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Major Article

Perceptions of the usefulness of external support to immunization coverage in Guinea-Bissau: a Delphi analysis of the GAVI-Alliance cash-based support

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ABSTRACT

Introduction: Although many countries have improved vaccination coverage in recent years, some, including Guinea-Bissau, failed to meet expected targets. This paper tries to understand the main barriers to better vaccination coverage in the context of the GAVI-Alliance (The Global Alliance for Vaccines and Immunisation) cash-based support provided to Guinea-Bissau. **Methods:** The analysis is based on a document analysis and a three round Delphi study with a final consensus meeting. **Results:** Consensus attributed about 25% of the failure to perform better to implementation problems; and about 10% to governance and also 10% to scarce resources. The qualitative analysis validates the importance of implementation issues and upgraded the relevance of the human resources crisis as an important drawback. The recommendations were balanced in their upstream-downstream focus but were blind to health information issues and logistical difficulties. **Conclusions:** It is commendable that such a fragile state, with all sorts of barriers, manages to sustain a slow steady growth of its vaccination coverage. Not reaching the targets set reflects the inappropriateness of those targets rather than a lack of commitment of the health workforce. In the unstable context of countries such as Guinea-Bissau, the predictability of the funds from global health initiatives like the GAVI-Alliance seem to make all the difference in achieving small consistent health gains even in the presence of other major bottlenecks.

Keywords: Africa. Coverage. GAVI Alliance. Guinea-Bissau. Vaccination.

INTRODUCTION

Although many countries have improved their vaccination coverage over the recent years, some have not reached their ambitious targets. Guinea-Bissau is one of them: it has made progress but, despite significant donor support, particularly from GAVI (Global Alliance for Vaccines and Immunisation) who has committed over 6 million United States' dollars ($US) since 2001, it has not reached its self-imposed third dose of diphtheria-pertussis-tetanus (DPT3) vaccines coverage of 94%. We try to understand the nature of barriers to better coverage in the context of GAVI-Alliance support, to test the underlying assumption of the cash based programmes: that a global health initiative can strengthen a national health system (HS) so as to achieve specific outcomes such as better vaccination coverage.

Context

Independent since 1973, Guinea-Bissau suffered a first military coup in 1980, that started the country towards economic liberalization and to a multi-party system. The civil war of 1998-1999 ended in the ousting of the country's then president for 20 years. Chronic political instability has set in ever since, with almost 20 changes of government and several military clashes/*coup d'états* (in 2003, 2004, 2009, 2010, 2011, 2012) between 1999-2012. None of the elected Governments or Presidents ended their mandates. The country saw 13 Prime-ministers and 18 Ministers of Health. Political tensions pit a government supported by the international community against an army leadership associated with charges of drug trafficking, corruption and criminal impunity[1-9].

Today, it is considered a fragile and conflict-affected country (http://www.oecd.org/dataoecd/35/50/49151944.pdf, accessed on 23rd of April 2012). It ranks as one of the poorest countries in the world (a human development index - HDI of 0.289 places it as 164th in the HDI ranks - http://hdrstats.undp.org/en/countries/profiles/GNB.html, accessed on 8th of October 2011). The country has 2,755km of roads but only 27% are tarred. Fuel shortages are recurrent with serious impact on the health services[10].

Health and the health system

The health profile reflects urban-rural asymmetries. Malaria, tuberculosis, Human immunodeficiency virus infection/acquired immunodeficiency syndrome (HIV/AIDS), diarrhoeal diseases, acute respiratory infections, malnutrition and maternal mortality are major problems[11-15]. The effects of the civil war on the health profile of children have been well documented[16-23].

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Despite these constraints, the under-5 mortality rate fell from 223‰ in 2006 to155‰ in 2010, infant mortality from 138‰ to 63‰ and maternal mortality from $822/_{0000}$ to $800/_{0000}$. Progress towards the Millenium Development Goals has been slow and it is unlikely that they will be reached by 2015[8,15].

The Health System of Guinea-Bissau has local, regional and national levels. At the local level there are health centres responsible by most vaccination efforts, supported by community health workers, a technical team and a management committee with community members. The reach of the technical teams is extended by mobile services hampered by problems of transport, fuel and cold chain.

Technical teams are frequently incomplete. It is not uncommon to have one single health worker manning a health facility on its own. In October 2011 there were 12 health centres (in a total of 114 nationwide) closed because of lack of personnel. This reflects the scarcity of health workers[24,25], compounded by a lack of competencies[25], moonlighting[26-29] and a significant brain drain[30-32]. A national school of public health trains mid-level health workers, mostly nurses and midwifes, and a medical school[33,34] graduated its first class last year. Government inability to pay health workers' salaries on time leads to repeated and prolonged strikes. The ensuing demotivation has been, in other contexts[35-40], a barrier to better vaccination.

The activities of the health system are guided by a comprehensive national health strategy (NHS) that runs until 2017. Compared to other countries the health sector and donor project planning cycles are relatively well synchronised (http://www.nationalplanningcycles.org/, accessed April 2012).

The cost of the implementation of the country's NHS was estimated at USD (United States Dollars) 55 million per annum[41,42]. Currently, the government budget only supports 25.5% of the total health expenditure, representing USD 18.4 per capita in 2009, very much under the needed annual USD 50 million[41].

Official development assistance (ODA) for health represents about USD 12.2 *per capita* and 14.3% of the total ODA to the country in 2009 when five donors represented 88% of ODA commitments for health: the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM) (44%), the governments of Spain (18%) and Portugal (13%), the United Nations Population Fund (UNFPA) (10%) and the GAVI-Alliance (4%)[43].

Vaccination coverage

Vaccination efforts are well documented[13] in particular since 1978, by the Bandim Health Project[19] and by successive multiple indicators cluster surveys (MICS) (2000, 2006, 2010) and demographic and health surveys (DHS) (2010)[14,15].

In 1979 there was no regular immunization programme in the rural areas. This was progressively introduced. Since 1986 UNICEF and the World Health Organization (WHO) have supported more systematic efforts. New DTP-hepatitis B-*Haemophilus influenzae* type B and yellow fever vaccines were introduced on August 30, 2008. Rotavirus and pneumococcus vaccines are currently being considered for introduction[44].

Vaccination has been provided routinely in health centres, through outreach mobile teams and, since 2001, during yearly national immunization days. Frequently, there is confusion among health workers about who should receive which vaccines. This is further hampered by low levels of public information, leading to low attendances. In 2008 there was also significant opposition of the population to antitetanus immunization (because of rumors of its association with infertility). Teams run out of vaccines and syringes and children's ages are miscalculated. Approximately one-third of all children in the urban areas and two-thirds in the rural receive at least one DPT vaccine after 6 months of age[45]. The dropout rate is not insignificant[5,14]. During the civil war there were no routine immunizations for the first three months of the conflict[17]. Cholera epidemics in 2002, 2004, 2005 and 2008 and the threat of dengue in 2009 and of H1N1 in 2010 were serious disruptive factors of the limited capacity of the Ministry of Health (MOH) with severe impact on vaccination activities. Despite this, vaccination coverage has resulted in a documented reduced mortality[18,44,46] and coverage has been increasing consistently, but without reaching the 94% DTP3 coverage planned for 2010 **(Figure 1)**.

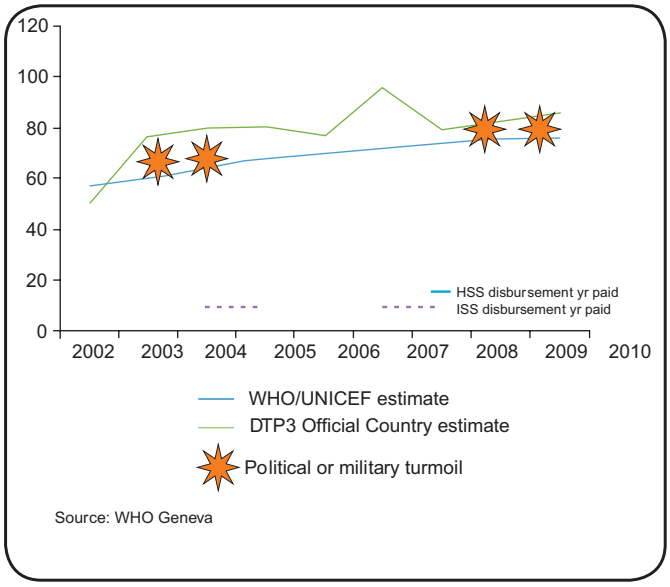

FIGURE 1 - DTP3 vaccination coverage trend - 2004: 64% 2010: 76% with average annual change of +1.71%.

DTP3: diphtheria-pertussis-tetanus;**HSS:** health system strengthening. **yr:** year; **ISS:** immunisation services support; **WHO:** World Health Organization; **UNICEF:** The United Nations Children's Fund.

METHODS

Field work (6^{th}-12^{th} October 2011) included a three round Delphi study and a final consensus meeting (FCM). A further element of the study was the analysis of the request for health system strengthening (HSS) funds from the GAVI-Alliance.

Delphi panel study

For the Delphi study the Country office of WHO and the Director General for Public Health of the MOH selected a panel of 30 experts among development partners, Civil Society

TABLE 1 - Profile of the participants.

	Delphi panellists		FCM participants	
Age (n= 13)				
mean	48 years		47 years	
median	49 years		49 years	
range	34 to 59 years		32 to 59 years	
Sex	**n**	**%**	**n**	**%**
male	11	61.0	11	68.8
female	7	39.0	5	31.2
Nationality	**n**	**%**	**n**	**%**
Guinean	17	94.4	15	93.8
Foreigners	1	0.6	1	6.2
Length of residence in the country for foreigners	7 years		4 years	
Professional group	**n**	**%**	**n**	**%**
physicians	6	31.6	9	56.3
nurses/midwives	3	15.8	2	12.5
economist	2	10.5	-	-
biochemist	1	5.3	-	-
biologist	1	5.3	1	6.3
epidemiologist	1	5.3	1	6.3
management	1	5.3	1	6.3
nutritionist	1	5.3	1	6.3
pharmacist	1	5.3	-	-
PHT	1	5.3	1	6.3
Sociologist	1	5.3	-	-
Institutional base	**n**	**%**	**n**	**%**
MOH and affiliated institutions	13	72.2	12	70.6
CSO	3	16.7	2	11.8
Other	2	11.1	3	17.6
Post in the institution	**n**	**%**	**n**	**%**
political	1	5.3	1	6.7
senior managerial position	5	26.3	3	20.0
intermediate managerial position	5	26.3	5	33.3
technical	5	26.3	4	26.7
Focal point				
WHO	2	10.5	1	6.7
MOH	1	5.3	1	6.7
GAVI subventions /immunization related activities	**n**	**%**	**n**	**%**
major function	3	17.6	-	-
frequent	8	47.1	-	-
infrequent	6	35.3	-	-
Direct knowledge of GAVI subventions	**n**	**%**	**n**	**%**
yes	11	64.7	-	-
no	6	35.3	-	-
Direct knowledge of GAVI subventions (more than one option are possible) (n=15):				
subvention to strengthen immunization programme				
knows well (helped to elaborate)	-	-	6	40.0
knows from an implementation perspective	-	-	9	60.0
general knowledge but not in depth	-	-	4	26.7
heard of but does not know	-	-	1	6.7
never heard of	-	-	1	6.7
subvention to strengthen health system				
knows well (helped to elaborate)	-	-	6	40.0
knows from an implementation perspective	-	-	7	46.7
general knowledge but not in depth	-	-	3	20.0
heard of but does not know	-	-	4	26.7
never heard of	-	-	0	0.0

FCM: Final Consensus Meeting; **PHT:** Public Health Technologist; **MOH:** Ministry of Health; **CSO:** Civil Society Organization; **WHO:** World Health Organization; **GAVI:** The Global Alliance for Vaccines and Immunisation.

Organization (CSO), MOH (immunization and planning representatives) and WHO country office **(Table 1)**. The overall response rate was 60% (18/30; per category of panellists was 72% (13/18) for members of the MOH or affiliated institutions, 43% (3/7) for CSO and 67% (2/3) for other categories. All 18 that answered to the first round also answered rounds 2 and 3 **(Table 1)**.

During an initial plenary meeting the panellists received an explanation of the Delphi technique intended. During round 1 they were asked to quantify the relative percentual contribution of 5 GAVI cash funding-related-causes tentatively associated with unsatisfactory DTP3 coverage (the 5 causes should add up to 100%): I) design failure (inappropriate design of the proposal); II) implementation failure (bad implementation due to capacity constraints, changes in plan, etc.); III) inadequate governance of the grant (administrative delays, leakage, etc.); IV) insufficient size of the funds made available by GAVI and/or lack of complementary funding; V) external factors, exogenous to the health sector (civil war, disasters; etc.). They were given the opportunity to include further factors besides these five. They were also asked to justify their answers.

On the basis of the results of round 1, the round 2 questionnaire included the five initial factors complemented by: I) misunderstanding of the concept of health system strengthening (HSS); II) human resources for health (HRH); III) community level determinants; IV) overdependence on immunization campaigns with neglect of routine immunization; V) lack of formal external monitoring and evaluation; VI) other unspecified factors.

On the basis of the results of round 2, the tentative causes addressed in round 3 included the initial five and: I) misunderstanding of the concept of HSS; II) HRH; III) community level determinants.

Two causes that appeared in round 2 (IV and V) were excluded from round 3 because the median was low, and/or the mode was 0 and the range was very wide; and cause VI, was excluded because it was not considered useful.

Round 3 questionnaires included extra questions in order to clarify whether, as it was intended, the cash-based funding support had been catalytic and complementary to the existing health sector funding system and whether it produced positive externalities for the health sector.

The anonymity of the replies was assured.

Final consensus meeting

The Delphi study was followed by a FCM. Nine of the Delphi participants were present plus six other participants, who had been invited to the initial panel, could not participate in the Delphi study, but were available for the FCM **(Table 1)**. Most (at least 67%) had at least some direct knowledge of the proposals. The meeting was chaired by one of the Director Generals of the MOH and facilitated by the consultant (PF) assisted by two participants (OL & SB) who helped with note taking.

After an initial presentation describing the process and the DS results, the discussion was divided into two parts: a)

Interpretation of the Delphi results and implications for (I) further GAVI subventions; (II) the Guinea-Bissau MOH. This discussion was used for the key informers who had not attended the Delphi to comment on the Delphi study consensus results; b) consensualizing recommendations on further action by GAVI: participants were invited to make up to three recommendations for each one of the problem domains studied, and to write them up. They did not have to make suggestions for all the domains. After all read them aloud, there was a period of discussion, after which they revised and rewrote their recommendation (10 of the 16 respondents reviewed their original recommendations).

Quantitative analysis

The consultant calculated means, medians, modes ranges, for round 1 results and asked the panellists for re-estimates during the two further rounds, confronting them with the summary results of the previous round in order to move them, without coercion, towards a consensus position on the estimates.

Consensus was considered if the mode included at least 50% of the replies (n=9), or for any range of values that included 75% of the replies (n=14).

Content analysis of documents and of the qualitative data of rounds 1&3 and of the FCM

The qualitative analysis was similar to the one described by Goeman et al.[47]. It was based on WHO's health system building block categories - service delivery, health workforce, health information systems, logistics (medical products, vaccines and technology), financing and leadership & governance[48]. This categorization was extended to include a classification of activities at either the operational (downstream activities) or the systemic (upstream) levels. Downstream activities were those that one could reasonably assume exist at the district healthcare system level or below and do not involve comprehensive change at a higher, systemic level. Upstream interventions were defined as those taking place at and/or involving change (action or resources) at a level higher than the district healthcare system level. Where an intervention could be considered systemic and operational, it was classified as systemic. No one building block was considered to be uniquely systemic or operational[47,49]. These were complemented by an additional category, community level.

RESULTS

Diagnostic consensus on the importance of the various factors explaining disappointing DPT3 coverage was firmly established for all variables in round 3. With one of the criterion, consensus was obtained for all problem categories; with the other for 3 of the problem categories **(Table 2)**.

According to the panellists, implementation problems explain about 25% of the failure to perform better with regard to vaccination coverage; implementation, governance and scarce resources explain together about half of the poor performance observed; adding extrinsic factors and the quality of the GAVI proposals explains 75% of the failure to improve vaccination coverage **(Table 2)**.

Qualitative data from the different Delphi rounds

During round 1 of the Delphi, 59 (63%) of the 93 barriers identified were downstream barriers; 32% of these were health workforce related and 40% were equally divided between leadership & governance and the financing system. Sixty five percent of the perceived upstream barriers were related to leadership and governance issues The perceived barriers seemed to ignore community demand, information systems and upstream financing system issues **(Table 3)**.

During round 3 of the Delphi, 33 (54%) of the 61 recommendations made in writing addressed downstream barriers. Of these, 27% were associated with the health workforce, 24% with the financing system and 15% with leadership and governance. Of the upstream recommendations, 43% related to leadership and governance and 14% to health workforce issues. Round 3 recommendations ignored community issues, information systems and logistics **(Table 3)**.

Respondents estimated that taking on board the full set of recommendations would make it possible to raise DPT3 vaccination coverage to levels between 85% and 98%.

Results of FCM

The discussion of the Delphi consensus in the FCM was dominated by participants who had not been panellists of the Delphi. All agreed that implementation was a major factor hampering coverage. They also felt that the serious

TABLE 2 - Round 3 ranking of the factors and consensus achieved.

Rank	Causes of unsatisfactory vaccination coverage studied	Round 3 mean (%)	Criteria for consensus range (%) that includes at least 75% of the values	Mode includes at least 50% of the values (%)
1	a problem of implementation	26.0	20.0-35.0	does not
2	a problem of governance	14.0	10.0-16.0	include
3	a problem of scarce resources	13.0	5.0-15.0	50% of the values
4	extrinsic problems	11.0	5.0-15.0	10.0
5	problem of conceptualization	11.0	10.0-15.0	10.0
6	HRH related issues	9.0	5.0-10.0	5.0
7	problems with community level activities	8.0	5.0-10.0	does not include 50%
8	misunderstanding concept of health systems strengthening	7.0	5.0-20.0	of the values

HRH: human resources for health.

TABLE 3 - Analysis of the GAVI-HSS proposal and of the qualitative data from rounds 1 and 3 and the FCM.

Health system's building block and community orientation	Activities funded under the HSS grant (n)		Barriers identified during round 1 (n)		Recommendations of round 3 (n)		Recommendations of the consensus meeting (n)	
	upstream	downstream	upstream	downstream	upstream	downstream	upstream	downstream
Leadership and governance	1	1	22	12	12	5	21	10
Health workforce	4	1	6	19	4	9	12	8
Logistics	3	4	2	6	1	2	1	2
Service provision	1	0	2	6	4	3	2	4
Health information systems and monitoring and evaluation	4	1	1	2	3	3	1	3
Financing system	1	0	1	12	2	8	3	5
Community orientation	4	7	0	2	2	3	5	7
Total	**18**	**13**	**34**	**59**	**28**	**33**	**46**	**39**
Context				16		1		

GAVI: The Global Alliance for Vaccines and Immunisation; **FCM:** Final Consensus Meeting; **HSS:** health system strengthening.

human resources crisis in the country was the second major bottleneck. The third and fourth bottleneck cluster of factors were governance and extrinsic factors.

During the FCM only 39 (46%) of the 85 recommendations addressed downstream barriers. Of these 26% were associated with leadership and governance, 21% with the health workforce and 18% with community orientation. Of the upstream recommendations, 46% were related to leadership and governance issues and 26% to health workforce issues. FCM recommendations ignored information systems and logistics **(Table 3)**.

These recommendations were validated in individual meetings with the WHO Country Representative in Guinea-Bissau and with the Secretary of State for Health of the MOH. The WHO Country Representative *was very comfortable with the recommendations* and highlighted the recommendation on human resources as being the most important- (*finance salaries of health workers until they are admitted into public service by the Ministry of Finance*: at the time of the survey there were over 100 nurses and 88 doctors without salaries awaiting integration into public service and 12 health centres were closed for lack of personnel with the majority of the others running on one nurse). The Secretary of State for Health was *in full agreement* with the panel conclusions and with the meeting recommendations.

Results of the analysis of documents

Between 2001 and 2012 the GAVI Alliance cash support to GB **(Table 4)** has been associated with immunisation services support (ISS) since 2003. The ISS grant has included support to health system building blocks such as service delivery (vaccination services), health workforce (training, salaries and incentives), logistics (cold chain equipment and maintenance, vehicles and transportation, stock control), health information systems (surveillance and monitoring) and to social mobilization, IEC, advocacy. It has been administered by the Rotary Club of Guinea Bissau. The ISS grant has been blind to issues related to the strengthening of the financing system and to leadership and governance of the health system **(Table 4)**.

The HSS application was prepared within the context of the drafting of a new NHP and a National Human Resource Development Plan (NHRDP) by the MOH technical team, with the support of a consultant financed by GAVI (PF). By strengthening certain key aspects of the Guinean HS, the aim of this application was to focus additional resources on the country's 41 most deprived health areas, in order to reduce inequalities in terms of immunisation coverage, access to health care and the availability of a minimum package of essential health services.

Fourteen (45%) of the 31 activities that were eventually proposed were downstream activities; 54% of these were

TABLE 4 - GAVI Alliance support to Guinea-Bissau.

Type of support	Total commitments 2001-2016 (as of 31st December 2011) (US$)	Total disbursements 2001-2012 (as of 31st December 2011) (US$)	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Health system strengthening	1,428,000	338,500						■	■	■	■	■	■	■
Immunization services support	630,860	500,360	■	■	■	■	■	■	■			■	■	■
Injection safety support	115,786	115,786			■	■	■							
Penta (NVS)	3,380,453	2,401,573						■	■	■	■	■	■	■
Vaccine introduction grant	200,000	200,000					■							
Yellow fever (NVS)	324,416	221,919						■	■	■	■	■	■	■
Total	**6,079,516**	**3,778,140**												

GAVI: The Global Alliance for Vaccines and Immunisation. **NVS:** New and underused vaccine support. ■ Red line on table indicates duration of support based on commitments. ■ Green line indicates 2010, the year of reference for the current study. **Source:** GAVI Alliance country hub at http://www.gavialliance.org/country/Guinea-Bissau/

community oriented while 67% of the upstream activities were equally divided between health workforce, information systems and community orientation. HSS financing ignored issues related to leadership & governance and to service provision. This last blind spot might be appropriate considering the dominant service provision focus that is already present in the ISS grant **(Table 3)**.

DISCUSSION

This study addresses supply side determinants from a perspective of how a global health initiative can strengthen a national health system to achieve better vaccination coverage.

In Guinea-Bissau slow progress can be attributed to several contextual barriers: to civil unrest in the country and to political instability associated health workers strikes and with shortages of petrol which limit travel and outreach activities. Frequent changes in government paralyzed departments including the MOH; the focal points for GAVI immunization and HSS were dissolved. This political instability is one of the consequences of the civil war of 1998, which disrupted the country to such an extent that, still today, it has not recovered (African Development Bank 2011). During these turbulent times the GAVI HSS funded activities were limited to some emergency interventions and the funds were not always applied according to eligible interventions which hampered its implementation.

Despite this, the MOH team has achieved a steady improvement in the vaccination coverage in the country and the support from GAVI Alliance, at a time when most donors reduced funding to the health sector of Guinea-Bissau (favouring with their support the reform of the security and justice systems), is seen as a major determinant of this relative success.also The HSS proposal development strengthened the planning efforts and helped identify and quantify important bottlenecks.

The consensus achieved in this study is that the main barriers in achieving the desired coverage objectives were, in order of importance, factors associated with implementation, governance, scarcity of funds, extrinsic factors and factors associated with the conceptualization of the proposals, human resources factors, factors at the community level and misunderstanding of the concept of health systems strengthening. Qualitative data collected during the Delphi rounds and discussion during the final consensus meeting highlighted some very relevant issues, mostly associated with human resources and implementation. Insufficient local production of human resources, very slow recruitment procedures, poor conditions of accommodation and low staff morale were some of the major factors indicated as underlying the unsatisfactory outcomes observed for vaccination. These are in line with the available published literature[34-40].

When discussing implementation the greatest emphasis was on the need to consolidate vaccination routines through stable, predictable outreach services. Two important overall policy consequences were: first, that the MOH's focus on vaccination campaigns and neglect of routine vaccination activities conflicted with the Delphi's focus on health system strengthening, both upstream and downstream; and, second, that the implementation of GAVI should be guided by regional and local implementation plans and not only according to a central national plan.

Most, 58%, of the activities proposed under the GAVI HSS proposal were activities targeting upstream barriers and, as such, very much aligned with the 54% consensus meeting recommendations addressing upstream issues. The concrete actions proposed as a result of the Delphi exercise include a request to review and re-programme the current proposal, to support training of the country's health leadership on HSS strengthening, to increase the focus on human resources issues (including initial training and salary support for new intakes into the system) and to strengthening routine services. This alignment notwithstanding, the actual measures proposed for action ignore important recommendations such as the need to address barriers at the level of leadership and governance and at the level of the financing system. The blindness of GAVI HSS proposals to the need to address issues related to the financing system has also been identified in a previous study[47]. This blindness to *strategic gaps* may reflect the challenges global health initiatives face in shifting from management through programs to managing through systems[50]. Management through programs focused on vaccination targets and, in Guinea-Bissau, delegated the financial management of the grant to the country's Rotary Foundation. Managing through the Guinean health system would require close attention to and investment in the financing system but would potentiate the impact of the support on both the overall health system and the eventual levels of coverage.

The major conclusion is that despite the difficult context and the major barriers identified Guinea-Bissau the State has succeeded, under very difficult conditions, in increasing in a sustained way its vaccination coverage **(Figure 1)**, albeit not achieving its specified target. The ambition of the target was encouraging. The achievement of the current level of coverage is laudable.

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CONFLICT OF INTEREST

Three of the authors – MD, SB, WVL, work for the funding agency. PF has been associated with consultancy work in Guinea-Bissau for many years and his works has been funded partly by the funding agency.

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