

The interface between health systems and vertical programmes in Francophone Africa: the managers' perceptions

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Summary

OBJECTIVE To explore the interface between vertical programmes (VPs) and general health services (GHS) in sub-Saharan Africa.

METHODS Using semi-structured interviews, we analysed the perceptions of a selection of experienced mid-level managers of GHS and of VP originating from francophone Africa on the nature and quality of this interface.

RESULTS The respondents acknowledged that VPs lead to both positive and negative effects on the functioning of GHS. The overall result, however, cannot be viewed as a simple summation of the positive effects possibly compensating for the negative ones. Indeed, some of the negative effects have a profound impact on the management and operation of the health care delivery system and may undermine the long-term institutional capacity of the general health systems. The quality and the nature of the interface between VP and GHS strongly vary in time, between settings and programmes.

CONCLUSION We argue for more systematic monitoring of the interface between VP and GHS, so as to identify and address, in a timely manner, significant disruptive effects and deficiencies in a perspective of systemic capacity building of health systems.

keywords vertical programme, general health service, interface, sub-Saharan Africa

Introduction

For decades, scholars have argued about the relationship between 'horizontal' and 'vertical' approaches to health care delivery, i.e. about the relationship between multi-purpose health care delivery systems and disease-specific control programmes (Gonzalez 1965; Mills 2005). This debate is often fuelled by strong ideological positions, and protagonists often ignore the arguments used by their 'opponents'. Some scholars argue that the debate is potentially destructive and have called for a new 'diagonal' approach (Mills *et al.* 2006; Ooms *et al.* 2008). A nuanced debate that includes a thorough investigation of the pros and cons of the respective approaches in different contexts is needed. This discussion should include empirical evidence related to each health system's strengths, the disruptive and positive effects of vertical programmes (VPs) on general health services (GHS) and the managerial and policy implications of this interface. Research on the interface between horizontal and vertical health care delivery systems is therefore a priority. The interface is defined as the point at which independent systems interact;

the interface between the VP and the GHS results from the integration, implementation, monitoring and evaluation of VP activities in the GHS (Gonzalez 1965). This paper seeks to enrich discussions of this interface by analysing francophone African mid-level managers' perceptions of the impact of VPs on GHS operations.

Methods

Semi-structured interviews were conducted with attendees at a conference whose topic was 'the interface between VPs and GHS in sub-Saharan Africa'. The conference was organised by the Institute of Tropical Medicine (ITM), Antwerp, Belgium, and took place in Kinshasa, Democratic Republic of Congo (DRC), in August 2008. The conference targeted alumni of the ITM's Masters of Public Health programmes who work in Francophone countries in West and Central Africa. Forty-one participants from francophone African nations were present, and 19 participants (46%) from 11 countries were interviewed. Ten participants were working for a specific VP and nine were running a GHS (see Table 1). Of the 22 non-respondents,

Table 1 Characteristics of the study participants

Item (number of items)	Number of participants
<i>Country of origin (11)</i>	
Benin	1
Burkina Faso	2
Burundi	1
Cameroon	2
Chad	1
Congo (Brazzaville)	1
Congo (Kinshasa)	6
Cote d'Ivoire	1
Madagascar	1
Mali	1
Niger	1
Togo	1
<i>Institutional sector (4)</i>	
Public sector	8
Bilateral cooperation	4
Non-governmental Organisation	6
United Nations' Organisation	1
<i>Nature of professional environment (2)</i>	
General health services	9
Vertical programmes	10
HIV/AIDS	4/10
Expanded programme of immunisation	2/10
African human trypanosomiasis	2/10
Tuberculosis	2/10

two were from Cameroon, one from Benin, four from Congo-Brazzaville and 15 from Congo-Kinshasa. Ten of these non-respondents were working in a GHS and 12 non-respondents were working in a VP. Each interviewee signed a consent form. Semi-structured interviews were conducted in French using a topic guide (see Appendix S1) and were audiotaped and transcribed. The interviews covered the participants' assessments of the positive and negative effects of VPs on the GHS, as well as their perceptions of the various factors that affect the interface between the VPs and the GHS. The software programme N-VIVO 7 (Victoria, Australia) and a deductive qualitative methodology were used to code the interview responses. To analyse the effects of the VPs on the GHS, we used a WHO framework that describes six key components of well-functioning health systems: leadership and governance, health information systems (HIS), health financing, essential medical products and technologies, human resources and health service delivery (WHO 2010). To analyse the factors influencing the VP and GHS interface, we distinguished between determinants related to the VPs and determinants related to the GHS. A simple frequency analysis of the various effects and determinants described by the participants was performed.

Results

All 19 interviewees noted that, in their experience, VPs have both positive and negative effects on the functioning of a GHS (Table 2). They also agreed that the quality of the interface between a VP and a GHS varies from one setting to another and that characteristics related to both the VP and the recipient health system shape this variability (Table 3).

Effects of the VPs on key components of the health system

Leadership and governance.

Four respondents stated that VPs improve both managers' planning capacities and the coordination and monitoring of activities, even if this is related specifically to the VP's activities. Moreover, seven interviewees noted that VPs enhance the capacity for partnership building and supervision. However, this enhanced capacity can include fragmented and inconsistent planning; 12 interviewees pointed out that VPs can undermine leadership and governance at district level because district managers are no longer in charge of planning, coordinating and monitoring health care activities. Seven interviewees indicated that the district management teams have lost their leadership role. One respondent stated that the juxtaposition of multiple microplans for a range of isolated health problems at the district level results in the 'absence of a global financed plan to ensure the coverage of the entire population with services offering curative, preventive and promotional care'.

Health information systems.

Four participants mentioned that VPs develop their own tools for data collection, monitoring and evaluation; through an active search for information, the VPs increase the completion and promptitude rates for district reports. However, 12 respondents stated that the multiple data collection tools used for each programme require significant time to complete and lead to increased workloads. In addition, the parallel systems put in place by the VPs undermine the national HIS and result in poor-quality data. Some statements made by the interviewees were quite illustrative. For example, one participant said that 'in Guinea-Conakry, from the 23rd to the 30th of each month, the head nurse only does administrative work, filling in the data collection tools'. A participant from the DRC mentioned that 'the head nurse in a health centre has to fill in around 40 different data collection tools each month despite the big document of the national HIS also being available'. Two other interviewees also reported that 'some staff invent data just to forward them on time or to merely get rid of the hierarchy which is asking annoying questions on reports'.

B. Keugoung *et al.* Programmes and general health services interface**Table 2** Summary table of positive and negative effects of VPs on the General health services (GHS)

Positive effects	Number of participants	Negative effects	Number of participants
<i>Leadership and governance</i>	8		12
Plannings, coordination	4	Multiple coordinating bodies in decision-making on resources	3
Improve partnership and multisectoral collaboration	7	Jeopardising of the district management team's leadership	7
Ensure supervision	4	Difficulties to coordinate and manage activities	6
		Multiple and overlapping planning procedures	1
		Loss of a global vision of the district health system	1
		Unilateral decisions taken by programme managers	1
<i>Health information system</i>	4	<i>Health information system</i>	12
Improve data collection tools and procedures	4	Increased workload	10
Improve monitoring and evaluation mechanisms	3	Multiplicity of health information tools and indicators	9
		Reduction in data quality	2
		Inefficient utilisation of time because fragmentation of activities	2
		Parallel health information system	2
<i>Health financing</i>	16	<i>Health financing</i>	12
Subsidies of health care fees or drugs	15	Discrimination of staff for incentives allocation	11
Improve financial access	6	Earmarking of funds	6
<i>Medical products, equipment and infrastructure</i>	19	<i>Medical products, equipment and infrastructure</i>	13
Logistical support and other material and equipment	19	Integration of activities without adequate resource allocation	10
Drugs, laboratory tests and other medical supplies	13		
Construction and rehabilitation of health services	6	Earmarking of resources	6
<i>Health workforce</i>	16	<i>Health workforce</i>	10
Incentives to staff	15	Internal brain drain	8
Training (capacity building)	16	Training of specific staff to whom duties are assigned	7
Improve technical competency of staff	9	Demotivation of excluded staff	6
<i>Health service delivery</i>	16	<i>Health service delivery</i>	10
Improve the functionality/capacity of health services	14	Neglect of activities that are not financed by VP	8
Improve the coverage of the minimum package of activities	12	Focus on programme activities and neglect of routine or non-paid activities	4
Increase geographical access	10	Reduction in access to versatile curative care during VP mass campaigns	4
Instil knowledge, new initiatives and strategies	7	Absence of continuity in programme interventions	3
Improve credibility of the health services	4	Reduction in the overall functioning of health services	2
Improve utilisation rate and bed occupancy rate	3	Reduction in accountability of health staff vis-à-vis district management team	1
Promote home visits	3	Instrumentalising of the GHS by the VP	1

B. Keugoung *et al.* Programmes and general health services interface**Table 3** Determinants related to the VPs and the GHS influencing the interface between them

Determinants of variability	Number of respondents
<i>Recipient health system</i>	
Human resources	19
Number of health staff	16
Workload	15
Managerial capacities to run the health system	15
Level of wages (salaries)	14
Technical competency	11
Motivation	8
Interests (incentives, career plan)	8
Availability of resources in GHS	19
Finance	19
Drugs	18
Infrastructures	17
Equipment	16
Health care funding	16
Level of public funding	11
Level of out-of-pocket payments	9
<i>Contextual factors</i>	
Perception of the health problem	16
Acceptability of health interventions	15
Geographical accessibility	10
Political stability	5
Security	4
<i>Vertical programmes</i>	
Human resources factors	19
Frequency and quality of the technical support	19
Supervision, coordination, feedback	19
Training	14
Technical competency	16
Managerial capacities to run the programme	15
Workload	6
Resources allocated by VP to GHS	19
Type and quantity	18
Type, number and extent of activities of GHS funded	15
Strategy used for the allocation to GHS	10
Incentives to health workers	9
Purpose of the resources	7
Health problem	10
Complexity of health interventions	10
Prevalence and incidence	9
Induced workload	6
Organisational structure of the VP	12
Decentralisation of VP's structures	11
Level of decision-making	9
Influence of donors of the VP	11
Design and strategies of the VP	11
Funding of the VP	11
Number of VP implemented by the GHS	6

GHS, general health services; VP, vertical programmes.

Health financing.

Fifteen respondents highlighted the fact that VPs provide incentives to health workers in a GHS and subsidise drugs or health care fees, thus improving financial access to health care for the specific problems targeted by the VP. However, the VPs were seen to have a negative effect by earmarking funding and not addressing all components of the GHS.

Essential medical products and technologies.

All respondents described resource allocation as a major positive effect of VPs on a GHS. In most instances, these resources consist of medical and non-medical equipment, drugs, laboratory tests and means of transport such as bicycles, motorcycles and vehicles. Some VPs construct wards or renovate medical facilities. In some cases, however, allocated resources are insufficient, earmarked for specific activities or only benefit the staff dedicated to the VP. As one interviewee declared that '*programmes recruit trustworthy people to whom they allocate resources and assign duties*'. One interviewee stated that '*even though VPs have a lot of resources, the main part is spent at the central level, a small part at the intermediate level and just an insignificant amount is given to the operational level,*' leading to an '*inability of GHS to cover the health needs of the population*'.

Human resources.

Sixteen respondents mentioned that VPs reinforce the technical skills of the staff by developing and providing guidelines, training, expertise and support supervision. Fifteen interviewees also indicated that VPs increase revenues through incentives. However, discrimination in the incentive allocation process affects the motivation of health workers and frustrates staff members who do not enjoy such privileges. As highlighted by three interviewees, the staff who are excluded from these benefits '*seem frustrated and less inclined to deliver care related to the programme activities*', question '*why they should work as voluntary workers while others are being paid*', or '*simply neglect non-paid activities*'. Similarly, staff members are lured away from the GHS by activities organised by the VP. A former Cameroonian district medical officer stated that '*during several months per year, I attended meetings, seminars and micro-planning workshops organised by programmes without working a single day in the district*'.

B. Keugoung et al. Programmes and general health services interface*Health service delivery.*

Sixteen respondents stated that resource allocation and improved staff capacity increase the functionality and viability of the GHS. This benefit improves the quality of health care, particularly for the specific health problem addressed, and enhances the population's trust in the health services. For instance, one participant declared that *'programmes improve the capacity of GHS to take care of the health problems normally included in their minimum package of activities'*.

By organising mass campaigns that include outreach through 'door-to-door' activities, geographical access is improved. Some health care services sponsored by the VPs deliver care free of charge or at a subsidised price. This increases the service utilisation rate and the population coverage for specific health problems. However, four interviewees recognised that many of the interventions lack continuity and that well-paid activities are prioritised while routine and less well-funded activities are neglected. While well-paid outreach activities are prioritised, the health infrastructure is abandoned by health workers, leading to a reduction in the permanence of care.

Determinants explaining variability in the quality of the interface between the VPs and the GHS*Determinants of the interface related to the GHS.*

The number of GHS staff and resulting individual workloads were seen as critical determinants of the success of the interface. A respondent stated that *'since staff are overburdened, they are no longer eager for integration of new activities, or even start prioritising activities or programmes in which they have particular interests or stakes'*. Fourteen respondents identified financial incentives, career plans and training perspectives as factors that significantly influence the motivation and behaviour of health workers. As a result of these factors, health workers tend to *leave the poorly funded GHS for the well-funded VPs, from which they will receive more privileges*, thereby worsening the human resources shortage in the GHS. Sixteen interviewees pointed out that the lack of technical competency of the staff could hamper the integration of specific interventions into the GHS; as one interviewee explained, *'when qualified staff are not available, GHS's managers are reluctant to integrate the specific interventions in their minimum package of activities'*. Apart from individual competence, 15 respondents saw the overall ability of the district management team to run the local health system as a fundamental factor. Eleven respondents specifically referred to the importance of good leadership and eight pointed to the importance of pro-active decision-

making. One interviewee stated that *'if the members of the district management team have a vision, include all activities in the district's plan, monitor activities and supervise health centres, they will mobilise all staff towards a common goal, and the relation between GHS and VPs will be more solid.'* Another respondent argued that *'if a consensual decision is taken after a participative discussion with all stakeholders, including beneficiaries, the involvement of stakeholders in the implementation of the activities by the GHS staff becomes less difficult'*. However, not all managers are interested in the VPs *'regardless of the inputs and training provided to them'*.

Seventeen interviewees further referred to contextual factors such as stigmatised health problems and socially unacceptable health interventions; these factors shape the health-seeking behaviours of patients and determine the acceptability of integrating VPs into a local GHS. For example, one interviewee stressed that in his country, *'some patients do not want to take antiretroviral treatment in the nearby hospital; they prefer to travel and get treatment where they are not familiar with people instead'*. In addition, security, political stability, geographical accessibility and other factors that affect the feasibility of health care delivery play a role in the interface between a VP and a GHS.

Determinants of the interface related to the VPs.

The most frequently cited factors related to VPs were human resources, the availability of other resources and the specific characteristics of the health problem addressed. Human resource issues included the regularity and quality of the technical support, such as coordination, supervision, feedback and training, given by VP managers to the GHS. One respondent argued that *'if managers of a VP are coercive, their decisions will be rejected by health workers of GHS'*. Another interviewee summarised by saying that *'the support by a VP depends on the technical competency and the managerial capacity of the managers who run that VP'*.

All participants believed that the VP's resources impact the interface. Several factors were identified as important, such as the type and amount of resources available, the strategy used to allocate resources to the GHS, the purpose of the resources and the type, number and extent of activities that are funded. For instance, one respondent stated that *'by revamping and equipping health facilities, some VPs strengthen the capacity of the GHS to deliver general health care while others stick to or earmark resources to their specific activities'*. Even worse, *'some VPs fund essentially mass campaigns and do not care about the routine facility-based activities related to the care for the specific health problem'*.

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The prevalence and incidence of the health problem play a role as well, because rare health problems may absorb a disproportionate amount of the resources. One interviewee argued that *'a health worker who only receives a few cases of a health problem monthly or every two months will not have the required experience to offer adequate health care to that patient'*. Another respondent pointed out that *'when the population did not perceive the health problem as a threat, intensifying interventions was seen as a waste of resources'*. More than half of the respondents felt that *'complex interventions cannot be easily integrated into GHS as additional training and more resources are required for this'*. Subsequently, six participants noted that the workload induced by activities such as the development of guidelines, the training of GHS staff and the monitoring of the programme's interventions affects the quality and the regularity of VP managerial support to the GHS.

Twelve respondents emphasised that the organisational structure of a VP, such as the level of decentralisation of its operational and administrative services, influences its relationship with the GHS. One participant declared that *'the more the VP services are decentralised towards the peripheral level, the more the health care delivery related to VP activities becomes parallel to the GHS's provision of care'*.

Eleven interviewees identified donors as playing an important role in the design and strategy of a programme and in determining the resources to be allocated to the VP and eventually to the GHS. One interviewee emphasised that *'priorities at the national level are donor-related and set with regard to resources received from funding agencies'*. The following quote from another respondent further illustrated the role of donors: *'due to the fact that the implementation of VP activities relies on the donor's resources, managers of VPs are obliged to follow the policy imposed'*.

The final determinant was the number of VPs to be implemented by the GHS. Because of differences in the privileges granted by the VPs, there is, as recognised by six respondents, a sort of competition between VPs for the human resources of the GHS; this competition results in different interactions between each VP and the GHS.

Discussion

Although our sample may not represent all middle-level health care managers in Francophone Africa, and the setting of our survey (an international meeting) did not allow us to collect data about patients' perceptions, we believe that our results provide some 'real-life' insights into what happens between VPs and GHS at the operational

level. Our results are consistent with the increasingly common view in international health policy circles that VPs create powerful opportunities for a health system. While many authors have described the strengthening effects of VPs (Dietz & Cutts 1997; Kertesz *et al.* 2003; Oliveira-Cruz *et al.* 2003; Komatsu *et al.* 2006; Atun *et al.* 2010), others have identified the weakening effects of programmes on health systems (Unger 1991; Oliveira-Cruz *et al.* 2003; Hsiao & Heller 2007; Unger & De Paeppe 2007; De Maeseneer *et al.* 2008; WHO Maximizing Positive Synergies Collaborative Group 2009).

Using a qualitative rather than a quantitative approach, we chose to present a balanced picture of the interface between VPs and GHS instead of starting with the most common viewpoints. The interview structure focusing on positive and negative effects may have affected respondents' answers. Although a positive *vs.* negative dichotomy is a practical way of classifying and presenting the answers, it remains a somewhat artificial and reductionist distinction; a complex, systematic perspective is most important.

It would be simplistic to examine the effects of VPs on the GHS as a 'zero-sum game' in which the positive effects can counterbalance the negative ones. The precise nature of each effect must also be considered. Some of the negative effects reported in our investigation point to a profound disruption of the health care delivery process. For instance, multiple cumbersome data collection tools not only increase workloads but, more importantly, contribute to the fragmentation and inaccuracy of the health information system, as some staff 'invent data' or under-report them (Gething *et al.* 2006; Mate *et al.* 2009). Such situations undermine the overall process of planning and monitoring programme activities and reduce the ability of system managers to track the programme's or system's performance. Some of the negative effects of the VPs are unintended, although not surprising, consequences of ill-designed strategies. For example, incentives, seminars and privileges allocated by the VPs to the health workers are intended to improve their revenues and competence; in actuality, they alter the workers' behaviour and contribute to an internal 'brain drain' that increases the human resources shortage and sometimes undermines primary health care delivery (De Maeseneer *et al.* 2008). Finally, some of the supposedly 'positive' effects of VPs are ambiguous. The specific resources brought by VPs may have different effects if the GHS were to directly receive and manage them independently.

Our research further revealed that the presence of multiple VPs leads to competition that results in health care personnel prioritising activities or programmes in which they have particular stakes while neglecting others (Ricketts 1990; Cavalli *et al.* 2010). Each VP tends to have

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its own coordinating bodies, planning processes and HIS, contributing to increased health system fragmentation, high transaction costs, a waste of scarce health resources and inefficiencies (Reerink & Sauerborn 1996; Keugoung 2009; Szlezak *et al.* 2010).

One finding that suggests an interesting area for further research is that the health managers do not perceive the interface between VPs and GHS to be static and constant in time and space; rather, they see this interface as a versatile phenomenon that strongly differs from one setting to another. Future research should investigate why some managers are more successful than others in similar environments; some managers are better able to optimise the positive effects of VPs to strengthen the health system while controlling the negative effects.

Conclusion

The interaction between a VP and a GHS can have both positive and negative effects. The quality of this interaction varies with time and from one setting to another and depends on a number of factors related to both the VP and the recipient health system. Some systems function better than others, and some function better with certain programmes than with others. A mechanical approach to the analysis of the effects of VPs is inappropriate; positive effects cannot be viewed as simply compensating for negative ones. Some of the negative effects of the programmes have a profound impact that can undermine the long-term institutional capacity and resilience of the general health system. Moreover, some of the positive effects of the programmes could disappear altogether if the general health systems were to directly receive and autonomously manage the resources that the VPs currently bring. We argue for a more systematic monitoring of the interface between the VPs and the general health systems to identify and address disruptive effects in a timely manner.

Following the call for a global health systems impact assessment (Swanson *et al.* 2009), we recommend that, first, more efforts be made to systematically monitor the various effects of the interface between VPs and the GHS. Second, we recommend studying, in a variety of contexts, those factors that seem to matter most in shaping the quality of the interface. Our hypothesis is that such routine monitoring by the national and local health authorities, development partners and donors can contribute to the timely identification of the disruptive effects of VPs on health systems. This monitoring effort may provide insight into the extent to which the capacities of local health systems are affected by the operation of the VPs. The capacity pyramid developed by Potter and Brough (2004) provides a useful framework for such an analysis. It

distinguishes four categories of capacity in a logical hierarchy: structures, systems and roles; staff and infrastructure; skills; and eventually tools (Potter & Brough 2004). VPs may improve the skills and tools of individual health workers and may even improve the GHS infrastructure. However, they may also simultaneously weaken the foundation of the pyramid, i.e. the system's structural and institutional capacity to run operations in a sustainable way, independent of changes of personalities, technologies and resource crises (Paul 1995). Such monitoring may also alert national policymakers and donors to the need to critically re-examine the use of donor aid in the light of OECD principles for the evaluation of development assistance and the principles put forward in the Paris Declaration on Aid Effectiveness (OECD 1991; Paris Declaration 2005).

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Supporting Information

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Appendix S1. Interview grid.

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