

Groundwork for Strengthening the Rural Health System: How to Revitalize the Roles of Village Midwives?

Wibowo L^{*1}, Harmiko MP^{**}, Aristyanita V^{**}, Santika O^{*}

* SEAMEO-RECFON, Jakarta 10430, Indonesia

** World Vision Indonesia, Jakarta 10340, Indonesia

ABSTRACT

The establishment of Village-based Midwife Program (VBMP) is anticipated to improve access to, equity and coverage of, PHC especially for mother and child living even in the remote areas. However, problems on its performance had been reported, while the root of the problems was limitedly studied. This study was then focused on the MOA (management-organization-administration) of VBMP which was related to the VMs' capacity in delivering PHC. This is reporting the results of formative research prior to the development of a comprehensive VBMP plan in Area Development Program (ADP) of Wahana Visi Indonesia at Nias District. Supportive objectives such as assessing the potential determinants of VMs' performance in delivering VBMP, community acceptance, participation, and utilization of VBMP at rural Nias were also carried out.

The study was conducted in 3 sub-districts namely Hiliduho, Botomuzoi and Hiliserangkai from August 2011 to March 2012. Following two conceptual models: Health System Model at meso and micro levels (Kielmann, 2008) and Organizational Behavior Model (Wibowo, 2009), data were gathered using mixed (quantitative and qualitative) methods from various sources.

The utilization of VBMP was considerably low (66%) relative to its acceptance (96%) by mothers. This was attributed to some factors, but mainly its accessibility because most of the VMs did not reside in the village (71%). The fact that no such responsive monitoring system to detect and immediately correct the program fallacies might indicate the poor comprehension on the pre-designed VBMP master plan as well as the inexistence of its detail operational plan at the district level and below. In such affected the clarity on management responsibilities of each institution and its individual stakeholders within it. With no pre-designed management system to ensure the proper implementation and evaluation of the program, what had been performed so far was still relied mainly on personal initiative rather than resultant of a well-established system. This was reflected on the patchiness, loss of continuity, inefficiency, and unsustainable approaches in running the program.

Recommendations and Policy Implication. *With respect to the VBMP functioning:* (1) Improving the overall management and Monitoring-Evaluation (MonEv) system at all administrative levels through periodic advocacy for policy makers and any relevant stakeholders to ensure their performance quality. (2) Improving the internal management and MonEv system at district level and HC through periodic advocacy and capacity building for staff to ensure their performance quality. *With respect to community acceptance and participation:* (1) Optimizing the utilization of VMs as the spearhead of MCH Care at the village level. (2) Optimizing the community mobilization within the VBMP.

Key words: Village Midwives, Primary Health Care, formative, Programmatic Study

INTRODUCTION

Despite more than three decades after the Alma-Ata declaration, achieving health for all through the provision of Primary Health Care (PHC) remains a globally unfinished agenda, also for most of the South-East Asian Region (SEAR). The fact that more than half a million mothers - the majority of whom from the rural poor population segments - still die every year is a reflection of inequality of risk factors, inequity of health care, and

¹To whom correspondence and reprint request should be addressed, email: lindoe13@yahoo.com

inappropriate midwifery skills of birth attendants (Ronsmans et al, 2006; Costello et al, 2006). In rural Indonesia, this fact may well be used as an indicator of a health system malfunction, partly because of poor performance, poor management, and inadequacy of service inputs (MMM² and support system) of the locally implemented PHCs. Since the epidemiologic profiles may vary even within a country, then there is no “*one size fits all*” solution in addressing such problems, a common strategic shall be proposed that a given approach shall *fit well within the settings in which they are implemented, and are managed by capable and motivated people* (Bryce et al, 2003; Fillipi et al, 2006; Campbell et al, 2006).

In Indonesia, the assignment of many midwives at rural areas – where most of the underserved populations resided - is anticipated to improve access to, equity and coverage of, PHC especially for mother and child (MoH, 1989; Shankar et al, 2008; Hatt et al, 2007). Village Midwives (VMs) can be seen as the frontliners of formal health service delivery because they (are suppose to) live with the community they served, are larger in term of number but paid or remunerated less than medical doctors, and still categorized as formal health staff who are able and legally allowed to deliver health care to some extent which cannot or shall not be done by the community members (i.e. community health workers, traditional birth attendants). By nature of their work in providing pre- and postnatal care, the frequent contacts of midwives with mothers during these critical periods may potentially determine birth outcomes and child care should they carry out their work properly (Frankenberg et al, 2005; SUMMIT Study Group, 2008). However, problems on community’s acceptance (MoH, 2008) and VMs’ performance had been reported, therefore preparing VMs to be powerful health agents of change must become the rule rather than an exception. Only once an individual VM can carry out her roles optimally, they can gain both their standing within the community as well as the community’s trust at the same time. Realizing the significant roles of VMs, it is surprising that only few studies that were widely published have highlighted these issues (Ray et al, 2004; Shankar et al, 2008; Makowiecka et al, 2008; Hatt et al, 2007). However, as far as the knowledge of the writers, there were limited studies thoroughly assessed the Management-Organization-Administration (MOA) aspects of the village-based midwife program although problems on it had also been presumed (Shankar et al, 2008). Therefore, this study was focused on two aspects: the MOA of village-based midwife program and VMs’ capacity in delivering PHC.

This is reporting the preliminary investigation for compiling detail essential information for the development of a comprehensive village-based midwife program (VBMP) plan in Area Development Program (ADP) of Wahana Visi Indonesia at Nias District.

METHODOLOGY

The methodology employed in this programmatic study consists of a mix of quantitative (epidemiological) and qualitative (social) methods using both deductive and inductive approaches.

² Manpower, material, and money.

Study site

The study was conducted at rural Nias District, Indonesia, where child undernutrition (RISKESDAS, 2007) and maternal mortality are highly prevalent (UNDP, 2004). This district consists of nine sub-districts with 119 rural villages. However, there were only three sub-districts as the WVI-ADP: Hiliduhoh, Botomuzoi and Hiliserangkai were purposively selected as the preliminary study areas. The local climate is humid with the highest rainfalls on September while the lowest on February. More than half of the area is hilly and mountainous, with the altitudes ranging from 0 – 800 meters above the sea level. The indigenous people are called *Ono Niha* whom is majority Christians. Most of the inhabitants are working on agriculture (i.e. food crops, plantation, forestry, livestock and fishery), public transportation, or as civil servants or traders.

The health service delivery system is organized around a district hospital at the capital – Gunungsitoli, and Health Centers (Puskesmas), Satellite Health Centers (Pustu) and health posts (Posyandu) at sub-district, village and sub-village levels, respectively. In 2009, there are 201 health facilities available within the district, consist of one District Hospital located at Gunungsitoli, eight Puskesmas, 28 Pustu, and two Maternal Child Health Stations (*Balai Kesehatan Ibu dan Anak/BKIA*). At the district hospital there usually are surgical, medical, pediatric, and obstetric specialty services available both on inpatient and outpatient basis. In the study areas, three Puskesmas were headed by non-medical doctors as the directors. In addition there always is at least one, usually more than one midwife, several nurses of either gender, sometimes a nutritionist and a varying number of auxiliary staff – cleaners, clerks, security guards, etc. Aside from Pustu³, there are Polindes⁴ and Poskesdes⁵ represent the next lower, formal health care facilities and are managed entirely by one village midwife. This individual is responsible for delivering VBMP as well as guiding and supervising activities performed by the community-appointed health workers (CHWs) at the Posyandu at village or sub-village level. The system is pyramidal in that the lower levels refer patients they cannot adequately take care of to the next higher levels.

Study Design

This first stage of study was designed as the formative research prior to the development of strategic plan for improving VBMP. In this phase, several investigations were carried out to examine the functioning of VBMP through interviews with various key informants and document reviews. The information gathered ranging from the MOA aspects, capacity of VMs in delivering VBMP within the community, potential determinants of VMs performance, and community involvement toward the program including its potential determinants. As the study outcome, all identified problems were ranked based on priority, presented with their feasible-preferable solutions - as collected through participatory approach with the key informants - , and classified into short and long-term approaches. The findings of the formative research and VMs' proposed problem-solving will be utilized as the basis of the following phase as the intervention phase.

³ Puskesmas Pembantu or Extension of Health Center

⁴ Pos Persalinan Desa or Village Midwifery Post

⁵ Pos Kesehatan Desa or Village Health Post

The information from the formative research will also be utilized as the baseline for the intervention phase. A plausibility evaluation design using *historical control group* (*before-after approach*) will be applied to determine the efficacy of the future interventions for strengthening the MOA and subsequently functioning of VBMP.

Conceptual Frameworks

To guide the data collection activities, there were two conceptual frameworks were used; one for the system review on VBMP and another one for identifying the performance of VMs with its determinants. Since the main focus of this study was on the VBMP functioning at the district level and below, thus the Kielmann Model on Health System at meso and micro levels (Kielmann, 2008) was taken as the relevant model for guidance. While an Organizational Behavior Model (Wibowo, 2009) was utilized for studying the performance of VMs with its related determinants.

Approach using a “System Lens”

This approach was adopted while using the Kielmann Model to conduct the system review on VBMP. In this, VBMP was seen as a system that consisted of several essential components that are interrelated and determined the program functioning. For illustration of this, below is the presentation of the Health System model (see **Figure 1**).

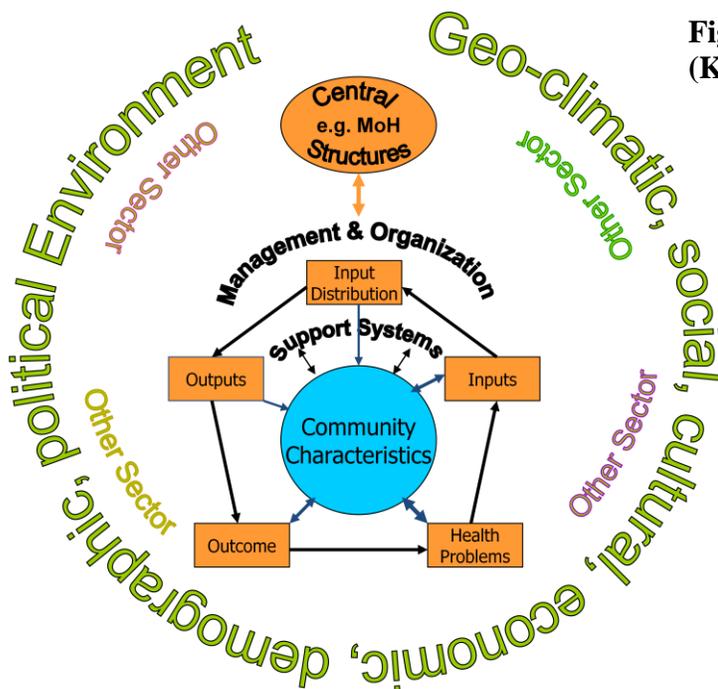


Figure 1. Health System Model (Kielmann, 2008)

Organizational Behavior Approach

To study the determinants factors of VMs performance, a model was constructed based on the combination of the organizational behavior references and one of the writers’ experiences on programmatic studies (see **Figure 2**).

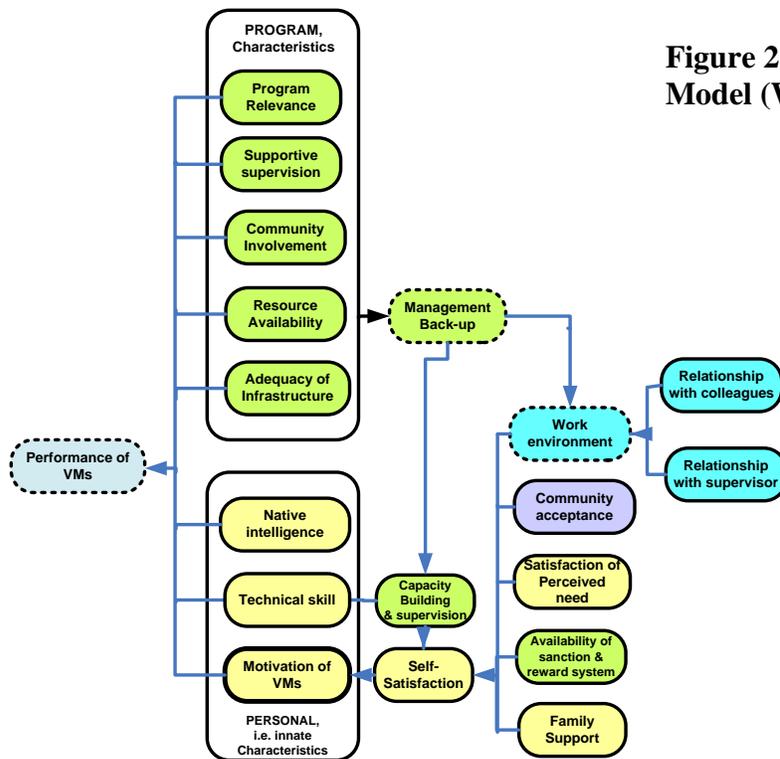


Figure 2. Organizational Behavior Model (Wibowo, 2009)

Partnership in the Study

This study was initiated by both the representatives from SEAMEO-RECFON (LW) and WVI (MPH) as the PI and Co-PI, respectively. The first idea of working on the proposal of VBMP was instigated from the discussion between the PI and Co-PI on the previous qualitative study done by the WVI team (MPH, VA, RT) in Nias ADP on maternal breastfeeding practices (unpublished report). In summary, the study discovered that such poor practices were actually deep-rooted on the lack of competent resource persons at the community level for mothers to consult with. The existence of VBMP in the district was not yet seen as problem solving, because of two major problems identified in this program: that midwives were rarely, if not at all, stayed in the villages and mostly did not have sufficient knowledge on MCHN⁶. By taking those issues into consideration, while assuming the potential of VBMP provided that it is fully function (see **Introduction, paragraph 2**), a research proposal was then prepared aiming at the effort on optimizing VBMP as the integral part of the existing health system. This approach was considered more sustainable than the other alternative approach such as providing training directly to mothers or community health workers (i.e. cadres) without improving the capacity of and/or optimizing the local health care delivery system.

In the course of the study, three-party collaboration (i.e. SEAMEO-RECFON⁷, WVI⁸, and DHO⁹) had been pursued with clear division of roles and responsibilities of

⁶ Maternal-Child Health and Nutrition

⁷ SouthEast Asian Ministry of Education Organization – Regional Center for Food and Nutrition

⁸ Wahana Visi Indonesia

⁹ District Health Office

each. With respect to the strengths and limitations of each party, then a form of partnership between SEAMEO-RECFON and WVI was then established. As an academic institution, SEAMEO-RECFON has the strength on preparing a master plan for either nutrition/health research project or program, given the prevailing problems have been identified. However, for the conduct, especially of a long term approach that required intensive intervention and monitoring, partnerships with the local institution such as WVI was necessary. With their adequate resources and local office at Nias District, this kind of study became feasible for implementation. With respect to the commitment of WVI in serving the community in their ADP, which was inline with the vision and mission of SEAMEO-RECFON, then this partnership could be seen as a mutual and complementing collaboration for both parties.

With the aim of studying VBMP, in implementing the study, other collaboration was established with the local government body as represented by the local DHO and its technical implementing units (so-called UPTD¹⁰) such as Puskesmas¹¹, Polindes¹², or Poskesdes¹³. This collaboration allowed the research team members in gaining access to the documents related to and doing interviews with all relevant stakeholders involved in VBMP.

Preparation Phase and Flow of the Study

The study was framed within the regular, ongoing health care delivery of the VBMP at the district level and below.

In the implementation, the study was carried out through a cascade of events. As described previously, the study was initiated from the discussion between the representatives of SEAMEO-RECFON and WVI, followed by the writing of proposal and signed MoU for a collaborative work between parties. Prior to the conduct of the study, approvals from both government and ethical committee for research on human subjects were sought. It was decided that the study would be conducted in WVI-ADP at Nias district, which consisted of three sub-districts. Based on the selection criteria of an ADP, these sub-districts met the criteria due to their high poverty level and poor profiles on health, economical, as well as education (unpublished report). Once determined, as the first data collection activity, secondary data on MCHN indicators was collected from the reports available at Puskesmas. These secondary data were utilized in the scoring system for selecting villages as the sites (i.e. cluster unit) of primary data collection activities.

Aside from doing document review, information was also gathered through in-depth and structured interviews. In this case, the PI and Co-PI prepared the guidelines, tools, and also capacity building for the enumerators in the form of training-workshops. In parallel to that, the PI and Co-PI, together with the WVI team, had also socialized this study to the DHO staff for the purpose of gaining their approval for its conduct as well as their compliance as the key informants in the formative study.

The field works at the community level were done in stages. It was started from the in-depth interviews with mothers of infants aged 6-9 months old. The results were then used to develop guidelines for the subsequent in-depth interviews with the other

¹⁰ *Unit Pelaksana Tekhnis Daerah* or Local Technical Implementing Unit

¹¹ Sub-district Health Center

¹² Maternity Care Unit at village level

¹³ Health Post at village level

identified informants in the community such as cadres and the head of villages. Once interviewed, the information from them were used as the basis to prepare a guideline for interviewing the VMs. In addition to that, the overall information gathered through in-depth interviews with the community key informants was summarized and utilized as the basis of developing the structured questionnaires for the surveys among mothers and VMs.

The surveys were managed according to the standardized procedure. First, the sampling frame was prepared and then training was provided for the enumerators prior to the surveys.

To prepare the in-depth interviews with key informants within the local health system, guidelines were provided by the PI and Co-PI for the enumerators. Those guidelines were made on the basis of the findings of the community study as well as some programmatic information and theories on VBMP. Once the in-depth interviews carried out, the results were summarized, linked, or triangulated with the findings from the community study.

The pool of summaries was then presented in the workshops with the key stakeholder as organized by the WVI team at Nias District. The first workshop was delivered by inviting the VMs and Puskesmas staff as the attendances, following by the second workshop inviting the Puskesmas and DHO staff. The purposes of carrying out these workshops were to clarify the findings of the study, rank the identified problems for prioritizations, and listed down any relevant possible solutions for them.

Finally, the findings from the mixed studies and the results of workshops were compiled to elicit a comprehensive picture about the local VBMP functioning with its determinants factors. And this was then conveyed to the WVI team at Nias District in the internal workshop for brainstorming on potential problem solving.

As illustrated in **Figure 3**, the boxes highlighted in green and turquoise were comprised of activities described above. However, the development of thorough plan of action shall be done through repeated workshops (i.e. not only once) between the local key stakeholders and the WVI team. Therefore, the box highlighted in turquoise was indicating the unfinished agenda (i.e. need repetition) prior to the conduct of the subsequent step – the intervention phase - as those in the boxes highlighted in blue.

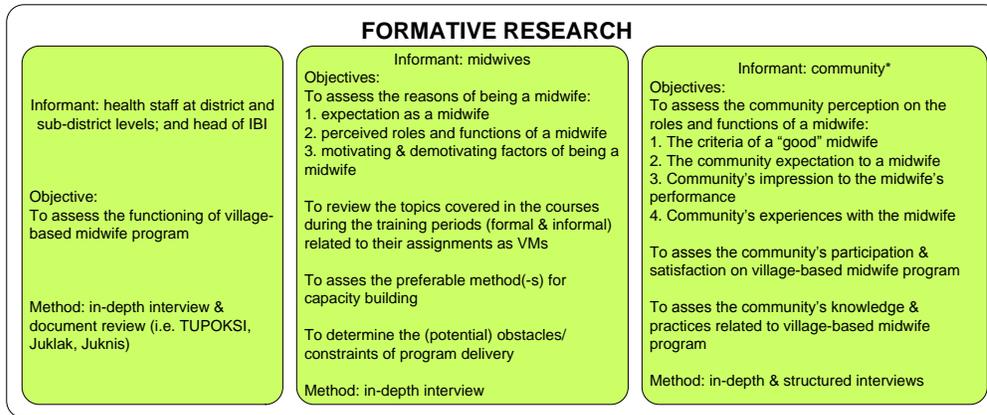
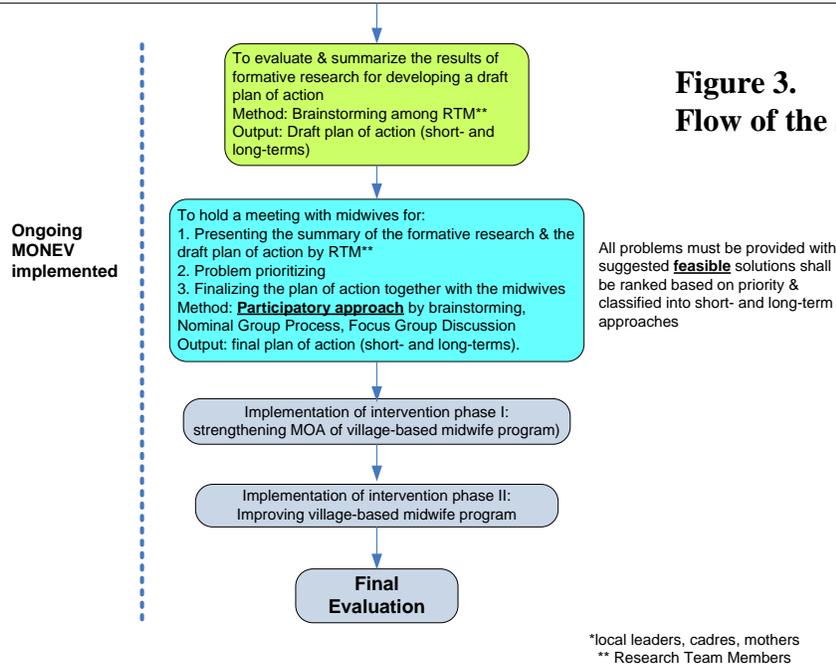


Figure 3.
Flow of the Study



Subject of the Study

This study included several subject groups as the key informants. The subject groups, type of information collected, method used and the respective sample sizes presented in the **Table 1**.

Table 1. Subjects of the study

No	Subject of the study	Type of information	Method	Sample size
1.	Mothers of children 0-3 months of age	<ul style="list-style-type: none"> ● Socio-demographic conditions of the household ● Knowledge and perception of the mothers related to VBMP and its obstacles ● Experiences of the mothers related to VBMP ● Expectation of the mothers related to VBMP 	<ul style="list-style-type: none"> ● Quantitative: structured interview 	census at 3 Sub-districts (Hiliduho, Botomuzoi and Hiliserangkai); 44 mothers

Table 1.

No	Subject of the study	Type of information	Method	Sample size
2.	Mothers of children 6-9 months of age	<ul style="list-style-type: none"> ● Socio-demographic conditions of the household ● Knowledge and perception of the mothers related to VBMP and its obstacles ● Experiences of the mothers related to VBMP ● Expectation of the mothers related to VBMP 	<ul style="list-style-type: none"> ● Qualitative: in-depth interview 	Randomly selected from the sampling frame; 7 mothers; @ one mother per village
3.	Village Midwives	<ul style="list-style-type: none"> ● Age of VMs ● Educational background of VMs ● Working experience of VMs ● Knowledge, perception, and experiences of the VMs related to their roles and functions <ul style="list-style-type: none"> ○ Expectation as a VMs ○ Perceived roles and functions of a VMs ○ Motivating and demotivating factors of being a VMs (managerial back-ups, living within the community) ● Topic covered in the courses during the training periods (formal & informal) related to their assignment as VMs ● Preferable method (-s) for capacity building 	<ul style="list-style-type: none"> ● Quantitative: structured interview 	24 out of 30 (six VMs refused to be interviewed)
4.	Village Midwives	<ul style="list-style-type: none"> ● Age of VMs ● Educational background of VMs ● Working experience of VMs ● Knowledge, perception, and experiences of the VMs related to their roles and functions <ul style="list-style-type: none"> ○ Expectation as a VMs ○ Perceived roles and functions of a VMs ○ Motivating and demotivating factors of being a VMs (managerial back-ups, living within the community) 	<ul style="list-style-type: none"> ● Qualitative : in-depth interview 	Purposive sampling; 7 VMs who stayed outside the villages and 4 VMs who stayed in the villages

Table 1.

No	Subject of the study	Type of information	Method	Sample size
5.	Key informants within the community	<ul style="list-style-type: none"> • Educational background of the cadre or head of village • Working experience as a cadre or head of village • Knowledge and perception of cadre/head of village related to VBMP and its obstacles • Experience of cadre/head of village related to VBMP 	<ul style="list-style-type: none"> • Qualitative: in-depth interview 	Purposive sampling; 7 cadres; 7 heads of villages
6.	Key informants within the health system	<ul style="list-style-type: none"> • MOA of VBMP with respect to their roles as the supervisors/mentors of VMs and the roles of VMs within the VBMP 	<ul style="list-style-type: none"> • Qualitative: in-depth interview • Document review 	Purposive sampling: 11 persons

Sampling Technique and Determination of Sample Size

The potential subjects of this study were recruited in different ways. Since only few mothers met the criteria and only one midwife assigned in each village, thus we recruited them all as the studied subjects. While for the other subjects were either recruited purposively or randomly selected from the sampling frame.

For sampling some of the respondents in both quantitative and qualitative studies, multistage sampling was applied. First, there was a selection of village as the Primary Cluster Unit (PSU) based on the scoring system of the VBMP performance. From the program reports¹⁴, there were 53 relevant indicators selected for indicators of VBMP performance (this was determined based on the job-description of VMs: DHO, 2010). However, based on the completeness and reliability¹⁵ of the data, only 21 indicators were then used on the scoring system. By seeing the data distribution of each indicator, the values were classified based on quartiles: below 25th percentile, 25th to 50th percentiles, 50th to 75th percentiles, and above 75th percentile). For each category, a score ranging from 1 to 4 was assigned representing the lowest to the highest scores, respectively. For example, any value below the 25th percentile was categorized as score 1 as the most un-ideal state, while those fell above the 75th percentile was categorized as score 4 as the most ideal state. After the assignment of scores for each indicator, then the scores of 21 indicators were summed up for each village. Due to the small variation of total scores, these were then grouped into three categories using 33rd and 66th percentiles as the cut off points. The classification of villages ranging from those with “poor”, “medium” to “high” VBMP performance when their total scores fell below the 33rd percentile, within 33rd to 66th percentiles, and above 66th percentile, respectively.

Once classified, there were about 50% of 32 villages randomly selected from each Puskesmas or sixteen villages in total were sampled using the probability-proportional-to size method (see **Table 2**). These 16 villages were assigned for the quantitative survey areas among mothers of infants 0-3 months old. Subsequently, there were 45% of those

¹⁴ Nutrition, Surveillance, and Immunization reports

¹⁵ Some program indicators with 100% coverage or achievement at all villages were not used and considered imprecise

16 villages (n=7) randomly selected using also the probability-proportional-to size method. The selection of these seven villages was for conducting the qualitative study, in which in-depth interviews with mothers of infants aged 6-9 months old, cadres, heads of villages, and VMs were carried out. However, for the purpose of keeping the anonymity of the respondents from these seven selected villages, the list of those villages was not presented in this report.

Tabel 2. The selected villages for quantitative study

<i>Puskesmas</i>	<i>Category I ($< 33^{rd}$ p)</i>	<i>Category II (33^{rd} p – 66^{th} p)</i>	<i>Category III ($> 66^{th}$ p)</i>
<i>Botomuzoi</i>	Simanaere Hiliwaele I	Hiligodu Fulolo Hilimbowo	Tuhegafoa I Loloanaa
<i>Hiliserangkai</i>	Lölöwua	Lawa-lawa Lölöfaösö Lalai	Lalai I/II Fulölö lalai
<i>Hiliduhu</i>	Onozitoli Dulu Tuhegafoa II	Sisobahili Tanoseo	Sinarikhi

Qualitative and Quantitative Studies among Mothers

To determine the program functioning as perceived and experienced by mothers, information was gathered through in-depth interview and survey. The in-depth interviews were done among mothers of infants aged 6-9 months, while the survey was done among mothers of infants aged 0-3 months. These different target groups were decided purposively with consideration on the starting time of each activity:

1. The in-depth interviews were conducted among mothers of infants aged 6-9 months. We expected to capture the roles of VMs within the VBMP (as described in the job-description: DHO, 2010) among this group of mothers because of the range of VM's responsibilities on prenatal up to the antenatal cares.
2. From the in-depth interviews, however, we found a massive placement of VMs happened on March – April 2011. It means that selecting mothers of children aged 6-9 months old as the survey's subjects might not be ideal because of their non-exposure to the program, especially during the prenatal period (starting from April – July 2010) and delivery (ranging from January – April 2011). Thus, the PI and Co-PI had decided to change the target group to mothers of infants aged 0-3 months old instead. With consideration of not delaying the survey time in one hand, the selection of this group of mothers was made with also consideration that they might be exposed to the program at least starting from their late pregnancy period (ranging from April – June 2011). And since only few mothers of infants aged 0-3 months old found in the study areas (N=44 persons), thus census was chosen instead of sampling them.

Qualitative and Quantitative Studies among VMs

As the spearhead of VBMP, information from the VMs was gathered using both in-depth as well as structured interviews. First, it was decided that the in-depth interviews with VMs were carried out in the seven selected villages. However, in the course of the study, we found none of those VMs lived in the villages, thus we purposively selected four VMs from the other villages who happened lived within the community during their assignment. The purpose of selecting them was simply triggered by the aim to compile

more information on why this group of VMs was willing to reside in the village while the rests were not.

Qualitative Study among Cadres, Heads of Villages, and Governmental Health Staff

For the purpose of triangulating and complementing information obtained from mothers or VMs, key informants from both community and local health system were purposively selected for in-depth interviews. Among cadres, only the leaders were interviewed to represent the rests with assumption that she knew VBMP better.

Quality Control

All enumerators were trained by both the PI and Co-PI for two purposes: to uniform their perception on the interview guidelines or tools and also to standardize their ability to carrying out the interview with the subjects. Prior to the interview, the surveys' tools were also pre-tested twice by each enumerator for the purpose of checking the fluidity as well as consistency of the questions with respect to the objectives of the surveys. These tools were revised accordingly and immediately (i.e. on the same day of interview) after the field pre-testing by the Co-PI together with the enumerators.

For the qualitative study, capacity building process in carrying all in-depth interviews were delivered by the PI through a discussion session before and immediately after each and every interview for the first two consecutive days. Prior to the interview, the interviewers were familiarized with each and every guideline through for about eight hours discussion session. And this process was tape-recorded so as each enumerator could listen again the discussion for further comprehension on the interview technique. After each interview trial, each recorded interviews were played and discussed between the interviewers and PI for comments and suggestions.

Some of the interviews were conducted only by the local enumerators using the local language to ensure the validity of the answer from the respondents who could not understand Indonesian language properly. Due to this matter, in every stage of data collection activity, and for developing the interview guidelines or tools, the summary of the obtained information was discussed together with the local enumerators for the correct understanding.

Data Analysis

The quantitative data was entered, cleaned, and statistically analyzed using SPSS for windows version 15. The statistical summary was mainly presented descriptively in proportion values or absolute frequency.

Qualitative data derived from recorded interviews were transcribed *ad verbatim*. Right after each in-depth interview with certain target group ended, a preliminary analysis was carried out to roughly summarize the important information for the development of guideline of the subsequent in-depth interview with other subjects. The listed key issues were compiled in a matrix so that content comparison could also be done. Triangulation of source and analyses were employed to ensure the validity of the qualitative data. Information from various key informants obtained through in-depth interviews and workshops were compiled, summarized, and linked to each others. For these, three analysts (LW, MPH, VA) worked simultaneously to confirm emerging themes and relationship between categories.

Ethical Consideration

There was no invasive treatment will cause any pain or harmful for the respondents. Any sensitive questions were phrased to avoid embarrassment of the respondents. Signed informed consent was obtained from all respondents, and their involvement in the study was on voluntarily basis. The confidentiality of the information was maintained, thus the respondents' IDs were not revealed in any part of this report.

This study followed the ethical guideline of the Council for International Organization of Medical Sciences (CIOMS, 1990) to elicit an approval from the ethical committee on studies with human subjects, of the Faculty of Medicine, University of Indonesia, Jakarta, Indonesia.

The government approvals were also obtained at all administrative levels and the DHO staff was sensitized with the study objectives and purposes.

RESULTS AND DISCUSSION

Despite more than two decades of its establishment (Binkesmas, 1989; Presidential Instruction, 1992), the VBMP functioning at Nias district was still far from optimal. Problems on the program implementation at the grass root level which had been identified earlier (Widayatun, 1999) elsewhere were similar to what happened in Nias when this study conducted in 2011. The findings of the study also showed that even the stakeholders within the local health system have different understanding on VBMP with respect to its planning, MOA, implementation, and MonEv. One may assume that this could be due to poor socialization of the program and/or high turn-over rate of staff without clear handing over mechanism from the former officer to the successor. The shortage of VMs in many villages within the district in 1990s to 2010 was worsened by the inability (i.e. felt powerless) of the local health authorities to encounter this shortcoming. Only after 2011, the shortage of VMs was lessened up to 34% within the district, but the persons in charge in the DHO still did not know clearly the mechanism of this happening. In other words, the dependency on the allocation of VMs by the central and provincial offices to the district was still high, while the role of DHO was rather trivial as the reservoir of this workforce.

In doing the system review on VBMP, information was compiled from many different stakeholders within the community as well as the local health system. The assessments were done thoroughly for each program component as illustrated in the Kielmann Model (see **Figure 1**) as the health system model for meso and micro levels. The resultants of the system review were also linked to the potential determinants of VMs performance indentified using the organizational behavior model (see **Figure 2**). Thus, based on the summary findings, one could understand the complexity of the systemic problem on the implementation of VBMP. Below is the detail description of the findings extracted from the information obtained from beneficiaries of and stakeholders within the program.

Performance of VBMP at the Community Level indicating the program outputs and outcomes

As the program outcome, the VBMP performance was determined based on two proxy indicators: the community acceptance toward the program and the utilization of it. With consideration that program utilization might not merely determine by its acceptance, thus assessments were done separately on each indicator for the purpose of identifying the gap – if any – between these two community elements which were supposed to be highly correlated. With respect to the roles of VMs, most of the key informants, including the VMs repeatedly mentioned antenatal, delivery, and postpartum cares as the main tasks of the VMs within the rural health care delivery system. Therefore, the questions on VMs performance were centered mostly on those three services, with assumption that if such services were not well-delivered, it would be even worse for the other tasks.

As the representative of the program beneficiaries, mothers of infants resided in three studied sub-districts were interviewed. They were mostly aged around 20 years old and above (93%) with rather low educational level (i.e. 91% of them had experienced less than 9 schooling years). One fourth of them were housewives, while majority (73%) worked in agricultural sector receiving daily or irregular wages. Although none of husbands were jobless, but they have more or less similar characteristics with their spouses, and had irregular and/or small income to sustain the family life (data not shown). Since there were only two villages without VMs during the survey time and based on the selection criteria of studied mothers, it was assumed that the VMs health services could be sought given they were accessible or mother preferred to utilize such services.

From both the qualitative (n=8) and quantitative (n=44) studies with mothers, the interviews results showed that majority of them had high acceptance toward the VBMP. However, the utilization considerably low (66%) relative to their acceptance which was attributed to some factors. Since majority of the VMs did not reside in the village (71%), in those villages, the accessibility of their services was then considered limited by the mothers with respect to ANC¹⁶ (30%), delivery (66%), and postpartum care (63%). For those who never utilized the VMs' services (41%), their reasons were varied. Some of them had complained about the absence or irregular visits of the VMs to the villages (39%), while some others did not even recognize their VMs (39%). These of course limited the accessibility to the service aside from other reasons such as geographical distance (20%), no trust on the VMs capability (17%), or financial constraint (6%). Although not revealed in the survey, but during in-depth interviews, some mothers and also the other key informants¹⁷ had complaining the inability of the VMs to socialize or their incapability in providing IPC¹⁸.

¹⁶ Antenatal Care

¹⁷ Cadres, heads of villages, Puskesmas staff

¹⁸ Inter-Personal Counseling

Table 3. The utilization of health services by mothers who did not go to the VMs by type of care (multiple answers)

No	Utilization of health services	ANC (n=22)	Delivery (n=42)	Postpartum (n=35)
1	Traditional birth attendance	14%	5%	-
2	Puskesmas midwife	77%	52%	23%
3	Nurse	9%	21%	3%
4	General practitioner	-	7%	-
5	Family member	-	10%	-
6	None	-	5%	74%

Among mothers who did not (always) go to the VMs, the pattern of health service utilization was varied based on the types of cares they sought (see **Table 3**). During antenatal and delivery periods, mothers tended to seek helps from either formal or non-formal birth attendances, but mostly from Puskesmas midwives. Such behavior then sharply declined during post-partum period when around one-fourth of the mothers did not go for health seeking any longer. Although we have no hard evidence to explain this pattern, but one may assume that this related to the sense of “emergency” among mothers during pregnancy and delivery relative to the post-partum phases. Considering the high mortality risk at any stages of the maternity period, the detail explanation of such pattern needs to be pursued for the purpose of improving the future delivery of service package from antenatal to post-partum cares.

Among mothers who utilized the VMs services (26 out of 44 interviewed mothers), majority of them came for ANC (84%), about one third (36%) for postpartum care, and only few (4%) for delivery. The same phenomenon had been identified more than a decade ago (Widayatun, 1999). There was a couple of reasons explaining this, ranging from the inaccessibility of the service when needed (i.e. timeliness and distance), doubt on the VMs capability (especially on the fresh graduate, young, and unmarried ones who were considered inexperienced), to simply the unavailability of it (i.e. VMs rarely came to the village, was not recognized by mothers, or no VMs) at the village (see **Table 4**). Yet, in overall, the reason why mothers did not use the VMs services was mainly due to its accessibility. In relation to the unpredictable need of delivery care, one may argue why the utilization of such service was very low if the VMs did not reside in the villages. As the substitute, mothers (n=44) then preferred to go to the other health providers for delivery such as the senior midwives (47%), nurses (24%), general practitioners (8%), or non-formal health providers such as family members (8%) and traditional birth attendants (5%). Few of them even delivered their babies without any birth attendances (5%). Among those who did not go to VMs for delivery, majority (65%) had complaining the accessibility of services from their VMs, while some others (24%) questioned on the quality of the services instead. Contrasting with the objective of VBMP for bringing quality health service close the community, these facts pinpointed that the settlement of VMs within the community and proper capacity building or orientation for them prior to their assignments is unexceptional. In line with that, almost all of the interviewed mothers also expected their VMs resided in the village. By knowing the consequence of their task (e.g. reside in the village) prior to the assignment, some personal reasons such as no family supports (18%), felt reluctant to live a village life (24%) or hesitant to stay at the houses of the local dwellers (12%) should no longer be excuses for the VMs to live outside the villages.

Table 4. Reasons why mothers did not use the VMs services (multiple answers)

No	Reasons*	ANC (n=22)	Delivery (n=42)	Postpartum (n=35)
1	No VMs	27%	14%	17%
2	VMs did not reside in and/or rarely came to the village	27%	62%	54%
3	VMs were considered no experience	18%	21%	17%
4	VMs were unrecognized	18%	12%	6%
5	“Too far” in term of distance	18%	7%	17%
6	Psychological comfortability or economical reason	-	5%	3%
7	Medical reason	-	2%	-

For mothers who utilized the VMs services, their degree of satisfaction to the services were assessed with the underlying reasons (data not shown). For antenatal and delivery cares, most of mothers were satisfied with the VM services. The responsiveness to the needs as requested or perceived by mothers as well as the social skills of VMs were mentioned as the main reasons why mothers satisfied with the services. However, the proportions of mothers who satisfied and not satisfied to the VM service for post-partum care were equal, as such signaling the need to improve it in the near future.

As the community members who were supposed to get involved also within the program, cadres and heads of villages were interviewed to gather their comprehension about VBMP. Besides, such information was utilized for re-confirming on what had been stated by mothers as described above. What had been extracted from the interviews with them reflected their limited understanding on their roles within the VBMP. With respect to the VMs assignments, both stakeholders actually had specific tasks to assist the VMs in carrying out their duties in the form of partnerships. In delivering services at Posyandu¹⁹ or health promotion activities at the village level, the VMs shall be assisted by cadres for the implementation. And the heads of villages were supposed to minimally secure the placement as well as safety of VMs to live within and ensure their acceptance by the community. However, the problems related to these were rather complex. Since none of the village leaders aware of their roles within the program, many of the VMs had no place to live or deliver their services in the villages (63%). Some other reasons of staying outside the village such as safety issue (18%) and acceptance by the community (18%) were also expressed by the VMs. All these arguments then provided excuses for the VMs for not staying or even coming to the village on regular basis. Given the willingness to fix this situation, but none of these village leaders knew the procedure to do so (e.g. to whom they should send request for problem solving). Only those who initiatively supported the program have their VMs resided within the community (29%). And due to the unawareness of their roles and also the notion of powerless, some of village leaders even consciously gave their “approval of absence” by signing the attendant forms of their VMs although in fact they did not come or irregularly came to the villages. As the further consequence of this, most of the VMs assignments could not be delivered properly – if not at all – and collaboration with cadres was interrupted. This complexity was also signaling the need to optimally socialize the VBMP to the key

¹⁹ Monthly Integrated Health Post

stakeholders at the village level while at the same time also explaining to them on their roles and competence on improving the program functioning.

Input and Input Distribution of VBMP: 3-M²⁰ and Infrastructures

To study on the program fallacies, a system review was carried out by looking at each essential program component as well as the interlinkages of those components to one another. If the above explanations were focused more on the program outcomes, here we elaborated the program inputs and its distribution.

In correspond to the objectives of VBMP as enlisted in the program guideline (MoH, 1991), we assumed that the program inputs shall minimally compose of:

- a) The sufficient number of well trained and skillful VMs to deliver the program,
- b) An orientation platform for VMs before the assignment,
- c) The VBMP plan that comprises of an integrated implementation and MonEv plans,
- d) Periodic refreshment trainings for updating the VMs on the new health service guideline, management backups, networking, and program policies,
- e) Program finance and infrastructures,
- f) Program promotion and its related materials.

As the most essential input for the program, the scarcity of well-trained and skillful VMs to deliver the program at the community level was evidenced. Despite its establishment in 1989 and before 2011, only few villages had VMs although requests to the PHO had been made as admitted by the stakeholders in the DHO. It was only in 2011; an extensive assignment of such workforce to Nias district happened, while none of the DHO staff knew what the reason of that was. Nevertheless, this could be considered as a significant undertaking in fulfilling the gap in human resources within the program as had been indicated by only two - from previously 25 - out of 30 villages within the study areas had no VMs yet. However, with the limited understanding on program objectives and subject know-how on the primary health care among those VMs, their sufficiency in term of number could not yet ensure the proper program functioning. These findings were inline with the recent presentation by the MoH representative (Hernawati, 2011) extracted from three data sources: RISKESDAS²¹ (2010), SDKI²² (2007), and MCH routine report (2010). It was found that only the number of midwives who lived in villages, but not their total number, did associated with the declining on maternal mortality rate.

With respect to the orientation prior to their assignments, all VMs received it either at both the DHO and Puskesmas (54%), DHO only (8%), or Puskesmas only (38%). At the DHO level, the orientation for VMs, took about two to three days, has been focused more on the management area of the program with respect to the policy, organization structure within the DHO, and administrative aspects of the program (see **Table 5**). The detail technical issues related to the program implementation especially emphasizing on the tasks and functions of VMs, recording-reporting of data, and basic medical care (especially immunization and MCH) were elaborated during the orientation

²⁰ Materials, Man-power, and Money

²¹ *Riset Kesehatan Dasar* or Basic Health Survey

²² *Survei Demografi dan Kesehatan Indonesia* or Indonesian Demographic and Health Survey

at the Puskesmas level (see **Table 5**). This session took for about one-week period and delivered by the Puskesmas team. However, out of 24 VMs being interviewed during the study time, 42% of them felt not sufficiently equipped with the relevant program knowledge and skills during orientation sessions. And what had been emphasized during the orientation (as admitted by the VMs) has also been reflected on the VMs' activities which were mostly centered on eight functions related to MCH, basic medical care, and recording-reporting data (see **Table 6, highlighted in grey**). While only few were aware of their roles on community mobilization²³ for health promotion and surveillance, fewer had really implemented it partially through Posyandu sessions.

Table 5. Issues delivered during orientation at either DHO or Puskesmas

No	Issues delivered during orientation	DHO* (15 out of 24)	Puskesmas* (22 out of 24)
1	Socialization of the organization structure	1%	2%
2	Socialization of the program administration	1%	1%
3	Socialization of the program policy (including tasks and functions of VMs)	14%	12%
4	Technical issues related to the recording-reporting of program data	-	11%
5	Technical issues related to scheduling of practices in Puskesmas and/or Posyandu	-	5%
6	Technical issues related to basic medical care (especially immunization and MCH)	-	10%
7	Technical issues related to the supply and request of program logistics (e.g. medicines) from Puskesmas	-	4%
8	Technical issues related to the placement of VMs within the community (e.g. where to live, how to socialize with the local people)	-	3%
9	Other technical issues related to the implementation of VMs' tasks and functions	-	1%

Table 6. The delivery of tasks and functions by VMs (n=24 interviewees)

No	Tasks and functions of VMs	Number of VMs who carried out their tasks and functions
1	To provide health care for the community, maternity care (antenatal, delivery, and post-partum cares), child care, and family planning services	24
2	To carry out demography survey together with village leaders (formal and non-formal)	21
3	To early detect the prevailing health problems among pregnant women, post-partum mothers, infants, and young children	23
4	To refer the severe/emergency cases to the relevant health facilities	NA (spontaneous)
5	To regularly cooperate with traditional healers and cadres	21
6	To provide nutrition and health promotion within the community	19

²³ collaboration and coordination with cadres, local leaders, and any other key persons in the community they served

Table 6. cont.....

No	Tasks and functions of VMs	Number of VMs who carried out their tasks and functions
7	To deliver immunization and basic medical care at Posyandu, Poskesdes/Posyandu Plus	24
8	To coordinate and establish Alert Village program in their working areas	3
9	To get involved in the social events in their working areas	10
10	To carry out evaluation and monthly reporting of program implementation to Puskesmas	22
11	To have consultation on technical and program related issues to the head of Puskesmas in Mini lokakarya (monthly meeting at Puskesmas) and technical meeting between midwives	24
12	To maintain the health infrastructure and facilities within their working areas and regularly report it to the head of Puskesmas	11
13	To convey inputs to the supervisors with respect to their tasks and functions at their working areas	23
14	To collect, record, and report data (including the indicators of health services at Pustu, Poskesdes, Posyandu Plus) related to their tasks and functions as VMs to the DHO on monthly basis	0
15	To carry out other assignments given by the head of Puskesmas	13

Since majority of the VMs (71%) did not reside in the village, then some of their tasks might not be delivered optimally. Even with daily visit to the village, but their short stays (usually within 08:00 a.m. to 04:00 p.m.) could only be allocated for delivering mainly maternity cares, basic medical cares, and monthly Posyandu. Given their capacity to socialize, yet such time constraint would not allow them to properly mingle with the community members. In addition to the problem on community distrust, the lack of social encounters between VMs and the community were also consistently complained by some of the community members²⁴ and seemed to exacerbate the already low utilization of the VM's services. With respect to the subject know-how, we had no hard evidences on the comprehension of relevant knowledge and skills of VMs, but some mothers had doubted on that (17%). And this argument was also supported by the key informant²⁵ who identified the poor knowledge and skills of many of the VMs during the internship period at the district hospital.

During the data collection, we could not get the documentation of program plan or even the program guideline at any levels within the local health system. Due to inconsistent responses of the program stakeholders about VBMP, we then assumed that most of them did not have standardized and complete understanding about the program itself. In relation with the implementation plan, we only found the document on the job description (i.e. tasks and functions) of VMs which comprised of 15 points (see **Table 5**) with no detail description for each of it. However, even this job description was not

²⁴ Mothers, cadres, and village leaders

²⁵ One of the training team members in the recent internship program for VMs at Nias District

optimally socialized or at least properly distributed to the VMs (i.e. none of the VMs could present the document to the interviewers) so as it provided argument for their unawareness on their tasks within VBMP. With minimum supervision and enforcement to follow the guideline, we assumed that most of the VMs had merely carried out the tasks they could recall from the orientation session and/or during their study time. In other words, the repetition of some general tasks of midwives (e.g. MCH, basic medical care, recording-reporting) might result on their deep internalization, but masked the other tasks (e.g. community mobilization) which were newly or not yet introduced once they were assigned as VMs.

In Nias district, the VMs were not prioritized to receiving period refreshment trainings because of their status as non-permanent staff within the local health system. Based on what had been described by one of the informants, most of the interns (i.e. VMs) did not have sufficient knowledge and skills yet to handle even a normal delivery (e.g. could not identify correctly the dilatation of effaced cervix). Yet, due to financial constraint and also misconception²⁶ on the effectiveness of training, capacity building program was not prioritized in the DHO agenda. In relation to the concern on the status of VMs, one informant had given example on the ineffectiveness of training for them:

“.....without the knowledge of the head of Puskesmas, the VM has processed her transfer of duty while she was assigned for an internship.....”

However, an internship program at the district hospital was still given for the VMs at the beginning of 2012. Aside from its aim, but it was assumed that such program did not yet match to the need on capacity building for VMs because of these following reasons:

1. The imbalance ratio between the number of VMs and the number of normal *partus* in the hospital, thus only few of the interns could experience to directly assist in the delivery process,
2. Too short internship program period (one week for one batch which consisted of around 40 VMs),
3. The type of exposure they had at the district hospital majority were *partus* with complication, which a midwife was not authorized to handle,
4. No evaluation system prepared to assess the improvement, if any, on the capacity of VMs after the internship program.

Aside from the VM' job desk, the grand implementation plan of VBMP was not available at the district level and below to ensuring the community participation for program promotion and the establishment of support system at the village level. For an example, one could argue on the roles of Puskesmas to actively involve stakeholders at the village level within the program due to the unavailability of the SOP for such activity. With poor engagement of the village stakeholders, then the establishment of support system such as settlement for or safety of the VMs was mainly relied on generosity rather than awareness of the village leaders on their functions within the program. This phenomenon was reflected from the fact that such essential support system was not

²⁶ Capacity building activity or training was under-valued as an ineffective approach to strengthen the health program performance

always available at all villages. And the almost no involvement of village leaders in the program promotion was also revealed during in-depth interviews.

In this study, the problem on the provision of midwifery kits could not be easily tracked down because all the responsible stakeholders either at the DHO or Puskesmas levels were newly assigned staff within the supply system. During in-depth interviews, it was found that some of the VMs were not equipped with midwifery kits. Therefore, during the workshop between the WVI team and the local health staff, an agreement was made to tackle this shortage of equipment. Since the stocks of the kits were actually available at the DHO, then its representative explained the mechanism of request once there is a need identified by Puskesmas.

Support System of the VBMP

Although there was a feasibility review by the DHO on the properness²⁷ of the construction of Poskesdes prior to preparing its plan, but the implementation was not proper yet in some cases. Due to several non-technical issues (e.g. availability of the land, budget allocation), some Poskesdes were still built in remote places that required extra costs to boost its accessibility (e.g. for building the road to it or for flattening the landscape). Such extra costs were then compromised the allocated budget for constructing the essential installation such as water supply in Poskesdes. As had been admitted by the staff at the DHO, the electric supply was still hardly installed and required further coordination between the DHO and the Governmental Electric Supply Company. Thus, intensive advocacies to and coordination between all stakeholders in the village up to district levels was urgently needed to prepare better planning and implementation on infrastructure construction in the future.

As one of the essential sub-systems, surveillance within the VBMP did also not function yet as intended. In most cases, all VMs still valued the surveillance system as equal to recording-reporting system. When cases found, some but not all, were recorded and reported to Puskesmas based on the pre-established guidelines (e.g. timing, forms, indicators). The reported data was not complete mainly because of time constraint and insufficient knowledge and/or skills of VMs on data management. As had been admitted by some of the VMs, there was limited, if not at all, assistance of community members to find cases in regular basis. With their short stays in the village, the hurdle on finding cases became more significant. Due to lack of training, the mastery on data recording and reporting was also compromised as reflected by the statement of one midwife as the following:

“.....I don’t know....but the formula (to calculate) is given.....never been trained thus far, only the forms are given, then (I) don’t know it is right or not (to fill the forms).....maybe each Puskesmas have different ways to fill the same forms.....”

In addition to that, the lack of data validity was also attributable to data manipulation by the VMs and resulting on imprecision of reported cases. Such practice indicated their incomplete and incorrect understanding on the data utilization as reflected in the statements of the informants below:

“.....based on our experiences, the coverage will always set (intentionally) equal to the “target” (calculated based on the pre-determined formula), even in fact it surpasses such calculation. For

²⁷ As guided by the document on requirements for building Poskesdes

example, based on the calculation, we've got about 30 pregnant women (PW), whereas we've actually found 34 PW We can use the number "34" as the denominator (for calculating the program coverage), but it will go beyond the "calculated target" (cut off point: 95%). Thus, it is better we kept the four "extra" cases to be reported next year.....but it will look odds.....it (the coverage) should not also fall too far from the target, not below 50%.....they might think we did not work properly....."

".....for sure there is a discrepancy (between the predicted and actual data), but we (VMs) follow them (Puskemas) because if it's different, the DHO will ask us and it will be too complicated.....the report will be for the DHO.....it will be used for....(the midwife could not answer and just laughed)...."

".....if it (the predicted target) is given....., we could not change it.....with this (the predicted target), it is impossible to reach the (real) target.....thus we adjust.....for example, if there are two PW reported, they will be counted in the report although they did not go for ANC.....it will be shameful if we could not meet the target.....thus, we adjust the data although the fact is not really like that....."

However, during the interview, we also found that they actually realized the negative consequence of such manipulation:

".....because the data was not "real", we could not measure the program success because the data is not match to one another...."

While the existing recording-reporting system was not fully clarified to the implementers (e.g. VMs), it was not also efficient for its implementation. There were too many redundancies in such that some similar indicators were calculated differently and recorded as well as reported in different forms by an individual staff. Such disintegration was highly related to the problems on *program-ego* and poor coordination among stakeholders within the health sector as described in **next two sections**.

The common pitfall of VBMP was laid on the "absence" of its overall MonEv system. During the study time, we hardly found any documents on the program planning for implementation as the "basis" to evaluate the program achievement. Although the recording-reporting system was embedded in the program, but it did not catered many measures of process evaluation (e.g. service inputs to outputs). Although some obstacles in program implementation were known and acknowledged by the stakeholders (during the interviews), but no significant actions were taken so far. While most of the compiled data were outcome indicators (e.g. program coverage), they were notoriously imprecise (see the above description) and was not yet optimized in utilization. In fact, it was also identified in the MoH report (MoH, 2012) that Nias District was one among others that did not actively send the MCH data to the central level.

Management and Organization of VBMP

In the course of the study, there was an indication that the VBMP was run rather based on the spontaneous decisions of the local authorities (i.e. with no clear program plan) at each administrative level. The high dependency on the flow of resources supplies from either the province or central offices was evidenced. As the spearhead of the program implementation, the active involvements from the DHO or any institutions below in program management were still considered trivial. This might be deep-rooted on the minimum understanding on the management areas among those at each administrative level combined with high turn-over rate of the staff within the health sector. With such fallacies, it was hardly possible to determine the management

responsibilities of the stakeholders and to set their Key Performance Indicators (KPI) within the program.

The intertwining of human resource management, program financing, and the overall program performance was elaborated in this paragraph. As described by the informants, the payroll system for the VMs was centralized and became the responsibility of the MoH. This caused misconceptions among the stakeholders at the district level and below as explicitly stated by the key informants within the local health system:

“.....we have no control to our VMs because they are paid directly by those at the central level.....how the process (of selection and recruitment) at the central level, we do not know, it’s their business, I do not want to bother.....the recruitment is by MoH through PHO.....all of sudden PHO sent a notification (to the DHO) that the VM has been transferred to.....thus working in Nias was only a “stepping stone” (for their career).....without the knowledge of the head of Puskesmas²⁸, the VM has processed her transfer of duty”

Although the applications for the VM candidates could be sent either to the DHO or PHO, in fact, only few native applicants were recruited, as described by one informant:

“.....mostly are outsiders.....do not know why.....those who were sent here are not qualified.....they could not speak the local language and were not ready to live a village life.....”

But the complexity also relied on the ability of the local midwifery academics to produce a “ready to compete” workforce for selection (i.e. qualified and certified). This issue was revealed during the workshop between the WVI team and the Puskesmas staff. Until the local academics could guarantee the certification of their graduates, thus the native applicants could hardly meet the qualification for recruitment. And this became one of the arguments why most of workforce was then recruited from other places outside the district.

The perceived “sense of powerless” among the DHO staff in the selection, recruitment, and remuneration of VMs became the major constraint to manage such workforce within the program. Although - on paper - the recruitment of VMs seemed to be sufficient to the need, in fact there was still a gap in this workforce. Among the recruited ones, some did not report to the DHO, and it means that they did not also come to work at the district eventually. As described by one informant, although requested, their replacement was also uncertain:

“.....ten of the selected VMs did not report to us (DHO), we reported this to PHO and Human Resource Bureau at the MoH, but no response yet until now.....”

The fact that the DHO perceived their detachment from the selection-recruitment process of their VMs was actually contradict with the existing regulation as recently presented by the Head of Human Resource Bureau of MoH (MoH, 2012).

Coordination across Programs and Collaboration with Other Sectors at the District level and Below

In the course of the study, we found no document available to plan the coordination across program and collaboration with other sectors to ensure proper implementation of VBMP. As results of this, it was admitted by the staff at all levels that *program- and sector-ego* were relatively bold and disrupted the program performance. As

²⁸ As supposed to be the direct supervisor of VM

the examples, we found indication that the placement of VMs was not well coordinated with the other sections and their remuneration sometimes disregarded their absences in the villages. Establishment of Poskesdes at a village level was also subjected to the lack of coordination between sectors or even within the health sector itself. The common practice, any collaboration or coordination found at any levels was mainly due to personal initiatives rather than following a pre-established system. Therefore, there was no uniform action prevailed yet and the sustainability of such networking was highly determined by each individual decision maker. Similar to the involvement of village leaders, it was mainly driven by their personal initiation rather than a resultant of a functioned system.

Community characteristics and participation within VBMP

As it is acknowledged that the community participation must be the essential and integral part of VBMP, in this exercise, we also compiled the community expectations toward the program. In overall, as we could identified from the table below (see **table 7**), there were no such overwhelming expectations from the community toward their VMs, instead they were actually essential to the proper program implementation. As the answers were ranked from the most to the least expected, accessibility of the service became the main issue. Either it was related to the physical distance or sufficiency and quality of the services (e.g. information, care, home visits) delivered by the VMs.

Table 7. Community expectations toward the VMs

No	Suggestions of mothers for the improvement of VBMP performance	n
1	VMs shall reside in the village to ensure the timely accessibility of the service	15
2	VMs shall do home visit when needed	11
3	VMs must be informative (through counseling or campaign)	11
4	VMs shall be responsible to ensure the implementation of Posyandu activities	8
5	VMs must have good social skills (e.g. sensitive, attentive, kind, sociable, impartial)	5
6	VMs shall carry out a surveillance for pregnant women, mothers, and children	3
7	VMs must have enough experiences to deliver the services	2
8	VMs shall be equipped with sufficient program logistics (e.g. tools, medicine, vitamin)	2
9	VMs shall deliver services according to the SOP	2
10	VMs must not be profit oriented	1
11	VMs shall provided basic health services for all	1
12	VMs must be responsive to the health need	1
13	Settlement in the village for VMs must be available	1

Until the formative study ended, the community was not yet significantly participated in the program. Thus far, the community members were still seen as merely the program recipients either by those at the health sector or the community itself. Their active involvement was not challenged and designed yet within the health system, although their potency was wide open and not impossible to release. During the formative study, we could even identify their strengths to ensure the availability of resources with respect to 3-M (i.e. manpower, money, and materials) and infrastructure (e.g. proper permanent places for VMs to deliver their services). Cadres could be recruited and

community leaders could be actively involved in ensuring the provisions of human resources for assisting the health promotion, surveillance, or referral system for severely ill patients. The village governance could also establish an operational financing to support the program either from ADD (*Anggaran Dana Desa*²⁹) or independent-collective financing by the community members (so-called “*saweran* or *iuran*”). With such financial resources, some essential materials for program as well as infrastructures could be afforded by the community itself and made available to run the program better.

As it was presumed that the common pitfall of VBMP functioning at Nias district was laid on two major problems: poor comprehension of the pre-designed VBMP master plan as well as the inexistence of its detail operational plan at least for the district level and below. In such affected the clarity on management responsibilities of each institution and its individual stakeholders within it. With no pre-designed management system to ensure the proper implementation and evaluation of the program, what had been performed so far was still relied mainly on personal initiative rather than resultant of a well-established system. In addition to the lack of coordination within the health sector and collaboration with other sectors, it resulted on patchiness, loss of continuity, inefficiency, and un-sustainability of approaches in running the program.

From the formative research, one could identify that problems on VBMP at Nias district were strongly intertwined and thus shall be tackled **only** through **multiple systemic approaches** to ensure its sustainable problem solving prior to the improvement of program performance. *With respect to the VBMP functioning:* (1) Improving the overall management and Monitoring-Evaluation (MonEv) system at all administrative levels through periodic advocacy for policy makers and any relevant stakeholders to ensure their performance quality. (2) Improving the internal management and MonEv system at district level and HC through periodic advocacy and capacity building for staff to ensure their performance quality. *With respect to community acceptance and participation:* (1) Optimizing the utilization of VMs as the spearhead of MCH Care at the village level. (2) Optimizing the community mobilization within the VBMP.

LIST OF REFERENCES

1. Ronsmans C, Graham WJ. Maternal mortality: who, when, where, and why. *Lancet* 2006; 368: 1189–200.
2. Costello A, Azad K, Barnett S. An alternative strategy to reduce maternal mortality. *Lancet* 2006 DOI:10.1016/S0140-6736(06)69388-4.
3. Fillipi V et al. Maternal health in poor countries: the broader context and a call for action. *Lancet* 2006; 368: 1535–41.
4. Campbell OMR, Graham WJ. Strategies for reducing maternal mortality: getting on with what works. *Lancet* 2006; 368: 1284–99

²⁹ A financial support from the Ministry of Internal Affair that is allocated and directly transferred to the village governance. This support was rather flexible in term of budget utilization, in such it was independently determined by the village officers through *musrenbang* (i.e. meetings among the village leaders to prepare yearly planning for village development)

5. Frankenberg E, Suriastini W, Thomas D. Can expanding access to basic healthcare improve children's health status? Lessons from Indonesia's 'midwife in the village' programme. *Population Studies*, Vol. 59, No. 1, 2005, pp. 5-19.
6. Ministry of Health of Republic of Indonesia. *Pedoman Kemitraan Bidan dengan Dukun*. 2008.
7. Ray AM, Salihu HM. The impact of maternal mortality interventions using traditional birth attendants and village midwives. *Journal of Obstetrics and Gynaecology* (January 2004) Vol. 24, No. 1, 5-11.
8. Shankar A, et al. The village-based midwife programme in Indonesia. *Lancet* 2008; 371: 1226-1229.
9. Shankar A, et al. Delivery of MDG 5 by active management with data. *Lancet* 2008; 371: 1223-1224.
10. Makowiecka K, et al. Midwifery provision in two districts in Indonesia: how well are rural areas served?. *Health Policy and Planning* 2008;23: 67-75.
11. Hatt L, et al. Did the strategy of skilled attendance at birth reach the poor in Indonesia?. *Bulletin of the World Health Organization* October 2007, 85 (10). 774 - 782.
12. The circular of Binkesmas General Directorate no 429/Binkesmas/Per/IX/1989 and the presidential instruction in 1992 tentang kebijaksanaan penempatan bidan desa
13. Widayatun. Program penempatan bidan di desa di Indonesia dan tingkat pemanfaatan pelayanan kesehatan ibu dan anak. *Buletin Pengkajian Masalah Kependudukan dan Pembangunan*, 1999: X (1-3).