

*PERFORMANCE ASSESSMENT OF
GAVI-HSS INTERVENTIONS
IN 20 TOWNSHIPS*



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Executive summary

The performance assessment of GAVI-HSS interventions in 20 townships was jointly conducted by the two international experts and the Myanmar team from the World Health Organization (WHO) country office and Ministry of Health (MOH) officials between June and August 2013. The objectives of the joint assessment of the first twenty townships are:

- To review and assess the program implementation process, and the program's key outputs and outcomes
- To provide policy recommendations for the ongoing HSS program implementation.

This joint assessment applies many methods, including a) review of relevant program documents, secondary data analysis, b) primary data collection through a questionnaire survey of Auxiliary Midwives and Community Health Workers, and c) field visits and interviews with key health staff in two selected townships.

The GAVI HSS Program is developed in line with national health policy and plans, with strong engagement and ownership from multiple stakeholders including relevant Departments of the MOH, international development partners, and civil society organizations. The design of the GAVI HSS Program is evidence-based (in consideration of the township assessment and local specific coordinated township health plan) and implementation is proceeding in the right direction. Measurable outputs of GAVI HSS Program include: a) the number of outreach services offered to hard-to-reach areas (who might not, in normal situations, get access to care due to physical, economic and financial barriers), b) the number of new community based health volunteers notably auxiliary midwives and community health workers being trained and who serve in their community, c) the number of beneficiaries of the hospital equity fund. After two full years of the program, these outreach services contributed to increased coverage of key indicators such as ANC, TT2, SBA, DTP3 and BCG implementation.

In 2012, the total estimated resource needs for 20 townships--as judged from the township assessment--were 6.552 billion Kyat. In reality, there was a shortfall of 51% of total resource required. Only 3.189 billion Kyat was available (56% contributed by the MOH and 44% by GAVI HSS program). The MOH budget is for staff salary while the GAVI HSS is for program operations. The expenditure, per head of population from the GAVI HSS program to hard-to-reach villages, is as low as US\$2.3 and US\$1.2 in 2012 and 2013, respectively. Although such a marginal per capita investment by targeting hard to reach areas has resulted in improved access to the basic primary care services, significantly more resources are needed.

Health infrastructure is one among many challenges. Out of the total 115 RHC and 617 Sub-centers in the 20 townships, many required major renovation as they are more than 45 years old. In 117 sub centers (19%), there is no building for service provision. In addition, public utilities such as electricity, water, and sanitary latrines were inadequate. Realizing this, Government is recently planning to invest in construction of health facilities. GAVI HSS is going to support a construction of 30 sub-rural health centers.

Similar to other developing countries, Myanmar is facing classic challenges of health workforce shortage and mal-distribution. Out of the total 108 RHC in 20 townships, only 8 RHC (7%) had reached the MOH standard of having 13 health professionals; 23 RHC (21%) had 9 health professionals and the remaining 77 RHC (72%) had less than 9 professionals. These 108 RHC serves the total 3.023 million in 20 township, on average one RHC covers around 28,000 population. On average, one midwife is responsible for more than 5,000 people--ranging from 1,816 in Htilin to 10,000 in Hsipaw. Noting this five-fold difference, the balance of midwife allocation across

townships needs to be reviewed and corrective measures are urgently needed. An average of 0.2 midwife per 1,000 population of these 20 townships is far below the global benchmark of 2.28 doctors/nurses and midwife per 1,000 people.

Voluntary health workers become an indispensable and unique in Myanmar. Community members were recruited to attend six-month auxiliary midwife (AMW) and one-month community health worker (CHW) training courses. AMW and CHW living in hard to reach villages, sharing the same language and cultural identity with the community, are invaluable health workforces in supporting health services in the local communities. GAVI HSS program supports recruitment, training and refresher courses for the AMWs and CHWs in the GAVI HSS program support townships. Due to resource constraints, each township has a quota of 20 new (six-month) trained AMWs and 20 newly (one-month trained) CHWs--as well as 50 refresher courses for both AMWs and CHWs.

Of the total GAVI HSS spending US\$ 2.437 million were spent in 2012 including US\$ 0.9 million (37%) on hard-to-reach areas [such as supervision activities, training of AMW/CHW including kits, continue training of BHS, Health Systems Strengthening officers, data quality assessment, support in producing CTHP and motorcycles]. The remaining was spent in 'non-hard-to-reach' areas. The proportion of expenditure in hard-to-reach areas increased in 2013 to be 49% of the total GAVI HSS program expenditure for that year.

It's generally acknowledged by most in the healthcare sector that an increased investment in outreach services will increase health service coverage, and this report puts this concept beyond doubt. From the statistics of MCH service coverage, which were township-wide data, HMIS data shows overall township coverage rather than disaggregate data at the village level. Such limitation hinders the assessment of direct contribution of GAVI HSS Program. But comparing the 2013 achievements with the 2010 level (prior to the program) we note a significant improvement of a few MCH service coverage. Out of 20 townships, 19 demonstrate increased coverage of antenatal care, 15 demonstrate increased SBA coverage, 11 demonstrate increased TT2 and BCG coverage. The secondary data analysis showed that outreach services to hard-to-reach communities four times a year boosts ANC, SBA, TT2, DTP3 and BCG coverage. Without these outreach services, people residing in hard-to-reach villages would not gain access these services. The total 2,342 sessions of outreach services (in 2012 equivalent to 10 sessions per township per month) is likely to boosts MCH service coverage. The civil unrest in Rakhine State interrupts implementation of routine and GAVI HSS program services significantly.

Due to limited GAVI HSS Program resources, stretched over 180 townships throughout the country, an annual amount of US\$ 10,000 was earmarked to each township Hospital Equity Fund, to subsidize the poor in the whole township. With an average population of 160,000 per township and poverty rate of 25.6% in 2010, there are some 40,960 poor people living under national poverty line in each township. Hospital Equity Fund budget is US\$ 0.24 per capita poor people in a district. After a full year implementation, by June 2013, the total US\$ 149,822 was used benefiting 2,072 inpatients, an average US\$ 72 per capita expenditure was noted.

Hospital Equity Fund prevents potential maternal deaths or complication from life threatening obstetric conditions such as obstruct labour, hypertensive in pregnancies require emergency obstetric care; for example, out of total 1,327 obstetric cases, 743 (56%) were cesarean section and 348 (26%) vaginal delivery. Hospital Equity Fund serves as an innovative first step of a long journey towards more comprehensive financial risk protection that targets the poor and focuses on MCH services to accelerate progress of MDG 4 and 5. The Hospital Equity Fund can and should be scaled-up if the government has more fiscal reserves and a continued political commitment.

Recommendations were proposed.

1. Program management: There is a need for regular township assessment in order to support annual Coordinated Township Health Plan and to judge progress. Regular meetings should be maintained among township health officers, RHCs and Sub-centers. The rapid turnover of township medical officer, through mandatory transfer or rotation every 2-3 years, should be evaluated as to its pros and cons. The continuity of township management is essential for rural health systems development in Myanmar.
2. Outreach services to hard-to-reach villages: This is the vital program component that should be sustained and improved. The government should scale-up supply-side capacities; especially at sub-centers. It indicates significant need for investment in health infrastructure. Adequate supplies of basic equipment, medicines and medical supplies as well as motorbikes for transportation to enable basic health staffs to better perform their functions. Offering outreach services to the hard to reach areas are essential, it should be maintained as an interim measure until static services are gradually established and accessible by them. In view of change in government policy in providing free medicines, the supplies of five items of medicines from GAVI HSS program should be reviewed.
3. Health workforce:
 - a. Basic Health Staffs, midwives are the backbone of health delivery systems in Myanmar, they are the most valuable assets in delivering quality MHC and primary health care services to rural people not able to attend hospital and doctor services. The recommendations made by Kyawt Sann Lwin are in line with WHO recommendations for decentralized recruitment of young rural women--especially from hard-to-reach areas--for midwifery training, where necessary exemption mechanism for recruitment is needed.
 - b. Health volunteers, traditional birth attendants and auxiliary midwives hold quite a meaningful share of antenatal care and delivery in rural Myanmar. Given their important role and contributions, the MOH and local government should continue to scale up training as well as provide refresher courses, supervision and support by sub-centre and RHC.
4. Financial risk protection: The Hospital Equity Fund should be continued. In line with current policy discourse on universal health coverage by the government, the initial provision of free MCH services to all pregnant women and under five should be the entry point of the long march closer to universal health coverage. It is noted that the government needs to continue to spend more on the health of the population. Note that when universal free MCH service for all is adopted, the burden of means-testing (to verify poor status, as is the current practice in Health Equity Fund) will be annulled.

Financial support by GAVI HSS program is tiny compared to the overall resources requirement in the 20 Townships and at only the amount of 2.3 and 1.2 US\$ per capita in hard-to-reach villages in 2012 and 2013 and it seems to spread too thin to many activities and many townships. This is less than a drop of water in the ocean of health needs of population. Nonetheless, it is valuable as it is the only program from International Development Partners on health system strengthening.

Importantly, the GAVI HSS program is an externally funded program, it is not sustainable in the long term, mechanism for longer term sustainability should be considered, such as other development partners as well government budget.

Introduction

The Global Alliance for Vaccines and Immunization (GAVI) supports the strengthening of the Myanmar health system with a four year Health System Support (HSS) program (2011-2015). This program is being undertaken via phased implementation; covering 20 townships in the first year, and 60 townships by 2013. By 2015, it will cover 180 townships. Two international experts were hired, Drs. Viroj Tangcharoensathien and Walaiporn Patcharanarumol, to conduct a program assessment in order to assess and review the overall performance of HSS interventions in the first 20 townships, and suggest strategic recommendations to guide a way forward.

The objectives of the assessment

This assessment was jointly conducted by the two international experts and the Myanmar team from the World Health Organization (WHO) country office and Ministry of Health (MOH) officials between June and August 2013. Although the Myanmar team was involved with the design, coordination and support of the GAVI HSS program, the local and international team had a role to ensure the objectivity of the assessment. The objectives of the joint assessment of the first twenty townships are:

- To review and assess the program implementation process, and the program's key outputs and outcomes
- To provide policy recommendations for the ongoing HSS program implementation.

This joint assessment applies multiple methods, including a) review of relevant program documents, secondary data analysis, b) primary data collection through a questionnaire survey of Auxiliary Midwives and Community Health Workers, and c) field visits and interviews with key onsite stakeholders in two selected townships. This assessment focuses at the implementation and outputs of the GAVI HSS program. It aims to answer 'what' but not 'how' and 'why' of the GAVI HSS program. Many topics are very important for example governance on the program design but it is outside the scope of this assessment.

Since 2010 national elections, Myanmar is going along with rapid changes in the political system and administrative structures. The new Myanmar government is carrying out many reforms, including health sector. Many policy changes for example 'people center concept' are designed and implemented in parallel with GAVI HSS program implementation. The assessment team realizes these changes and takes them into account as context of the Myanmar society but does not plan to measure them as a confounder of the GAVI HSS program implementation.

Structure of the assessment report

The assessment report consists of seven chapters.

Chapter One: an illustration of the development of the GAVI HSS proposal since its beginning until its approval and preparation for implementation.

Chapter Two: an assessment of the GAVI HSS program preparations, implementations, and key outcomes in 20 townships.

Chapter Three: an assessment of the trend of maternal and child health (MCH) service coverage between 2008 and 2011 (which is considered as pre-GAVI HSS program) and 2012-2013 (when the HSS program was implemented in 20 townships). This assessment looks into seven indicators: 2nd dose of tetanus toxoid coverage among pregnant women, coverage of antenatal care, coverage of

skilled-birth attendance, coverage of BCG, coverage of DTP3, coverage of oral re-hydration solution for under 5 years children, and coverage of sanitation.

Chapter Four: an assessment of the implementation and outcome of the hospital equity fund; including its level and profiles of expenditure.

Chapter Five: an assessment--using literature reviews and self-administered questionnaire surveys--of the life and works and contributions of midwives, and health volunteers (including auxiliary midwives and community health workers).

Chapter Six: a description and assessment of field visits in two selected GAVI HSS townships about how the program was implemented and what are the main strengths and weaknesses.

Chapter Seven: this chapter serves as a discussion section, a conclusion section, and a recommendation section (the latter with regards to policy recommendations).

Chapter 1 GAVI HSS proposal development

In recognition of the health system challenges in Myanmar (notably, the limited government investment in health, inadequate human resources, capacity, logistics and infrastructure, and the challenge of sustaining high level of immunization coverage) the Board of Global Alliance for Vaccines and Immunization (GAVI), invited the Myanmar Ministry of Health (MOH) to submit a Health System Strengthening (HSS) proposal in 2005 [1]

By 2008, 51 eligible countries had applied for GAVI HSS support; of which 39 countries (54% of eligible countries), including Myanmar, had been recommended to the GAVI Board for funding. [2] The application for Myanmar GAVI HSS funding was submitted in March 2008 and approved in August 2008. [3] Due to sanctions in Myanmar and GAVI's requirement for Myanmar to meet their Financial Management Standards, GAVI did not disburse the funds until agreement was reached with WHO and UNICEF in administering GAVI HSS funds in 2011.

The aim of the GAVI HSS proposal from Myanmar is to achieve and sustain increased immunization coverage, through strengthening the capacity of the health system to provide immunization and other related health services at the community level with a focus on improving child and maternal health.[4] The proposal is in line with the National Health Policy of Myanmar focusing on primary health care strengthening, especially in rural areas, through the provision of adequate and equitable distribution of health service to meet the needs of the population.[5]

1.1 GAVI HSS proposal: country ownership and alignments

The GAVI HSS proposal was initially drafted in early 2007. All the GAVI HSS stakeholders in Myanmar agreed that an in-depth health system analysis would be required in order to identify health service gaps and develop an evidence-based HSS framework for the GAVI HSS proposal.[6] The Ministry of Health (MOH) fully supported the in-depth health system analysis which took about 12 months until the HSS strategy was drafted.

The design process was driven by the Myanmar government which undertook to form coordinating bodies and a technical working group (whilst WHO and UNICEF rendered technical support). It was also aligned with Myanmar Health Vision 2030 and The Health Sector-National Health Plan 2006-2011. This is a similar set-up to those of other countries of the region (for e.g. Indonesia, whose proposal was aligned with the Indonesian Ministry of Health Strategic Plan, 2004-2009, which aimed to mobilize and to empower the community to live healthy and to improve primary care services).[7] However, in some countries, for example: Cambodia, GAVI HSS is aligned not only with the Health Sector Strategic Plan 2 (2008-2015) but is integrated within a sector-wide approach program collaborating with other major partners including the World Bank, AUSAID, DFID and the AFD, and also works to complement and build upon the GFATM HSS project currently under implementation.[8]

1.2 Gap analysis: health systems barriers

Between August and November 2007, five studies and desk reviews were conducted jointly by Department of Health, Department of Medical Research, and Department of Planning, which included a midwifery Study, studies into community perceptions of health, a review of management effectiveness, an EPI Desk Review and also a mapping of NGO activity in health services support in Myanmar. All these studies culminated in the publishing of a Health System Working Paper entitled 'Health Systems Barriers to Improving Immunization and MCH coverage in Myanmar'.

In brief, the gap analysis highlighted 3 main barriers in the health system access: (a) service delivery (b) program coordination and (c) human resource management, which focused at the township level and below and on the hard-to-reach areas and the never-reached areas. [9]

1.3 Coordinating bodies and technical working groups

In Myanmar, the National Health Sector Coordinating (NHSC) Body for HSS, headed by the Director General of the Department of Health, was formed in early 2007 with high level officials and technical personnel from multi-sectoral departments as members, to oversee development and implementation of the national health system strengthening strategies. This included activities to ensure alignment of GAVI HSS goals with National Health Plans, including the coordination of inputs from central level departments and from a broad range of stakeholders about how to develop the HSS strategy and draft the proposal.

The terms of reference were clearly defined and meetings of the NHSC were held regularly (at least twice a year--and they may also be convened as required) from September 2007 to guide the drafting of the proposal. The Technical Working Group (TWG) led by the Planning Division of the Department of Health, was also assigned to provide oversight and to coordinate the HSS application process and to lead the drafting of the proposal/application (with technical inputs from the Planning Division and the Public Health Division of the Department of Health (and other related departments, especially EPI and the State/Regional Health Directors). The Technical Working Group met more frequently, averaging almost once a month during the HSS proposal development. A smaller HSS working group was also formed for conducting special studies, such as a detailed health system analysis, which provided evidence-based input into the GAVI proposal. The members of the NHSC also provided inputs at a meeting on the 26th September 2007; when the proposed HSS objectives, activities, and HSS implementation strategy (outlined at the WHO/SEARO HSS development workshop) were presented.

Similarly, in other countries of the region, various national level bodies (either already-formed or newly-formed) were involved in overseeing the development of the proposal. In the Lao PDR, since 2005, there has been a coordinated effort. Here, the members of the Sector Working Group for Health at the policy level, as well as the operational level, and also the MCH/EPI Technical Working Group, all participated in the development of the application. [10] In Sri Lanka, the Health Master Plan Implementation Steering Committee (which is a part of the National Health Development Committee and which has been operational since 1983) provided oversight for the development of the GAVI HSS proposal.[11]

In Myanmar, the representatives of local NGOs with close links to the government (such as the Myanmar Maternal and Child Welfare Association, Myanmar Red Cross Society, Myanmar Women's Affairs Association, Myanmar Medical Association, Myanmar Health Assistant Association) participated in the proposal development. Civil Societies, which were very few during that period, and also the private sector, were not involved.

1.4 Strategic planning workshop and approval for submission

The HSS Technical Working Group convened a 5 day workshop in Mandalay in November 2007, with participation from township medical officers, Regional/State Health Directors, consultants from WHO SEARO and UNICEF and national advisors. At this workshop, the findings of the HSS assessment, studies and barriers were presented. Based on clearly-defined priority barriers, a logical framework for the strategy was formulated that linked health systems gaps to the health system objectives, activities, and monitoring and evaluation. These frameworks were also aligned with the priority gaps and strategies of the National Health Plan. Here also at the workshop, a consensus was reached for the final version of the GAVI HSS application.

A review meeting was held in January 2008, where international NGOs were invited to review and provide comments on the draft proposal. The peer review process commenced in mid-January 2008 and the draft proposal was circulated to all the stakeholders. The proposal was revised and finalized in early February 2008, after taking into account all relevant comments of the reviewers. A meeting of the National Health Sector Coordinating Committee held was on February 15th 2008, where the application which was endorsed then sent for final approval by the Ministers of Health, Finance and Revenue. Subsequently it was submitted to the GAVI Board in March 2008.

1.5 Selection of townships for GAVI HSS program

The criteria for selection of the proposed 180 townships (55% of total townships in the country) were based on them exhibiting DPT 3 coverage below 80% and skilled birth attendance (SBA) less than 60%, including 103 townships with “catch-up immunization” (where services are provided to children under three during 3-4 rounds a year when seasonal accessibility is possible. [12] The first phase, involving twenty townships, was variously chosen because they fulfilled the above criteria and they represented the hilly, plains, coastal and delta regions.

The site selection process in Myanmar GAVI HSS program was similar to that of other countries. For example, in Bangladesh, 13 districts were chosen where immunization coverage rates were low, the community clinics were in poor condition and lacked of equipment, the staffing was inadequate, and the clinics were located in remote areas with few roads or areas only accessible by boat. [13]

1.6 Concluding remarks

The content of the Myanmar GAVI HSS proposal is driven by evidence through gaps analysis of barriers to primary health care (with special focus on immunization and maternal and child health services). It is also developed in line with national health policy and plans, with strong engagement from multiple stakeholders including various relevant Departments of the MOH, International Development Partners, and NGOs.

Chapter 2 Preparations, implementations and key outcomes in 20 townships

2.1 Background

The GAVI HSS program covers four years: mid-2011 to mid-2015. The GAVI supports Myanmar through three different windows: introduction of new and underused vaccines, immunization service support and health systems strengthening (HSS). The GAVI HSS program covers four year: mid-2011 to mid-2015. GAVI HSS designs to support three program areas, see table 2.1

Table 2.1 Status of implementation by programmatic areas

Program areas	Implementing partners	Status
Overall HSS strategic interventions	MOH & WHO	Implementation started in 20 townships since early 2012 and expanded to 60 townships by 2013.
Procurement and supply of basic drugs and vaccines	MOH and UNICEF	Implementation started in 20 townships since early 2012 and expanded to 60 townships by 2013.
Infrastructure (construction of sub rural health centers	Myanmar Red Cross is Identified to construct the facilities.	GAVI approved Proposal from MRCS and Grant Agreement signing under process.

HSS Fund, approved by the GAVI Board, was disbursed to and managed by the Myanmar MOH principle development partners (namely WHO and UNICEF). In addition, GAVI is in the process of signing the Grant Agreement with Myanmar Red Cross Society, a local NGO, Ministry of Health to implement the construction of sub-Rural Health Centers.

A significant portion of the HSS programme in Myanmar is implemented jointly by WHO and the MOH following the conditions mentioned in the Aide Memoire signed between WHO-GAVI-MOH. UNICEF is responsible for procurement of supplies of basic medicines and kits for the GAVI-supported townships.

The National Health Sector Coordinating (NHSC) body, established in 2007, was mandated to support GAVI HSS proposal development and oversee the implementation of HSS program. The NHSC, chaired by the Director General of the Department of Health and with members drawn from the MOH and in-country development partners, meet on a quarterly basis.

2.2 Goals and strategic activities

The GAVI HSS program aims to accelerate DTP coverage for children (under 12 months old) from 70% to 90% at a national level, and increase the assistance of Skilled Birth Attendants (SBA) from 67.5% to 80% (in HSS targeted townships) in the 180 priority townships by 2015. According to GAVI proposal, these outcomes are expected to achieve through management strengthening, resourcing, implementing and monitoring of coordinated townships health Plans (55% of all townships), staffing of rural health centers in 90 townships (28% of all townships) in line with national standards. To achieve these goals, implementation is expanded in a phased manner; activities were implemented in 20 townships in the 1st year (2011-2012) and by end of 2013, it was expanded to 60 townships, and is planned to 180 townships by 2015. See Figure 2.1.

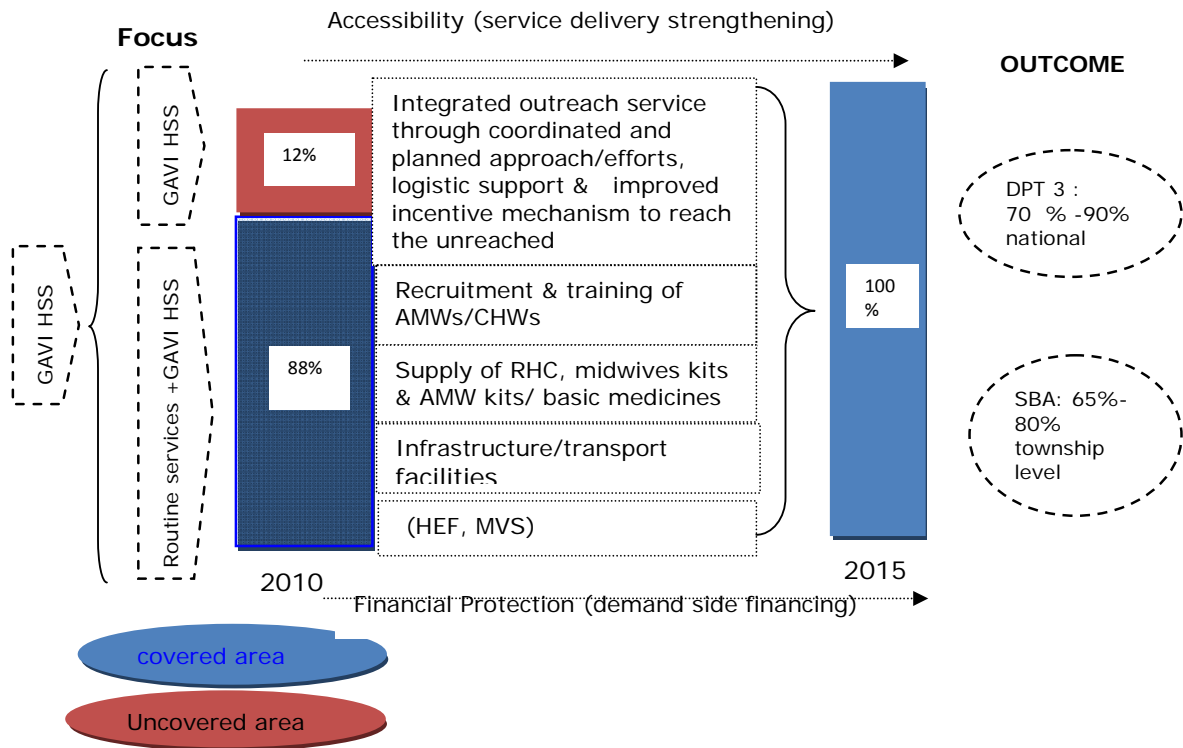


Figure 2.1 Flow Diagram for the GAVI HSS Program

A comprehensive and inter-related set of strategic activities includes the following interventions:

- Assessments, including data quality and service quality assessment. This exercise verifies if routine reporting, such as EPI and MCH services, is valid and reliable.
- Develop a coordinated Township Health Plan specific for each township.
- Provide free health service packages (including EPI, MCH nutrition & Water Sanitation) by issuing additional daily allowances to groups of Basic Health Staff.
- Supply basic items, including midwifery kits, basic medical equipment, clean delivery kits, and office equipment for Township Hospitals and rural health centers,
- The drafting of a National Strategy on health sector human resources, research on rural retention of health workforce, and training and recruitment of community health workers,
- Pilot studies of demand-side financial initiatives such as Hospital Equity Fund and Maternal and Child Health Voucher Scheme.

See Figure 2.2 below describing major activities conducted prior to the GAVI HSS program and its program implementation until 2013.

Major events of GAVI HSS program	2010												2011												2012												2013											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Township assessment	first batch 10 townships												second batch 10 townships																																			
Coordinated township health plan													All 20 townships																								annual update											
Contract signed by MOH and GAVI													■																																			
WHO CO received budget from GAVI through WHO HQ													■																																			
WHO CO disbursed budget to MOH													■																																			
MOH allocated budget to Townships directly													■																																			
Provision of outreach services to HTR areas																									■																							
Implementation of Hospital Equity Fund																									■																							

Figure 2.2 chronological events of preparation and implementation of the GAVI HSS Program 2010-2013

2.3 Township Health System Assessment

Health system assessments were conducted in all 20 HSS Townships using the Township Assessment Guidelines to identify and assess health delivery and health workforce gaps, with a particular focus on the hard-to-reach areas. Such assessment provides evidence for the development of a Coordinated Township Health Plan, specific for each Township.

The assessment was conducted by the team from DOH, DHP, WHO, and by Health system strengthening Officers and Township Medical Officers. Four main research instruments were used for the health system assessment as follows:

- A facility and management questionnaire for Townships and Rural Health Centers (RHCs)
- Infrastructure, essential drug, and equipment questionnaires and inventories.
- Mapping of hard-to-reach areas
- Use of questionnaires and registers for assessment of household-level data and services.

The surveyors applied a range of research methods in order to collect and analyze the health system information. Examples include: a) collection and analysis of quantitative health system data (such as infrastructure, human resources ratios, population data, essential drugs), b) in depth interviews with health staff regarding availability and accessibility of services in hard-to-reach areas, c) Focus Group Discussion (FGD) with Township Health Committee (THC) to understand issues affecting community participation, d) mapping hard-to-reach areas (to estimate the number of target populations, barriers to health services such as physical, social and economic), e) conducting Data Quality Assurance (DQA) and Service Quality Assurance (SQA) in 3 RHC (one easy to reach and to hard-to-reach RHC) to check consistency of data according to data flow across tiers of health facilities (sub-centre, RHC and THC) and consistency of data between data in the registers and clients in the community through door to door home visit and interview, as well as the assessment of quality of services provided by basic health staffs.

2.4 Health workforce situations

Assessment includes number and distribution of health workers in the RHC and Sub-center and the population covered by them in the catchment areas. Out of the total 108 RHC in 20 townships, only 8 RHC (7%) had reached the standard of health workforce, namely 13 health professionals; 23 RHC (21%) had nine health professionals and the remaining 77 RHC (72%) had less than 9 professionals, see Figure 2.3. Note also that these 108 RHC serves the total 3.023 million in 20 township, on average one RHC covers around 28,000 population. The workforce capacity in RHC is very stretched.

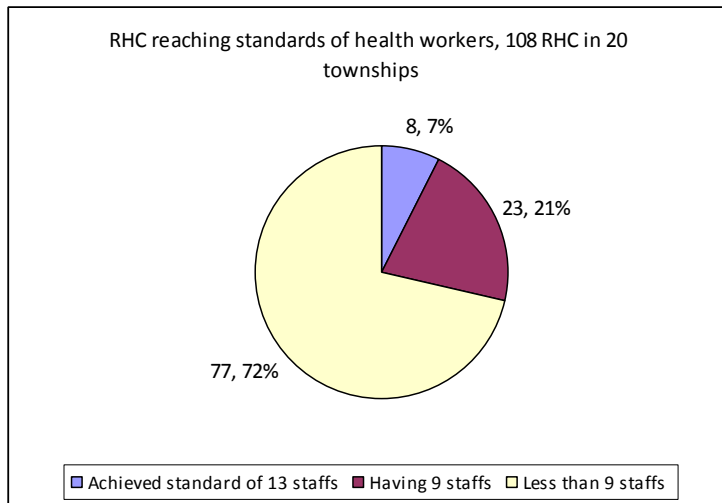


Figure 2.3 HC with different health workforce standards

2.5 Population to midwife ratio

Even with the limited health workforce, maldistribution was observed. Of the total 108 RHC, only 44% of midwives are responsible for less than 4000 people per midwife, 50% of them are responsible for a range of 4,000-10,000 population per midwife; while 6% of the them covered more than 10,000 populations per midwife, see Figure 2.4. The huge workload shouldered by midwives should be shared and spread to other BHS such as HA, LHV, PHS2 and by some neighborhood midwives. Midwives also have problems in tracking and offering health services to the mobile population who are working and residing in the farms and rubber plantations.

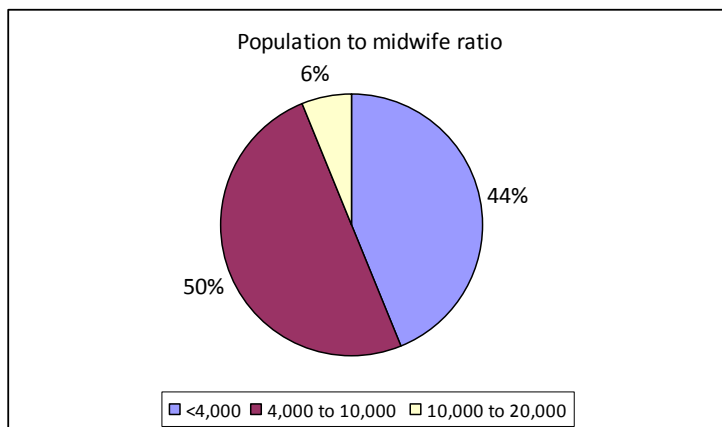


Figure 2.4 Population to midwife ratio

Table 2.2 Population to midwife ratio by townships

Township	Township Population	Midwives	Population per one midwife	Midwife per 1000 population
1. Bamaw	108,021	27	4,001	0.25
2. Shwegu	83,718	23	3,640	0.27
3. Demawsoe	77,336	41	1,886	0.53
4. Hlaingbwe	257,688	47	5,483	0.18
5. Hakha	40,452	24	1,686	0.59
6. Ye U	126,579	32	3,956	0.25
7. Myeik	273,062	32	8,533	0.12
8. Yedarshay	198,795	31	6,413	0.16
9. Tharyarwaddy	153,828	33	4,661	0.21
10. Kyaingtong	161,162	34	4,740	0.21
11. Htilin	50,848	28	1,816	0.55
12. Lewe	221,535	38	5,830	0.17
13. Pyinmanar	155,745	17	9,161	0.11
14. Mudon	213,445	35	6,098	0.16
15. Thahton	250,641	43	5,829	0.17
16. Nyaungshwe	166,120	35	4,746	0.21
17. Hsipaw	190,341	19	10,018	0.10
18. Kawhmu	141,530	24	5,897	0.17
19. Ngaputaw	152,468	29	5,258	0.19
Twenty townships	3,023,314	592	5,107	0.20
Average	159,122			

On average, one midwife is responsible for more than 5 thousand people--ranging from 1,816 in Htilin to 10,000 in Hsipaw; see Table 2.2. Noting this five-fold difference, the balance of midwife allocation across townships needs to be reviewed and corrective measures are urgently needed. An average of 0.2 midwife per 1000 population on the last column is far below the global benchmark of 2.28 doctors/nurses and midwife per 1000 people [14].

2.6 Health workforce cadre-mix

While the standard ratio of midwife to Public Health Supervisor 2 is one to one, in reality, the ratio in these 20 townships is ten to one. Suggestions from the Township Medical Officers were to create balance between the two categories by filling up the Public Health Supervisory 2 positions and allowing PHS II to share the workload of midwives. See Table 2.3. Midwives have become multipurpose health workers providing immunization, environmental sanitation, nutrition in addition to their primary midwifery function. To release the work burden apart from midwifery, more relevant health workers, such as the government has been taken this issue PHS II should be recruited to reach the standard norm of 1:1. The midwife to PHS II ratio in table 2.3 was from the township health system assessment in 2010 for the first 10 townships and 2011 for the second 10 townships. During 2013, the government has seriously implemented the policy in order to meet the standard of 1:1.

In addition to its support at the township level, the program influenced strategic policy change at the national level through the development of Health workforce strategic plan 2012-2017.

Table 2.3 Midwife to PHS2 ratio by Township

Township	Midwives	PHS II	Midwife to PHS II ratio
Kawhmu	24	1	24:1
Bamaw	27	1	27:1
Hakha	24	1	24:1
Htilin	28	1	28:1
Demawsoe	41	5	8:1
Lewe	38	4	9:1
Maungtaw	32	2	16:1
Ngaputaw	29	1	29:1
Yedarshay	31	2	15:1
Tharyarwaddy	33	15	2:1
Pyinmanar	17	5	3:1
Naung Shwe	35	3	12:1
Hsipaw	19	2	10:1
Hlaing Bwe	47	1	47:1
Kyaing Tong	34	2	17:1
Shwegu	23	0	23:0
Mudon	35	10	4:1
Ye U	32	4	8:1
Myeik	32	2	16:1
Thaton	43	0	43:0
Total 20 townships	624	62	10:1

2.7 Mapping hard-to-reach areas

This mapping exercise aims to identify hard-to-reach areas in these 20 townships (and their physical, economic and/or social nature, as experienced by the population as they sought access to health services), see Figure 2.5 below.

Physical Barriers were evident in Hakha, Hsipaw, Ye U, Htilin and Hlaingbwe. However, Maungdaw, Hakha, Hlaingbwe, and Hsipaw had more social barriers--in particular communication and language barriers--while some religious beliefs also restrain certain communities from seeking health services. Economic barriers were profound in all twenty Townships, with highest-level problems in Myeik and lowest-level problems in Nyaung Shwe. This information is based on Focus Group Discussion with the BHS, including midwives from the sub RHC.

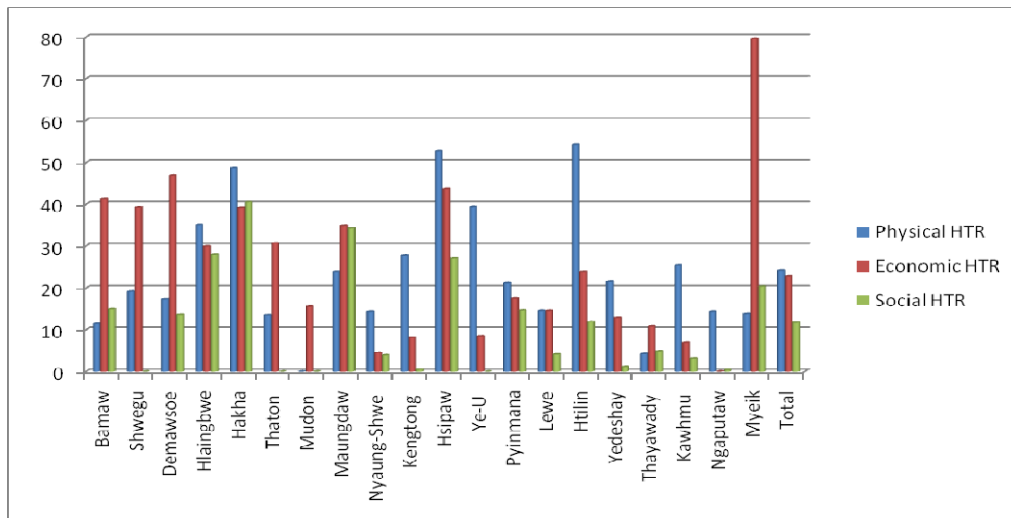


Figure 2.5 Physical, economic and social barriers to care in 20 Townships

Climate and seasonal factors significantly affect physical access to health services. For example, in Shwe ku, during the rainy season, streams are swollen by mountain run-off (taung kya chaung) which prevents communities from travelling from one place to another. During the dry season, roads become dusty, sandy and not feasible to reach by motorbikes. In such conditions, midwives may have to walk three to four hours to reach a village for immunization procedures, see Figure 2.6.



Figure 2.6 Physical challenges to accessing health services

2.8 Source of health financing

There are three main source of financing existing in the twenty townships. 1) The Government budget mainly finances healthcare worker's salary, 2) numerous projects are financed mostly by international development partners (with specific objectives, mandates and timelines), and 3) household payments for such as expenses as the Revolving Drug Fund, Community Cost-Sharing (government-sponsored user-pay services provided within public facilities). There are also Trust Funds and Donations which support health services in some cases.

Government is the major source of financing; comprising 68.4 % of the health budget in the 20 townships that we studied (followed by community cost-sharing at 13.6%), see Figure 2.7. However, the government budget is used mainly for salaries and not for other costs such as drugs and equipment; for which the patients have to pay through community cost-sharing and informal payments. Note that the National Health Account in Myanmar 2011, showed that public source of financing accounted for 13.6% of Myanmar's Total Health Expenditure (THE), whilst private sources accounted for 79.3% of THE, and donor sources accounted for 7.1% of THE. In turn, Out-of-pocket payments--OOP--by householders accounted for 92.7% of private sources (or 73.5% of THE). In surveying the 20 Townships, there is no expenditure by household in the private sector.

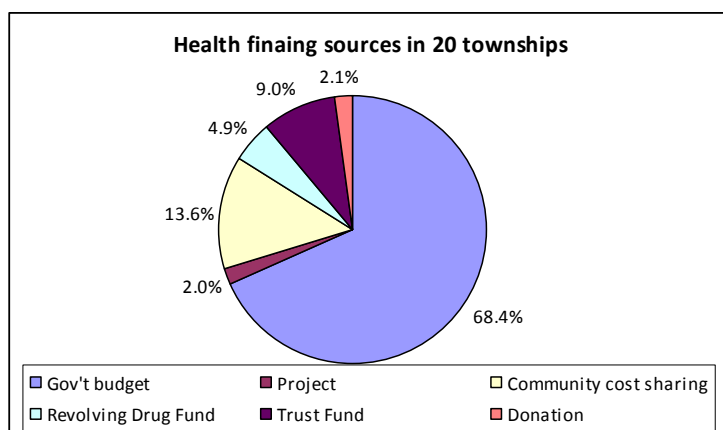


Figure 2.7 Source of health financing in 20 townships

Note: Household out of pocket does not cover spending in private sector.

2.9 Health infrastructure and support systems

Out of the total 115 RHC and 617 Sub-centers in the 20 townships, many required major renovation. The age of these health infrastructure ranges from two to 45 years. In 117 sub centers (19%), there is no building for service provision at all, and midwives have to offer services in the village administration offices or in the house of the village head. There are no living quarters for staff, and some midwives must stay in the house of community members. Realizing this, Government is recently planning to invest in construction of health facilities. However, there is still need to mobilize additional resources for health infrastructure. Proposal for construction of 30 sub-rural health centers through GAVI HSS is underway.

The majority of the health facilities have no electricity. Water is usually sourced from shallow wells or ponds in the vicinity. Sanitary latrines were present but their infrastructure was inadequate. Transport facilities for midwives to support Outreach service were also inadequate. Some midwives

were provided with bicycles from different projects (which were more than 10 years old) but many were not functional. Many midwives purchased their own motorcycle with no maintenance and fuel cost subsidized by the government.

2.10 Data quality and service quality assessment

Data quality and service quality assessment was conducted alongside the township health system assessment. It was done in two segments, 10 townships covered in 2010 and another 10 in 2011.

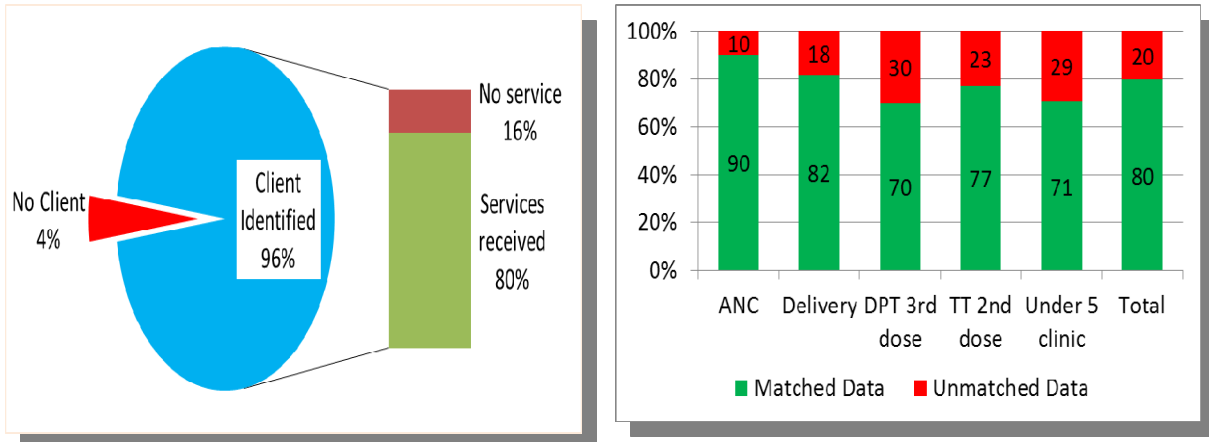


Figure 2.8 DQA: verification of register with home visit and by service type: first batch of 10 townships

When attempting to verify the names of clients in the RHC records (registers) against home visits by DQA team in the first 10 township (see figure 2.8) three percent of clients could not be identified by the home visit team. So, in all, only 97% were identified. Of these 97% identified clients, 13% reported that no services were rendered to them; while 84% confirmed that services were given. DTP3, TT2 and delivery by skilled birth attendants were not delivered to individuals that were mismatched with registered data at RHC.

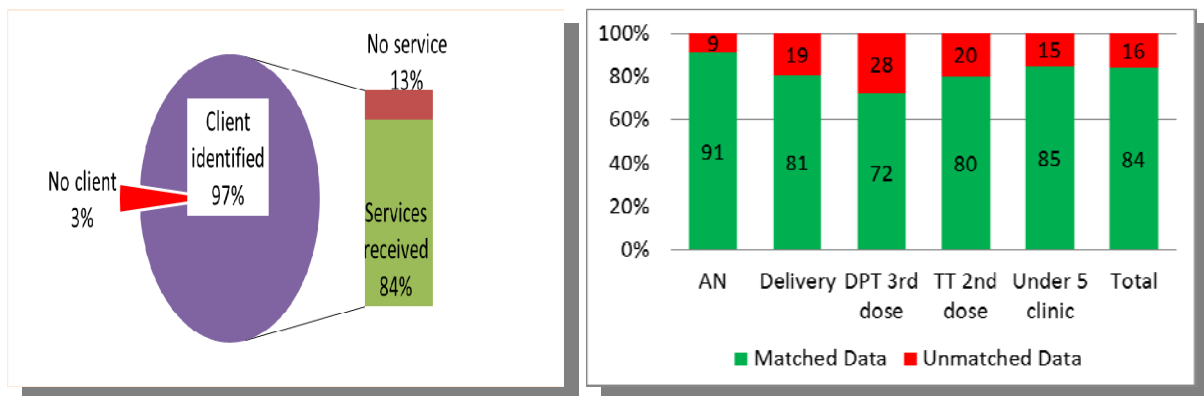


Figure 2.9 DQA: verification of register with home visit and by service type: second batch of 10 townships

The results of DQA in the second batch of ten townships, see Figure 2.9, was less favorable than the first batch. Of the total 96% of clients able to be identified by DQA team, 16% reported no services offered; for which DTP3 and under five children services were the most common services not offered, a mismatch between client interviews and registers.

Table 2.4 Summary DQA, verification factor of four steps of data comparisons.

Township	Township and RHC	RHC and SC reports	SC reports and register of MW	Sample from register of MW and Clients at field visit	Overall data quality
First batch of 10 townships	100%	100%	100%	84.1%	84.1%
Second batch of 10 townships	100%	100%	67.2%	79.8%	53.6%
Total 20 townships	100%	100%	83.6%	81.9%	68.5%

Four steps of data quality are demonstrated in Table 2.4. Data between RHC and township and between SC and RHC are consistent (100% quality), data between sub-centre report and the registries by midwives in the 2nd batch was only 67.2%. The consistency between the sample from registry of midwives and clients in field visit are 81.9% (84.1% and 79.8% for the first and second batch). The overall data quality of first and second batch was 84.1% ($0.841 * 1 * 1 * 1$) and 53.6% ($0.672 * 0.798 * 1 * 1$). The overall verification factor of the twenty townships is 68.5% ($0.819 * 0.836 * 1 * 1$). While the agreed benchmark verification factor is 80% for acceptable quality of data, this needs significant improvement to enable a good quality of data, a good quality of reporting and management, and a good quality of service provision.

2.11 Coordinated Township Health Plans

The Coordinated Township Health Plans (CTHP) were developed based on the assessment findings using CTHP guidelines to reorient health service delivery towards be more coordinated between public health intervention and curative services. The CTHP aims to improve coverage of skilled birth attendant and third dose of Pentavalent vaccine (DTP-HepB and Hib) from the base line in 2011. Four key steps of Coordinated Township Health Plan are shown in Figure 2.10. Note that the CTHP lists the annual activities for Comprehensive township health system strengthening and estimates total resource needs and notes available budget from financing sources of MOH and GAVI and highlights resource gap. Huge resource gap around 51% is noted to cover everything that is planned in the comprehensive CTHP. Hence, priority of CTHP is focused on strengthening outreach services to hard to reach areas. CTHP introduces a coordinated approach of delivering package of services (EPI, MCH, Nutrition, Environmental Health) by team of basic health workers to the hard to reach areas. This coordinated approach allowed the Basic Health Staffs from easy to reach areas to support the basic health staffs placed in hard to reach areas in delivering the outreach services. CTHP then calculates actual costs for delivering the planned number of outreach services to cover hard to reach areas within the townships.

According to the planned schedule and cost calculation in CTHP, Outreach Services were implemented by respective townships. In 2012, activities were implemented in 19 of the 20 townships, as activities were put on halt in Maungdaw, Rakhine state due to unrest in that township.

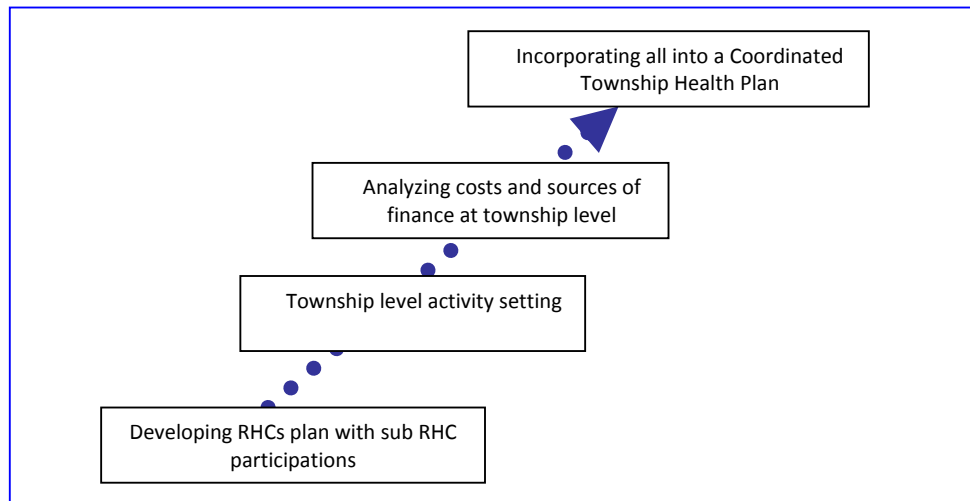


Figure 2.10 Four key steps in deriving a coordinated township health plan

2.12 Monitoring and Evaluation system

Eighteen Health System Strengthening Officers (HSSOs) were recruited and deployed by WHO; 14 at the township level and 4 at the central level. HSSOs work very closely with the State and township health authorities. They conduct field visits to monitor and supervise the delivery of Outreach services in hard-to-reach areas, and they also supervise the implementation of the hospital equity fund and submit monthly reports to the MOH. Since these HSSO's are recruited by WHO, they also submit their duty/travel reports to WHO for every visit they make.

TMOs, Health Assistants and Lady Health Visitors also make monthly visits to the RHCs and Sub-RHCs to track progress status of package of services delivery (EPI, MCH, Nutrition and Environmental Health) in hard-to-reach areas. Furthermore, random monitoring visits are made by the Planning Unit, Department of Health, MOH, to review the status of implementation in the townships.

The fund release for each activity from WHO to MOH is subject to receipt of proposals (APW and DFC) by WHO from the MOH. The proposals must detail every activity and highlight the timeline and budget breakdown for their implementation. The GAVI HSS technical unit in WHO monitors the implementation status of each activity in line with timelines and budgets in the proposal. WHO does not accept any delay in the activity implementation and deviation in budget use by MOH, unless proper technical justification is provided by the central team of the MOH.

Service delivery is monitored through monthly and quarterly review meetings held at the townships. Mid-term assessments with support of external experts are organized by WHO and MOH to review and advise the overall program process, progress and guide way forward. The National Health Sector Coordination Committee oversees the overall implementation of HSS activities. Minutes of NHSC meetings are recorded and shared with an Independent Review Committee at the GAVI HQ in Geneva, which approves annual funding for countries based on the annual progress report submitted by recipient countries.

2.13 Number of outreach services in 2012

A total of 2,342 Outreach services were provided to population in hard-to-reach areas in 19 townships during 2012, see Table 2.5. The services included: a) immunization of children, including zero dose children (who had not been immunized at all since birth), b) maternal and child health services, c) nutritional promotion, and d) environmental health advocacy. These Outreach services were provided on site by teams of 3 to 4 Basic Health Staff. They conducted all the activities necessary at the village level. Note on average, there are 123 sessions (2342 / 19 township) of Outreach services per township, or 10 sessions per month per township. Number of visits depended on the number of hard to reach areas in a township identified in the CTHP.

Table 2.5 Number of sessions of Outreach service offered to hard-to-reach areas in 2012

ID	Township	2012
1.	Ngaputaw	122
2.	Yedershae	158
3.	Tharyarwaddy	169
4.	Hakha	73
5.	Bamaw	75
6.	Shwegu	86
7.	Demawsoe	88
8.	Hlaingbwe	109
9.	Htilin	109
10.	Lewe	253
11.	Pyinmanar	114
12.	Mudon	127
13.	Thaton	123
14.	Ye U	212
15.	Kyaing Tong	56
16.	Hsipaw	103
17.	Naung Shwe	156
18.	Myeik	83
19.	Kawhmu	126
	Total	2,342

It should be note that there was civil unrest in Muangdaw township in Rakhine State; so it was not possible to continue the GAVI HSS program there as planned.

During the Outreach services, the BHS conducted a series of activities, including: antenatal care, post natal care, immunization, monitoring the weight of under-five year olds, and environmental sanitation activities (such as examination of latrine and water sources) and also health education.

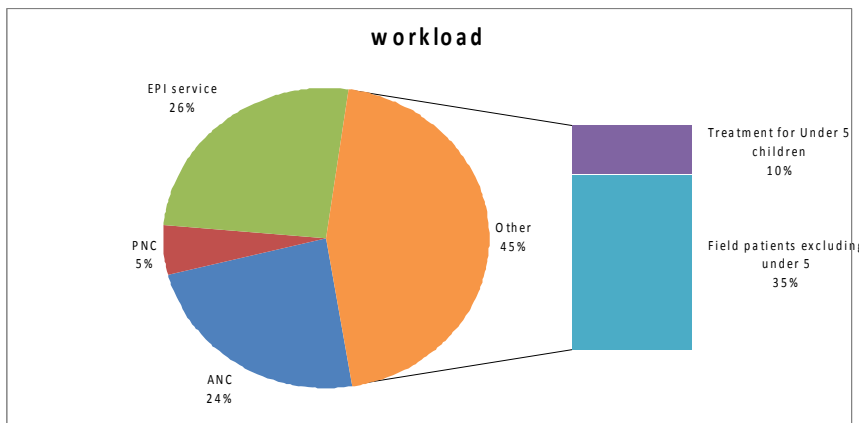


Figure 2.11 Profiles of outreach services 2012

Figure 2.11 shows the profile of Outreach services: a total of 62,683 people benefited from the Outreach services—the majority from the MCH service (EPI 26%, ANC 24%, PNC 5%), the remaining 45% from general treatment (of which 10% are services for under-five year old children, and 35% for the general population).

A total of 90,064 children under five were weighed for nutritional monitoring by Basic Health staff during the Outreach package. BHS found 0.41% and 10.74% suffered severe and moderate malnutrition for which BHS provided health education to caregivers, see Figure 2.12.

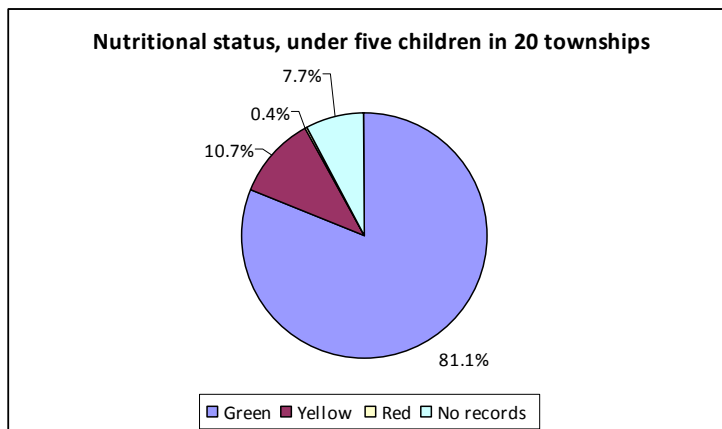


Figure 2.12 Monitoring nutritional status of children under five, 2012

During the Outreach package of services, health education on various topics was given to the community. Key topics included, for example, education about MCH, contraceptives, EPI, nutrition, environmental health, and communicable and non-communicable diseases.

2.14 A large gap between total resource needs and availability

The CTHP, a bottom-up micro-level planning administration at township level, provided an estimate of the total resource needs for implementing comprehensive health system strengthening activities for the whole township to improve skilled birth attendance rate and immunization coverage (measured by DPT3). Eight major groups of activities are described in Box 2.1. These activities are essential in strengthening health services at township level but their roll-out into the township is also thought to be very ambitious.

Box 2.1 Eight groups of HSS activities,

1. Health planning and management
 - Annual planning meeting
 - Quarterly Review
 - Supervision of Outreach services: daily allowance and transport allowance
 - Conduct data quality and service quality assurance for Central, State and Division levels)
 - Administrative Cost for Township Health Department
2. Service delivery
 - Package of Service (hard-to-reach) daily and transport allowance for BHS
 - Routine Outreach services
 - EPI Surveillance
 - ARI treatment
 - Maternal death review (30,000 Kyat per case , and expected cases are 10 per township)
 - Neonatal & child death review
 - Salary for all Township Health Department
3. Human Resource Development
 - Capacity Building program for MCH, Nutrition
 - MEP five day Training
 - Health systems research 3 day training for all HA and hospital staff)
4. Community participation and communication
 - THC /RHC Committee Meetings (as per quarterly meetings)
 - THC Advocacy programs (estimated 3 sessions per year for 10 persons)
 - Training and functioning of VHW(AMW/ CHW/ CSG) in hard-to-reach areas
 - AMW 6 months
 - CHW 30 days
 - CSG 3 – 7 days
 - AMW Refresher Training (50 per year) -5 days
 - CHW Refresher Training (50 per year) - 5 days
 - Amplifier for training
5. Infrastructure
 - Construction and renovation of new RHC
 - Renovation and renovation of RHC
 - Communication Equipment at sub-centers (SH, RHC, S-RHC)
 - Communication running cost (10,000 Kyat per phone per month)
6. Medicines and equipment
 - RHC drug Kit (UNICEF kit), two supplies per year
 - Sub-centre drug Kits, one supply per year
 - Clean Delivery Kits for RHC and sub centre (5 CDK per midwife per month)
 - Cold Chain boxes
 - HA Kit
 - Midwife Kit
 - PHS 2 Kit
7. Transport
 - Bicycle

- Motorcycle
 - Boat for supervision and referral
 - Ambulance
8. Health Financing and Financial Administration
- Health financing scheme tested
 - Health financing scheme implemented
 - Emergency Referral Fund (8,000,000 kyats – covering transport and treatment costs for the poor) (approx 80 patients complemented by other sources of fund including trust fund)
 - Revolving Drug Fund
 - Community Cost Sharing
 - Fund for Poor Pregnant Woman (15 persons)
 - Computer/Printer Township level

Based on this program of activities, each township participated in drafting the CTHP which total resource requirement were estimated, Table 2.6 describes total resource needs (compared to resources available) from two sources: the MOH and the GAVI HSS program for 2012.

Table 2.6 Total resource needs, resource available and shortfall; CTHP 2012

For year 2012	Resource needs, million Kyat	Resources available by sources, million Kyat			Shortfall between available and needs, Million Kyat	Shortfall, % of total needs
		Gov't	GAVI	Total		
1 Bamaw	448.9	209.4	70.8	280.2	-169	-38%
2 Shwe Gu	286.5	55.9	71.1	127.0	-160	-56%
3 Demawsoe	244.2	8.3	70.4	78.7	-165	-68%
4 Hlaing Bwe	314.1	78.6	72.6	151.3	-163	-52%
5 Hakha	331.9	78.6	71.7	150.4	-182	-55%
6 YeOo	327.7	78.6	70.3	148.9	-179	-55%
7 Myeik	461.3	226.1	69.4	295.5	-166	-36%
8 Yedarshay	313.0	78.6	71.6	150.3	-163	-52%
9 Tharrawaddy	313.2	78.6	70.2	148.8	-164	-52%
10 Htilin	322.2	78.6	70.8	149.5	-173	-54%
11 Lewe	317.6	78.6	70.7	149.3	-168	-53%
12 Pyinmanar	311.6	78.6	71.5	150.1	-162	-52%
13 Mudon	354.3	82.5	71.9	154.4	-200	-56%
14 Thaton	310.2	78.6	69.8	148.5	-162	-52%
15 Maung Daw	314.4	78.6	71.0	149.6	-165	-52%
16 Kyaing Tung	314.5	78.6	72.0	150.6	-164	-52%
17 hsipaw	339.1	88.2	72.7	160.9	-178	-53%
18 Nyaung Shwe	314.3	78.6	69.6	148.2	-166	-53%
19 Kawthmu	308.0	78.6	70.1	148.8	-159	-52%
20 Ngaputaw	305.1	78.6	69.8	148.4	-157	-51%
All 20 Townships	6,552.2	1,771.2	1,417.9	3,189.2	-3,363	-51%
		56%	44%	100%		
	100%			49%	51%	

Source: Analysis from coordinate township health plan 2012

In 2012, total resource needs for 20 township were 6.552 billion Kyat of which 3.189 billion Kyat was planned available, there was a shortfall of 51% of total needs. MOH budget mainly for staff salary had 56% share, while GAVI HSS has 44% share mostly for program activities and additional incentives such as daily and travel allowance for Outreach services by BHS.

Of the total GAVI HSS spending US\$ 2.437 million were spent in 2012 including US\$ 0.9 million (37%) on hard-to-reach areas [such as supervision activities, training of AMW/CHW including kits, continue

training of BHS, Health Systems Strengthening officers, data quality assessment, support in producing CTHP and motorcycles]. The remaining was spent in 'non-hard-to-reach' areas. The proportion of expenditure in hard-to-reach areas increased in 2013 to be 49% of the total GAVI HSS program expenditure for that year.

Table 2.7 Hard-to-reach villages and populations, 2011

	Township	Total Township Population	Hard-to-reach population	HTR pop, % Total	Total villages	HTR villages	HTR village, % total
1.	Ngaputaw	152,468	9,921	6.5	418	55	13.2
2.	Yedarshay	198,795	44,344	22.3	320	114	35.6
3.	Tharyarwaddy	153,828	10,433	6.8	264	58	22.0
4.	Hakha	40,452	12,150	30.0	68	29	42.6
5.	Bamaw	108,021	6,304	5.8	92	25	27.2
6.	Shwegu	83,718	8,029	9.6	85	28	32.9
7.	Demawsoe	77,336	9,782	12.6	171	35	20.5
8.	Hlaingbwe	257,688	24,360	9.5	381	102	26.8
9.	Htilin	50,848	23,986	47.2	92	57	62.0
10.	Lewe	221,535	31,937	14.4	261	14	5.4
11.	Pyinmanar	155,745	8,553	5.5	144	42	29.2
12.	Mudon	213,445	2,429	1.1	54	0	0.0
13.	Thahton	250,641	17,162	6.8	197	8	4.1
14.	Ye U	126,579	24,323	19.2	183	48	26.2
15.	Kyaingtong	161,162	24,162	15.0	731	177	24.2
16.	Hsipaw	190,341	52,711	27.7	497	256	51.5
17.	Nyaungshwe	166,120	32,370	19.5	454	66	14.5
18.	Myeik	273,062	11,728	4.3	140	22	15.7
19.	Kawhmu	141,530	29,760	21.0	132	38	28.8
	20 townships	3,023,314	384,444	12.7	4,684	1,174	25.1

The data in Table 2.7 was excerpted from all CTHP across these twenty townships. There are a total of 1,174 hard-to-reach villages spread over these 20 townships. Those in hard-to-reach villages number 384,444 (12.7%) out of a total population of 3.02 million.

When comparing the total GAVI HSS program expenditure in 2012 and 2013 and population in hard-to-reach areas, the per capita population expenditure in hard-to-reached areas, despite its low level, was higher than the non-HTR areas: US\$ 2.3 and 1.2 in 2012 and 2013 versus US\$ 0.58 and 0.18 respectively, see table 2.8. Per capita expenditure for these particular 20 townships in 2012 was higher as it included the preparatory expenses (assessment, trainings, and supplies of office equipment's) whereas the expenditures of 2013 were only for implementation of activities in 20 townships. This reflects the favorable targeted outcome of the GAVI HSS interventions in hard-to-reach areas. It is note that such a marginal per capita investment by targeting hard to reach areas, though it has resulted in increase in accessibility to some basic primary care services; significant more resources are needed to implement the range of services identified in CTHP.

Table 2.8 Per capita population spending of the GAVI HSS program, 2012 and 2013.

Per capita GAVI spending	2012	2013
HTR area	2.3	1.2
non-HTR areas	0.58	0.18
Discrepancy ratio, HTR to non-HTR areas	4.0	6.6

Chapter 3 Trends of MCH service coverage between 2008 and 2013 in Twenty GAVI HSS townships

3.1 Background

The GAVI HSS program concentrates on supporting, accelerating and sustaining the coverage of immunization for children under 12 months (DTP3 and BCG), the treatment of children under five years old with Oral Rehydration Solution (ORT), the provision of key maternal health services (for e.g. a) antenatal care, b) providing 2nd dose of tetanus toxoid for pregnant women, c) developing skilled birth attendants capacity, and d) improving sanitation). There is no financial investment for improved safe water and sanitation; only advice and advocacy by Community Health Workers and Auxiliary Midwives. Monthly reports of implementation of service package from GAVI HSS sites were collected by sub-centers to RHC and township respectively. This was compiled and analyzed by the MOH and WHO through its routine Health and Management Information Systems (HMIS). Note that, since HMIS data for 2013 will be available only after March 2014, we have used the township data for 2013, which is the key source for HMIS.

3.2 Methods

Using secondary data compiled by the M&E systems from 20 GAVI HSS townships, this chapter analyzes the trends of MCH service coverage both prior to GAVI program (2008-2010) and during the Program (from half year of 2011 to end 2013); in a pre-post intervention manner. Note also Figure 2.2 on the list of chronological events, that real GAVI HSS program implementation took full action in 2012, while 2011 is noted as a preparatory period. The outcome of the program implementation in terms of improved MCH service coverage should be seen in 2012 and 2013. Effort was made to get data from non-GAVI HSS townships for comparison; unfortunately it is not possible to do so, due to limited availability of data.

3.3 Findings

Table 3.1 offers a basic information of 20 township covered by the GAVI HSS Program. Populations range from 44,000 in Hakha township (ID 4) in Chin State to half a million in Maungdaw township (ID 14) in Rakhine State. The figures below show total population, as well as: women of reproductive age group and children under one and five years old. These numbers reflect the demand for MCH services and challenges to accelerate and sustain coverage. Note that the focus of GAVI HSS program sites are hard to reached areas in the townships. See also Table 2.7 in chapter 2 on number of population coverage by hard to reach areas was 12.7% of total population in 19 Townships.

Table 3.1 GAVI HSS program sites, 20 township in 2012

ID	Township name	Township Code	State/ Region	Total villages	Population (2011)	Female 15-49	Child <1 year	Child <5 years
1	Ngapudaw	18	Ayeyarwady Reg	424	153,219	41,158	2,856	14,993
2	Yedashe	40	Bago Region	321	196,285	54,115	4,469	20,911
3	Thayarwady	52	Bago Region	264	156,474	40,721	3,050	15,876
4	Hakha	56	Chin State	68	44,483	11,980	1,026	4,732
5	Bhamo	64	Kachin State	92	108,520	30,513	2,148	9,750
6	Shwegu	77	Kachin State	79	84,750	22,854	1,871	9,067
7	Demoso	83	Kayah State	171	78,704	20,903	1,890	9,350
8	HlaingBwe	89	Kayin State	381	284,361	71,915	7,107	32,589
9	Tilin	118	Magway Region	92	51,079	14,644	667	3,394
10	Lewe	127	Mandalay Region	261	263,892	67,207	6,347	31,708
11	Pyinmana	141	Mandalay Region	144	156,701	42,771	3,538	14,417
12	Mudon	157	Mon State	54	213,471	62,378	4,118	21,239
13	Thaton	160	Mon State	197	252,068	70,087	5,168	23,944
14	Maungdaw	167	Rakhine State	419	540,032	139,305	16,617	89,811
15	Ye-U	214	Sagaing Region	191	128,672	36,875	1,992	10,239
16	Kengtung	216	Shan State (East)	731	164,566	40,873	3,807	19,374
17	Hsipaw	229	Shan State (North)	497	161,705	40,521	3,604	18,363
18	Nyaungshwe	265	Shan State (South)	454	172,469	49,436	3,348	15,265
19	Myeik	276	Tanintharyi Reg	145	273,759	70,717	6,263	29,707
20	Kawhmu	299	Yangon Region	126	125,812	35,162	1,986	10,024

These tables together measure the outcomes of the GAVI HSS program implementation in terms of coverage of seven MCH services in the years 2011 to 2013 compared with prior period of 2008-2010. The coverage of seven MCH services includes: 1. antenatal care, 2. second dose of tetanus toxoid dose (TT2) for pregnant women, 3. skilled birth attendance, 4. BCG, 5. Third dose of DTP coverage (DTP3), 6. use of oral rehydration therapy (ORT) for under five years old children and 7. Improved sanitation.

It should be noted that these service coverage is for the whole township, where as GAVI HSS support is focused on Hard to Reach villages of the townships due to budget shortage. HMIS data shows an overall township coverage rather than disaggregate by village level. Such limitation hinders the assessment of direct contribution of GAVI HSS Program.

Table 3.2 Change of coverage rate between 2013 and 2010, percentage points

	AN C	TT 2	SB A	DTP 3	BC G	OR T	Sanitatio n
Numbers of township							
• With increased coverage	19	11	15	7	11	4	9
• With decreased coverage	1	8	5	12	6	6	11
• With no changes	0	1	0	1	3	10	0
• Total townships	20	20	20	20	20	20	20
Average changes, percentage points							
• Among townships with increased coverage	19	10	18	9	16	4	7
• Among townships with decreased coverage	-37	-11	-11	-17	-16	-3	-8

Clearly, comparing the 2013 (during the program) with 2010 (prior to the program), there is a significant improvement of service coverage, see Table 3.2. Out of 20 townships, 19 demonstrate increased coverage of antenatal care, 15 demonstrate increased SBA coverage, 11 demonstrate increased TT2 and BCG coverage. ORT shows a mixed result, 10 out of 20 townships have no changes between 2010 and 2013.

Among townships with increased coverage, there is a high level of increase in terms of percentage points before and after the GAVI HSS program, such as ANC (19 percentage points) and SBA (18 percentage points), BCG (16 percentage points) and TT2 (10 percentage points). Only Maungdaw township in Rakhine State (ID 14), had decreased ANC coverage, with 37 percentage points reduction; where the service was disrupted due to social unrest in the State hampering MCH services. This is the most significant reduction in ANC across MCH service coverage.

The following parts are the outcome of each service.

Outcome 1: ANC coverage

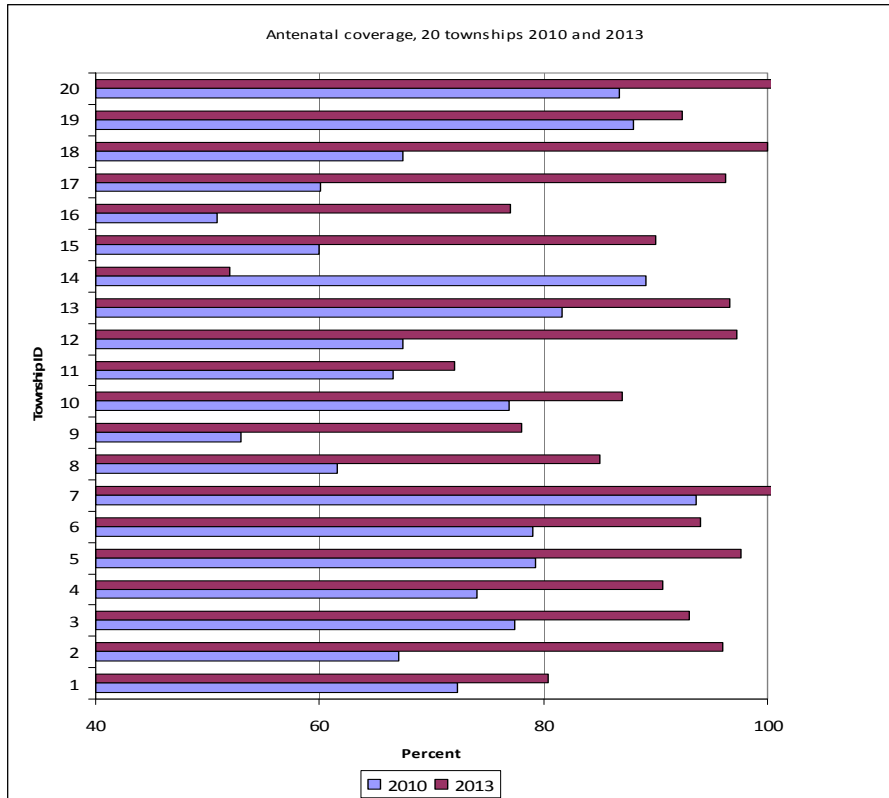


Figure 3.1 ANC coverage, changes between 2010 and 2013; twenty township.

An overall picture shows significant increases in ANC coverage across these twenty townships, with an varying degree of achievements. Note in Figure 3.1 that Maungdaw township (ID 14) in Rakhine State has a dramatic reduction in ANC coverage from around 90% in 2010 to around 50% in 2013. The civil unrest resulted in MCH service disruption. Htilin in Magway Region (ID 9) and Hsipaw township in North Shan State (ID 17), where 62% and 51% of the villages are hard to reach areas (see table 2.7) had shown a huge increase in ANC coverage, from 60% to more than 90%.

Outcome 2: Second dose Tetanus toxoid coverage

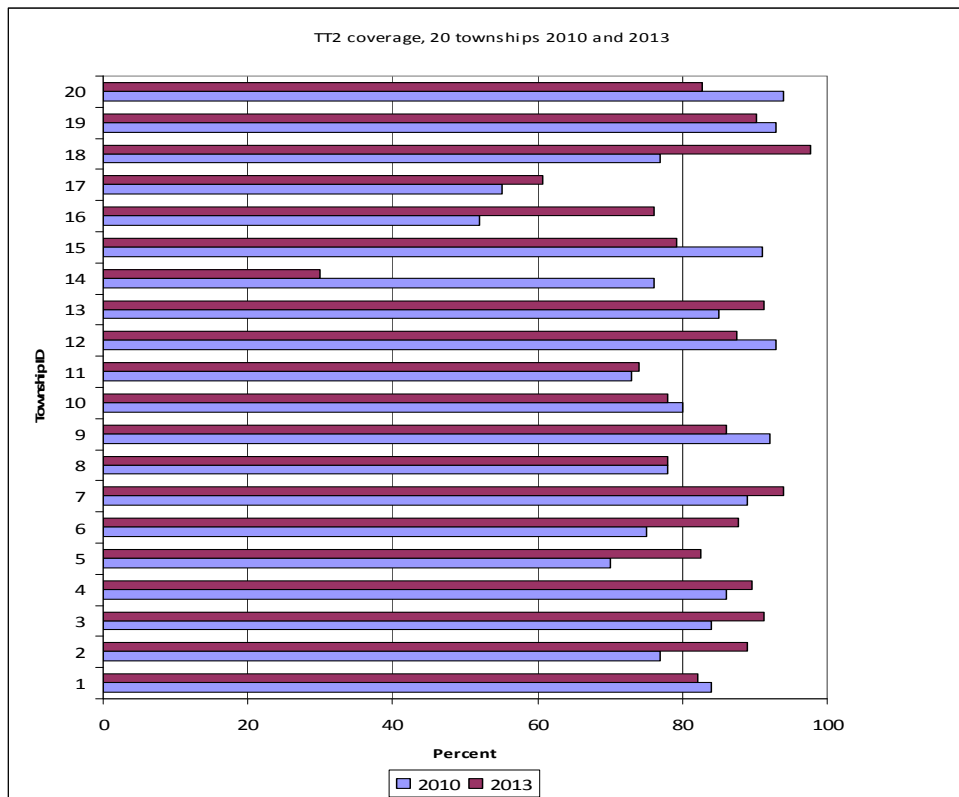


Figure 3.2 TT2 coverage, changes between 2010 and 2013; twenty township.

In general the high coverage of TT2 in 2010 (70-90%) could be sustained or increased in most townships. In Figure 3.2 Muangdaw township (ID 14) in Rakhine State has had a dramatic reduction in TT2 coverage from around 80% in 2010 to 30% in 2013, due to civil unrest.

Outcome 3: Skilled birth attendance

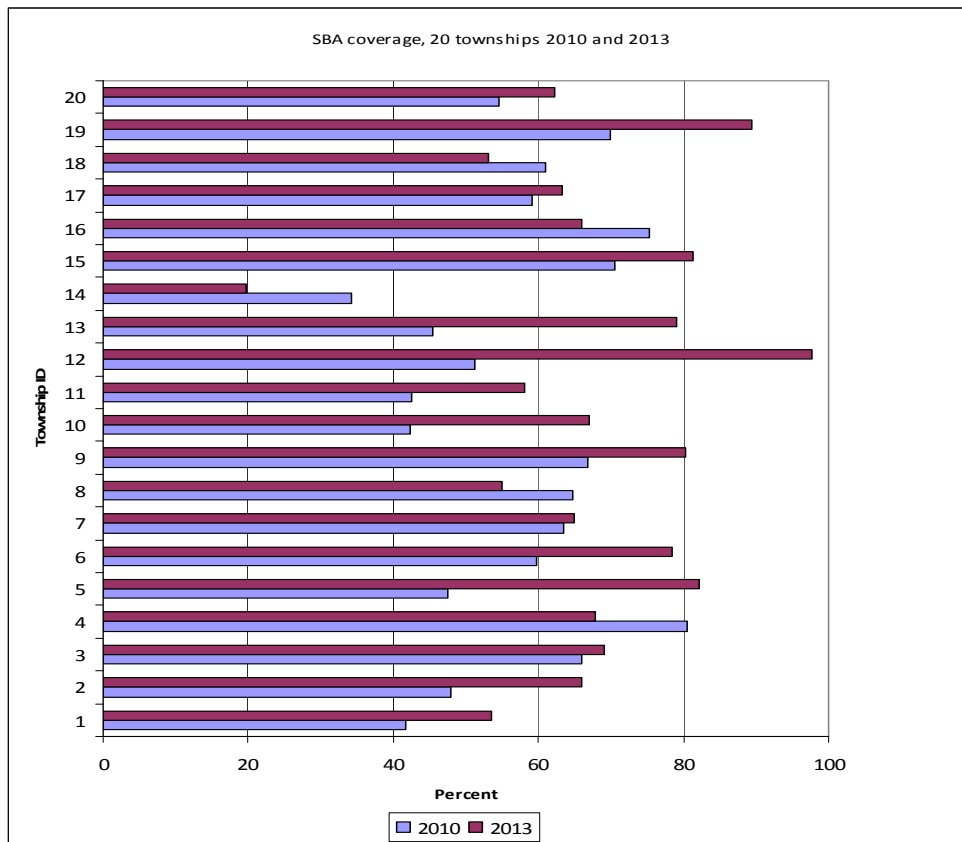


Figure 3.3 SBA coverage, changes between 2010 and 2013; twenty township.

The coverage of SBA is slightly lower than ANC, ranging from 50% to 70% but most townships show increased coverage in 2013, figure 3.3. Note that services by AMW for ANC, PNC and Health Education is recognized and counted, where as delivery by AMWs were not categorized as skilled birth attendants. It is noted that Muangdaw township (ID 14) in Rakhine State has a reduction in SBA coverage from (a low level of) around 30% in 2010 to (a lower level of) 20% in 2013, due to civil unrest. Mudon township in Mon State (ID 12) had shown significant increase in SBA coverage, from 50% in 2010 to almost 90% in 2013.

Outcome 4: DTP3 coverage

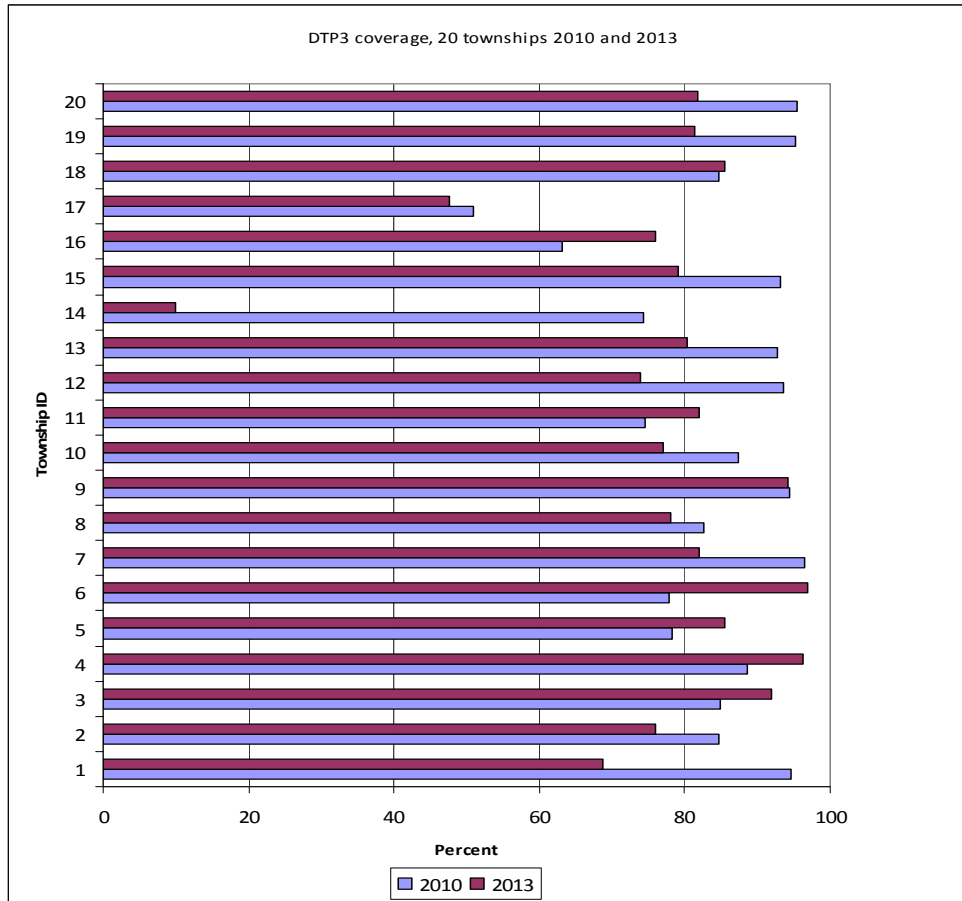


Figure 3.4 DTP3 coverage, changes between 2010 and 2013; twenty township.

DTP3 coverage is high (70-90%). It exhibits mixed results in 2013, sometimes increasing while sometimes decreasing, see Figure 3.4. Muangdaw township (ID 14) in Rakhine State has a massive reduction in DTP3 coverage from almost 80% in 2010 to 10% in 2013, due to civil unrest.

Outcome 5: BCG coverage for under five children

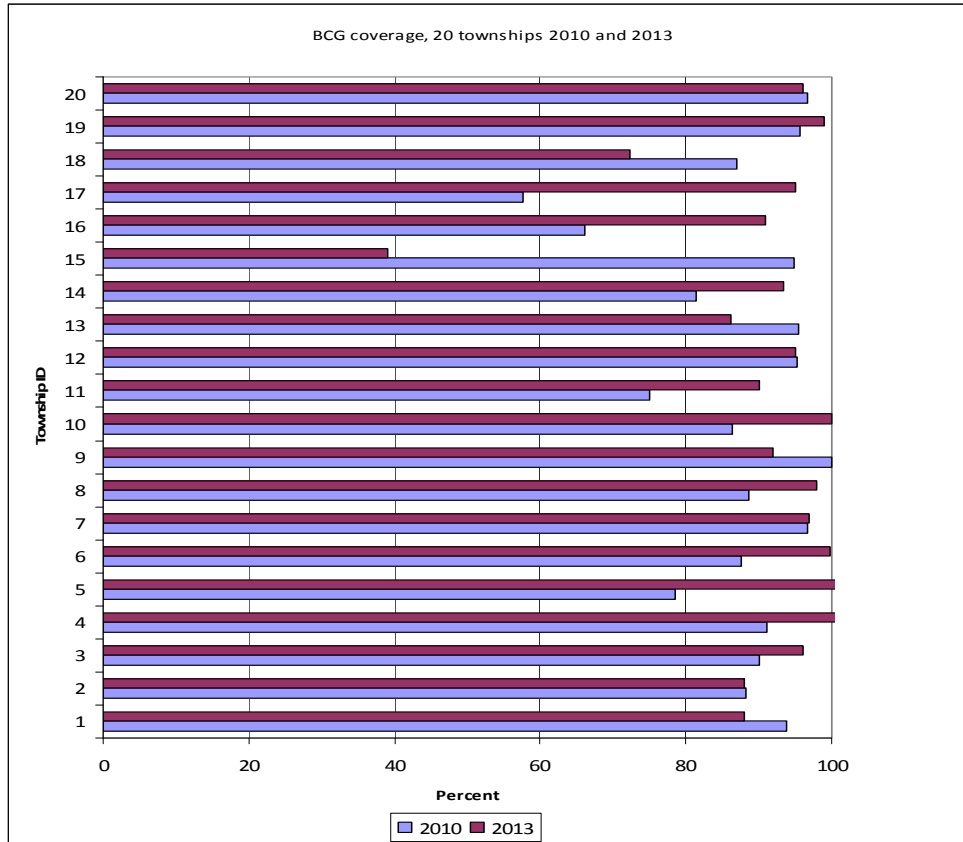


Figure 3.5 BCG coverage (changes between 2010 and 2013 over 20 townships)

BCG coverage, Figure 3.5, is high mostly higher than 80% and quite homogenous across twenty townships. Muangdaw township (ID 14) in Rakhine State, despite civil unrest, BCG coverage continued to increase from 80% in 2010 to more than 90% in 2013. However, Ye-U township in Sagaing Region (ID15) had significant reduction of BCG coverage, from almost 100% to 40%.

Outcome 6: ORT coverage

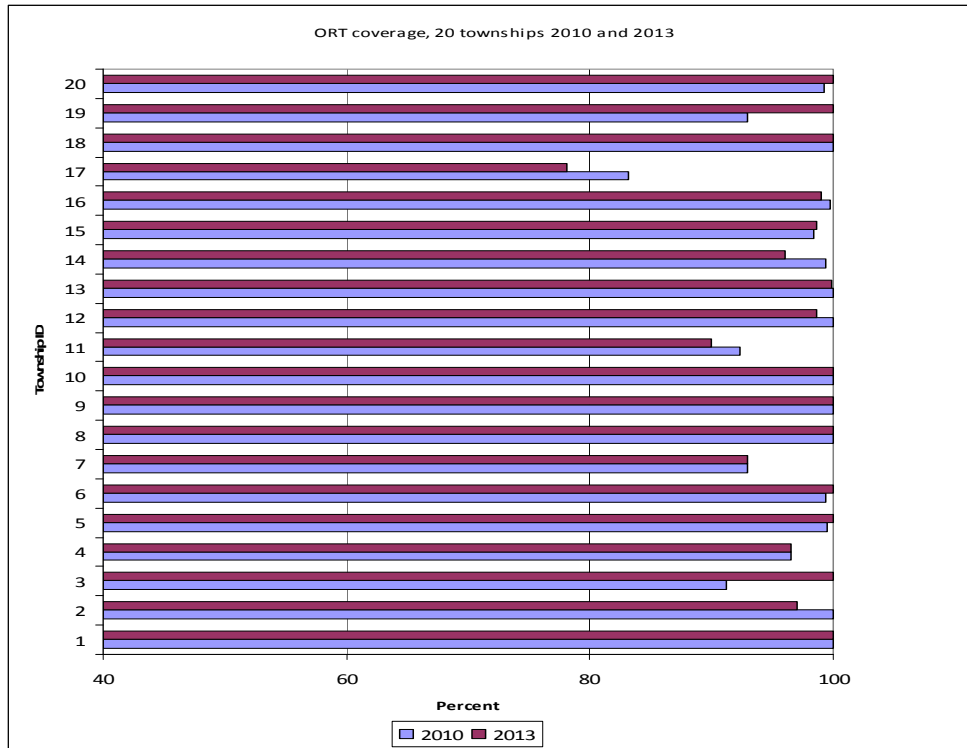


Figure 3.6 ORT coverage, changes between 2010 and 2013; twenty township.

ORT coverage among under five years children is very high, Figure 3.6, 90 to 100%, and homogeneous across twenty townships, with an exception in Hsipaw township in North Shan State (ID17) has the lowest coverage of below 80% and slight reduction was observed between 2010 and 2013.

Outcome 7: Improved sanitation

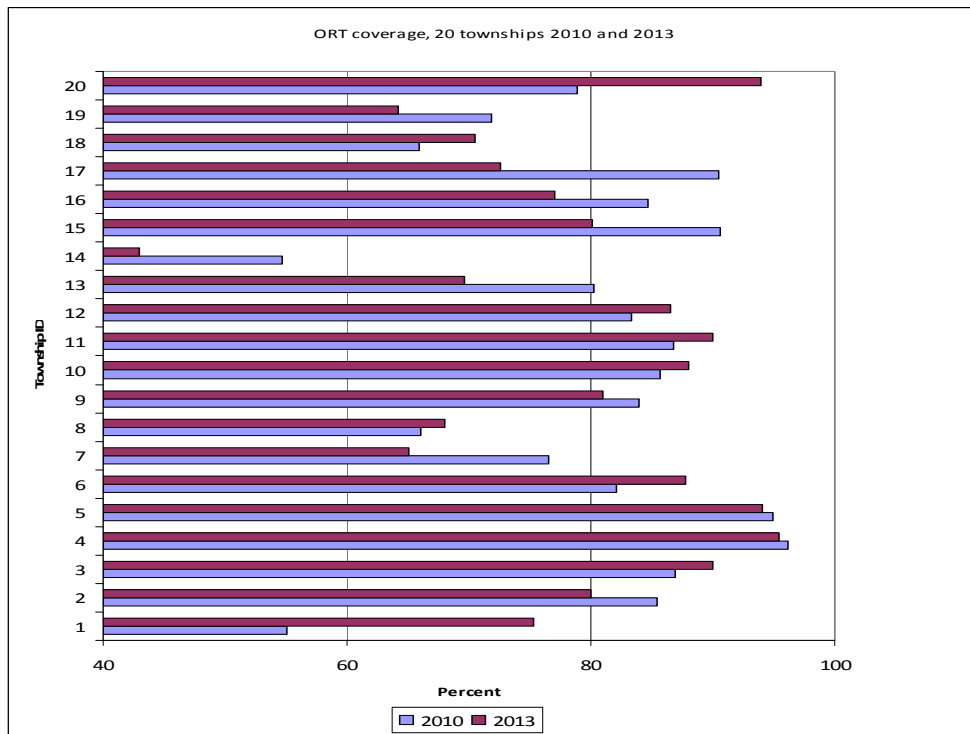


Figure 3.7 Coverage of safe sanitation, changes between 2010 and 2013; twenty township.

The GAVI HSS did not provide financial support for water and latrine; only for communication and advocacy during outreach services. Therefore, any change in levels is an independent change (linked to the socio-economic status of the township). Note in Figure 3.7 that sanitation coverage in Muangdaw township (ID 14) Rakhine State, had a reduction from the level of 50% to (slightly higher than) 40% coverage.

In conclusion, the overall analysis showed that between 2010 and 2013, there was a significant increase in ANC coverage, where most townships have coverage higher than 80%. High coverage of TT2 (70% to 90%) was noted in 2013, most townships show increased SBA coverage, though lower than ANC coverage, ranges between 50% to 70% in 2013. DTP3 coverage was high, 70-90% in 2013, though a mix results was noted. BCG coverage was high, mostly higher than 80% in 2013 and quite homogenous across twenty townships. ORT coverage among under five years children was very high and homogeneous across township, 90 to 100% in 2013.

Notably in Htilin and Hsipaw townships where 62% and 51% of villages are hard to reach areas have made showed significant improved in ANC coverage. The findings also reveal that a limited number of townships such as Maungdaw showed decreased outputs due to external factors that hindered effective program implementation.

Decrease in DPT 3 coverage across most townships was a surprising finding as it was not consistent with the progress in ANC which was delivered in package of outreach service. It has been noted that Pentavalent vaccines (DTP-HepB and Hib) was introduced in November 2012 with an associated change in vaccination schedule may have resulted in reduction of DTP3. Also there is delay in the modification of HMIS system capturing DTP3 and Pentavalent coverage. Reconciliation of data recoding is underway.

3.4 Discussion

Compared with the 2010 baseline coverage, the outcome in terms of MCH service coverage is favorable in 2013, by which time the GAVI HSS has been implemented for 2 full years (acknowledging that 2011 was a preparatory year for these townships). However, as the baseline coverage rate is at township-level data from MOH HMIS, it cannot readily compare the outcome of the GAVI HSS implementation (in hard-to-reach areas) with townships from the country as a whole. Given this constraint, we argue in favour of GAVI HSS contributions to improved MCH service coverage in these twenty townships on two grounds.

First, without introduction of coordinated approach which allows Basic Health Staffs from easy to reach areas to jointly support outreach services through additional daily and transport allowances in offering MCH services on site four times a year in these communities, though recognizing BHS professional commitment,) people residing in these un-reached communities would not have been covered by these services. In Table 2.5 of Chapter two, there were 2,342 sessions of outreach services in 2012 with an average 123 sessions per township, or 10 sessions per township per month. Clearly, this boosts MCH service coverage; and is likely to contribute to the increased coverage. The civil unrest in Rakhine State seriously interrupts implementation of routine and GAVI HSS program services. Field observation in two townships by the assessment team confirms that BHS welcomes the new coordinated approach to provide outreach services and have major impact on coverage rate. Second, it is likely to expect a normal performance of MCH services among easy-to-reach areas; as there is no additional incentive to boost services. Therefore the changes is likely the contributions of GAVI HSS in hard to reach areas.

However, the data quality assessment conducted in 20 townships as a part of township assessment by GAVI HSS program, shows the verification factor is only 68.5% for twenty townships (see Chapter 2,) which is well below the acceptable benchmark of 80%; careful interpretation of the service coverage is needed. In addition, it is well realized that various factors contribute to EPI coverage. For example, community engagement is the key of success to increasing EPI coverage. The heads of village and CHW played a vital role to recruit people in the community to participate in the package service tour.

GAVI HSS interventions do not directly address the shortage of midwives in sub-centres and RHU, whom can boost the SBA coverage. However, the program supports the drafting of National Strategic Plan for Health Workforce (2012-2017) to address the overall issue on health workforce including the shortage of Basic Health Staffs. GAVI supports training of additional auxiliary midwives, 20 newly AMW in each township. However, AMW are not categorized as skilled birth attendants, despite AMW delivered 10.1% of total birth in 2009 in rural areas [15]. AMW also urges the high risk pregnancies to up take hospital equity fund for referral to township hospitals for delivery by SBA, see Chapter 4.

3.5 Conclusion

With these findings, our argument is in favour of the GAVI HSS program contributions to improve few key MCH service coverage, and a variation in progress across townships. Evidence suggests that outreach MCH service offered in the hard to reach community boosts improvement of MCH coverage rate.

Chapter 4 Hospital Equity Fund

4.1 Background

Geographical and financial barriers are major hindrances to health services, in particular mother and child healthcare; these were identified during the health systems assessments conducted in Myanmar between 2009 and 2011. The assessments also showed more than 80% of total health expenditure was out-of-pocket payment, for which the poor who cannot afford to pay and so they do not have access to health services when needed. The GAVI HSS program addressed this limitation in its design.

Initially it was started in the Township of Lewe, with the concept of a “Patient Referral Fund” (PRF) a name later changed to “Hospital Equity Fund” (HEF) and then expanded to all the 20 GAVI HSS townships. Finances were earmarked from the GAVI HSS program in each township to support the poor for the cost of referral, food, and treatment of life threatening conditions in the Township Hospital.

4.2 Who is covered with what?

Eligibility to HEF and detail of package and payment are described in Table 4.1

Table 4.1 Benefit package and eligibility for HEF

Benefit Package	Beneficiaries	Details of Benefits
<ul style="list-style-type: none"> Emergency procedures such as cesarean section and other lifesaving procedure Management of complicated delivery (eclampsia, obstructed delivery, anti- and post-partum hemorrhage and abortion related complications) Other lifesaving emergencies such as road traffic accidents, snake bites and others) Management of childhood acute illness (e.g. pneumonia, diarrhea, dengue and malaria or other acute condition) 	<ul style="list-style-type: none"> All emergency patients who are mothers , pregnant women and children under 5 and were pre-identified as poor, with life threatening conditions. This includes mothers or children as being at “high risk” of a life threatening condition. 	<ul style="list-style-type: none"> Reimbursement of medicines and all related treatment costs, transport and food. 5–10 day stay in hospital with one attendant Total reimbursement not exceeding 100,000 kyat for the whole benefits package

4.3 How is HEF managed?

A total amount of US\$10,000 from GAVI HSS fund is earmarked for each township annually the four years of the program. The Ministry of Health (MOH) submits a proposal to WHO and WHO releases funds to the MOH based on WHO's financial rules. The MOH then deposits this fund straight into the "other account" opened for the Hospital Equity fund at the township level.

The finance sub-committee (chaired by a senior community member with the help of other members from local authorities, the township medical office (TMO), and local well-wishers) is responsible for oversight and approval of disbursement of the fund. The Ministry then submits quarterly reports on the utilization of the fund to WHO. Upon submission of the year-end financial report (with full liquidation by the MOH, the next tranche of funds are released by WHO.

The principle is to use this fund as "seed money" with options kept open for other donors and well-wishers to co-contribute. The Myanmar Maternal and Child Welfare Association (MMCWA), which is one of the local NGOs, have so far donated Kyats 500,000 (US\$ 606) to each of the 20 townships.

4.4 Process at operational level

The midwife of each Sub-center can make the decision to refer an HEF patient from the Sub-center to the Township Hospital. After admission, patients at the hospital are interviewed by a committee of five members (which includes the chair, an assistant doctor, another senior citizen, the finance chief and the TMO as secretariat). The decision is then made not only based on the quantitative score in the checklist, see Table 4.2, but some qualitative information such as the physical appearance of the patient, and also information from AMW / CHW who referred them to the hospital. The higher the score--the poorer the patients are. After approval, HEF patients are provided with free medical treatment, payment for the actual cost of round-trip transport and a daily allowance of 3,500 Kyat for the patient and attendants. However the daily allowance rate differed across township hospitals as some hospital were paid based upon actual expenditure.

Table 4.2 poverty assessment quantitative score, applied for HEF beneficiaries

Multiple criteria	Score
Family member > 5	10
One or less than one member who is earner	10
Household characteristics and ownership of durables	
▪ Bamboo wall and thatch roof	5
▪ Not owning a bike	3
▪ No TV	3
▪ No radio	4
Indebtedness from illnesses or food	25
Household income <1000 Kyat per day, or 30,000 Kyat per month	50
Total score	110

4.5 Outcome of HEF 2012-2013

Since March 2012, a total of US\$160,000 was distributed to the first batch of 20 townships (USD 8,000 each); according to WHO financial procedure, it initially released 80% of the fund with the understanding that the remaining 20% will be released upon liquidation by the MOH. Hospitals started to use the funds by June 2012, with a large variation in implementation status and the use of funds across the various township hospitals. Some implemented as planned where as some could not, depending on the administrative and management capacity of individual township hospitals.

Utilization rates varied across hospitals. For example, by the end of June 2013, only 14 hospitals utilized more than 95% of the allocated fund. To meet the implementation schedule within 2013, MOH then reallocated funds from the hospitals that had low utilization rate to those with higher utilization. The need was felt to rationalize fund allocation based upon the capacity of hospitals in the future. Some hospitals used more than 100% of their allocation after the reallocation. There were both supply side and demand side factors which explained these variations, as is outlined below:

Supply side factors:

1. Hospital bed strength: The hospitals with higher bed strength utilized more than 100% within the time frame. Eg, Pyinmana, Bamaw and Myeik, all with 200 beds, utilized their allocated funds by February 2013 (and even managed to use all their reallocated funds by June 2013).
2. Vacant Positions: Some of the hospitals had vacant positions for Township Medical Office (TMO) and for obstetricians and gynecologists (OG). The absenteeism of TMOs hampered the management and use of HEF, as TMOs were the only ones given the authority to release funds from bank. In some townships e.g. Lewe township, the TMO was on long term training with no fund withdrawal authority assigned to other staff; thus impeding its utilization. However, after the TMO returning from training, the hospital managed to utilize more than 100% of the allocation. Also many fund usages were OG cases, and the hospitals with no OGs showed less utilization.
3. Hospital staff awareness: Other than TMOs and Nurse in charge, the rest of hospital staff are not aware of HEF as is the case for Yadershey township hospital.
4. Staff attitude: all midwives were aware of the fund and many even referred eligible cases to the hospital. However, whether the referred patients were covered by HEF depended on attitude of staff at hospital. Some staff were not happy doing financial reporting which was an extra burden to them. Whereas in some hospitals, staff found some non-referred cases by midwives eligible for and granted with HEF benefits; as is the case of 25 bed Ngaputaw township hospital, where the TMO was very active, the hospital utilized all funds.

Demand Side factors:

Population Coverage: population coverage varied across hospitals. Hospitals located in geographically flat areas and easy-to-reach areas had higher population coverage than those located in hilly areas with sparse populations.

Public Awareness: considering the limited funding, the MOH decided not to advocate this funding to the general public. Only TMOs and midwives were informed about the funds and were advised to refer and/or grant benefits to any eligible patients coming to their facilities (and during their Outreach services). There was no wider publicity program directed to the community and this led to a general lack of public awareness of the Fund.

In conclusion, use of HEF is complex and determined by various factors. Unless the hospitals are equipped with OGs (or general doctors that can conduct cesarean section or manage difficult labour), and unless there is general availability of TMOs and also adequate bed strength, HEF will remain underused. See Figure 4.1.

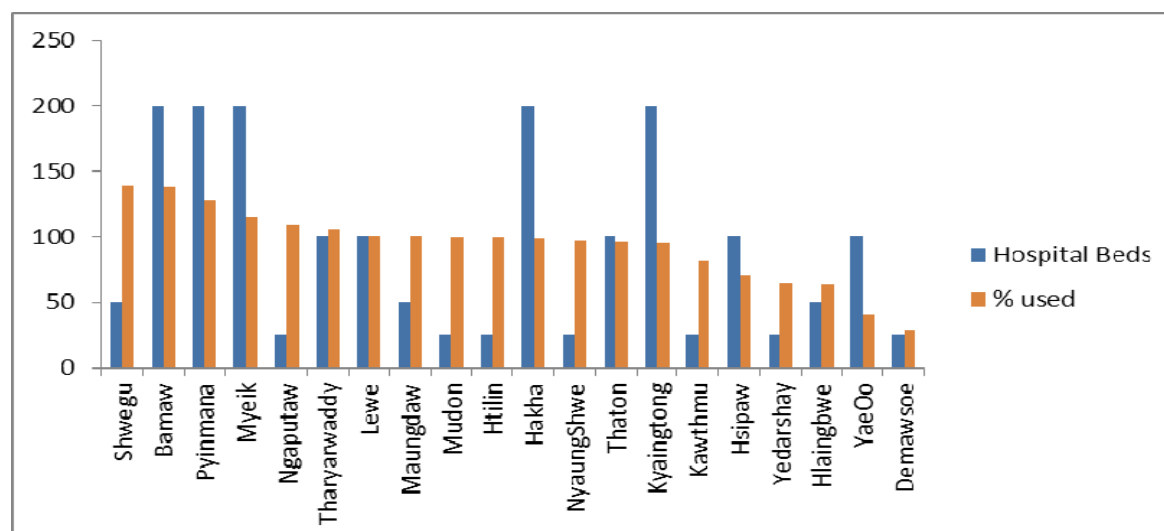


Figure 4.1 HEF utilization by bed strength by June 2013

By the end of June 2013, 20 townships utilized US\$ 149,822.6 and benefited a total of 2,072 patients with an average US\$ 72.3 per capita patient spending, See table 4.3.

Table 4.3 Number of patients covered by HEF, by June 2013

Township	Male	Female	Under five	Total Number of Beneficiaries	Total Expenses, US\$	Average expense per beneficiary, US\$
Ngapudaw	0	160	45	205	8,753	43
Yedarshay	0	52	21	73	5,145	70
Tharyarwaddy	4	60	30	94	8,447	90
Hakha	22	37	40	99	7,921	80
Bamaw	0	96	60	156	11,030	71
Shwegu	0	112	55	167	11,152	67
Demawsoe	0	10	21	31	2,261	73
Hlaingbwe	5	35	34	74	5,123	69
Htilin	7	78	0	85	7,952	94
Lewe	6	94	20	120	8,069	67
Pyinmana	0	137	43	180	10,265	57
Mudon	0	109	4	113	7,982	71
Thaton	3	52	5	60	7,674	128
Maungdaw	1	55	38	94	8,000	85
Ye U	0	47	4	51	3,240	64
Kyaingtong	8	32	29	69	7,596	110
Hsipaw	9	65	52	126	5,683	45
Naungshwe	0	79	21	100	7,766	78
Myeik	0	47	50	97	9,215	95
Kawthmu	0	72	6	78	6,549	84
Total	65	1429	578	2072	149,823	72

4.6 HEF profiles

The HEF expenditure profile is categorized into three groups: 1) travel allowance, 2) per diem and food for patients and their attendants, and 3) medicines. Half of the total HEF expenditure was on medicines, 29% on food and per diem and 21% on travel cost. Note that the HEF only subsidizes medicines for patients but did not pay for services charged by providers and for their hospital stay, which were provided free by the government. The majority of the beneficiaries were female (69%), followed by children under five (28%), and 3% were male.

The HEF fund supported obstetric cases (64% of total), childhood cases (28%), surgical cases (5%) and general medical cases (3%). As its goal was to support MCH services, obstetric cases consumed 89% of total HEF expenditure. The case profiles were similar across townships, with a predominance of obstetric cases.

Recently in 2013, the MOH has initiated a policy of purchasing medicines using the government budget and distributing free medicines down to the Sub-center level. The government conducting a consultation process to develop a set of benefit packages for universal health coverage in the light of improved capacity from the annual budget. Therefore the experiences in the HEF operation and outcome may contribute to the current consultations.

4.7 Detail analysis on obstetric cases

Obstetric cases consumed 89% of total HEF spending, or US\$ 79.3 per capita beneficiary. Out of total 1,327 obstetric cases, 743 (56%) were cesarean section, 348 (26%) vaginal delivery cases. Table 4.4 shows per capita HEF expenditure by type of diagnosis, see also Figure 4.2 on case profiles.

Table 4.4 Average HEF expenditure per case, US\$ by diagnosis (ICD 10)

Diagnosis by ICD 10	Average expenditure per case, US\$
Cesarean section	94
Normal spontaneous vaginal delivery	57
Instrumental delivery	60
Complication of labour and delivery	85
Complication of puerperium	62
Maternal care related to fetus and amniotic cavity and possible delivery problems	63
Other maternal disorder predominately related to pregnancy	74
Edema, protein-uria and hypertensive disorder in pregnancy, childbirth and puerperium	60
Pregnancy with abortive outcome	65
Gynaecological cases	78

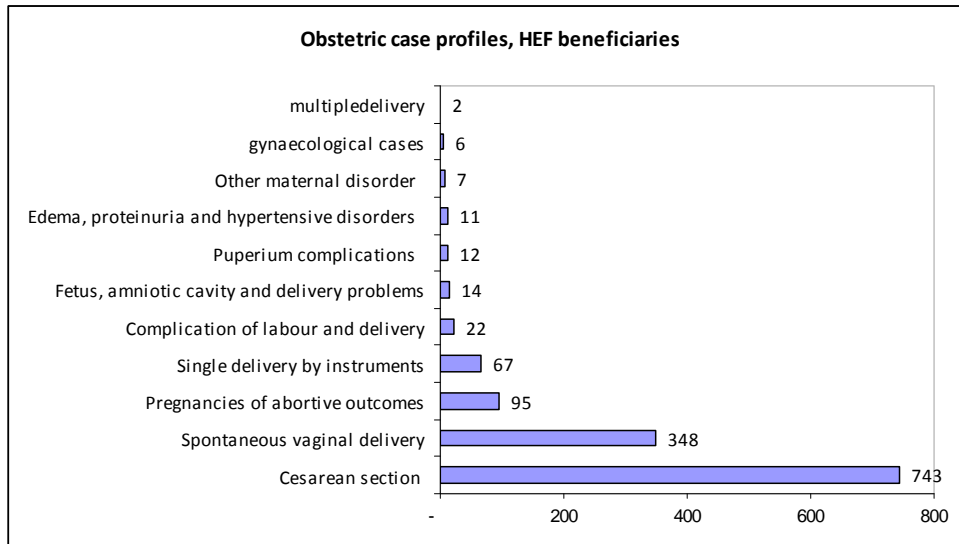


Figure 4.2 Obstetric cases profiles

4.8 Observations from the two selected townships

The Township Hospitals recorded patient profiles including bio-data, diagnosis, and expenditures. Unfortunately, the consolidated data at national level does not contain the address of patients and so information about whether they were referred from hard- or easy-to-reach villages was not available. However, research teams in the assessment of Yadershey Township noticed that the HEF was concentrated among only 3 of its 8 areas (the 3 being the Township Hospital, Aung Chan Thar RHC and Amygikhon RHC), see Table 4.5. There were no HEF patients from the most hard-to-reach Hle Pwe Lay RHC. However, more detailed information could not be found to explain this phenomenon due to time constraints and limited involvement of Key Informants in the HEF.

Table 4.5 Catchment areas of patients served by HEF, Yadershey township.

Area	Number of HEF patient	%
A. Township	21	29%
B. AungChanThar RHC	39	53%
• Main SC	10	
• Petue SC	13	
• Ywathit SC	9	
• Ngabutinn SC	7	
C. Amatygikhon RHC	13	18%
• Main SC	1	
• Khintar SC	9	
• Kyanthanwe SC	2	
• Ooyinhmu SC	1	
Total	73	100%

4.9 Conclusion

The findings show that when financial barriers are eliminated via the provision of free emergency hospital care services to poor women and children (through combined support for food and transport), the demand for essential lifesaving maternal and child health services increases. Though the two thousand cases covered by the HEF is 'less than a drop of water in the ocean' of overall health needs, the HEF serves as an initial step in a long journey towards a more comprehensive financial protection. The original limited help for poor people from these 20 townships, and the focus on MDG 4 and 5, can be scaled up and widened if the government has more financial resources and a continued political commitment.

With this limited support, the HEF contributed to averting maternal and child deaths, since 70% of beneficiaries were female and 27% children.

"HEF is useful in providing some of the poor patient's access to essential health services. Most of the cases are obstetric patients requiring immediate attention by physicians at the hospital. Without this, patients may die or denied to come to see us." TMO Nyaungshwe

Demand-side barriers (such as: 1. a refusal to be referred for fear of financial impacts, 2. lack of awareness, and also 3. limited funding at US\$ 10,000 per township serving a catchment population of 200 to 300 thousand population) cannot make a big change on mortality and morbidity.

The HEF has also facilitated in generating information on unit costs for treating patients with different conditions which can later be used to inform future health financing plans for maternal and child health services.

Chapter 5 the role of Auxiliary Midwives and Community Health Workers in rural health services in Myanmar

5.1 Background

Myanmar is one of the 57 countries classified as enduring critical shortage in their health service workforce, falling below the threshold of 2.3 doctors, nurses and midwives per 1,000 population (WHO 2006). Not only is there an inadequate workforce but also the maldistribution of this workforce is jeopardizing the health status of people in hard-to-reach areas. Note also, that there is an internal migration of health workers from rural to urban areas, from the public to the private sector, and from primary health care level to the higher-up care level, and also out of health profession itself. The net losers of all these factors are people residing in the rural hard-to-reach areas. Note also that international emigration out from Myanmar is as serious a problem in the health sector as domestic migration.

5.2 Midwives in Myanmar

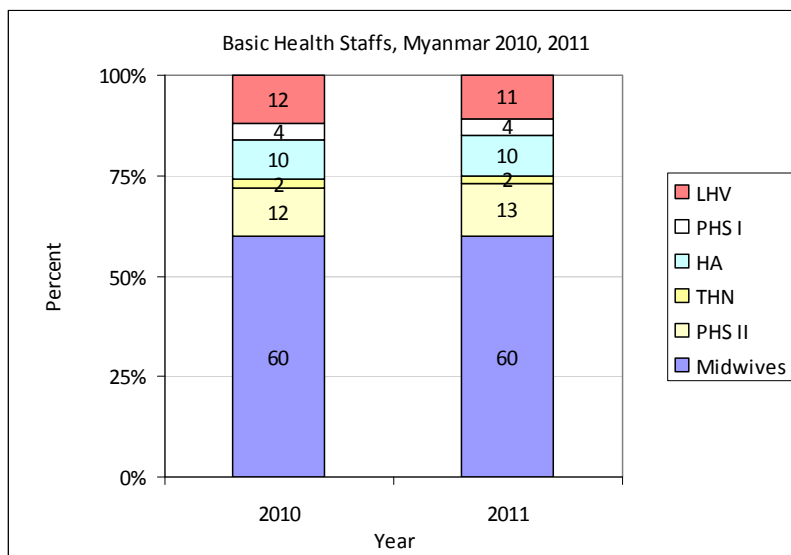


Figure 5.1 Profiles of basic health staff, 2010-2011

Source: Public Health Statistics, 2010-2011

In 2011, there were 27,420 Basic Health Staff in Myanmar, this includes health assistants, Lady Health Visitors, Midwives, and Public Health Supervisors I and II. Midwives are the majority of BHS, making up 60% of total BHS serving the vast majority rural population (see Figure 5.1.). Training, capacity building, rural retention, and ensuring the fullest contributions by midwives, are important in order to achieve a healthy rural population. They are the frontline health workforce of the country.

Midwives are assigned as primary health care workers in sub-centres under the supervision and support of a Rural Health Centre. To understand the Myanmar health service workforce, it is important to understand the midwifery career ladder, their support system, and their reasons to stay or to leave the profession. To address these questions, an interesting study supported by GAVI HSS program on " Motivation and Retention of Midwives in Hard To Reach Areas " [16] in 2010-11 had randomly selected hard-to-reach (HTR) rural health centres in five of the GAVI HSS Townships

[Hakha Township in Chin State, Htilin Township in Magway Region, Ye U Township in Sagaing Region, Yetarshay Township in Bago West Region and Tharyawaddy township in Bago East Region]. In these townships, all midwives working in the RHC and sub-centre level, as well as township health team supervisors (the TMO/ THO/ THA/THN/HA1) and community members who had utilised midwives at primary care level, interviewed in-depth. This study assessed midwives' career expectations, work conditions, and perceptions of their jobs, as well as factors contributing to motivation and retention.

A total of 50 midwives and 9 Township health team supervisors (i.e. TMO/ THO/ THA/ THN/ HA1) plus a number of community members (NB: no actual numbers were provided in the report) who had used any health care services provided by midwives, were interviewed in these five townships. Most of the midwives expected to take responsibility for peoples' health as well as their own family members. Midwives, assigned as primary health care providers, did not confine their work to the office (RHC and Sub-centres) but Outreached to households of the whole communities they served.

They generally found their working conditions very challenging. For example, traveling in difficult terrain with poor transportation facilities is both tiring and costly (especially when there is no per diem support from the MOH). The midwife career ladder is not straight forward. For example, they have to pass the competitive entrance exam and have to attend a nine months training course in order to be a Lady Health Visitor (Note that an LHV is a higher position than a midwife). At the same time, township level supervisors (i.e. TMO) have no control over their career progression and over the transfer mechanism. Note that the Executive Committee under the Department of Health at the Ministry of Health is responsible for the career progression and transfer of LHVs and Midwives.

On rural retention, about half of them (47%) who are under 55 years, expressed their intention to be transferred out of their current post, and about one fifth (19%) intended to work at their current post until they are offered to attend LHV training. Only one third intended to continue working at the current hard-to-reach areas. Several reasons explain their intention to leave their current post: 50% reported wanting to stay with their family, 13% reported difficulties in their children's education in the current locality, and 8% said the hard-to-reach area are far too difficult. It is noted that 75% of midwives who intended to continue in current post, were from rural background.

Qualitative findings indicate that newly-recruited midwives are liable to quit. Among the midwives who served less than 5 years, only 18% intended to continue working in hard-to-reach areas, whereas 82% of midwives who served more than 10 years intended to continue working there. It is noted that most of the newly recruited midwives were posted in more difficult hard-to-reach areas; aggravating their intention to leave. Qualitative information indicates that midwives having support from family, supervisors, and their community, are more likely to serve longer in hard-to-reach areas.

Factors contributing to job satisfaction and retention are for example, good Sub-center infrastructure and housing (70%); adequate supplies of medicine and equipment (68%); provision of travel allowance (63%), and improved transport through provision of a motorcycle (63%); plus appreciation and understanding from community members (53%).

Similar motivation factors emerged; 1) adequate supplies of medicine and equipment is the top factor, followed by 2) support from community (65%); 3) understanding and appreciation from community (58%); 4) appreciation and support from supervisors or superiors (50%); 5) improved transport including providing motorcycle (50%) and 5) increased pay (35%). On financial incentives, travel allowance is the most important need--due to expensive out-of-pocket payments by midwives for Outreaching services to the communities.

5.3 Health volunteers in Myanmar

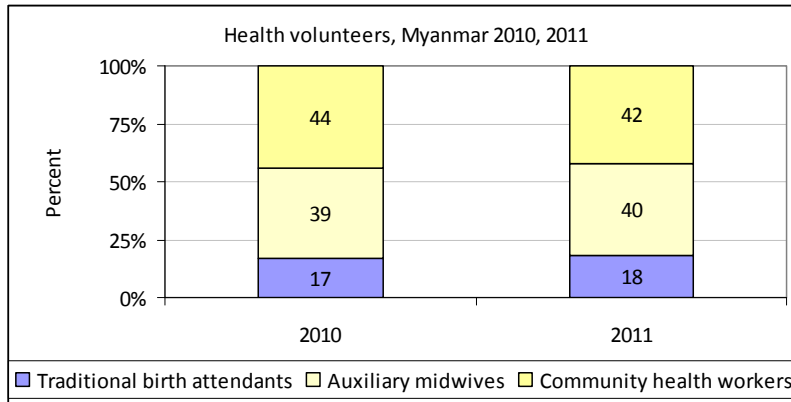


Figure 5.2 health volunteers in Myanmar

Source: Public Health Statistics, 2010-2011

The three cadres of community health workers (CHWs) serving the rural communities in a voluntary capacity are 1) Traditional birth attendants (TBA), 2) auxiliary midwives (AMWs), and 3) community health workers (CHWs). All were trained to support the work of Basic Health Staff in rural areas. AMWs and CHWs are the majority; being 83% and 82% of total volunteers in 2010-2011, Figure 5.2. In 2010 and 2011, there were a total of 31,787 and 33,860 AMWs; of which not all were necessarily functioning (in 2011, it was estimated that only 19,974, some 59%, were so).

5.4 Contributions of BHS and health volunteers to MCH services

A round 4 multi-cluster indicator survey in Myanmar (2009-2010) showed that midwives are the backbone of antenatal care services: 53.7% of total ANCs, followed by doctors (20%), and nurses and lady health visitors (9.4%). Health volunteers also play some role, AMWs 4.1%, and TBAs 4.8%. About 6.9% of pregnant women who did not get any antenatal health care (See Figure 5.3.)

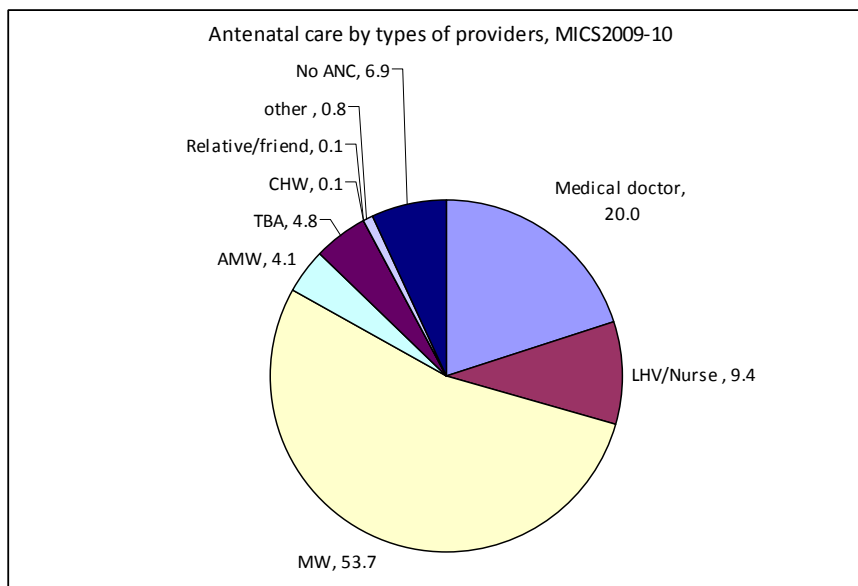


Figure 5.3 Antenatal care by type of health workforces 2009-2010

Source MICS 4

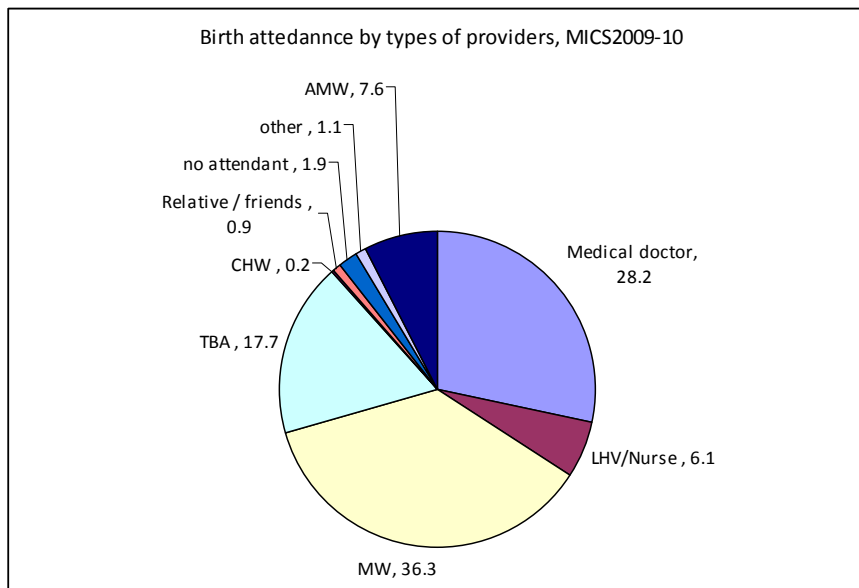


Figure 5.4 Skilled birth attendance by type of health workforce 2009-2010
Source MICS 4

Similar to ANCs but less proportion, midwives are major birth attendance, 36% of total births, followed by doctors (28.2%), traditional birth attendants (17.7%), nurses and lady health visitors (6.1%). While AMWs have 7.6% share of total birth, traditional birth attendants have a larger share of 17.7% reflecting either more trust in TBAs among community members or lack of adequate number of or trust in AMWs. Note that TBAs have a larger share in providing delivery (17.7%) than providing ANCs (4.8%), see Figure 5.4. Total skilled birth attendance (doctors, nurses/lady health visitors and midwives) was 70.6%. Note that AMWs and TBAs are not counted as skilled-birth attenders.

MICS reflects that doctors are not easily accessed by pregnant women who are poor, lower educated, and live in rural areas; they are attended mostly by midwives, TBAs and AMWs in each locality respectively. Therefore, the competency of midwives, TBAs and AMWs in screening high risk pregnancies through quality ANCs and proper referral are keys to preventing maternal mortality and improved fetal outcomes.

5.5 Health workforce component in the GAVI HSS program

In the past few decades, community health workers (CHWs) and auxiliary midwives (AMWs) have been active in supporting rural health services as extension arms of basic health workers, especially midwives, in the light of limited number of trained health workforce in the hard-to-reach and remote areas. They are trained by using multiple sources of funding either from MOH or other international development partners when opportunities arose. It is important to assess how these community health workers contribute to community health services, and to understand their strengths and weakness, in order to encourage program improvement. GAVI HSS program also supports recruitment, training and refresher courses for the AMWs and CHWs in the GAVI HSS program support townships. Due to resource constraints, each township has a quota of 20 new (six-

month) trained AMWs and 20 newly (one-month trained) CHWs--as well as 50 refresher courses for both AMWs and CHWs.

This study assessed the socio-economic profile of AMWs and CHWs, and their contribution to filling the gap of MCHs and other general health services in hard-to-reach areas and needs for supports for the improvement of the program.

5.6 Methods

There were two separate assessments during the last quarter of 2013: one for AMWs and one for CHWs. The first draft questionnaire was piloted in two townships: Kawhmu and Tharyarwaddy. All AMWs and CHWs in the catchment areas of two selected rural health centres in each township (rated as best and worst performing in the view of the TMO) received the self-administered questionnaire. A total of 33 samples of AMW and 30 samples of CHW responded to the pilot study. After the pilot study, the contents in the questionnaire were reviewed, revised and finalized (see Annex 5.1 and 5.2 on final version of questions). The English version was then translated into a Myanmar version and distributed to nineteen first year GAVI HSS Townships and two upcoming GAVI HSS townships (namely: Pinlong and Thanatpin). This study applied a census method. All AMWs and CHWs, irrespective of their recruitment and training period and funding agencies functioning in 19 GAVI HSS townships and 2 upcoming GAVI HSS townships were recruited as samples.

Procedures of survey management: WHO sent the Myanmar version of the questionnaires to the Health System Strengthening Officers (HSSOs) in 21 townships. The questionnaires were then sent out to Basic Health Staff (Health Assistants/Lady Health Visitors/Midwives) of the health facilities within their townships at the time of the township monthly meeting (by the end of July 2013). The BHS then circulated the questionnaires to all existing AMWs/CHWs within their catchment area. After reading the consent form on the first page of questionnaire, respondents were requested to answer the questionnaires 'on the spot' and BHS collected the completed questionnaires. Since it was difficult to gather all respondents in one place, some BHS travelled around to the residences of the CHWs and AMWs to circulate and collect the questionnaires.

HSSO collected the completed questionnaires from the respective BHS during the next township monthly meeting (by end of August 2013). The total time taken for the distribution and collection of the questionnaires in the field was one month. HSSO submitted the questionnaires to WHO country office by pouch. Data was entered in Excel, and analysis was conducted using STATA. Note that this method was applied to both AMW and CHW.

5.7 Finding on Auxiliary Midwives

5.7.1 Personal profiles of AMWs

There were 1,185 AMWs from 21 townships who completely responded to the questionnaire; 59% of them aged more than 30 and 41% below 30 years old. 42% were single. On their education background, a majority of them, 47%, were grade 11, whilst 13% were grade five, 34% grade 9, and 6% were bachelor degree level or above. Almost all AMWs, 98%, lived in the village they offered services to, and spoke the same dialect as the villagers. The AMW is a voluntary service position, 71% of them had to earn their living from farming, 17% as shop-keepers and 12% were had 'other' occupations.

5.7.2 About being an auxiliary midwife

A majority of AMWs, 59%, reported that they applied for AMW training, whilst 20% reported they were nominated by the midwives in the Sub-centre, 15% nominated by village heads, and 7% by villagers. Altruism is the main motivation to be an AMW, as 89% reported that they may have a chance to serve the people in their own villages, 6% said they are recognized by the communities, and 6% reported having a chance to upgrade to become a midwife. Less than half percent reported having a chance to earn some money from being an AMW.

Of the total sample of AMWs, 27% were recently trained in a six-month course in the GAVI HSS Program in 2012, whilst 39% were trained prior to 2000, and 34% between 2000 and 2012, by multiple sources of funding. Within the GAVI HSS program, there was a five-day refresher course offered to the existing AMWs, 52% and 43% of those trained between 2000-2011 and before 2000 reported having a refresher course. Due to budget constraints, only 50 refresher courses per township were provided.

After the six-month training course, 25% reported they were 'very confident' in providing services to villagers, while 60% reported being 'confident' and 14% 'fairly confident'. Less than one percent reported they are 'not confident'.

5.7.3 The contributions of AMW to villagers

After the training, 28% reported they were 'very satisfied' with support from the sub-centre or RHC, 58% reported being 'satisfied', 10% were 'fairly satisfied', and 3% 'not satisfied'. In the past six months prior to the survey, on average, 2.9 high risk pregnancies were identified and referred by AMWs to their Township Hospital (max 83, min 0). Not all high risk pregnancies accepted to be referred. AMWs reported that on average in the last six months, 1.3 (max 22, min 0) refused to go Township Hospital for fear of financial burden, despite that they were eligible for HEF support. AMWs reported they assisted an average of 9 deliveries in the last six months, 11.5 antenatal care cases, and 9.2 postnatal cases.

What support do they needed? 99% reported the importance of technical supervision by midwives and other health staff, 96% on replenishment of AMW kits reflecting very high demand for replenishing of AMW kits, 72% on financial support for their services, 74% on financial support for transport to reach villagers, and 99% on refresher course.

The study found that 72% of AMWs reported they are 'well accepted' by their community, 27% felt 'somewhat accepted' and 0.6% reported 'not being accepted' by the villagers. Of all the respondent AMWs, 66% reported difficulty with traveling to reach women and children in remote, hard-to-reach areas, 57% reported refusal by pregnant women to be referred, 76% reported women are of low education, and lack health knowledge, and 54% said they lacked of support from basic health staff.

Although AMWs are volunteers, we were interested to assess if AMWs get financial support in return for their work. A total of 9% reported they get financial support from the community, 39% from the patients they served.

A future-minded question was asked on the topic of how many years they intended to serve as an AMW. A majority, 90%, reported an intention to serve more than 5 years, whilst 5% will serve between one to three years, and 3% between three to five years, and 1% will serve less than a year. Potential reasons for quitting were as follows: 4% when getting married, 21% when moving out of

the village, 12% when getting a permanent job or employment, and 23% if they feel they cannot contribute as intended, and 10% if they do not feel proud of their own work in the future.

5.7.4 AMWs, their confidence and intention to contribute more than five years

Table 5.1 shows multiple logit regression; the confidence of offering services to community is a dependent variable, whereas independent variables include 'age group', 'education level' (grade 5, 9, 11 and bachelor or above), 'recruitment pattern' (self-application, proposed by midwives, villagers and village head), and 'batch of training' (before 2000, 2000-2011 and 2012).

A Regression study shows that the older AMWs are more confident about the service they give; odds ratio is 4.97 for more than 50 year olds with statistical significance. Conversely, AMWs who are grade five, those who self-applied, and older batches trained before 2000, all report higher confidence than those who are higher educated; those who are nominated by others, as well as the more recent batches.

Table 5.1 Multiple logit regression: factor contributing to confidence of providing services by AMW

Feeling confident	Odds ratio	Std. Err.	P-value	95% CI	
Age (compared with youngest, < 20)					
• 20-29	1.038	0.306	0.899	0.583	1.850
• 30-39	1.493	0.527	0.257	0.747	2.981
• 40-49	6.019	3.010	0.000	2.259	16.038
• >=50	4.966	2.444	0.001	1.892	13.031
Education (compared with grade 5)					
• grade 9	0.713	0.256	0.347	0.353	1.443
• grade 11	0.642	0.229	0.214	0.319	1.291
• bachelor or above	0.478	0.222	0.111	0.192	1.186
Recruitment (VS self application)					
• local midwives	0.944	0.201	0.788	0.623	1.433
• Villagers	0.655	0.224	0.216	0.335	1.280
• village head	0.866	0.226	0.581	0.520	1.444
Training batch (compared with batched trained before 2000)					
• 2000-2011	1.703	0.485	0.062	0.974	2.977
• 2012	1.062	0.333	0.849	0.574	1.963

Note: Pseudo R2 = 0.0616

Table 5.2 shows multiple logit regression; intention to contribute more than 5 years is an dependent variable, whereas independent variables are similar to the above and level of confidence in providing services. Regression study shows that the AMWs who are confident in providing services have higher probability in staying longer than 5 years (odds ratio 3.5 with statistical significance). Also the older an AMW--the higher probability of their intention to stay more than five years (odds ratio is 2.5 for age more than 50 years old). An AMW who is grade five, and those who self-applied, as well as those from older batches trained before 2000, reported higher probabilities of serving more than five years (with some statistical significance).

Table 5.2 Multiple logit regression: factor contributing to intention to contribute more than five years, by AMW

Intention to serve communities >5 years	Oddss Ratio	Std. Err.	P-value	95% CI	
Confidence in providing services (VS not confident)	3.486	0.823	<0.001	2.195	5.537
Age (compared with youngest, < 20)					
• 20-29	1.327	0.430	0.382	0.703	2.506
• 30-39	1.783	0.753	0.171	0.779	4.079
• 40-49	1.710	0.940	0.330	0.582	5.025
• >=50	2.532	1.624	0.147	0.720	8.901
Education (compared with grade 5)					
• grade 9	0.345	0.221	0.096	0.099	1.207
• grade 11	0.255	0.161	0.031	0.074	0.881
• bachelor or above	0.531	0.436	0.441	0.106	2.657
Recruitment (VS self application)					
• local midwives	0.726	0.201	0.247	0.422	1.248
• Villagers	0.324	0.127	0.004	0.150	0.701
• village head	0.300	0.089	<0.001	0.168	0.535
Training batch (compared with batched trained before 2000)					
• 2000-2011	0.655	0.268	0.301	0.294	1.460
• 2012	0.252	0.108	0.001	0.109	0.582

Note: Pseudo R2 = 0.1376

5.8 Finding on community health workers

5.8.1 Personal profiles of CHW

There were 715 CHW from 21 townships completely responded to the questionnaire; 68% of them age more than 30 and 32% below 30 years old; 34% were single. On their education background, a majority of them 40% was grade 9, while 15% were grade five, 39% grade 11 and 6% was bachelor or above. Almost all, 98% of CHW lived in the village they offered services, and spoke the same dialect with villagers. The CHW position is a voluntary job, 73% of them had to earn living from farming, 14% as shop-keepers and 13% other occupation.

5.8.2 About being a CHW

A majority of CHWs, 53% reported that they applied for CHW training, while 21% reported they were proposed by the midwives in the Sub-center, 15% were proposed by the village head and 11% by villagers. Altruism is the main motivation to be a CHW, as 87% reported that they will have a chance to serve the people in their own villages, 9% said they are recognized by the communities and 4% reported having a chance to upgrade to a midwife, less than one percent reported having a chance to earn some money from being an AMW.

Of the total sample CHW, 32% were recently trained in a one-month course in GAVI HSS Program in 2012, while 40% were trained prior to 2000, and 28% between 2000 and 2012 by multiple sources of funding. In GAVI HSS program, there was a five day refresher course offered to the existing CHW, 55% and 47% of those trained between 2000-2011 and before 2000 reported having a refresher course. Due to budget constraints, only 50 trainees for refresher course per township was provided.

After the one-month training course, 31% reported being 'very confident' in providing services to villagers, while 58% reported being 'confident' and 10% 'fairly confident'. Less than half percent reported they are 'not confident'.

5.8.3 The contributions of CHW to villagers

After the one month training, 29% reported they were very satisfied with supports they received from the sub-centre or RHC, a majority, 57% reported satisfied, 9% fairly satisfied, and 4% not satisfied with the supports they received. In the past six months prior to the survey, 95% reported they advocated the environment health such as clean water and safe sanitation; 94% reported support provision of health education to villagers, 96% reported support community mobilization for immunization of children under one year old and 83% reported having offered treatment of minor illnesses, with an average of 61.8 cases treated during the last six months. CHWs reported an average of 11.8 serious illnesses identified and referred during the last six months; but 6.1 refused the referral despite eligibility to HEF. Hence investment in CHW has contributed in community mobilisation for immunisation services, advocated and facilitated referral for MCH services supported by Hospital Equity Fund

What are important supports they needed? 99% reported the importance of technical supervision by midwives and other health staff are need, 71% on replenishment of CHW kits, 71% on financial support for their works, 80% on financial support for transport to reach villagers, and 99% on refresher course.

They have positive assessment that 69% of total samples of CHW reported they are well accepted by the community, 30% somewhat accepted and 1% reported not being accepted by the villagers. Barriers to access to care by patients are for example, 68% reported difficult traveling by CHW to reach the women and children in remote, hard-to-reach areas, 58% reported refusal by patients to be referred, 80% reported women are low educated and lack of health literacy, 83% lack of awareness among villagers and 54% reported lack of supports from basic health staff.

Although CHW are volunteers, we are interested to assess if they get financial supports in return of their works, 6% reported they get financial supports from the community, 22% from the patients they served.

A future-minded question was asked on how many years they intended to serve as a CHW. A majority, 87% reported an intention to serve more than 5 years, 13% will serve between three to five years, 8% between one to three years, and 2% will serve less than a year. Potential reasons for quitting were as follows: 7% said when getting married, 28% said when moving out of the village, 15% when getting a permanent job or employment, 26% said if they feel they cannot contribute as much as they expect and 15% if they feel not proud of their own work.

5.8.4 CHWs: their confidence and intention to stay more than five years

Table 5.3 shows multiple logit regression; the confidence of offering services to community is an dependent variable, whereas independent variables includes age group, education level (grade 5, 9, 11 and bachelor or above), recruitment pattern (self-application, proposed by midwives, villagers and village head), and batch of training (before 2000, 2000-2011 and 2012).

The Regression study shows that the older a CHW, the higher their confidence to provide services to the community they serve (with an odds ratio of 7.44 for those aged more than 50 years old with statistical significance). CHWs who are grade 11, those who are nominated by villagers, and also the recent batch trained in 2012, reported higher confidence but this was not statistically significant.

Table 5.3 Multiple logit regression: factor contributing to confidence of providing services by CHW

Feeling confident	Odds ratio	Std. Err.	P-value	95% CI	
Age (compared with youngest, < 20)					
• 20-29	1.545	0.661	0.308	0.669	3.572
• 30-39	2.511	1.216	0.057	0.972	6.487
• 40-49	6.363	4.026	0.003	1.841	21.992
• >=50	7.442	4.608	0.001	2.212	25.045
Education (compared with grade 5)					
• grade 9	1.013	0.475	0.978	0.404	2.539
• grade 11	1.125	0.537	0.805	0.442	2.867
• bachelor or above	0.950	0.608	0.936	0.271	3.331
Recruitment (VS self application)					
• local midwives	0.944	0.307	0.859	0.499	1.786
• Villagers	1.450	0.734	0.463	0.538	3.912
• village head	0.798	0.303	0.552	0.379	1.679
Training batch (compared with batched trained before 2000)					
• 2000-2011	1.037	0.442	0.933	0.449	2.393
• 2012	1.269	0.588	0.606	0.512	3.145

Note: Pseudo R2 = 0.0604

Table 5.4 shows multiple logit regression; intention to continue their contribution for more than 5 years is an dependent variable, whereas independent variables are similar to the above and level of confidence in providing services. The Regression study shows that CHWs with confidence had a higher probability of serving the community more than five years, odds ratio 1.8. Also those aged 40-49 have the highest probability of intention to contribute more than five years, odds ratio is 7.4 with statistical significance. CHWs on grade nine, those who are nominated by villagers and older batch trained before 2000 reported higher probability of serving more than five years with some statistical significance.

Table 5.4 Multiple logit regression: factor contributing to intention to contribute more than five years service, by CHWs.

Intention to serve communities >5 years	Odds ratio	Std. Err.	P-value	95% CI	
Confidence in providing services (VS not confident)	1.838	0.648	0.084	0.921	3.669
Age (compared with youngest, < 20)					
• 20-29	2.353	0.912	0.027	1.101	5.029
• 30-39	4.914	2.397	0.001	1.889	12.783
• 40-49	7.374	4.795	0.002	2.062	26.373
• >=50	2.683	1.476	0.073	0.912	7.889
Education (compared with grade 5)					
• grade 9	1.037	0.537	0.943	0.376	2.862
• grade 11	0.656	0.330	0.403	0.245	1.761
• bachelor or above	0.745	0.484	0.650	0.209	2.659
Recruitment (VS self application)					
• local midwives	0.383	0.115	0.001	0.212	0.690
• Villagers	2.057	1.311	0.258	0.590	7.173
• village head	0.568	0.230	0.163	0.257	1.256
Training batch (compared with batched trained before 2000)					
• 2000-2011	0.466	0.224	0.112	0.182	1.194
• 2012	0.308	0.153	0.018	0.116	0.815

Note: Pseudo R2 = 0.1623

5.9 Discussion

This study offers a quantitative cross-sectional picture of the existing AMWs and CHWs trained prior to 2000, between 2000 and 2011, and the recently trained in 2012 from 21 townships. These extension frontline health volunteers (traditional birth attendants, CHW and AMW) were trained to support the work of midwives in the Sub-centres and RHCs; and also provide services in and by themselves (such as antenatal care, delivery for simple normal delivery and post natal care; identifying high risk pregnancies, suggesting referral using the HEF facilities, and treatment of simple illnesses. Both AMWs and CHWs have a comparative advantage to be effective workers, as they live in the hard-to-reach villages, speak the same dialect as the locals, understand the socio-cultural dimensions, and are well accepted by the community.

As a health volunteer, they have to hold other primary jobs to earn a living. Although there is no additional cost in using their own home as a venue for service provision, these voluntary workers such incur several costs such as: travel costs when visiting homes, time costs when they must get time-off from other work, whilst the purchase of medicines and other medical supplies incur substantial cost (as the replenishment of AMW and CHW kits by the government does not match high demand for services). Unavoidably, these costs have to be shouldered by someone, either the community or the patients; 9% of AMWs receive financial support from their community, and 39% from the patients they served. Also 6% of CHWs receive financial support from the community, 22% from the patients they served.

As these extension workers contribute significantly to MCH services, the government should invest in providing more support; 99% of AMWs and CHWs need technical supervision from midwives and other health staff and also refresher courses; 96% of AMWs and 71% of CHWs need replenishment of AMW and CHW kits, 72% of AMWs and 71% of CHWs need financial support for their voluntary services, 74% of AMWs and 80% of CHWs need financial support for transport to villages.

Multiple logit studies show similar results: the older AMWs and CHWs have a higher probability of intention to keep working more than five years (the odds ratio is 3.4 for AMWs aged more than 50 years old, and 5.48 for CHWs aged 40-49 with statistical significance). This has policy implications in that refresher courses for the older volunteers and older batches (who were trained a long time ago), as well as proper supervision and support, are necessary to ensure proper contributions to MHC and general health services in rural Myanmar.

5.10 Recommendations

Basic Health Staff: especially midwives are the backbone of health delivery systems in Myanmar, they are the most valuable assets to deliver quality MHC and primary health care services to people normally not accessible to hospital and doctor services. We endorse the recommendations by Kyawt Sann Lwin in line with WHO recommendations [17], for example, for decentralized recruitment of young rural women especially from hard-to-reach areas for midwifery training, where a necessary exemption mechanism for recruitment is needed; strengthen midwifery training institutes to ensure adequate midwifery skills and practices; review curriculum of multipurpose midwifery training to equip them to manage some essential basic health services especially when they are posted in hard-to-reach areas.

Not only is it important to train more competent midwives, health policy should also ensure a high level of retention in rural areas (such as through hometown work placements upon graduation) financial and non-financial incentives; provision of adequate medicines and supplies, support and

supervision by township peers, and daily and travel allowances for the workers and those that support them.

The core team of community health service is composed of not only MW, but also HA, PHSI and PHSII. The control and prevention of disease responsibility is belongs to PHSII. In the future, the resource needs of health staff calculation should also be analyzed in terms of quality and quantity in the future.

Health volunteers: especially traditional birth attendants and auxiliary midwives hold quite a meaningful share of antenatal care and delivery in rural Myanmar. Investment by the GAVI HSS program in training and refresher course for these health volunteers contributes in filling health workforce gaps at the township level. However, there is a need to strengthen the existing support, supervision and consider other incentives to these health volunteers. These health volunteers, who are extension workers supporting midwives, are an important workforce in rural areas; which health policies should support (through the provision of adequate supervision, refresher courses, Sub-center and RHC support, and also preventing them to become a "quack" in the communities).

Chapter 6 Field assessment in two selected GAVI HSS townships

6.1 Background

GAVI supported Myanmar to strengthen its health systems with a four year Health System Support (HSS) program (2011-2015). Implementation is to be done in a phased manner; 20 townships in the 1st year and is then expanded to cover 60 townships in 2013. By 2015, the program will cover 180 townships.

Good progress is noted in terms of activities conducted and financial disbursement. However, a few delays have been incurred, such as implementation of MCH voucher scheme and completion of hospital equity funds. At the mid-term in 2013, it is a good opportunity to conduct a program assessment of the processes and outputs of the program in order to inform planning so as to better scale-up to the planned 180 township roll-out.

6.2 Objectives

To assess how the GAVI HSS program was interpreted and implemented at the operational level (namely at the township health offices and hospitals, RHCs and Sub-centers levels) two selected townships were assessed in order to identify strengths and weakness for improvement on program operation.

6.3 Selection of two townships

The international experts (Drs Viroj and Walaiporn) had two sessions of face-to-face consultation (1st and 21st June, 2013) and several rounds of email communication with Ms. Sangay Wangmo of the WHO Country Office and other Myanmar team members on the selection of the two townships. Finally, Naungshwe in Shan State and Yaedarshay in Bago Region were selected by consensus on the basis that they are comparable in a geographical sense. Importantly, these two townships were possible to access and so conduct the field exercise.

6.4 Preparation of the field exercise

A total of eight International Health Policy Program staff from MOPH Thailand, and eight staff from the WHO country office, the Health System Strengthening Office (HSSO) and the Ministry of Health (MOH) teamed-up to hold the township assessment (see Table 6.1). All had a preparatory meeting at the WHO country office in Yangon on 5th August, 2013, and the morning of 6th August, 2013 (See table 6.2.)

Table 6.1 List of team member for the field exercise in Naungshwe and Yedashe Township

Team A: Nyaungshwe		
1. Dr Viroj Tangcharoensathien	IHPP	viroj@ihpp.thaigov.net
2. Dr Weerasak Putthasri	IHPP	weerasak@ihpp.thaigov.net
3. Ms Waraporn Poungkantha	IHPP	waraporn@ihpp.thaigov.net
4. Ms Chiraporn Khidee	IHPP	chiraporn.k@ihpp.thaigov.net
5. Dr Pe Thet Htun	WHO	pthtoon@gmail.com
6. Dr Mya Lay New	HSSO, WHO	m.laynwe@gmail.com
7. Dr May Thwe Hla Shwe	MOH	mtshwewah29@gmail.com
8. Dr May Min Theint	HSSO, WHO	drmymint@gmail.com
TeamB: Yaedarshay		
9. Dr Walaiporn Patcharanarumol	IHPP	walaiporn@ihpp.thaigov.net
10. Dr Rapeepong Suphanchaimat	IHPP	rapeepong@ihpp.thaigov.net
11. Ms Angkana Sommanustweechai	IHPP	angkana@ihpp.thaigov.net
12. Ms Kanjana Arunyk	IHPP	kanjana.a@ihpp.thaigov.net
13. Ms Sangay Wangmo	WHO	wangmos@searo.who.int
14. Dr Tin Tun Aung	HSSO, WHO and MOH	drtintunaung@gmail.com
15. Dr Myo Min Win Han	MOH	mrbellgyi@gmail.com
16. Dr Saw Thetlya Aung	HSSO, WHO	dr.sawthet@gmail.com

Table 6.2 The schedule of the preparation meeting at WHO office, Trader Hotel

Date	Time	Activities
5th August 2013	08.50	IHPP team land at Yangon International Airport
	10.30	IHPP team arrive in the WHO Office at the Trader Hotel
	10.30-12.00	Self-introduction, introduction of the whole proposal and overview of all activities, preparation of the field exercise and of team-members
	12.00-13.00	Lunch
	13.00-16.30	<ul style="list-style-type: none"> Requirements from the field exercise, tools [Viroj] Appointment of each team for travelling on the next day and communication among the teams
6th August 2013	09.00-12.00	<ul style="list-style-type: none"> Continue discussion about the tools

6.5 The field exercise

The whole team (teams A and B) started travelling to the townships around noon of Tuesday 6th August 2013. See Table 6.3 for a work schedule of the two teams. The interview guide and the template of the report were provided to the team members, see Annex 6.1.

Table 6.3 Work schedule for township assessment

Date	Shan state: Naungshwe Team A	Bago Region: Yedashe Team B
Tuesday 6th August 2013	Noon flight to Shan State and car to Naungshwe Briefing with Township Medical Officers	Noon by car(s) to Yedashe Briefing with Township Medical Officers
Wednesday 7th August 2013	A1 2 persons to Township A2 3 persons to STRONG RHC A3 3 persons to LESS-STRONG RHC	B1 2 persons to Township B2 3 persons to STRONG RHC B3 3 persons to LESS-STRONG RHC
Thursday 8th August 2013	A1 2 persons to Township (continue) A2 3 persons to sub-center in the STRONG RHC A3 3 persons to sub-center in the LESS-STRONG RHC	B1 2 persons to Township (continue) B2 3 persons to sub-center in the STRONG RHC B3 3 persons to sub-center in the LESS-STRONG RHC
	Some points for investigation at RHC and sub-center	
	<ul style="list-style-type: none"> • Service package of the GAVI HSS and management for services: appointment for EPI, ANC, Post-natal care • Supervision and support of Township to RHCs and RHC to sub-center e.g. any monthly meeting, supervision schedule, information flow from sub-center, RHC and to township • Management of medicines including assessment of stock-out of medicines and vaccines at RHC and sub-center • Financial support, transportation for Outreach • Management of Hospital Equity Funds (if any) • AMW kits • Procedures for recruitment and training of AMW/CHWs 	
Friday 9th August 2013	Debriefing at Township by team A1, A2 and A3 Produce a township report Travel back to Yangon	Debriefing at Township by team B1, B2 and B3 Produce a township report Travel back to Yangon
Saturday 10th August 2013	08.30-10.30 Each team works on their Township report 10.30-12.00 Presentation of the main findings of Team A and Team B (20 minutes each) and general discussion of key points from the field exercise of the two townships 12.00-13.00 Lunch 13.00-15.00 General discussion and wrap up The township reports and ppt file (if any) from the two teams are required to submit to Sangay and Walaiporn by 15.00 of 11th August 2013 Evening IHPP team travel back to Bangkok	

6.6 Finding of Nyaungshwe Township

6.6.1 Summary

In Nyaungshwe Township, the GAVI HSS comes into play in the light of several active players, in supporting health systems strengthening through four important strategic inter-related approaches;

1. Provisions of Outreach services, mostly MCH and simple treatments (other activities—education, water and sanitation—were incidental), to hard-to-reach villages 3-4 rounds a year, by offering daily allowances and traveling costs for basic health staff in the responsible areas,
2. Provisions of five limited items of medicines and basic medical equipments and supplies for Outreach services, as well as services provided by SC and RHC,
3. Training of new and refresher courses for CHW and AMW recruited from HTR villages, as volunteers, to support the works of Outreach services as well as provisions-delivery and other simple treatments, and also referral of high risk pregnancies to township hospital,
4. Hospital Equity Fund for free admission services referred from hard-to-reach villages, including food and traveling.

The Outreach of service package delivery hard-to-reach villages—where villagers have serious limitation in access to static services at SC and RHC—was explored. Significant improvements in immunization coverage and ANC were observed but this was not so regarding safe water and sanitation (as there was no investment by the program on these factors except awareness-creation in the communities).

The planned activities were completed in this township but the rapid turnover of TMOs through mandatory transfer every 2-3 years is harmful for the continuity of township health development, and the MOH should investigate the pro and cons of mandatory transfer and react accordingly.

The MOH uses limited GAVI funds spread over 180 hard-to-reach townships throughout the country. Care was taken to ensure some equity across seven Regions and seven States. Therefore, resources were spread too thinly and it is difficult to make any significant change. For example, medicines and medical supplies to HC, RHC and AMW and CHW kits are very tiny and grossly inadequate. The size of the hospital equity fund, equitably spread over 80 townships, does not match with demands of the poor in these areas.

6.6.2 Recommendations

Given the evidence from the field assessment, the report of Nyaungshwe provides the following recommendations:

1. The role of CHWs and AMWs are important, the MOH and local government should continue to scale-up training of AMWs and CHWs as well as regular monitoring and support in order to prevent them acting as "quacks" in their local communities. This service extension role of health volunteers is important to help expand services to hard-to-reach villages.
2. sustainability measures should be explored once GAVI funding ends in the following ways:
 - Outreach services to hard-to-reach villages should be maintained. The Outreach packages may consider providing a more comprehensive set of services, beyond MCH, for the treatment of key non-communicable disease such as DM and hypertension.
 - Outreach is an important transitional mechanism but the government should scale up supply-side capacities, especially at SCs and RHCs, as well as provide for general improvement in road transport and poverty reduction.

- Per-diem and traveling cost reimbursements for Outreach by basic health staff should be kept on, once GAVI HSS program ends, and then fully-financed by the MOH budget or other international development partners.
 - Provision of medicines and medical supplies should be terminated but then fully replaced with MOH CMSD supplies.
 - The Health Equity Fund should be continued for the poor. The MOH should scale-up universal free access to essential medicine by all citizens, which is on the policy agenda but not yet fully implemented (though significant investment by MOH on medicines and medical supplies were observed in FY2013).
3. Rapid turnover of township medical officers through mandatory transfer / rotation every 2-3 years should be reconsidered.

The full report of the assessment of the Nyaungshwe Township GAVI HSS program is in Annex 6.2.

6.7 Finding of Yedashe Township

6.7.1 Summary

The GAVI-HSS programme has contributed to a significant increase of the frequency in Outreach visits for healthcare staff. One of the key factors for this success is a provision of a per diem and help with transportation. This makes healthcare staff more flexible, and yields a substantial amount of additional revenue on top of their regular salaries, much more than that supported by the government.

All service packages proposed by the programme are parts of the routine activities routinely done before the advent of GAVI mainly covering the easy to reach areas leaving hard to reach uncovered. However, GAVI HSS introduced a coordinated approach of providing integrated primary health care services (EPI, MCH, Nutrition and Health education) by Basic Health staffs to hard to reach areas. Through this approach the BHS in hard to reach areas gets support from BHS in easy to reach areas. Basic Health Staffs are incentivised with Perdiem and Transportation cost to provide the outreach service to hard to reach. GAVI-HSS serves as a technical support among several donors.. The programme also provides basic drug items for health facilities. The quantity of this supply is relatively small compared to that from the government. Some items duplicate the supply from other sources and did not adequately match health needs of the residents in the community.

Monitoring and supervision of the programme at the township level is mostly focused on data verification as defined in the Coordinated Township Health Plan. However, there is a need to strengthen supervision on management of the programme.

Training of community health workers and auxiliary midwives is successful in strengthening health workers in the community. However, the target participants were confined to certain kinds of health workers and not all of them were able gain attendance on training courses. To leverage the competency of healthcare teams in the field, there is a need to strengthen the capacity of all kinds of workers. Strengthening the continuous professional development programs through workshops or refresher courses on a regular basis is a potential solution for addressing this challenge.

The GAVI-HSS has incorporated itself into the existing government mechanisms by applying the government guidelines and practices. This strategy of the GAVI-HSS leads to a proper alignment of GAVI-HSS and the government programs and creates buy-in from the government staff. When GAVI-HSS ends in 2015, there is a high potential that the activities supported by the GAVI-HSS programs will continue adequately without much difficulty as reflected by key informants from the field. This

reflects the hope that the government will mobilize resources or offer financial support for programs that are now tested and shown to contribute to their overall goals.

6.7.2 Recommendations

The report of Yedashe Township identified many good things contributed by the GAVI-HSS which will serve as a lasting legacy for Myanmar's health system:

- Outreach service packages created awareness and health knowledge for health staff and for villager. The Outreach services became an effective approach and functioned as a comprehensive package.
- Group work or networking among different health staff categories has been strengthened.
- Community involvement – more participation by villagers their own health care.
- Trust from community to health staff and health facilities, for e.g.: the availability of medicines has been improved. This will help to reinforce an acceptability of the community to health staff and health facilities.
- A learning platform was thusly created and it should continue to build-up more capacity of and for health staff.

The full report of the assessment of Yedashe Township GAVI HSS program is in Annex 6.3.

Chapter 7: Discussion, conclusion and recommendations

7.1 Discussions

The GAVI HSS is a well thought-out and designed program that provides selective interventions to hard-to-reach areas (initially in 20 townships by mid-2011 by 2015 it will be scaled-up to cover 180 townships. The criteria for township selection are: DPT3 coverage below 80% and skilled birth attendance below 60%. Full implementation in twenty townships was realized in 2012.

The GAVI HSS Program is developed in line with national health policy and plans, with strong engagement and ownership from multiple stakeholders including relevant Departments of the MOH, international development partners, and civil society organizations.

The content of the GAVI HSS proposal is driven by evidence through township assessment in order to identify gaps of access to immunization and maternal and child health services. Gaps are filled by a micro-level coordinated township health plan (CTHP) with cost recovery and financing from the MOH and GAVI. The CTHP is developed on an annual basis. People residing in hard-to-reach villages in these townships were offered free EPI, MCH, nutritional and water sanitation information, through Outreach services four times a year by local BHS. To do so, coordinated approach of delivering package of services (EPI, MCH, Nutrition, Environmental Health) by team of basic health staffs (BHS) to the hard to reach areas was introduced. This coordinated approach allowed the Basic Health Staffs from easy to reach areas to support works in hard to reach areas in delivering the outreach service. Further additional daily and travel allowances for midwives and supervision and support from RHCs and Townships were offered by the Program. Funds were used for the supply of basic items of medicine, midwives' kits, basic medical equipment, clean delivery kits, plus office equipment for Township Hospitals and rural health centers.

Community members were recruited to attend six-month auxiliary midwife (AMW) and one-month community health worker (CHW) training courses. These health volunteers are assigned to support MCH services conducted by midwives in rural Sub-centers. The Hospital Equity Fund offers free referral medical treatment at township hospitals for the poor (including per diem and transport). The prospective recipients are identified by a mean test scored by a panel in the appropriate Township Hospital. The Hospital Equity Fund is not necessarily confined to hard-to-reach areas.

Assessments at the township level found that physical and financial barriers are the two major challenges—more important than social barrier—with regard to preventing access to health services in these twenty townships. Supply-side constraints are significant; especially the provision of a strong workforce. There is on average 0.2 midwives per 1,000 persons¹ in these twenty townships. This is far below the global benchmark of 2.28 doctors, nurses and midwives per 1,000 persons [18], a benchmark set to encourage and sustain 80% deliveries with a skilled birth attendant (see Figure 7.1.)

Training of new 20 AMW and CHW and refresher course for the existing 50 AMW and 50 CHW per township has contributed to the supply of voluntary health workforce, as their contribution in ANC, PNC, health education. However, they have limited clinical capacities for case management and provision of MCH services, and they are not categorized as skilled birth attendants though some of them provide delivery services.

¹ This ratio has not yet included doctors and nurses. Even we assume another 0.4

Auxiliary midwives and community health workers living in hard to reach villages, sharing the same language and cultural identity with the community, are invaluable health workforces in supporting health services in the local communities

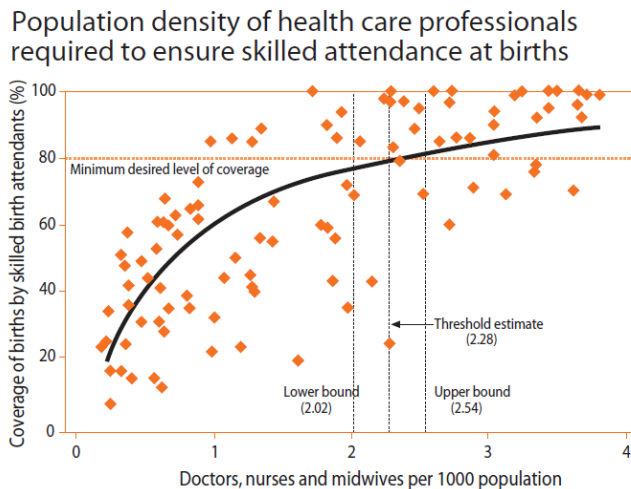


Figure 7.1 doctors, nurses and midwives per 1000 population and percent delivery by skilled birth attendants. Source: WHO, World Health Report 2006

In 2012, the total resource needs for 20 townships--as judged from the township assessment--were 6.552 billion Kyat, of which 3.189 billion Kyat was made available. 56% came from the MOH and 44% from the GAVI HSS program. There was a shortfall of 51% of total resource required. The MOH budget is for staff salary while the GAVI HSS is for program operations.

The expenditure, per head of population from the GAVI HSS program to hard-to-reach villages, is as low as US\$2.3 and US\$1.2 in 2012 and 2013, respectively. Although such a marginal per capita investment by targeting hard to reach areas has resulted in improved access to the basic primary care services, significantly more resources are needed from international development partners and from the government budget. The GAVI HSS expenditure per population in non-hard-to-reach areas is US\$ 0.58 and 0.18 in 2012 and 2013, respectively, demonstrating the program effectiveness in targeting hard-to-reach villages.

Four steps of data flow were assessed; (a) from RHC to township, (b) from sub-centre to RHC are consistent, 100% quality, (c) from registries by midwives to sub-centre is poor in the 2nd batch of ten townships, only 67.2% accuracy; (d) consistency between registry of midwives and verification with clients through field visit are 81.9%. The overall verification factor of twenty townships is 68.5%, much lower than the acceptable benchmark of an 80% verification factor. There needs to be a significant improvement in the quality of data, and of its reporting, and its management. This poor quality of reporting especially reporting by the sub-centre, results in erratic coverage of key MCH services.

From the statistics of MCH service coverage, which were township-wide data, HMIS data shows overall township coverage rather than disaggregate data at the village level. Such limitation hinders the assessment of direct contribution of GAVI HSS Program. . But comparing the 2013 achievements with the 2010 level (prior to the program) we note a significant improvement of a few MCH service coverage.

Out of 20 townships, 19 demonstrate increased coverage of antenatal care, 15 demonstrate increased SBA coverage, 11 demonstrate increased TT2 and BCG coverage. Our analysis shows that Outreach services to hard-to-reach communities four times a year boosts ANC, SBA, TT2, DTP3 and BCG coverage. Without these Outreach services, people residing in hard-to-reach villages would not gain access these services. The total 2,342 sessions of Outreach services (in 2012 equivalent to 10 sessions per township per month) is likely to boost MCH service coverage. The civil unrest in Rakhine State interrupts implementation of routine and GAVI HSS program services significantly.

GAVI HSS interventions do not directly address the shortage of midwives in sub-centres and RHU, whom can boost the SBA coverage. GAVI supports training additional auxiliary midwives, but these are not categorized as skilled birth attendants.

Due to limited GAVI HSS Program resources, stretched over 180 townships throughout the country, an annual amount of US\$ 10,000 was earmarked to each township hospital equity fund, to subsidize the poor in the whole township. With an average population of 160,000 per township and poverty rate of 25.6% in 2010 [19], there are some 40,960 poor people living under national poverty line in each township. Hospital Equity Fund budget is US\$ 0.24 per capita poor people in a district. After a full year implementation, by June 2013, the total US\$ 149,822 was used benefiting 2,072 inpatients, an average US\$ 72 per capita expenditure was noted.

HEF prevents potential maternal deaths or complication from life threatening obstetric conditions such as obstruct labour, hypertensive in pregnancies require emergency obstetric care; for example, out of total 1,327 obstetric cases, 743 (56%) were cesarean section and 348 (26%) vaginal delivery.

Though two thousand cases were supported by the HEF, this is less than a drop of water in the ocean of health needs. Nevertheless, HEF serves as an innovative first step of a long journey towards more comprehensive financial risk protection that targets the poor and focuses on MCH services to accelerate progress of MDG 4 and 5. The Hospital Equity Fund can and should be scaled-up if the government has more fiscal reserves and a continued political commitment.

Field observations in two townships by the joint assessment teams, confirmed that the BHSs at sub-centers, RHCs and townships are fully committed to the GAVI HSS program. Though a small amount of financial support is offered, these daily and travel allowances are important to facilitate Outreach services to hard-to-reach areas (compared to regular MOH system which has limitations to offer even this support). The supply of five items of medicine is far too small to match the large treatment demand in the population but fortunately MOH has significantly increased its budget for medicines during 2012 and 2013.

7.2 Conclusions

The design of the GAVI HSS Program is evidence-based (in consideration of the township assessment and local specific coordinated township health plan) and implementation is proceeding in the right direction. Measurable outputs include: a) the number of Outreach services offered to hard-to-reach areas (who might not, in normal situations, get access to care due to physical, economic and financial barriers), b) the number of new community based health volunteers notably auxiliary midwives and community health workers being trained and who serve in their community, c) the number of beneficiaries of the hospital equity fund. After two full years of the program, these Outreach services contributed to increased coverage of key indicators such as ANC, TT2, SBA, DTP3 and BCG implementation.

The major limitation is the GAVI HSS program are its small quantity of resources spread over a large number of townships (as well as too numerous program activities). These limitations mean that, nation-wide or regionally, it cannot hope to make a significant improvement in overall health. It's generally acknowledged by most in the healthcare sector that an increased investment in Outreach services will increase health service coverage, and this report puts this concept beyond doubt.

A few fundamental barriers cannot be solved by the medium-term nature of the GAVI program interventions; in particular increased number of midwives and other basic health staff, as well as improved competency and better policies to ensure their continued service to their communities.

7.3 Recommendations

7.3.1 Program management

As an evidence platform for micro-planning, there is a need for regular township assessment in order to support annual Coordinated Township Health Plan and to judge progress. Regular meetings should be maintained among township health officers, RHCs and Sub-centers to a) monitor progress, b) support and solve operational problems, and c) outline and communicate important processes. The rapid turnover of township medical officer, through mandatory transfer or rotation every 2-3 years, should be evaluated as to its pros and cons. The continuity of township management is essential for rural health systems development in Myanmar.

7.3.2 Outreach services to hard-to-reach villages

This is the vital program component that should be sustained and improved. In the light of increased prevalence of non-communicable diseases, the Outreach packages in the future may consider providing more comprehensive services, beyond MCH, for diagnosis and treatment of key non-communicable diseases such as diabetes mellitus and hypertension.

Outreach is seen as an important transitional mechanism. The government should scale-up supply-side capacities; especially at sub-centers. For instance; 117 out of 617 sub centers (19%) do not have office space for service provision for which midwives have to offer services in the village offices or in the house of the village head. Also, there are no living quarters for staff, and so some midwives have to stay in the house of community members. Clearly, this indicates significant need for investment in health infrastructure. Adequate supplies of basic equipment, medicines and medical supplies as well as motorbikes for transportation to enable basic health staffs to better perform their functions. . Offering outreach services to the hard to reach areas are essential, it should be maintained as an interim measure until static services are gradually established and accessible by them.

In view of change in government policy in providing free medicines, the supplies of five items of medicines (Paracetamol, Cotrimoxazole, Misoprostol, ORS and ZnSO₄) from GAVI HSS program should be reviewed.

7.3.3 Health workforce: Basic Health Staffs

Midwives are the backbone of health delivery systems in Myanmar, they are the most valuable assets in delivering quality MHC and primary health care services to rural people not able to attend hospital and doctor services. We endorse the recommendations made by Kyawt Sann Lwin, in line with WHO recommendations [20], for decentralized recruitment of young rural women--especially from hard-to-reach areas--for midwifery training, where necessary exemption mechanism for

recruitment is needed. And we endorse the idea of strengthening midwifery training institutes and ensuring adequate midwifery skills and practices, as well as reviewing the curriculum of multipurpose midwifery training (to equip them to manage some essential basic health services especially when they are posted in hard-to-reach areas).

Not only should more competent midwives be trained, but policies should be developed also to ensure the highest level of retention in rural areas and to prevent attrition (such policies might encourage hometown placement upon graduation, financial and non-financial incentives; support of adequate medicines and supplies for effective services provision, supervisory support by township peers, and financial reimbursement for daily and travel expenses).

7.3.4 Health workforce: health volunteers

Traditional birth attendants and auxiliary midwives hold quite a meaningful share of antenatal care and delivery in rural Myanmar. Given their important role and contributions, the MOH and local government should continue to scale up training as well as provide refresher courses, supervision and support by sub-centre and RHC.

7.3.5 Financial risk protection

The GAVI HSS program is an externally funded program, it is not sustainable in the long term, mechanism for longer term sustainability should be considered, such as other development partners as well government budget. Observation during the township visit, it is clear that MOH had increased significant investment in supplies of medicines and medical supplies.

The Hospital Equity Fund should be continued. In line with current policy discourse on universal health coverage by the government, the initial provision of free MCH services to all pregnant women and under five should be the entry point of the long march closer to universal health coverage. It is noted that the government needs to continue to spend more on the health of the population. Note that when universal free MCH service for all is adopted, the burden of means-testing (to verify poor status, as is the current practice in Health Equity Fund) will be annulled.

Reference

1. GAVI 2007. Revised HSS guidelines 2007. GAVI, [http://www.gavialliance.org/resources/HSS Guidelines 2007.pdf](http://www.gavialliance.org/resources/HSS_Guidelines_2007.pdf) [accessed on the web August 14, 2013].
2. GAVI 2008. Executive secretary/CEO report to the GAVI Board. GAVI alliance and fund board meeting, June 25–26, 2008, Doc # AF.1, www.gavialliance.org [accessed on the web August 14, 2013]
3. GAVI Health Systems strengthening support evaluation 2009, RFP-0006-08, Volume 2, Full Evaluation Report, Final Report 30th September 2009.
4. MOH, Myanmar. Health System Working Paper: Health Systems Barriers to Improving Immunization and MCH coverage in Myanmar. (*Including Health System Strengthening Framework*) January 8, 2008.
5. National Health Policy, NHP 2006-2011, Ministry of Health.
6. GAVI ALLIANCE, Application Form for: Myanmar Final February 29, 2008.
7. Indonesia's Application Form for: GAVI Alliance Health System Strengthening (HSS) Applications March 2007. pdf [accessed on the web June 6, 2013].
8. Cambodia's Application Form for: GAVI Alliance Health System Strengthening (HSS) Applications March 2007. pdf [accessed on the web June 26, 2013].
9. Nilar Tin et al, An Approach to Health Systems Strengthening in Myanmar, Health Policy 95 (2010) 95–102.
10. Lao PDR's Application Form for: GAVI Alliance Health System Strengthening (HSS) Applications March 2007. pdf [accessed on the web June 26, 2013].
11. Sri Lanka for GAVI Alliance Health System Strengthening (HSS) Applications October 200. [accessed on the web June 9, 2013].
12. c-MYP (Comprehensive Multiyear Plan, 2007-2011) p. 8.
13. Application: GAVI Alliance Health System Strengthening (HSS) Applications Ministry of Health and Family Welfare Government of the People's Republic of Bangladesh Resubmitted 11 September 2008. pdf [accessed on the web June 26, 2013].
14. WHO World Health Report 2006, Working Together for Health. Available at http://www.who.int/whr/2006/media_centre/06_chap1_fig09_en.pdf?ua=1 [access 22 January 2014]
15. Myanmar monitoring the situation of children and women, Multiple Indicator Cluster Survey 2009-2010 http://www.unicef.org/myanmar/MICS_Myanmar_Report_2009-10.pdf [access 3 February 2014]

-
16. Kyawt Sann Lwin, Report on motivation and retention of midwives in hard-to-reach rural areas of five selected townships. Yangon, University of Public Health (2011)
 17. World Health Organization. Increasing access to health workers in remote and rural areas through improved retention, Global policy recommendations. Available at http://www.who.int/hrh/retention/Executive_Summary_Recommendations_EN.pdf?ua=1 [access 20 January 2014]
 18. WHO World Health Report 2006, Working Together for Health. Available at http://www.who.int/whr/2006/media_centre/06_chap1_fig09_en.pdf?ua=1 [access 22 January 2014]
 19. Asian Development Bank, Myanmar. Available at <http://www.adb.org/countries/myanmar/main> [access 22 January 2014]
 20. World Health Organization. Increasing access to health workers in remote and rural areas through improved retention, Global policy recommendations. Available at http://www.who.int/hrh/retention/Executive_Summary_Recommendations_EN.pdf?ua=1 [access 20 January 2014]

Annex

Annex 5.1 Survey Questionnaire: Auxiliary Midwives

Annex 5.2 Survey Questionnaire: Community Health Workers

Annex 6.1 Guideline for interview and template of the report

Annex 6.2 Report of the assessment of Nyaungshwe Township GAVI HSS program

Annex 6.3 Report of the assessment of Yedashe Township GAVI HSS program