant and maternal mortality in South Africa in relation to avoidable causes or actions in the national health system. High maternal and infant mortality are attributable to avoidable health systems factors as noted in the national audit reports (2500 mothers die, 20000 babies are stillborn, 52600 children die before 60 months) 46% mothers die of direct obstetric
causes whilst 44% die of pregnancy related infections including HIV. Thirty percent mothers die from modifiable factors such as the administrative action like lack of blood for transfusion, lack of transport between health facilities. Fifty-eight percent of the deaths are attributed to modifiable factors at primary health facility level 49% at secondary level, 30% at tertiary level such as not adhering to standard protocols.

For stillbirths and neonates 8% deaths were attributed to administrator action such as personnel not available or not sufficiently trained to monitor maternal hypertension. 13% stillbirths and neonates were attributed to health provider action such as fetal distress not identified in labour, poor response to hypertension.

Children aged 60 months and below recorded (the majority were children with HIV) 22% deaths from avoidable administrative action such as lack of senior doctors and nurses and insufficient paediatrics beds. Fifty-three percent attributed to provider action such as Integrated Management of Childhood Illnesses (IMCI) not used in clinics and poor assessment and management in hospitals.

District hospitals recorded the highest avoidable administrative related deaths for children which is probably because they receive limited outreach support from regional hospitals which are also overstretched with clinical work. It is estimated that nearly 50000 lives of infants and children up to 60 months could be saved between 2008-2015 if these avoidable health systems problems are actually avoided through the implementation of effective and efficient coverage of interventions. Such measures could also enable SA to meet the MDG4. Scaling up PMTCT with improved PMTCT infant feeding is likely to save up to 37200 children’s lives yearly.

1. HEALTH SYSTEMS STRENGTHENING CONCEPTUAL FRAMEWORKS

Expanding access to priority health interventions: a framework for understanding the constraints to scaling-up. Kara Hanson, M. Kent Ranson, Valeria Oliveira-Cruz and Anne Mills Journal of International Development. 15, 1–14 (2003).

Following the Commission on Macroeconomics and Health (2001) which recommended increasing funding to enable developing countries to strengthen their health systems, the authors conducted an extensive literature review and presented a framework for analysing constraints to scaling up/strengthening health systems for optimal efficient and sustainable delivery of services. The term scaling up refer to expanding access to ensure they are universally available and accessible. The
authors define constraints as obstacles which are more than mere inputs as they cover systems, processes, incentives, and values or norms that restrict desired goal achievement.

They argue that resource constraints constitute a limitation of health systems to achieve effective care for the people. The conceptual framework they propose considers the close to the client health system approach and analyses the range and intensity of constraints to the delivery of priority interventions. A framework for scaling up health systems should be policy relevant so as to enable the relaxation of constraints for capacity strengthening. They offer two levels of analysis:

1. The level at which a constraint operates: This is important to understand barriers to strengthening capacity in a country at all different levels of care in the health care delivery system eg poor policy as a constraint occurs at the higher level of government whilst administering ART occurs at the health facility by doctors and nurses. Issues of sectoral control need to be identified and analysed likewise since they affect health but cannot easily be relaxed by the health officials themselves eg salaries of health care workers are usually decided by the public service office and health infrastructure is put up and or renovated by public works department although they directly impact on health system delivery. Health system constraints exist at the following levels [DIAGRAM]:

   a) community and household level;
   b) health services delivery level;
   c) Health sector policy and strategic management level;
   d) Public policies cutting across sectors;
   e) Environmental and contextual characteristics

2. Amenity to improvement through additional funds: It is important to analyse constraints according to their susceptibility to positive change through injecting additional funds in the health service which the authors called relaxation of constraints. Generally lower level constraints are more amenable to change than higher level constraints. Constraints due to lack of inputs are also much more amenable to change by adding funds. Those related to performance of processes e.g. planning, regulation, management can be strengthened through investment in development of new procedures and systems. There are also constraints that do not change by adding additional funds /reliance on donor funding such as environmental or geography which are not easily amenable. So is government policy or structure or governance. Money is a necessary condition but unlikely to be sufficient as socio-political factors will bear on how this will be used. [DIAGRAM]
Overcoming health-systems constraints to achieve the Millennium Development Goals

The authors present a conceptual framework that they argue could enable the relaxation of constraints to strengthen health systems in order that countries could attain MDGs. They offer two major choices or strategies for health system strengthening (parallel programming and system-wide programming). The article which was first in a series, ahead of the Mexican Ministerial Conference, was written to enable knowledge transfer and policy makers to make decisions on strategies of health systems strengthening in the context of achieving the MDG targets. The key challenges to achieving the three health MDGs in the developing countries is the health systems which currently look fragile and fragmented to be able to deliver the volume and quality services that their populations require. Major barriers to health systems strengthening include finances, human resources, drugs, supply systems, generation and use of information. Political instability and policy environment and quality of governance also pose policy and institutional constraints. The authors observed one major limitation in the conceptual framework designed by Hanson et al (2008) and used by different authors since its development. They noted that it only identifies the constraint but does not trace it to identify its underlying causes that can help in addressing these constraints to capacitate health systems. Again, constraints in health systems usually do not have a single cause, but rather interconnected and multidimensional causes. Efforts to address health systems constraints should consider the interconnectedness of such constraints, anything short of that may lead to failure to fully address the constraint. The authors argue that the advantage of addressing constraints through an intervention specific method targeting a specific health problem or disease (which they called parallel programmes) is that it can yield quick results as compared to system-wide interventions which need long term plans to fully address the constraints. However such small parallel interventions may lead to duplications in the system as there may lack coordination of activities in the whole system. There may also be distortions through creating a separate cadre of health workers who are better paid. This could only demotivate staff who are not benefitting from that programme or may deplete staff from other parts of the health system to that better financed programme. The authors also warn against the problem of disruptions of work as uncoordinated programmes take workers off their work for training for several long periods of time. Sometimes this may mean one worker may benefit from different programmes whilst their offices lag as they will be attending trainings. Finally, distractions are common due to the specific and uncoordinated reporting mechanisms and requirements from different players in the health systems. This may distract them from their main job activities.
The disadvantage of system-wide strategies include that workloads can increase for certain people eg. as one employee can be required to undertake training for different diseases management compared to maybe two training sessions for HIV only per year in parallel programmes. Secondly, benefits take longer to accrue; they are unfocussed and may become unmanageable. The system wide approach recognises the need to tackle the root causes of the problem, recognises the complexity of health systems constraints and problems, but does not mean loosing focus on outcomes, abandoning priorities and wanting to do everything simultaneously. It ensures benefits accrue to many dimensions of health systems (not single priorities).

**Global Health Actors Claim to Support Health System Strengthening—Is This Reality or Rhetoric?**

The authors conducted a literature review of the role of Global Health Initiatives (GHIs) in health systems in developing countries. In this report the they reported that implementing GHI programmes effectively requires well functioning Health Systems many of which are currently fragile and unable to provide effective health services in developing countries. There is need for developing countries to consider strengthening their health systems as their medium term goal towards the achievement of higher order MDGs in future. One limitation is that the term HSS is vaguely defined and its strategies are therefore misunderstood and different ideas are put forward on the role of HSS towards public health. It is crucial to note that HSS approaches driven by Global Health Agencies are selective as they target certain diseases which may undermine progress towards long term goals of effective high quality and inclusive health systems.

The authors argue that many GHIs argue that they help to strengthen health systems yet their activities only do the opposite as they undermine progress towards turning health systems into “effective, high quality, inclusive” health systems. They argue that there is need to redefine HSS in order to realign efforts towards strengthening HSS and also to launch a balance between HSS in prevention and in treatment. The authors argued that HSS has become a buzzword for GHAs as there is a clear gap in their terminology (HSS) and their activities. “Their HSS strategies are essentially a means to deliver targeted interventions more efficiently, rather than being strategic and directed towards the root causes of health system weaknesses. Therefore, HSS efforts of most actors can be more accurately described as selective HSS interventions.”
In 2006 WHO redefined its 2000 definition of HSS to “building capacity in critical components of health systems to achieve more equitable and sustained improvements across health services and health outcomes”

The authors argued that the selective discourse of the GHAs weaken health systems. They noted that duplication, interruptions and imbalances are noted where GHA programmes are implemented. They adapted Travis et al’s categorisation of problems caused by the selective nature of GHIs. They cite examples from Nepal where health workers preferred to leave the primary health care system to join the national immunisation days where they were offered higher per diems thereby interrupting service in the health system. In Cambodia, ongoing immunisation campaigns were reduced by campaigns for HIV, TB, Malaria and birth spacing programmes.


There is a huge debate on whether the introduction of GHIs and ART into the health systems weaken or strengthen health systems in Africa. This introduction unravelled decades of neglect and weaknesses of health systems. The WHO defines health systems as “all organisations, people and actions whose primary intent is to promote, restore or maintain health” Its six building blocks are:

1. effective safe and high quality health services
2. Responsible workforce
3. Equitable access to essential medical products, vaccines, and technologies
4. A well functioning health information system
5. A good health financing system
6. Strong leadership and governance

HIV and AIDS increase the demand for health services and also reduce the ability of the health services to respond to the care needs of the population. The advent and introduction of ART means the easing of hospital beds. In Brazil, due to free ART, 40-70% decrease in mortality; 60-80% decrease in morbidity; 85% decrease in hospitalisation and savings of USD1.2b in health costs were recorded. HIV and AIDS programmes have strengthened primary health care efforts through the provision of IMCI, FP, TB case finding. In many countries such as Zambia and Rwanda many HIV programmes are integrated in or work closely with other primary health care programmes.
In Rusikisiki village in South Africa, ART programme led to infrastructural development which includes huge improvements such as reliable electricity, water supply, telefax for clinics, whilst building renovations have increased space for counselling and nursing services.

However it is feared that huge decreases in funding for family planning and reproductive health have resulted due to shifting of funding to HIV programmes. In other programmes it was realised that ART helps to keep health workers alive for continuing work in different primary health care programmes and other health care work. For example in Malawi, it was reported that 250 of the 1022 health workers were kept working by enrolling for ART. There is also significant progress reported elsewhere in sub-Saharan countries (Ghana, Malawi, Kenya and Ethiopia). However, the authors also noted localised brain drain from other primary health care programmes to ART and NGOS offering HIV programmes.


The Mount Freire Project in Eastern cape is a case in point in which the UWC and Health Systems Trust worked together with the Eastern Cape province in managing malnutrition whilst developing the capacities of the health care workers and developing an efficient District Health System. A multi-sectoral approach informed by a comprehensive (instead of selective) primary health care approach was applied. Provincial representatives came from the following sectors to form a steering committee which oversaw the project: agriculture, education, environmental health, maternal and child health, nutrition and welfare and a national representative from the Nutrition Directorate. At the district level the Mount Freire Nutrition team included representatives from nutrition, agriculture, education, local government, water affairs, and environmental health. Through workshops they fostered team building and a common understanding on causes of malnutrition by applying the planning cycle of assessment, analysis and action. The project successfully developed capacity of public sector personnel in the poorest regions in the country. The hospital component managed to see a reduction in case fatality rates from severe malnutrition inpatients. The programme is sustainable without ongoing external support from UWC faculty. It is also replicable in South African public health services. (add more information on the successes)

2. **HAS HEALTH SERVICE DELIVERY BEEN EXPANDED?**

[The Comprehensive Plan stipulates that the health system acknowledges the presence and the work of traditional healers in the fight against AIDS]. There is a high prevalence of HIV and TB in South Africa, a high co-infection rate of 60% and a high prevalence of HIV (36.2%) in Kwazulu Natal (KZN) and a high health worker burden and a nurse-patient ratio of 1:8333, doctor patient ratio of 1:155000 due to nurse vacancy rates, high attrition rates for doctors and nurses and a 50% nurse absenteeism. It is against this background that in KZN there is a high proliferation of traditional medicine for HIV related illnesses being used. South Africa enacted the WHO regulation to involve traditional healers into the health system and over 60% people in KZN are believed to visit traditional healers before they visit primary health care facilities. In a baseline survey conducted by AMREF it was noted that traditional healers lacked a number of supplies for use in treating and caring for patients with HIV such as gloves and razor blades in Mtubatuba sub-district of Umkhanyakude District. The traditional healers formed the Traditional Healers Project which then worked with AMREF in Mtubatuba. AMREF set up a VCT centre in the community which served as a link (and referral) between traditional healers and the health care delivery system. It successfully helped to create the link between traditional healers and primary health care system by training 80 traditional healers in HIV, TB, VCT, ART, HBC, STIs, PMTCT, Community IMCI, care of OVC, project and financial management, leadership, and ethics. In a follow up study a number of changes were recorded in the work of traditional healers. Traditional healers put up infrastructure such as toilets for safer waste disposal, building waiting shelters, shelves for drugs storage, they began using Oral rehydration therapy in the treatment of dehydration, practised nutrition gardening and counselled HIV and AIDS patients. In terms of referrals, 25 out of 30 healers interviewed mentioned that they referred patients for VCT for HIV to a local clinic or hospital for TB whilst 17 referred patients for HIV, nine for diarrhoea with others referring for different diseases. All traditional healers who were interviewed reported that they could identify symptoms and signs of HIV and were referring to primary health care and hospitals. Prior to project implementation none of the healers in the project had ever referred patients to primary health care centres and none could identify signs and symptoms of HIV. All were now using referral letters in referring patients. Each was referring at least one and at most 4 patients per month whilst two were referring over 800 per year. There was consensus among all health workers interviewed in the district that ART roll out had improved due to the implementation of the project. Health care workers perception of traditional healers changed from bad to fairly good and good. Overall about 2500 clients were referred for VCT between October 2007 and August 2008. [see report for qualitative findings].

The authors conducted an analysis of routine programme data on ANC and programme registers at 18 PMTCT pilot sites and interviewed health care workers and programme managers. The analysis was aimed at assessing the performance and uptake of PMTCT elements at the pilot sites. Results show a high uptake of VCT in Kwazulu Natal province which was attributed to the opt-out approach and the availability of lay counsellors. Provinces that recorded the highest number of VCT uptake employed or subcontracted lay counsellors through NGOs. Whilst those provinces (North West and Eastern Cape) which only relied on the service of the overstretched and busy nurses had few clients who were counselled and tested for HIV.

In Mpumalanga, Eastern Cape and Free State there were reports of shortages and interruption of test kit supplies and therefore reducing the uptake of VCT. The centralisation of the procurement system through national tendering system was to blame as provinces had little control of the procurement process. The uptake of nevirapine was 55% which was suboptimal. The health system could have enrolled more mothers for nevirapine if they had a plan for identifying mothers except by way of the stickers marking a mother’s HIV positive status which they latter removed as they realised that they were stigmatising mothers in labour ward. The tracking system was poor. Mothers disclose their status to the nurses during ANC but the labour ward was a different setting with different nurses who did not have any information regarding their status and some mothers considered their privacy and avoided telling different nurses in the labour ward. Some mothers administered nevirapine themselves and therefore were not captured in the records which were analysed.

The research showed that there were different training packages offered in the country regarding infant feeding priorities. The decision to formula feed mirrored a province’s training and priorities in infant feeding. KwaZulu Natal and Free State provinces whose health workers were trained in breast feeding practices recorded 60% mothers opting breastfeeding whilst Gauteng and Western Cape provinces in which staff were trained in formula feeding had a 80% formula feeding choice. Formula feeding supplies were also running out at the collection centres and nurses were not aware of what advice to give to mothers. In order to minimise loss of infants to follow up at 18months, national government policy of testing infants at 18 months was relaxed and infants were tested at 12 months
and were again followed up at 18 months if they tested positive. There were however low infant testing rates (10-78%).

Overall, there is need to strengthen health system infrastructure to enable privacy in HIV status disclosure. Also need for management capacity in running and improving PMTCT programme.


The paper analyses efforts taken to revive human resources for health and ART in particular in Malawi after GHIs injected funds in the country. In Malawi there is an extensive use of clinical officers, medical assistants and about 4500 community based health surveillance assistants (HSAs) as a rescue plan in the face of brain drain of health care workers such as doctors, pharmacists and nurses.

Clinical officers who receive 4 years training to do some surgery, diagnoses, treatment and anaesthesia are alone serving the rural areas. Medical assistants (2 years training) provide medical care in health centres and the OPD of district hospitals. Health assistants (HSAs) who receive 10 weeks training are engaged in conducting duties such as from health promotion activities to TB defaulter tracing. With support from DFID and Global Fund, Malawi set up a six year emergency human resources programme (EHRP) in 2004 valued at US$272m to boost staff level with the following aims:

1. Improving incentives for recruitment and retention of public sector based hospitals through a 52% salary top up for 11 professional and technical cadres and to recruit and re-engage staff.

2. Expanding domestic training capacity, that is, to double the number of nurses (30x2 registered nurses and between 300 and 500x3 enrolled nurses) and triple the number of doctors (20x3). It also aimed to use international volunteer doctors and nurse tutors as short term measures to fill critical posts while training locals.

4. Assisting the ministry of health in planning, management and development of human resources for health.

5. Establishing a monitoring and evaluation capacity.
With the implementation of the programme, the government now bonds nurses after training for a certain period. It also provided incentives for filling posts in rural and underserved areas. There was no outcry from other public servants to the increased salaries of the health care workers as was previously suspected. By July 2006 human resources in all disciplines had improved greatly in all categories of staff, for example 162 posts of physicians of the planned 433 were filled; 3416 nurses’ posts out of 8440 were filled. By last quarter of 2005, 591 inactive staff had been recruited. The medical school increased intake of doctors from 20 to 60 whilst trained health professionals increased annually from 400/year to over 1000/year. However, a recent evaluation of the programme showed many hurdles which include that rural and underserved areas still have problems as retention rates were not improved. In the 2005-6 only less than 8 medical graduates joined the MOH and several other junior doctors resigned. In districts, nurses were also leaving the hospitals. Retired nurses brought into the service had problems getting contracts while the promised 52% salary top up was taxed to the surprise of health workers who then got far less than they were promised. NGOs or research projects still paid better than government for scarce skills. They offer stipends in training and fieldwork activities which can increase monthly salary by 25-40% according to MSF.

The success of the ART: Despite the HS constraints mentioned above by end of 2006, there were about 60 000 people on the ART countrywide and planning to reach 245 000 by 2010. The successes were attributed to the following:

1. Rights based international advocacy movement
2. Earmarked funding for ART services from a range of donors
3. Support from international NGOs and research organisations to deliver ART services
4. Strong technical leadership and management within the ministry of health
5. A vertical management and delivery system which included the following:

   i. Dedicated training programmes for various cadres of health workers
   ii. A parallel independent system of financing, buying and distributing ARVs i.e. UNICEF buys the drugs from India, ships them to Copenhagen (Denmark) for packing according to individual clinic needs then ships them to Malawi for distribution to individual clinics.
   iii. A parallel (independent) information system to enable high quality monitoring and evaluation system
   iv. Quarterly supervision and support visits at all ART clinics
6. A low cost approach which includes using a single first line and second line regimen for all patients and providers using clinical staging (not CD4 count), fixed dose combination tablets and clinical signs only to monitor treatment and response.

In the private sector, patients pay 500MK (1$:140MK) in addition to consultation, of which MK300 will go to the government which provides those drugs for free. This is a cost saving measure for sustainability purposes on the part of the government. To register for ART, the private hospital should undergo training of workers, their attachment to already running sites and assessment of infrastructure. There are plans to task shift and decentralise ART to lay and professional nurses.


The study sought out to determine the effectiveness of the South African PMTCT programme. A total of 665 mother–infant pairs in which the mother was HIV-positive were recruited at three sites (Western Cape, KwaZulu Natal and Pretoria) and 588 were followed up at 3 or 4 weeks after birth to determine the infant HIV status. The PMTCT programme showed that the quality of counselling was related to the uptake of nevirapine. Better counselling was associated with a higher uptake of nevirapine (OR 1.55; P=0.008). Ten percent of the mothers who were given nevirapine according to the guidelines transmitted the virus to their infants compared to 13.4% (24) who were not given according to the guidelines (either too early or too late) whilst there was a transmission rate of 14.2% in the 113 who were not given nevirapine although the difference was not statistically significant. There were inadequate services for VCT in Rietvlei during the ANC attendances and most pregnant women only got an opportunity for VCT in the labour ward. With the national coverage of 43% VCT it means that there is need to scale it up (See Baron et al 2005 HST). The study showed that a substantial number of pregnant women attend health facilities and this can be a better opportunity to enrol those deserving for longer regimens that could end up in better uptake of VCT and nevirapine and adherence to treatment. Longer regimens which have greater efficiency can reduce early transmission to rates that are as low as 1.1%. It is therefore recommended to scale up PMTCT with ARV regimens which are efficacious.

The authors argue that the disparities in salary payments between the public sector and private sector does not mean that NGOs and private sector are bad and not contributing to health system strengthening since they do contribute to national health goals. Employees would not go back to the public sector if the NGOs release them; they will rather go overseas. They argue that it is better that these health professionals are employed by NGOs and private sector serving local health needs rather than going abroad where the nation would not access their invaluable contribution to HRH. “The creation of relative islands of excellence in seas of insufficiency” is not deliberate and the problem is not the island itself but the insufficiency that surrounds it. It is the public sector which does not pay adequately and it is a democratic right of an individual to choose where they want to work. Blaming NGOs and research institutions does not solve the problem of internal brain drain, rather, adequate remuneration can solve the problem as happened in Malawi when health care workers were brought back into the service after government started paying salary top ups. In fact, NGOs and private sector prevent international brain drain. NGOs can and do collaborate with the government as is seen in many countries to strengthen health systems, conduct operational research with government, advocate international health. They also possess powerful weapons of advocacy for health. However, they should also exist to respond to other health problems other than HIV in their countries of operation.

In support of parallel programmes, the authors argued that despite WHO’s emphasis on global health systems strengthening and integration of care the reality is that health systems consist of individual parts which in sum make a system. In this argument the authors support ART delivery in parallel programmes. They argue that waiting until all constraints to health systems in health care delivery are solved before rolling out ART (as argued by some proponents of horizontal approaches) would not yield, as many benefits would have been lost if that approach had been taken. Each component of the system, if improved, does help to improve the system of health delivery.


The South African Health Research Policy (2001) stressed the need for conducting health research to influence policy. It also paved way for the establishment of Provincial Research
Committees mandated to coordinate all health research in the province, manage priority setting in provincial health research and review preliminary and final research reports in the province. The authors set out to assess if the provincial health research committees were formed and were functional in each province by 2006 and by 2007. Interviews were held with committee members and or other members responsible for the establishment of the committee in each province. It was noted that a few provinces had managed to formulate them whilst others were still to formulate and begin working. Lack of resources was singled out as a limitation to this process. Other problems include lack of dedicated staff since the positions or work had no budgets allocated to them. In other provinces it was noted that reviewing of health research was conducted by academic institutions and not the provincial health research committees. North West and Eastern Cape managed to form the committees with good working relationships with academic institutions. All provinces mentioned lack of funding for the committees to function. All provinces highlighted the need to capacitate their members on research ethics for them to be able to review projects in their provinces although ethics review was regarded as not urgent business for the committees. The political atmosphere in the Western Cape was also reason for delaying implementing this policy as there was scepticism regarding the policy objectives and the provincial government and academic institutions had not forged working relations. There is need to give adequate time to the committees to fully function.


The study aimed at describing the validity of the IMCI/HIV algorithm when used by IMCI experts and the use of IMCI/HIV guidelines by IMCI trained health workers in routine clinical practice. Authors observed 77 workers at 74 facilities in two provinces. Also observed were consultations with 1357 sick children, each child was reassessed by IMCI expert to check correct findings. In 50 out of 74 facilities visited children were observed in private area as per guidelines (IMCI/HIV). Observed health workers were nurses with average 32.2 months experience after training in IMCI. Nineteen out of 77 nurses (24.7%) were trained in previous algorithms of which 8 out of 19 (42.1%) had received training on the updated version. The HIV component of IMCI is frequently not used by workers working in the programme in routine clinical practice. Health workers misclassified children leading to missed opportunities to include for ART. Lack of current training on updated algorithm is also to blame for these missed opportunities. Heath workers should be taught to understand that the algorithm only screens and does not to test for HIV and that those screened are send for testing and
most may test HIV negative and this should also be expected. The study shows that the PMTCT programme is not being implemented well, as children born to mothers who tested HIV positive had not been tested (despite being exposed to HIV). Many clinics were not testing for HIV in under fives. The study shows a higher rate of undiagnosed HIV in children in the PHC clinics with most having advanced disease.

3. HAVE HEALTH SECTOR HUMAN RESOURCES BEEN EXPANDED?

Patient satisfaction with antiretroviral services at primary health-care facilities in the Free State, South Africa – a two-year study using four waves of cross-sectional data Edwin Wouters, Christo Heunis, Dingie van Rensburg and Herman Meulemans. BMC Health Services Research 2008, 8:210 doi:10.1186/1472-6963-8-210

The study set out to describe patient satisfaction with ART services at 16 sites in Free State province. The study interviewed patients of 18 years and older who were on ART or ready to receive ART after certified by the doctor to assess if they were satisfied with the following services: medical care, complaint procedure, cleanliness of the facility, privacy during examinations, confidentiality of medical records respect shown by nurses, health information about HIV/AIDS, information provided by nurses on ARV medication, opportunity to ask questions, language used during consultations, facility opening hours, and waiting time before consultation. It was found out that patients were overall satisfied with the general services and nurses services they received at the hospitals. They were much less satisfied with the waiting times in 5 districts. At one site patients were highly satisfied over time and other sites it did not change (generally high) over time. Waiting times were the most important determinant of patient satisfaction. The study demonstrated a strong negative association ($r = -0.438, P < 0.001$) between nurse vacancy rates and mean satisfaction levels with ART services performed by nurses at baseline survey time as patients who were attending facilities with low professional nurse vacancy rates reported significantly higher satisfaction with nurses’ services than did those attending facilities with higher vacant nursing posts.


The authors analyse ways of building research capacity in the developing world. They argue that sub Saharan Africa operates on a background of very limited funding for health research capacity. In Sub Saharan African countries, health research is allocated less than 0.5% of national health budget with
health budgets being funded less than 1% of the GDP. UNESCO estimated that researcher: population ratio was 3: 10 000 in less developed countries compared to 1: 1000 for developed countries. They reviewed literature and proposed the following approaches for developing capacity in human resources for health:

1. Training of individual researchers and research users at masters, PhD and post doctoral levels. There are many fellowships offered by funding agencies eg.  Forgarty International, Welcome Trust, US NIH which help to build human capacity in research.

2. Learning by doing approaches are crucial for providing ongoing residential programmes as they effectively complement degree offerings. In India and Thailand such methodologies have successfully been applied. Such programmes help to train the apprentice by the mentor who is knowledgeable and who also learns in the process of supervising the apprentice which the authors described as co-learning.

Due to the fact that there is huge brain drain, the above two programmes which are individual based may alone prove unsuccessful to national goals. The approaches which relate to an institutional capacity building will work better in the face of brain drain. These approaches are described below.

3. Collaborations between developed and developing countries or south-south corporation e.g. for research and training in tropical diseases (WHO/TDR).

4. Creating centres of excellence in less developed countries to work with well funded global research programmes e.g. US NIH

Although training is acceptably good the big challenge is to create a research environment to maintain the interest of the researchers and those who use research results. A study that examined post doctoral experience in Pakistan revealed the problems facing the country as inadequate enabling environment, lack of competent leaders and funds for research and salaries and poor career structure. In Africa the problem is that of inequities in the research environment. African based researchers are said to over rely on developed countries for money, the problem of huge differences in salary scales between national and global entities, inadequate dissemination and uptake of research results.

The authors set to assess the implementation and performance of the IMCI/HIV integrated programme on sick children who were presenting at clinics. Focus group discussions were conducted with trained nurses who were involved in the IMCI programme and with mothers attending first level facilities. Nurses expressed negative attitudes towards routine checking of HIV status on children. They reported that it was unnecessary and unacceptable to mothers; they lacked the skills to implement the programme and feared adverse reactions from mothers if they wanted to or if they checked HIV issues. They especially felt it was unnecessary to check if the child had no signs of illnesses. Nurses reported that they felt that their training inadequately prepared them to conduct HIV checks, diagnosis and counselling. Some nurses who had not attended the two weeks course on HIV reported that they simply referred children to an HIV counsellor. However, some nurses who had some knowledge of conducting the checks reported that they checked the baby’s card for HIV information on the mother and child. Overall, health professionals lack skills to implement the HIV component of the IMCI. Nurses recommended more coverage of the information and counselling in IMCI training (e.g. information on diagnosis, signs and symptoms).


The school of public health of the University of the Western Cape offers quality public health education from certificate to master level education to students without disrupting learners from their work through a system called distance education. The school which used to recruit 100% South Africans as shown by 2000 statistics has however reduced to 68% the number of South African nationals or citizens in 2003 and to 33% in 2007. Currently foreign students dominate the pool of students.

Health Research Capacity Building in South Africa: Current knowledge and practices

The authors conducted a national review to identify interventions from which lessons can be drawn to influence and give support to the national health research committee in strengthening and implementing their policy for South Africa. The review was conducted by sending questionnaires to different health research institutions identified. The cores skills that the researchers found out as critical to the development and strengthening of research capacity include proposal writing, data collection, analysis, and report writing. Training occurs through formal postgraduate education, hands on practice in internship programmes and both formal and non-formal research education.

The main challenge to scaling up is lack of financial resources for research capacity building programmes. Other problems cited include brain drain of critical research skills, inadequate understanding of research and health system by academics, researchers and health officials at all levels. It was also highlighted that there was need to make nurses aware of the importance of research. Data collectors should also be knowledgeable of other research processes beyond just the collection of data which is the only known process by most data collectors. Research capacity in South Africa mainly focus on building capacity but not considering skills retention, motivation, and utilisation of skills and capacity. It was also recommended that after graduating from training courses, graduates should be given an opportunity to practice the skills they learnt and should be directly involved in the research process. Although efforts to strengthen networks in research were noted, there is need to strengthen such efforts in districts and communities.


The authors conducted ethnographical work at maternity hospitals in areas serving African Black, coloured and white population and held semi-structured interviews with pregnant women attending antenatal care clinics and also discussions with nurses at the hospitals in Western Cape province. Unprofessional work ethics such as violence against pregnant women (verbal, slapping, neglect) and women in labour were common. The health system which was characterised by shortages of supplies such as testing kits which only helped to demotivate health care workers (nurses) leading them to displaying negative attitudes and behaviours against pregnant women and women in labour. For example pregnant women had to wake up early morning (3am) to join a queue for ANC services at 4am only to be served from 730am for blood testing whose results would be taken outside the clinic for laboratory testing (830am) and results would be available at the end of the day. This led to some women not getting tested for HIV and other conditions. Scolding, beating,
humiliations, lack of privacy on one’s sexual life and illness, vulgar and sexual language, neglect, characterised nurses interaction with pregnant women and women in labour ward. Nurses were dissatisfied with bottlenecks in the health system such as lack of adequate machinery and technical devices to use, bureaucratic procedures, heavy workloads as well as their own personal educational part time work as they sought to get promotions. The study revealed a high magnitude of problems in the health system which translated in poor service delivery and client dissatisfaction with services offered.

THE RURAL ALLOWANCE STUDY

The South African Treasury allocated R500m for rural allowances in 2003. The programme was aimed at solving the problem of the maldistribution of health professionals between rural and urban areas in South Africa by injecting financial and non financial incentives to recruit and retain health professionals. Despite the Rural Recruitment Allowance having been instituted in South Africa in 1994, it failed to recruit and retain health staff. Community service for all health professionals has also failed to redistribute health staff to deserving rural areas. In order to assess the success of the Rural Allowance programme at its inception, Interviews were held with health professionals in rural hospitals before the inception of the programme and two months after the inception. It was shown that health workers changed their career plans for the year 2005 because of the inception of the programme. Despite the fact that it is too quick to judge the impact of the study, it showed that incentives can change health workers intentions to move. It was also not possible to determine the effect of confounding variables such as the introduction of the Scarce Skills Allowance. Generally, the study does not inform us whether the rural allowance worked or not.


This survey compared skills and competencies between hospital managers in public sector and private sector in South Africa. Questionnaires were mailed to all provinces and 215 public sector managers and 189 private sector managers responded. Three provinces did not respond and an overall 52% response rate was recorded. Hospital managers in the private sector reported higher managerial competency in a likert scale than public sector managers. A total of 55.3% public sector managers had medical/health related background while the majority in the private sector had a commerce/management or other (67.2%) background. More Public sector managers (74.8%) received formal training in health management than private sector managers (41.9%). Similar differences were observed in reception of informal health management training. Both categories of
managers perceived themselves as reasonably competent in all facets of management (means>3) whilst more public sector managers reported needing further management development training than private sector managers. In 6 out of 7 items in the questionnaire public sector managers felt less competent than private sector managers (p=0.009) in conducting their managerial business. The majority of government managers had less than five years of experience in current position compared to private sector managers in which the majority had more than 5 years of experience in current position.


A survey of 569 professional nurses across South Africa showed that private sector nurses were generally satisfied while public sector nurses were generally dissatisfied with pay, workload and resources available to them in the conduct of daily business. Overall professional nurses were marginally satisfied (mean 2.935).

BD/PEPFAR LAB-STRENGTHENING INITIATIVE MARKS PROGRESS IN FIGHT AGAINST HIV/AIDS AND TB IN SUB-SAHARAN AFRICA PEPFAR 2009 news release. CAPE TOWN (July 19, 2009

PEPFAR DB collaboration has made significant progress in improving the skills of laboratory personnel and laboratory conditions in the fight against HIV/AIDS, TB in Sub Sahara Africa. Their collaboration which is worth US$18m is implemented mainly through the Centres for Disease Control (CDC) of the USA. The programme involved a series of training programmes in Uganda, South Africa and Mozambique to strengthen the laboratory systems under the auspices of the 5 year programme to fortify health care systems in countries severely impacted by these two pandemics. In Uganda 94 health care workers were trained in a series of workshops and laboratory worker tests scores showed an improvement of 151%. Training was also offered in Global Positioning System/Global Information System technology to ensure laboratory specimens from remote areas promptly reach the laboratory for processing. The system is working well in Uganda; more than 200 samples have been referred through this innovative specimen management initiative. Twenty-two microbiologists from South Africa, Ethiopia, Ethiopia and Namibia, Nigeria were trained to improve their ability to detect and identify mycobacterium TB.

In this commentary, the authors argue that there is evidence to show that task delegation from doctors to non-physician clinicians including nurses, from nurses to nursing assistants or aides or non-professional or lay health care workers and patients can improve access, coverage and quality of healthcare services at a cost that is cheaper than or similar to traditional models of health care delivery. However, this requires greater government and political backing. There is need to change scopes of practices and regulatory frameworks, enhanced training infrastructure, etc into mainstream health system. Preconditions for successful task shifting include commitment and the need to be clear about levels and extent of participation. Without government leadership in ensuring an enabling regulatory environment and credentialing system, task shifting will be exposed to the changes in financial, leadership and policy fashions and become fragile and unsustainable.


The authors argue that the disparities in salary payments between the public sector and private sector does not mean that NGOs and private sector are bad and not contributing to health system strengthening since they do contribute to national health goals. Employees would not go back to the public sector if the NGOs release them; they will rather go overseas. They argue that it is better that these health professionals are employed by NGOs and private sector serving local health needs rather than going abroad where the nation would not access their invaluable contribution to HRH. “The creation of relative islands of excellence in seas of insufficiency” is not deliberate and the problem is not the island itself but the insufficiency that surrounds it. It is the public sector which does not pay adequately and it is a democratic right of an individual to choose where they want to work. Blaming NGOs and research institutions does not solve the problem of internal brain drain, rather, adequate remuneration can solve the problem as happened in Malawi when health care workers were brought back into the service after government started paying salary top ups. In fact, NGOs and private sector prevent international brain drain. NGOs can and do collaborate with the government as is seen in many countries to strengthen heath systems, conduct operational research with government, advocate international health. They also possess powerful weapons of advocacy for health. However, they should also exist to respond to other health problems other than HIV in their countries of operation.

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parallel programmes. They argue that waiting until all constraints to health systems in health care delivery are solved before rolling out ART (as argued by some proponents of horizontal approaches) would not yield, as many benefits would have been lost if that approach had been taken. Each component of the system, if improved, does help to improve the system of health delivery.

**Motivation and retention of health workers in developing countries: a systematic review.** Mischa Willis-Shattuck, Posy Bidwell, Steve Thomas, Laura Wyness, Duane Blaauw and Prudence Ditlopo

The authors conducted a systematic review of literature on motivation and retention of health workers in developing countries. They report that in order to advance the MDGs, African health systems need at least one million health workers to offer basic services needed to meet the MDGs. Seven themes were identified as motivational factors

1. Financial allowances and salaries which was reported in 18 out of 20 papers reviewed
2. Career development, that is the possibility to specialise which was reported in 17 out of 20 papers
3. Continuing education: the chance for one to further their education, seminars and training. This was reported in 16 out of 20 papers.
4. Hospital infrastructure which relates to the physical condition of the health facility or work environment out of twenty papers.
5. Resource availability - equipment, medical supplies as inputs for good performance of their duties which was reported in 15 out of 20 papers reviewed.
6. Hospital management (16/20 papers)
7. Personal recognition and appreciation - (14/20 papers)
8. Fringe benefits

In South Africa rural allowances were found to have little effect on retaining workers (see Reid 2004 HST). In Cameroon and Zimbabwe financial incentives were perceived as unequally distributed between health care workers. In South Africa, nurses with children under 18 years and in the ages from 30-49 years were more likely to be considering going overseas compared to the younger and older nurses.

Authors describe opportunities for strengthening capacity that can be implemented in Africa. The Initiative to Strengthen Health Research Capacity in Africa (ISHReCA) identified 9 crucial requirements to strengthen health research capacity in Africa. These are grouped into three categories as follows:

**Improve the research environment by:**
1. Ensuring an enabling legal framework
2. Raising the profile of science and health research

**Support individuals by:**
3. Promoting school and college services education
4. Creating career pathways, developing critical mass and recruiting and retaining talented scientists
5. Supporting senior scientists to act as research leaders and role models

**Support institutions by:**
6. Developing competitive grant and fellowship schemes administered by the African institutes
7. Providing institutional support for infrastructure management, technical services and strategic development planning
8. Promoting networks and partnerships especially between African institutions
9. Using funding mechanisms as drivers of change at African institutions

The current African researchers are ageing and there is need to identify younger talented ones who can take over. This can be done through secondary school science education and the training of teachers in science.

Lack of a career path to attract and retain science researchers is a set back to health research. Authors recommend opening up and starting attractive research focussed career pathways within key institutions in Africa to address this problem. More opportunities for PhD and post PhD education should be encouraged and established in Africa and competitive individuals should be
encouraged to go beyond the PhD. Such a strategy will need incentives for success through research funds, travel grants, salaries and career posts. African institutions often lack the recruitment of women and empowerment of junior scientists in capacity building programmes. Makerere University has a well funded junior clinical scholarship positions programme that attracts, monitors and retains junior researchers whilst in many African institutions junior researchers develop their careers on their own.


The South Africa Institute of Race Relations says the public sector had only 7645 doctors of the 30 000 registered that is 0.7 doctors per 1000 population between 1994 and 2004. A national programme of community service program has contributed to a decrease in 3800 migration of new graduates who could have migrated out of the country but were deployed in the rural areas.


[Introduction: The comprehensive plan intends to provide ART to more than one million of the 5.7 million HIV patients. The Plan’s central aim was to “strengthen the national health system overall” in terms of absolute numbers and relative to the population. South Africa has fewer numbers of health care staff that it had a decade ago. Therefore other means of dealing with shortage in the context of an additional burden of HIV and ART have to be applied such as use of lay and mid level workers to relieve pressure on the professionals –task shifting and task delegation.]

The paper assesses the resource mobilisation for ART programme (2004) in Free State after the introduction of ART. It evaluates the goal of strengthening HR capacity through establishment of extra posts, appointment of extra personnel and the enhanced training of staff. The authors assessed the impact and dynamics of the introduction of ART in Free State province on health care workers at ART facilities and outside. Data were collected by auditing professional nurse posts created and filled after the ART programme started in the first 38 sites for ART in 3 districts in Free State province, facility survey for two years and reviewing government database for human resources for health. It was found that nearly 80% nurses posts for ART were filled by transfers from other programmes within the facility or other clinics in the district. Between 2004 and 2006 nurse
recruitment did not meet need, HIV prevention and demand for care led to uneven nurse-patient ratio and workloads in the province. In 2003 only 59.3% (7176) posts of health professionals in Free State province were filled. By mid 2006, professional nurse vacancy rates in ART had gone down to half (15.8%) that of the PHC system as a whole (37.1%). By November 2006 85% of the 115 professional nurse ART posts were filled. The political support the ART program enjoyed made it possible to attract nurses. In 2005 all professional nurse posts were promoted to senior level and also received better remuneration packages. 20.6% new appointments came from outside the province and 43.2% moved from a neighbouring (non ART) facility in the same district to the ART providing facility. A quarter of the new recruits came from another division (intra facility mobility). 37 out of 40 nurses had received training before the ART programme roll out.

Task shifting: Due to shortage of doctors a nurse initiated and monitored model of ART at PHC facilities (indirect substitution) was pursued. The strong reliance of ART on pharmaceutical services called for shifting pharmacist tasks to nurses who were generally available. Regarding other staff, administration clerk posts were filled quickly leaving a vacancy rate of 7% (of the 78 posts that were created). Most of the lay professionals (85%) who were assisting nurses received training by second follow up. The lay professionals ended up assisting patients with drug readiness for ART, once a responsibility of professional nurses only. Lay counsellors were lured into the ART programme by the stipends which amounted to a double remuneration previously received.

From 2004 to 2006 a total of 1393 health care workers were trained in ART. The brain drain (in the primary health system and in general) to ART could generally weaken the health system in the country. Rural areas which were already underserved were the most affected by this internal brain drain. Compulsory community service starting in 2008 to professional nurses upon finishing their training will mean 2000 nurses will be deployed yearly to under resourced sites. This also helps to cope with ART demands. The vertical ART programme is rigid as it calls for national accreditation before a site can dispense ART. A centralised ARV dispensary in Free State alleviates professional nurses of dispensing workload as patients from rural clinics may get drugs from this outlet. It also helps to counter shortage of pharmacists.

4. HAS THE HEALTH INFORMATION SYSTEM BEEN STRENGTHENED?

The authors conducted a study to assess data accuracy and completeness for 6 elements of PMTCT in 2007 from all 316 clinics and hospitals in 3 districts in KwaZulu Natal province. Visits were done to selected clinics to assess the same. Data were reviewed for completeness and health workers were interviewed about the data they compile and send. Completeness was measured by assessing if all 12 months were reported on each data item. It was noted that data elements only recorded 50% of the time and were accurate in only 12.8% of the time. The most accurate data was that which shows “ANC clients tested for HIV” (19.8%) whilst the least accurate was “HIV PCR testing of baby born to HIV mother” (5.3%). It was noted that clinics report more complete data than hospitals. The study shows that there are major defects in the completeness and accuracy of data in the District Health Information System. There was highly inaccurate data transfer from clinic registers to monthly summary sheets. There was infrequent data transfer by clinics for capture in the DHIS.


The increase in demand for information to make decisions and make policy means that data should be accurate. The study sought to evaluate the District Health Information System in a rural district in South Africa. Available routine data were analysed and interviews were held with health workers. Findings show that there was a highly perceived work burden linked to collection and collation with some data collation tools not being used appropriately. Generally, there was good collection and collation process but there was less data interpretation, analysis and use. 2.5% data were missing, 25% outside expected ranges with no explanation given. Duplication of data collected on chronic patients, (TB, HIV) PMTCT and immunisation was noted. The format of data differed with clinics, tally sheets were poorly used. The burdensome and differences in data could be attributed to the fact that data were collected for national offices and well as for district use with different formats. There was no computerisation and electronic submission of data making the process laborious and costly. There were very limited validation checks for completeness or accuracy of data and there was no discussion of data in staff meetings. As part of the research the research team presented the data to the health care workers who were involved in collecting and collating information. However, no clinic staffs were able to calculate the indicators presented whilst most were able to interpret
graphs. Although the clinics had targets that they had set, they did not use the data to monitor these targets and align their performance to meeting these targets. Clinics do not receive any feedback on data from the district offices and this means that there was no information of the clinic’s performance in relation to other clinics or national targets. Generally, there is a severe shortage of health informatics knowledge and there is a culture of reporting but not of using the information.


The paper is a report on how the South African District Health Information System (DHIS) evolved from a district’s efforts to drop a primary health care essential data set through removing some unnecessary information. The vision of the South African DHIS is “to support the development of an excellent and sustainable health information system that enables all health workers to use their own information to improve coverage and quality of care within our communities.” An essential data set is a set of the most important data elements, selected from all PHC vertical programmes that shall be reported by health service providers routinely to generate indicators for monitoring the provision of services in an integrated manner. Two key principles of the creation of an essential data set are: (1) limiting indicators to between 100-150 data elements for primary health care and hospital services and enabling the calculation of 80-120 indicators; (2) integrating the reporting requirements of various programme managers so that their needs are included in a set of essential data elements and indicators.

What prompted the need for an essential data set was the finding that in one rural district in the province in Eastern Cape, the district information seemed inappropriate for the management of essential health services. Data were submitted routinely (quarterly) to the national office from which no feedback was received. Although data requirements were spelt out long back, no revisions to accommodate the changing nature of health had been considered all along. Health workers removed some data elements that were agreed to be unessential to the management of the health services and were left out with 70 elements which were used to calculate 75 indicators essential for monitoring quality service delivery. With the experience from one district other districts imitated and later other provinces until. In June 2002 a national workshop adapted an essential data set for the country’s district health information system. It is important to note that this process was a bottom-up approach that was successful through decentralisation of decision making powers in the health care delivery system.
5. HAS HEALTH FINANCING BEEN IMPROVED?


The author offers an analysis of health care reform and response to HIV in the first decade of self rule in South Arica. The redistribution of resources saw a reduction of funds in tertiary hospitals and an increase in primary health care clinics and other areas. He lists major challenges that face the health care system as lack of human resources, finance and poor administration. Despite the expansion of access to health care, within a district based system of primary health care, nationalisation of health laboratory services, greater regulation of health care workers compensation for occupation injuries, there still remain huge disparities in access to health care. There was a shift from racial discrimination to discrimination based on class as most best health services could be accessed by the economically advantaged in the private sector where most doctors are serving. National budgeting has shifted more budgeting from wealthier (Western Cape and Gauteng provinces) to poorer provinces (Eastern Cape and KwazuluNatal provinces) which led to more suffering among the poor and uninsured citizens owing to the reduced budgets in these wealthier provinces. Despite the increase in population by 8% in the Western Cape province between 1995 and 2000, the reduction of the budget (from 14.3% of total national budget in 1995-1996 fiscal year to 12% in 2003-2004) resulted in a reduction of 3601 beds (24.4%) and by 9282 health and support personnel (27.9%) in the public sector. In terms of health care in the hospitals significant reductions in patient satisfaction and increasing bottlenecks in health care delivery were recorded. For example, the waiting time for women who needed a breast cancer surgery increased from 2 weeks to 8 weeks, full time staff at the Groot Schuur in Cape Town reduced from 43 in 1990 to 27 in 2003; in 2007 elective surgery was suspended for 6 months at Wits University’s major academic hospitals in Gauteng.

The denial of the link between HIV and AIDS by the government (1994-2004) is to blame for the accelerating effects of AIDS on the population and the health system which also took time to respond to the problem. Initial treatment was ineffective, PMTCT had been badly ineffective. The author listed the current bottlenecks in scaling up HIV treatment as inadequate healthcare infrastructure, resistance to adopting bottle-feeding, potential adverse effects of ART in poor and vulnerable population, fear of not meeting constitutional requirements for equity, and concern about promoting drug resistance.
The Treatment Action Campaign’s civic engagement with the government and the Constitutional Court’s judgement which called the government to roll out PMTCT and ART are commendable. It shows the power of civil society in holding the government responsible for the health of the people. The government is commendable for its recent budget of US$1.7b or ART for five years and between US$2.4 and US$3bn is required by 2010. The fact that VCT is not accessible in 56% of health facilities and condoms in 87% of health facilities shows that there is still a lot of work to be done in the health systems. In order to strengthen health systems, there is need to inject more funds in the health system which could only come from GHIs since other alternatives such as borrowing from the IMF; reallocation of budget from other departments such as the military or increasing personal and corporate tax seem impossible.


The author offers an anthropological analysis of five chronically ill patients residing in the Cape Flats area who died due to health system bottlenecks in Western Cape province following the restructuring and redistribution of financial budgets in post-apartheid South Africa. The author interviewed patients, their relatives who cared for them, and hospital workers (doctors, nurses, laboratory technicians and hospital managers). The health systems in the independent South Africa posed great problems to the chronically ill people due to problems in the health system such as the red tape, queues, paper work, and lack of adequate health infrastructure. Four of the five patients died while negotiating their way or waiting to access health care. The deaths were due to gaps in structural, technical, financial and staff inadequacies. These deaths, which resulted from modifiable health system bottlenecks, could have been avoided. The reduction of budgetary allocations to the Western Cape through the medium term Expenditure framework (MTEF) which determined levels of funding to provinces was also to blame for the suffering faced by people as they try to access health care. Health care workers at the clinics were overwhelmed with work including treatment and paperwork and they could not deliver the best health care to the patients as required. Due to a
stressed ambulance service in the hospitals, relatives had to resort to transporting their chronically ill relatives by wheelbarrows or if they can afford, hire some private cars although some with no options could only queue up and wait for the unpredictable ambulance. Budgetary cuts crippled secondary hospitals and this led to problems accessing basic and other technologies such as ECGs.


In this commentary, the authors analyse South Africa’s preparedness to implement global aid money in addressing HIV and AIDS problem especially in KwaZulu Natal with experiences in Zambia and Tanzania. In the last decade, South Africa experienced an influx of HIV support which the health systems was not prepared for which led to collisions between NGOs and the government. For example, in KZN the Global Fund allocated some funds to the districts without the knowledge and approval of the latter. This could be described as a clash between decentralisation and centralisation of health care approaches to delivery. Doward and Venstra reported that district health managers did not know which nongovernmental organisations were operating in their geographical spheres and performing what activities in the HIV and AIDS programmes. This happened when South Africa was still learning to manage donor support. Such confusion and chaos led to the introduction of the National Health Act in 2003 which specified the functions an roles of the National Department of Health’s provinces and districts in managing district health services. The authors report that their action research assisted to improve relations between government and the NGOs in the country such as the Treatment Action Group which was viewed with great suspicion and was marked as an enemy of the government yet they were helping the government. Their comparative research did this by explaining to the government that South Africa was not the only country that was facing the problem as other southern African countries were having the same problem of beginning to work with NGOs and strengthening their health system.

**Castro-Leal et al 2000 Bull WHO 78 (1)**

An analysis of public health spending on health care in Africa shows that resources meant for the poor do not really benefit the poor but the rich community. The greater percentage of rich people compared to the poor often define themselves as ill and receive treatment at primary health care
and district hospitals in Cote d’Ivoire, Ghana, Guinea, Madagascar, South Africa, Tanzania. Of all the people who consult the traditional healers, most of them are the poor.

GOVERNANCE AND LEADERSHIP


The emergency workforce planning in South Africa to correct the out migration of HRH from South Africa using the WHO HRH toolkit saw a reduction in migration of new graduates, 3800 of whom had been deployed to rural areas. The community service managed to keep rural areas served by health students before they can be registered by the medical professions councils (Medical and Dental board of South Africa and the South African Nursing). At first the policy was unpopular. [ADD MORE INFORMATION ON South African government role in AIDS issues]

OTHER DATA


This paper is a report on a nevirapine (NVP)-based perinatal HIV prevention program initiated in Lusaka, Zambia in November 2001 with USD221000 (for supplies, salaries, training, incidentals) although some supplies such as the HIV test rapid kits were donated free of charge. The first 12 months of the programme saw 178 district health employees being trained (midwives were trained for 10 weeks) in voluntary counselling and testing. A total of 17 263 pregnant women received group short talk (on pregnancy, HIV prevalence in women, risk of transmission to baby) and counselling for HIV whilst 12 438 (72%) were tested, and of these 2924 (24%) tested positive to HIV. A total of 1654 (57%) mothers and 1157 (40%) babies enrolled for NVP. An estimated 190 infants have been spared of HIV infection in this
A number of health legislation and policies took effect in the post apartheid era. The National Health Act (Act 61 of 2003) redefined the training of health workers, who were traditionally trained in tertiary hospitals, to include training in primary care facilities and communities. The National Human Resources Plan which was finalised in 2006 repeats the need for a strong focus on training and continuing the development of human resources in South Africa. Other policy initiatives in the post apartheid era include a new Nursing Act (Act 33 of 2005), which reviews the South African Nursing Council and gave birth to community service for nurses. The period has also seen the development of new qualifications under the South African Qualifications Authority, the introduction of community service which sought to improve the provision of health services to all citizens and to provide an opportunity to develop skills in young professionals. There has been the introduction of rural and scarce skills allowances to attract and retain health workers in rural and underserved areas. The National Community Health Worker Policy Framework (NCHWPF) was introduced to cater for the availability of generalist CHWs who are attached to primary care facilities throughout the country. An Occupation Specific Dispensation for nurses was introduced in March 2008 to provide for a new wage structure for nurses. The introduction of clinical associates has also been agreed to, and the first 24 clinical associates are presently being trained at the Walter Sisulu University, in Umtata. The author argues that despite a much better health worker: patient ratio that South Africa enjoys relative to most African countries, the internal...
disparities [public-private, urban rural and urban based provinces (such as Western Cape) - rural provinces (such as Limpopo) differences] are still highly pronounced. There has been a dramatic decrease in the national average ratio of professional nurse: patient from the 1990s to the 2000s, that is from 251 to 110.4 per 100 000 population showing a decrease of over 50%. Most of the policies above are still in their early stages of implementation and therefore it is too early to judge their impact on health care delivery.

**Availability, equity and distribution of health personnel:** Since 2001 there has been an improvement in vacancy rates in the country although a third is still to be filled with some provinces such as Mpumalanga having as high as 42.5% vacancy rates. The distribution of community service doctors has improved the numbers and service delivery in the country since its inception in 2006 until 2007. Due to the fact that the internship course was extended for two years the figures dropped in 2008. Almost 2000 nurses are in community service countrywide, mainly in Gauteng, Western Cape and Eastern Cape. A worrying fact in the demographics of registered nurses in the service is that only 3% is under 30 years of age while 40% will be expected to retire in the next 5 to 10 years. Both enrolled and auxiliary nurses follow the same trend with registered nurses. In total nearly 70 000 nurses (more than a third of the entire nursing population) will retire in the next 5-10 years.

**Training and support:** Primary health care in South Africa is almost entirely served by nurses and most clinics are run by nurses with support from clerical and general and community health workers. The country needs at least 3000-a-year production rate for nurses to adequately cater for the health needs in south Africa at the current rate of brain drain, retirement, death and disease. The doctors’ increase rate is slow and may fall short of the projected 2400 per year in the National Human Resources Plan for Health Plan in 2014. In 1994 medical students were 1000 nationally and by 2005, they were only about 1400 (see graph).

**Appropriate skills for Primary Health Care:** Graduates in community service: community service doctors report that they work in isolation without seniors to guide them and that their training in the tertiary hospital does not fully prepare them to work in rural clinics.
**Introduction of new cadres:** South Africa has midlevel nurses (enrolled nurses and enrolled nursing assistants) and pharmacy workers which have been used for many years in the health field. Other than nursing, the first profession to introduce this level was pharmacy. Medical middle level workers called clinical associates are being trained at Walter Sisulu University although their positioning in the medical field still needs to be discussed. With regards to community health workers, there have been contestations and they have remained at the sidelines of the health care system as in many countries. Since the mid-1970s there have been community health workers managed by NGOs working in water and sanitation related issues and community development. With the growing need for human resources for health due to HIV in the 2000s the Department of Health moved towards the introduction of the community health workers but managers in provinces and districts are not regularising and regulating their use leaving the NGOs to train and engage them for a stipend. They are estimated at many tens of thousands. Their challenges include that some are not trained, do not know if they are employed or volunteers and the system is insufficiently established and integrated. “An evaluation of practices and regulation of the sector is clearly urgent given its size and importance for community and primary care”p186.

The author finally recommends increasing the numbers of students in training hospitals and colleges develop skills and reorient curricula towards meetings primary health care goals, task shifting from doctors to nurses and from nurses to CHWs, accelerating and standardising mid level workers and CHWs.

**Tanner, M. Strengthening District Health Systems.** Bull WHO 2005. 83 (6) 403-404

The author comments on the results from a demonstration project in Tanzania show some successes in scaling up progress with GHI funding in a project named Tanzania Essential Health Interventions Project. Two large districts in Tanzania in 1997 sought how to efficiently use limited resources in view of the forthcoming policies on sector wide approaches to decentralize district funding. In 5 years the project managed to improve the mix and quality of primary health care services, increase coverage and use of services and reduce infant mortality of under fives 40%. This was made successful by donor funds and use of a tool kit with ten tools and strategies at various elements of the health system. Success was also attributed to the decentralization of services to the district level by firstly
strengthening their capacity in management and administrative skills; finances were also managed at a district level. Services delivery was ensured by setting priority goals through the use of a tool kit that integrated health informatics (sentinel household surveillance systems) into health information systems. The project was a success also because there was local ownership of the process and control of resources by the community. It was also learnt that system gains are not quick fixes as there is need for longer periods for incremental change.


In this paper, the authors argue that despite the development of good policy documents, the Department of Health continues to support and sustain an overwhelmingly medical/clinical model of health service delivery which primarily uses doctors and nurses. They note that the health system has been hampered by the inadequate numbers of health workers, inequitable distribution of health workers, both private and public, rural and urban and an increasing burden of disease. Government will need to consider task shifting and see how it can be done to respond to the country’s needs. It has to properly recognize the existing and new cadres of health, to redefine the scope of practice for new and existing cadres. They should avoid duplication of roles and should also consider revising the training curriculum of health professionals (old and new) and to initiate an effective mechanism to ensure retention of health professionals in the public sector. There is need for the government to urgently consider how community health workers can be used more effectively to help in delivering services at the community level.

Although it is known that health human resources in South Africa are inadequate and affected by distribution imbalances, there is a dearth of information on human resources with respect to distribution in the provinces such as rural urban although there is data on provincial totals. It is also difficult to get information according to level of care and sector. There are wide
differences between the numbers of health professionals registered with the Health Professions Council of South Africa and the numbers of professionals who are actually practising in the country’s public sector. Of the 34687 medical practitioners registered with the Health Professions Council of South Africa, only 10653 are working in the public sector. In the Western Cape in particular, of the 7396 registered with the HPCSA, only 1418 are practising in the public sector while out of the registered 1714 in Western Cape, only 609 are working in the public sector. The difference is accounted for by the fact that many are practicing abroad, in the private sector or are working in non-clinical positions such as in research and academic institutions.

The WHO suggested a minimum of 200 nurses per 100 000 people (Solidarity Research Institute, May 2009). The WHO also suggests that countries with less than 230 health providers (physicians, nurses, midwives) per 100 000 were likely to fail to meet the health MDGs. Based on this statistic and the population of South Africa of 48,7m the country should then have a total of 97400 nurses. The South Africa Health Review of 2008 estimated that South Africa has a total of 178404 nurses (professional, enrolled and assistant nurses.) thereby implying that South Africa is above the minimum stipulated by the WHO. The country has 104 571 nurses working in the public sector (where 85% of the population access health services) as shown in the personnel salary administrative system. However, this is an overestimate because nurses are often registered but they are not employed and some will be off sick considering the HIV prevalence of 15.7% in the health workforce. The greatest problem is therefore maldistribution of health workforce across and within provinces, rural and urban, sectors. Lehmann (2008) suggested that 40% of registered nurses will retire in the next 5-10 years. The country has experienced a dramatic decrease in the number of nurses since 1994. There was an average of 251 nurses per 100000 in 1994 and this went down to 110.4/100000 in 2007 (Lehmann 2008). In order to maintain the current level of health workforce, South Africa needs to scale up the production of all categories of nurses.

The aim of the study is to undertake a national assessment of existing district management structures, competencies and current training programmes in order to inform a national strategy and plan to strengthen district management capacity to ensure effective delivery of primary health care in South Africa. Information on managers and district management structures within the South African health system is limited and this has prevented and inhibited managerial workforce planning monitoring and development. Last formal national evaluation of health management training was undertaken almost a decade ago and reported in the 1998 South Africa Health Review. Key competencies required by district managers were subsequently defined by the national department of health in 2002. Limited use of competencies as a framework for developing training course content and with the proliferation of courses to health managers there is concern about both quality and content of many of the courses.

Human resources delegations: In the Eastern cape district managers can approve appointments up to level 12. Centralized management of posts using consultants proved a failure. In the Free state district managers can neither advertise posts nor appoint staff. In Gauteng province, acting district managers were unable to approve appointments resulting in administrative delays and sometimes loss of good applicants.


Like many countries in southern Africa Zambia faces a huge burden of and has inadequate human resources for health. It receives significant amounts of funding from the GHIs for ART through both public and private sectors. Results of their study show that GHIs do not provide additional resources for human resources. GHIs successfully retrain a large number of health workers. Evidence suggests that they successfully deplete the pool of skilled human
resources by recruiting them into their private sector programmes. Due to attrition there is rapid turnover of staff, high staff absenteeism and unequal distribution of staff between rural and urban areas. There is great need for laboratory technicians, followed by pharmacists, doctors, nurses and data monitors.

Zambia has a remarkable success in scaling up access to ART in the public sector. The Human Resources Strategy in 2005 introduced by the government sought to address the shortfalls in human resources. At the time this research was conducted the only targeted human resources programme that was receiving support was rural retention programme which was funded by PEPFAR. It included an incentive to attract doctors into rural areas including better housing, a car and a cash allowance. Zambia receives most of the GHI funding from Global Fund, PEPFAR and MAP. In 2006, PEPFAR money alone made up 63% of all funding for HIV in Zambia. Much of the funding supporting public sector programmes is channelled through NGOs or the private institutions and not directly to the government, and this makes it difficult to map the flow of funding provided by individual GHIs in the country. A recent study suggested that less than 5% of PEPFAR funds were channelled through the government. Data on actual expenditure to recipients at the country level is not easy to get since PEPFAR and the World Bank MAP do not publicly share this information.

While GHIs do not provide direct financial support to human resources, they contribute to human resources strengthening through training of health care workers and volunteers in all aspects required to support the treatment programme. They also provide allowances such as salary top ups or payment of expenses especially for volunteer counsellors or treatment support to workers.

**Impact of salary top ups**: top ups are either overtime payment for shift work in the ART clinic or transport costs for meetings for those working for PEPFAR funded health programmes. These incentives go a long way motivating public health workers to work in the
art clinic. An official in the ministry of health observed that malaria TB and HIV had taken 90% of time and most of the budgetary money to the extent that non communicable diseases are being neglected. Provision of short term incentives such as top ups may also have implications for sustainability, including quality of care in the longer term. Provision of top ups may also have negative implications for sustainability in the long run. In one study it was found out that only 7% of non-HIV staff had received top ups, this raising questions in the disparities in payments in the health workforce.

Training and mentoring of health care worker for ART provision in Zambia: health workers are attracted by the training and per diems to work in the ART programmes and this adds to the potentially distorting effects of top ups. The courses which are usually intensive take workers away from their clinical work and this causes further strain to the day to day running of the ART program. Lack of staff adds to the already strained sector risking the burn out and ultimately contributing to making programme efforts less sustainable.


Scaling up refers to systematically expanding the coverage of priority health interventions as a strategy to improve health outcomes. It may refer to scaling up resources needed to deliver care or scaling up the performance of health services. The later improves equity of access, effectiveness and efficiency of services, responsiveness of services and the protection offered to users against the impoverishing effects of ill health. Scaling up resources needed means strengthening health information systems, upgrading the number and competencies and health workers, augmenting the number and competencies of health workers. Augmenting the number of providers amounts to scaling up the stock of HRH which can be accomplished by improving retention, integrating unemployed and retired personnel, recruiting from other countries and creating a mix of cadres. Sub-Saharan Africa with 11% of the world’s population and 24% of global health burden of disease has only 3% of the world’s human resources commanding less than 1% of world’s expenditure (WHO 2006). With the increasing availability of ART due to drug price drop, human resources shortages began to be
increasingly felt much more than before. Strategies to increase the shortage of health workforce include producing increased numbers, improving retention rates, harnessing unemployed, inactive or retired health workers and importing health workers.

**Augmenting production of new worker:** increasing high classes is one method as was done in Tanzania, Swaziland and the Philippines. This can be done by ensuring that the private sector is optimally harnessed for the training of health workers through providing subsidies for existing institutions or through creating incentives for opening new ones, creating networks of distance learning, intensifying and shortening learning, facilitating the registration process with professional bodies after qualifying to avoid delays. However, scaling up production in schools requires additional capacity in form of infrastructure, learning materials and qualified trainers more workers. It does not also necessarily address issues of skills mix, geographical imbalances, retention or poor performance. Many countries fail to enforce bonding schemes. Thailand successfully runs a bonding programme in which two thirds of graduates continue rural placements after compulsory training.

**Incentives:** nonfinancial incentives such as involving health staff in decision making and management processes can be beneficial as far as incentivising workers is concerned. In Swaziland, salaries which were increased by 60% helped to retain some nurses and physicians in the public sector and also helped to attract some more staff.

Importing health workers is not common in developing countries. Swaziland however used GHI funds to employ nurses from other African countries. In Malawi agencies such as the German organization CIM recruit volunteer medical specialists and nurse tutors to fill critical gaps until more Malawians are trained. This strategy has problems such as communication difficulties and retention problems. Scaling up health workforce needs to be closely aligned with support for pension of other key resources. In Swaziland, challenging working conditions such as excessive workloads, lack of drugs, essential material and equipment, poor
infrastructure were main sources of dissatisfaction among health staff ahead of salary and remuneration concerns.

**Extension and role of nurses or midwives to tasks traditionally performed only by physicians**: In Ghana and Zambia trained nurses provide anaesthesia for surgical operations. A life saving skills training project trained midwives in rural areas to carry out delivery related tasks that were previously done by physicians.

**Direct substitution of an existing profession by a new cadre is another dimension**: cadres undertaking general medical care which range from diagnosing to advanced surgical procedures like caesarean sections. In Mozambique surgical technicians were introduced in 1984 during the war when many surgical specialists emigrated from the country. **Intra medical skills delegation** whereby some tasks traditionally performed by specialists are delegated to general practitioners as happened in West Africa postgraduate medical college.


(See framework of analysis diagrams)

The paper gives a summary of the South African health care system, its accomplishments and shortcomings from 1994 to 2009. The health care system’s successes were recognized as both in health policies and health delivery as follows:

**Legislation and gazetted policies**

3. Choice on termination of pregnancy, 1996
5. Community service for graduating health professionals

**Better health systems management**

6. Greater parity in district expenditure
7. Clinic expansion and improvement
8. Hospital revitalization programme
9. Improved immunization programme
10. Improved malaria control

The author listed ten challenges and shortcomings as relating to **insufficient control and prevention of epidemics**, which include limited effort to curtail HIV/AIDS, emergence of MDR-TB and XDR-TB, lack of attention to the epidemic of alcohol abuse. Secondly, the **persistently skewed allocation of resources between public & private sectors which include**, inequitable spending patterns compared to health needs and insufficient health professionals in the public sector. Lastly, the country has **Weaknesses in health systems management which include**: poor quality of care in key programmes; operational ineffectiveness; insufficient delegation of authorities; persistently low health worker morale; insufficient leadership and innovation.

The paper notes that the establishment of the district based system was a huge milestone in the post 1994 health care delivery in that it ensured resource distribution more equitably while responding to local health problems. In retrospect, its success has been constrained by the inability to decentralize authority fully, and by the erosion of efficiencies through lack of leadership and low staff morale. “Retooling district health management to improve local service delivery would seem to be an example of a ‘breakthrough strategy’ that could be fairly easily accomplished”p2. As a way of reducing mortality in South Africa there is need to introduce a heavily equipped high impact prevention programme at a macro scale. The incidence can be halved within five years if the existing programmes are fully scaled up.
However, the management of HIV and AIDS programmes should not be done at the expense of the other chronic problems such as TB and alcohol abuse.

The primary health care was made free to pregnant women and under 6 children on 24 May 1994 and free of access to health in public health facilities was later declared to all users on April 1 2006. It is estimated that a 10% real increase in the price of cigarettes in South Africa resulted in a drop in demand of 6-8% (Peer et al 2009). The introduction of a one year community service for newly graduating health workers has improved the availability of health staff in the public sector.

Regarding the shortcomings, HIV mortality will continue soaring in the country. Even with ART the number of deaths from AIDS will continue to exceed 300 000 per year for the next 5-10 years because ARVs help to prolong life for a period of time. It was observed from a cost effectiveness study in Khayelitsha that ART may be considered cost effective if South Africa is prepared to pay R10 400 for each life years gained (Cleary et al 2006). Given that the Commission of Macroeconomics and Health proposed that health is very cost effective if it costs less than per capita GDP and South Africa’s GDP is R47000, therefore it can be cost effective to implement ART in South Africa.

McPake notes that South Africa has about 5.3 health workers (doctors, nurses and midwives) per 1000 population and have an HIV burden of about 18%. The country needs about 0.4% of human resources for health requirements for full population coverage with ART according to Smith (2005). A Lancet editorial (2004; 364) noted that the 10/90 gap reminds us of the research infrastructure that are needed for capacity building and strengthening which are an investigator and an institution that has appropriate facilities that support research work; and good policies which facilitate research and implementation of research results and recommendations. To achieve more with limited or current resources, greater political will is needed. The editorial comments that this lack of political will and leadership was witnessed in South Africa in the first decade of SA’s independence, a time when HIV and AIDS were claiming huge numbers of people due to lack of treatment for those
infected. The government discredited the work of the Medical Research Council on the impact of HIV and AIDS on adult mortality.

Another Lancet Editorial (364; 2004 1555-56) noted that in order to meet the health MDGs the role of the health systems strengthening is critical as also noted in the Mexico Ministerial Statement. The HSS is still inadequately recognised.

Ndinda 2002) remarked that South Africa should be praised for being able to strengthen the capacity of the historically disadvantaged universities through the activities of the MRC.

Coovadia and Hadingham (2005) argue that KZN province had about 150000 deliveries per year and PMTCT increased from 10% in 2001 to 78% in 2003-2004 due to the expansion of IEC, more rapid testing methods, enhanced record keeping, and drug technological advances. (Read the KZN Dpt of Health 2004 for the PMTCT uptake at maternity hospitals June 2001-2004.)

Whysonge and Volmink remark that the 10/90 gap means that less than 10% of world resources spent on health research are devoted to the less developed countries which shoulder 90% of global disease burden.

Barnighausen and Bloom 2009

After a period of 10 years, doctors of rural origin were more likely to practice in rural areas.

Goudge et al 2009

Barriers to accessing chronic care inability to pay for costs, limited availability of inputs and services for chronic care, weaknesses in diagnosing and prescribing at clinics, interrupted drug supplies, inadequate ambulances/poor patient provider relationship, weak referral system.

LITERATURE TO CONSULT