

The response to flexibility: country intervention choices in the first four rounds of the GAVI Health Systems Strengthening applications

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Since December 2005 the GAVI Alliance (GAVI) Health Systems Strengthening (HSS) window has offered predictable funding to developing countries, based on a combined population and economic formula. This is intended to assist them to address system constraints to improved immunization coverage and health care delivery, needed to meet the Millennium Development Goals. The application process invites countries to prioritize specific system constraints not adequately addressed by other donors, and allows them to allocate their eligible funds accordingly.

This article presents an analysis of the first four rounds of countries' funding applications. These requested funding for a variety of health system initiatives that reflected country-specific requirements, and were not limited to improving immunization coverage. Analyses identified a dominance of operational-level health service provision activities, and an absence of interventions related to demand and financing. While the proposed activities are only now being implemented, the results of this study provide evidence that the open application process employed by the HSS window has led to a shift in analysis and planning—from the programmatic to the systemic—in the countries whose applications have been approved. However, the proposed responses to identified constraints are dominated by short-term operational responses, rather than more complex, longer term approaches to health system strengthening.

Keywords Health systems strengthening, systemic constraints, immunization, planning, alignment

KEY MESSAGES

- To achieve effective immunization coverage, governments must address constraints at the health systems level.
- Allowing Ministries of Health to identify health systems constraints and appropriate interventions without a prescriptive blueprint produces greater diversity in interventions at both systemic and operational levels.
- Interventions proposed to deal with health systems constraints are focused primarily at the operational level, addressing in particular health service delivery, workforce issues and infrastructure, with interventions dealing with demand and financing under-represented.
- The focus on short-term solutions to systemic problems, rather than advocating longer term systemic responses, raises concerns regarding sustainability of interventions.

Introduction

In the 5 years following its establishment in 2000, the GAVI Alliance (GAVI), formerly the Global Alliance for Vaccines and Immunisation, made significant investments to improve immunization in countries with Gross National Incomes (GNI) of less than US\$1000 per capita. The alliance brings together key public and private stakeholder partners in this global health initiative: donor governments and their developing world partners, the World Health Organization (WHO), the United Nations Children's Fund (UNICEF), the World Bank, researchers and vaccine manufacturers, civil society organizations and philanthropists such as the Bill and Melinda Gates Foundation. It has increased access to immunization programmes, strengthened immunization services and supported the development of new vaccines (HLSP 2005; Naimoli 2009). By the end of 2005, however, the Alliance recognized that investing in immunization programmes was necessary, but not sufficient, to increase and sustain immunization coverage at levels required to meet the Millennium Development Goals (MDGs) (Kadama and Fife 2005)—a recognition reiterated in a recent call for a 'global fund for the health MDGs' (Cometto *et al.* 2009). A number of studies, including GAVI's own reviews (NORAD 2004), highlighted health systems constraints as impediments to progress towards improved immunization coverage, health care delivery for mothers and children, and other health outcomes. De-motivated health workers, inadequate management and supervision, logistic failures and unpredictable financing featured strongly (Brugha *et al.* 2002; Travis *et al.* 2004). For GAVI, and increasingly for other global health partnerships, these health system constraints also need to be addressed if their more specific goals are to be achieved (Marchal *et al.* 2009).

In December 2005, the GAVI Alliance Board committed US\$500 million of new funding to Health System Strengthening (HSS) for a 5-year period (2006–10), in parallel with its Immunisation Services Support (ISS) (GAVI Alliance 2005). The funding allocations are predictable, calculated on the annual number of births, with the poorest countries (GNI less than US\$365 per capita) receiving US\$5 per newborn per year, and those over this level receiving US\$2.50. These funding allocations provide a financial 'envelope' that countries can use as the basis for planning, confident that this amount will be available to them once their application completes the approval process. With their country funding allocation secure, the Ministry of Health's Planning Department coordinates the

GAVI-HSS planning process, under the supervision of a Health Sector Coordination Committee (HSCC), and with engagement of key stakeholders—multilateral and bilateral donors, and non-government organizations. This process focuses on internal allocation of funds, with countries identifying their priorities, and the 'best buys' available to address these key issues. An iterative review cycle ensures the quality of the planning process, with locally involved stakeholders engaging through the HSCC, and proposals subsequently being examined through a central GAVI preliminary review process and finally by the Independent Review Committee (IRC) (Naimoli 2009). The IRC works collaboratively with countries to ensure that inadequate applications are referred for clarification or resubmission, with a view to ultimate approval.

Round 1 commenced in October 2006, and in the first four rounds proposals were received from 40 (55%) of the 72 eligible countries. Country applications recently prepared for Rounds 5–7 will bring the number of applicant countries to 56 (78%) by June 2009.

The objective of the GAVI-HSS window is to help achieve and sustain increased immunization coverage, by providing complementary funding to strengthen the current capacity of the health system to provide basic health services. The application process seeks to highlight constraints that have not been adequately addressed by other donors or by the Ministry of Health itself, and to fill these gaps with activities that complement ongoing initiatives in immunization coverage and other health services.

Applications are intended to use available health sector or sub-sector reviews and situation analyses to identify key health systems obstacles to the effective achievement of immunization coverage. Planners are then asked to develop locally appropriate proposals for interventions that will overcome these obstacles, with estimates of the costs, and an appropriate set of monitoring and evaluation criteria.

The principles underlying the HSS window are consistent with other GAVI funding: the application processes are direct and accessible; the funding is intended for time-limited but sustainable projects that can demonstrate performance, and are open to stringent monitoring and evaluation (Naimoli 2009).

The following guidelines for the application process show the specific characteristics that distinguish GAVI-HSS initiatives:

- Firstly, the focus of the support is not on strengthening immunization programmes as such, but on

alleviating constraints to their effectiveness within the health system as a whole. Proposals can thus be expected to include interventions intended to improve the functioning of health systems generally, inclusive of but not exclusively aimed at enhancing immunization performance.

- Secondly, countries are able to choose their own health systems priorities, depending on their specific needs, and they are expected to ensure complementarity of these new proposals with the ongoing efforts of government and other stakeholders. The guidelines thus encourage applicants to explore local options for interventions, avoiding prescriptive blueprints. Nevertheless, they do identify three preferred themes for support (for which they provide examples): health workforce mobilization; the supply, distribution and maintenance systems for primary health care; and the organization and management of health services at district level and below.

The expected result of this approach is that proposals are designed to suit their local context and complement the inputs already offered by the government and other development partners. The effectiveness of the proposals is further enhanced by ensuring the use of available health systems coordinating mechanisms for their planning, implementation and monitoring. Existing sectoral and sub-sectoral analyses (such as recent health sector reviews, situation analyses, reviews of funding flows or human resources), undertaken collaboratively between key development agencies and the Ministry of Health, are used as the basis for the analysis of the health system and its constraints. This was intended to reduce duplication, ensure consistency with current health sector perspectives and priorities, and assure the quality of data sources for the health systems diagnosis.

As a result of these planning approaches, Ministries of Health, together with other stakeholders, have considerable leeway in deciding how to make the necessary trade-offs between the wide range of options for the strategic use of the available resources.

This article provides an overview of 32 approved applications (approved, or approved pending clarification or conditions) from the total 49 applications submitted in Rounds 1–4; detailing the types (categories) of activities and their budget allocations.¹ The aim is to examine the range of health systems strengthening interventions identified by county planning processes using the GAVI-HSS application, taking into account the specificities of their particular context, and their identification of local priorities.

Methods

The analysis reviewed all 49 GAVI-HSS funding applications by approval status, categorizing activities in each application. The study identified 18 of these 49 applications as coming from fragile states, listed as marginal, core or severe on the World Bank Low Income Countries Under Stress (LICUS) list for the fiscal year 2006 (Independent Evaluation Group 2007). Thirty-two country applications, approved at the end of Round 4 [of which 13 (40%) were LICUS countries] were examined for detailed budgetary analysis linked to intervention activities.

Fourteen applications were referred for resubmission, with the expectation of amendment for future approval, and three applications did not include sufficiently itemized budgets to enable analysis by activity categories.

Analysis was based on the six health system 'building block' categories from the WHO Framework for Action Everybody's business: strengthening health systems to improve health outcomes (WHO 2007). These inter-dependent building blocks include: service delivery, health workforce, health information systems, logistics (medical products, vaccines and technologies), financing, and leadership and governance. To enable a detailed descriptive analysis of proposed budget distributions in US dollars, subcategories were developed for these categories, to which four additional categories were added: demand, research, infrastructure and GAVI-HSS management costs. 'Logistics' as a category was collapsed, and its components allocated as a sub-category to the specific categories they supported. While it was recognized that some activities (20%) could have been allocated to more than one 'building block', the decision was made to allocate each activity to only one category and sub-category, to avoid double counting. This method proved a highly reproducible way of categorizing complex qualitative data with almost perfect agreement between two analysts on allocation to category (kappa 0.88) and sub-category (kappa 0.89).

For the purposes of this study, activities were considered the primary unit of analysis. Activities were defined as planned interventions identified within country proposals. As countries were given freedom in the planning process and an estimate of how much they could request, each process defined its own activities, with considerable variance, both in size, cost and level.

Consistent with GAVI's intention to address health systems constraints in this window, the WHO categorization was extended to include a classification of activities at either the 'operational' or 'systemic' level. This was of particular relevance to the budgetary analysis, as this GAVI window sets out to fund sustainable (rather than consumable) health system activities. Operational activities were defined as those that one would reasonably assume exist at the district level or below and do not involve comprehensive change at a higher, systemic level. Systemic interventions were defined as those taking place at, and/or involving change (action or resources) at, a level higher than the district. Where an intervention could be considered systemic and operational (depending on context specificities), it was classified as systemic. No one building-block category was considered to be uniquely systemic, or operational. For example, 'short and long term TA [technical assistance] to assist in building the capacity of 15 northern states and 20 localities' was considered a systemic-level human resource activity within the category leadership and governance; while within this same category, the activity 'support Health Management Teams in 20 districts to undertake supervision of services delivery through provision of 1 vehicle per district' was considered an operational-level logistics activity. Discrimination between categories was difficult, though moderate agreement (kappa 0.55) was found between two independent analysts for allocation to systemic or operational levels (Viera and Garrett 2005).

Proposals were also examined to identify those whose activities were limited to immunization (project specific). Proposals with activities clearly involving health systems components that were not limited to improved immunization coverage were held to be non-specific.

The application forms were also examined for linkages between intervention activities and identified health systems constraints. Linkage of activities to constraints was traced from the activity to the constraint they addressed, rather than from the constraint to corresponding intervention activities. Linkage was assessed as strongly explicit or weakly explicit where connections were evident in the application, and implicit where no overt linkage was made.

Data were tabulated using Microsoft Excel 2007 spreadsheet functions with selective filters to facilitate analyses and generate generic lessons. Statistical analyses were undertaken in Epi Info 3.4.3.

Limitations of data

The planning and budgetary data used in this analysis was submitted as part of the GAVI-HSS funding application, rather than a research process. Constraints and intervention activities varied in their scope and detail within and between applications, and while budgetary allocations for these activities provide some indication of the relative priorities in resource allocation, they do not directly reflect the potential impact of interventions.

Findings and discussion

Figure 1 shows the distribution of activities by level and category for all 32 approved country applications, demonstrating the broad diversity of activities and divergence in the patterns of interventions. Proposals demonstrated a wide variance in the combinations of systemic and operational activities, though fragile states tended to propose more activities at the systemic level than non-fragile states.

In total, US\$427 358 794 has been allocated among the 32 approved country applications examined. As the formula for GAVI-HSS entitlements is linked to GNI and demographic data, and low GNI to fragile status, 44% of this budget (US\$189.1 million) will be directed to the 13 fragile states, proportionately higher than the allocation for 19 non-fragile states. Only 23 country applications sought their full funding entitlement. In the remaining applications, calculations appear to be based on the cost of planned interventions. In one case, the GNI rose over the threshold of US\$365 per capita during the process of resubmission, almost halving the level of available funding.

Applications proposed a mean of 24 activities that responded to a mean of 10 identified constraints. While over half of these constraints identified were systemic (average 5.7 compared with 4.3), the intervention activities devised were mainly at the operational level (average 15 activities), rather than the systemic level (9 activities). This pattern was consistent through all categories, with the exception of leadership and governance, where systemic constraints were (quite logically) more likely to be addressed by activities implemented at that level.

The internal coherence of the applications was good. Systemic interventions were explicitly linked to constraints in 89.9% of cases, with operational interventions explicitly linked in 93.4% of cases.

GAVI-HSS management costs accounted for 8.8% of the total allocation, and were excluded from analysis. While 59% of the funding requested for project activities was linked to systemic, rather than operational constraints, the focus of the proposed 771 intervention activities was predominantly at the operational level, with only 17% of the budget directed to activities at the systemic level, and 83% applied at the operational level.

Fragile states tended to allocate a greater proportion of their budgets to systemic level activities (21.9%), particularly in the areas of leadership and governance and information, compared with non-fragile states (13.5%). Fragile states allocated proportionately less to health services delivery, but greater proportions to health workforce activities, and especially to activities promoting demand for services.

An analysis of the programme specificity of all activities suggests that 93.1% are not limited to immunization services, but have broader health systems applicability, a trend that is stronger in those proposals that were approved. Fragile states were significantly less likely to propose immunization-specific activities than non-fragile states (χ^2 analysis: $P < 0.005$).

Of the eight categories examined (excluding GAVI-HSS management costs), 94% of the total budget is accounted for by proposed activities in four categories: service delivery, health workforce, infrastructure, and leadership and governance, with two-thirds of the total budget requested for service delivery (43%) and health workforce activities (23%) (Table 1).

Health service delivery

The requested budget for the 143 proposed health service delivery activities (US\$167.3 million) is focused at the operational level (132 activities), and dominated by the purchase of necessary medical equipment and drugs (38%), cold chain and related technology (11%), the vehicles and transportation required to deliver these (14%) as well as ambulances to establish or reinforce referral systems. Twenty per cent of the budget is committed to the design, development and implementation of health services, such as introducing a minimum package of activities (World Bank 1993; Unger and Criel 1995). Complementing service implementation are activities designed to increase access and coverage, particularly in rural areas. No applications explicitly addressed issues of quality improvement.

Health workforce

The main focus of the 147 proposed health workforce activities is on training-related interventions at the operational level (111 activities), with 56% of the total workforce budget of US\$89.9 million aimed at improving the skills and performance of (mostly) existing staff. Recruitment incentives to attract remote and rural staff, salary supplements and other incentives for health personnel form a cumulative 40% of the remaining workforce budget, though the incentives proposed (bonuses, contracts and performance-based grants) lacked specificity and detail. These responses to inadequate civil service salaries are further supplemented by travel allowances included in training that effectively 'top-up' basic income (Van Lerberghe *et al.* 2002).

	Systemic activities								Operational activities							
	Service delivery	Health workforce	Health information systems	Infrastructure	Financing	Leadership and governance	Demand	System research	Service delivery	Health workforce	Health information systems	Infrastructure	Financing	Leadership and governance	Demand	Implementation research
Fragile states																
Non-fragile states																

Figure 1 Interventions by level and fragile-state status

Only 1% of the workforce budget has been requested to enhance management and workforce planning functions, though 24% of training expenditure is requested for the development of these areas.

Infrastructure

Construction and renovation for Ministry buildings, regional warehouses, housing and health services account for 93% of the infrastructure budget (US\$49.6 million). In 13 applications, the remaining 7% (US\$3.3 million) is shared between the design of

logistics or maintenance systems—such as the development of procurement, transport and equipment maintenance systems—or training in these areas.

Leadership and governance

Thirteen per cent of the budget (US\$51.4 million) has been requested for leadership and governance, with 157 activities (US\$23.8 million) proposed at the systemic level, and 90 at the operational level (US\$27.6 million). While this category represents a smaller budgetary allocation than health services

Table 1 Distribution of activities and budget allocation for all 32 applications

Category	No. of activities	Budget allocation to operational activities (US\$)	Budget allocation to systemic activities (US\$)	Total budget allocation (US\$)	%
Service delivery	143	153 229 519	14 080 306	167 309 825	42.9
Health workforce	147	83 158 487	6 837 635	89 996 122	23.1
Leadership and governance	247	27 562 546	23 828 900	51 391 446	13.2
Infrastructure	72	45 065 223	4 629 639	49 694 862	12.8
Health information systems	110	8 676 505	12 371 880	21 048 385	5.4
Demand	15	2 706 260	3 887 316	6 593 576	1.7
Financing	15	624 430	1 122 668	1 747 098	0.4
Research	22	1 687 805	294 300	1 982 105	0.5
Total	771	322 710 774	67 052 643	389 763 418	100

delivery, it does include a range of functions that are integral to the effective implementation of services, and the higher identification of leadership and governance activities in fragile states reflects a direct linkage between perceived capacity and identified responses. Supervision and management account for 31% of the budget, and training in capacity building and management, together with the development of necessary manuals and guidelines, add a further 29%. Twenty-two per cent of the budget has been requested for policy, planning and implementation processes. Given the overt emphasis on inclusiveness in the application process, it is interesting that only 17 countries requested resources to enhance stakeholder collaboration—a total of 8% of the leadership and governance budget.

Health information systems

Health information systems activities linked to supervision and management amount to 5% of the total budget (US\$21 million), but were proposed in 29 of the 32 applications included in this analysis. Half of this budget was committed to data collection, transfer and analysis. The design and development of information systems, and training related to these, accounted for a further 26% of this component. Activities proposed focused on infrastructure, collection and collation of data, rather than on its interpretation or application. Twenty-two applications planned a more structured systems-level approach to problems in supervision or analysis: development of instruments, targeted training or the incorporation of supervision into health curricula.

Demand

Demand issues were conspicuously limited in analysis of constraints and rarely proposed as interventions. Only 15 activities were proposed, in a total of eight applications, at a total cost of US\$6.6 million (1.5%). Demand issues were conceptualized in terms of limited awareness, problems in care-seeking behaviour or community participation, with a corresponding response in terms of social mobilization or information, education and communication (IEC) initiatives. Only one application identified financial constraints for patients as a demand issue, responding with the piloting of a model for demand-side financing.

Financing

Inadequate funding appears to be an omnipresent problem for these developing country health systems. The proposed interventions included the purchase of consumables under health services delivery, the supplementation of health worker salaries and incentives under health workforce issues, and significant contributions to construction in infrastructure. However, despite this, health financing as a systemic constraint was rarely raised, and only 10 applications proposed interventions on improving financing mechanisms, with the 15 planned activities costing at only US\$1.7 million (0.4% of the budget). Of these, two proposals identified schemes to reduce the high cost of services to the community: a voucher system for malaria treatment and an insurance system to improve service utilization. The key activities categorized under financing are related to budget planning and management, and improving financial flows. Together with financial training, these activities accounted for 91% of the budget requested for financing.

Interpretation and conclusions

In its first four rounds of funding, the GAVI-HSS window has prompted the submission of a broad range of proposed initiatives, responding to varying local health systems contexts, and demonstrating clear country capacity and leadership, including in countries classified as 'fragile states'. The decision not to apply a programmatic blueprint has allowed eligible countries to identify their own health systems constraints to increasing immunization coverage and maternal and child health services, and to elaborate what they consider appropriate responses. While this analysis is only able to analyse proposals for activities, rather than their outcomes, the results suggest that GAVI-HSS funds will be expended in ways that are consistent with the initiative's intentions; and offer encouragement to other global alliances considering health system strengthening.

Countries have mined existing health sector analyses for a comprehensive understanding of the barriers. Deficits in the current support for health systems have been identified. Proposed activities have sought to address gaps in the broader health system, rather than concentrating on a narrow programmatic focus. Countries' prioritizing of health service

delivery, workforce and infrastructure is a response to the scarcity of resources in GAVI-eligible countries. Specifically, attempts have been made to address a largely de-motivated health workforce and have acknowledged the constraints around leadership and governance.

There is no evidence for the kind of stereotyping of proposals that may occur when donor expectations and directive technical assistance combine to produce situation assessments or initiatives that look very similar across countries (Craig and Porter 2003). Locally specific solutions have been explored, though it is clear that the least developed countries share common constraints in limited supplies and equipment, gaps in the logistics of delivery, insufficient salaries and inadequate incentives. This diversity has implications for the design of the evaluation of the implementation of these initiatives (GAVI Alliance 2007), as does the focus on the removal of barriers to improving coverage. This is different from initiatives that seek to define inputs that directly impact on programmatic outcomes. Future evaluation will need to focus on success in overcoming these barriers to coverage, recognizing its contribution to the health system as a whole.

This positive assessment, however, needs to be qualified.

Fourteen of the 49 applications were referred for resubmission, and three did not have adequate financial detail for analysis. While the GAVI-HSS process assures countries of their calculated allocation once necessary changes are made, the need for IRCs to request resubmission suggests significant discrepancies between country proposals and the relatively liberal guidelines offered.

In addition, the strong identification of systemic-level constraints in the analysis contrasts with the arguably disproportionate share of the budget allocated to operational activities. Three factors may explain this. Firstly, the application process asked countries to examine both systemic and operational constraints to increasing immunization coverage; however, only operational examples of activities were provided in the guidelines. Countries may have responded to this by focusing on operational activities, attempting to 'second guess' the GAVI Board's intentions, and to some extent, exercising self-censorship over intervention choices. Secondly, familiarity with programmatic planning is stronger in least developed countries, although most have limited expertise or experience with addressing constraints using a systems approach. Interventions at the operational level are also more readily conceived, implemented and evaluated, and will enable early, more predictable outcomes. Finally, the impact of activities is not reflected in their cost alone—higher level interventions to influence systemic change may not require as much funding as large-scale service delivery.

Furthermore, the identification of health system constraints has not been without blind-spots. Three issues that can *a priori* be considered as significant in many of the applicant countries have little or no prominence in the proposals. Examples conspicuous by their absence are barriers that affect demand (for example, user fees that prove a frequent deterrent to service uptake); workforce behaviour (other than the vague 'de-motivation') and competence (for example, absenteeism, under-the-counter payment, or client-unfriendly behaviour affect performance in many countries); and the under-funding

of the health sector (Van Lerberghe *et al.* 2002; Palmer *et al.* 2004; Marchal *et al.* 2005; Borghi *et al.* 2006; Dieleman *et al.* 2006). The absence of these issues in the situation analysis—and the corresponding lack of interventions to address them—may suggest that countries have adopted a health-care-provider perspective that skirts around potentially controversial issues and considers deep structural constraints as a given rather than as a problem that needs to be solved systemically.

There is thus some cause for concern regarding the sustainability of selected initiatives and the ability of countries to identify the full range of systemic constraints. Despite the focus on health service delivery, there is minimal investment in activities addressing demand. There has been a significant commitment to recurrent costs—purchases of consumables and salary supplementation—but a lack of attention to establishing and strengthening logistics or financing systems. Lastly, the implications of the diversity of proposals for monitoring and evaluation from the donors' perspective are issues that have not yet been resolved.

More explicit linkages between the analytical work and the selection of interventions may help overcome these problems to some degree, as would better technical support. Given the importance of tailoring the initiative to local specificities, a deep understanding of the context is critical for effective support. This implies greater reliance on domestic expertise than is the case in more conventional donor preferences.

Despite these caveats, this study provides evidence that gains can be anticipated from the degree of flexibility and country discretion in developing proposals that the GAVI-HSS window has provided. Following implementation, there is a clear need to undertake systematic evaluations of the activities proposed in these applications, to determine the appropriateness and effectiveness of country choices in resolving HSS constraints. With the increasing recognition of the importance of HSS to achieve global targets (Travis *et al.* 2004), and the attention now being shown to HSS by the Global Fund to Fight AIDS, Tuberculosis and Malaria and the G8 (Reich *et al.* 2008; Marchal *et al.* 2009; Reich and Takemi 2009), this insight into how countries construct their priorities and responses is most timely.

Endnote

¹ The 32 applications reviewed for this analysis were submitted by the following countries: Afghanistan, Armenia, Bhutan, Burkina Faso, Burundi, Cambodia, Central African Republic, Chad, Democratic Republic of the Congo, Eritrea, Ethiopia, Ghana, Guinea Bissau, Honduras, Kenya, Korea Democratic People's Republic, Liberia, Madagascar, Malawi, Nepal, Nicaragua, Nigeria, North Sudan, Pakistan, Rwanda, Sierra Leone, Sri Lanka, Tajikistan, Uganda, Vietnam, Yemen, Zambia.

Conflict of interest

The research for this article was originally conducted in support of the work being undertaken by the GAVI-HSS Task Team.

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Marthe Sylvie Essengue Elouma contributed to this analysis during her employment at WHO; however she currently works for the GAVI Alliance. Naima Hammami has participated in the pre-review of GAVI-HSS proposals; Benedicte Galichet, Lieve Goeman and Peter Hill were on short-term contracts with WHO for this analysis. Patrick Kadama is currently part of the GAVI-HSS Task Team; and Wim Van Lerberghe is a past member of this Team.

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