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A GLOBAL LEADER IN IMPROVING HEALTH CARE FOR WOMEN AND FAMILIES



measuring the effects of the
**SIAGA behavior change
campaign in Indonesia**
with population-based survey results

Maternal
& Neonatal
& Health



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Center for Communication Programs

Maternal
& Neonatal
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The Maternal and Neonatal Health (MNH) Program is committed to saving mothers' and newborns' lives by increasing the timely use of key maternal and neonatal health and nutrition practices. The MNH Program is jointly implemented by JHPIEGO, the Johns Hopkins Center for Communication Programs, the Centre for Development and Population Activities, and the Program for Appropriate Technology in Health.
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ABBREVIATIONS AND ACRONYMS

BCC	Behavior Change Communication
BCI	Behavior Change Interventions
BP/CR	Birth Preparedness/Complication Readiness
CEDPA	Centre for Development and Population Activities
DFID	Department for International Development
IEC	Information, Education, and Communication
IPC/C	Interpersonal Communication and Counseling
IMP	Identifikasi Masyarakat Partisipatif (Participatory Appraisal Methodology)
JHU/CCP	Johns Hopkins University/Center for Communication Programs
KAP	Kartu Amanat Persalinan (Pledge Card)
MNH	Maternal and Neonatal Health (Program)
MOH	Ministry of Health
NGO	Nongovernmental Organization
PATH	Program for Appropriate Technology in Health
USAID	United States Agency for International Development

EXECUTIVE SUMMARY

Introduction

The Maternal and Neonatal Health (MNH) Program in Indonesia began in 1999 and focused on increasing skilled attendance at birth. The Program was USAID/Indonesia's primary support to the country's overall Safe Motherhood Program, to which it contributed in the areas of policy improvement, health systems strengthening, and empowerment of women and families to become responsible for their health. The MNH Program in Indonesia was multifaceted in its approach and was designed to improve quality in clinical training, to enhance the policy environment, and to strengthen community participation in safe motherhood.

While community involvement in maternal health was historically strong in Indonesia, interventions did not necessarily reflect communities' needs. Indonesia's emerging democracy expanded community involvement from a centrally driven, message dissemination network to engaging the community through the emerging civil society and nongovernmental organizations (NGOs). The MNH Program built on this foundation through its Behavior Change Interventions (BCI) component and its promotion of shared responsibility for the well-being of women during pregnancy, childbirth, and the postpartum/newborn period. MNH Program interventions were concentrated in West Java, but activities at the national level, including behavior change communications for the SIAGA campaign, helped to strengthen maternal and newborn care by promoting birth preparedness and complication readiness (BP/CR) throughout several provinces and the country. Shared responsibility for BP/CR is the strategic focus of the MNH Program. In Indonesia, BP/CR was represented by the concept of SIAGA, which means *alert/ready* and is formed from the words *SIap* (ready), *Antar* (take, transport), and *jaGA* (stand by or guard).

The SIAGA campaign was launched in 1999 as part of Indonesia's Mother-Friendly Movement. The initial campaign—Suami SIAGA (alert husband)—was aimed at promoting desirable behaviors that husbands could practice to reduce delays in deciding to seek care, reaching care, and receiving care.¹ A “Suami SIAGA” is aware of the possibility of complications, arranges for transport prior to childbirth, and helps ensure that his wife receives care at a facility.

As a concept, SIAGA held great appeal because of its applicability across a variety of audiences. Accordingly, the SIAGA campaign was expanded under the MNH Program to embrace the community (Warga SIAGA), the midwife (Bidan SIAGA), and the village (Desa SIAGA). SIAGA thus became a unifying concept, embodying the notion of shared responsibility that is central not only to the MNH Program's approach, but also to the Indonesian value of *gotong royong* or community help.

Each phase of the comprehensive SIAGA campaign shared a common look, featuring a popular singer (Iis Dahlia) as the spokeswoman and print materials with a consistent color scheme and logo, which helped to make SIAGA a safe motherhood brand name. At the same time, each phase of the campaign had distinctive audiences, with appropriately tailored goals and approaches.

Suami, Warga, and Bidan SIAGA aimed to establish normative foundations for behavior change and were national in scope. They were chiefly conducted through communication campaigns, relying on

¹ Thaddeus S and D Maine. 1994. Too far to walk: Maternal mortality in context. *Social Science and Medicine* 38(8): 91–111.

television, radio, and mass media events, including public relations, launches, press gatherings, and karaoke contests. All media events and materials were supported with print materials, including posters, calendars, and leaflets.

The formation of a Desa SIAGA depended on participatory and facilitative techniques for problem solving, such as Identifikasi Masyarakat Partisipatif (IMP), a participatory appraisal methodology. Trained organizers used IMP to identify community resources with community members. Using IMP, they helped identify traditional ways of collecting funds, values and issues related to blood and childbirth, how to set up systems for transport, stakeholders who needed to be involved, and the need and availability of resources.

A baseline survey was conducted in 2001, and an endline survey was conducted in February 2004 to evaluate the impact of the BCI component of the MNH Program in Indonesia. This report is an analysis of knowledge, attitudes, and behaviors of respondents to the baseline and endline surveys.

Methodology

The main objective of the endline study was to assess the effects of the SIAGA campaign and interventions. This impact evaluation followed two earlier studies—a baseline survey in April 2001 and a midline survey in November 2002. The baseline had two key purposes: to feed into the program design of the SIAGA campaign, and to provide indicators against which to measure the impact of the MNH Program's BCI activities. The midline study interviewed women who were pregnant at the time they were interviewed for the baseline and about one-third of their husbands. The purpose of the midline was to examine how women's stated intention, or lack of intention, to use a skilled provider at birth correlated with their actual practice.

For the endline, quantitative and qualitative research was conducted in the six districts of West Java where previous research had been conducted. The endline survey was undertaken in all three districts where all Program components were implemented (Kabupaten Cirebon, Kabupaten Kuningan, and Kota Cirebon) and in three other districts (Bandung, Sukabumi, and Purwakarta).

The selection methodology followed the same criteria used during baseline. The sampling strategy for the districts of Bandung, Sukabumi, and Purwakarta involved returning to a sub-sample of the same villages where the baseline was undertaken and selecting a cross-section of women with a live birth in the previous 15 months from these same villages. For Kabupaten Kuningan, Kabupaten Cirebon, and Kota Cirebon, the sampling strategy included the selection of villages from three categories: SIAGA villages, scale-up villages, and control villages. These three groups were determined based on the program intervention design. Villages where intensive mobilization efforts associated with the Desa SIAGA intervention had been undertaken (55 in all) were "SIAGA villages," and 35 such villages were included in the endline sample. Of 62 villages that had undertaken scale-up Desa SIAGA activities, 31 were included in the endline sample as "scale-up villages." The endline sample also included 186 "control villages"—96 in Kabupaten Kuningan, Kabupaten Cirebon, and Kota Cirebon, and 90 in Bandung, Sukabumi, and Purwakarta.

The total sample of individuals surveyed at baseline was 3,364, including 2,269 women (*istri*), 741 husbands (*suami*), 202 midwives (*bidan*), and 152 community influentials (*toma*). The total sample at endline was 2,925, including 1,782 women, 583 husbands, 200 midwives, and 360 community influentials. The profile of the respondents in the surveys was comparable in terms of age, occupation, religion, and ethnicity. However, the average age of the community influentials was 52

years at baseline and 43 years at endline. Another notable difference was that more midwives reported high monthly expenditures at endline than at baseline.

Key Research Findings

The first section of this analysis focuses on exposure to individual components of the SIAGA campaign as well as the overall campaign. The second looks at the impact of the campaign on knowledge, awareness, and actions related to BP/CR. For the purposes of this report, the overall SIAGA campaign is measured in terms of exposure to a composite measure of the Warga, Bidan, and Desa SIAGA components of the campaign.

Exposure to SIAGA Campaign

Individual Components

Suami SIAGA (alert husband): Of the total sample of 3,364 at baseline, nearly two-thirds of the respondents (65.1%) were exposed to the Suami SIAGA campaign in the target districts. Slightly more than half (53.0%) of the total respondents at endline affirmed that they were aware of Suami SIAGA. This is impressive because at the time of the endline survey the Suami SIAGA campaign was years in the past, and the MNH Program was devoting greater attention and resources to newer campaign components.

Bidan SIAGA (alert midwife): Some 51.4 percent of the respondents at endline reported being exposed to Bidan SIAGA. Nearly all of the respondents (99.5%) recalled one or more of the messages contained in the Bidan SIAGA. Some 43.6 percent of the women and 49.0 percent of the husbands also reported taking action after being exposed to Bidan SIAGA. In addition, approximately one-third of the women and husbands reported that they had discussed the Bidan SIAGA campaign within their social networks. Seven of ten community influentials and almost all midwives reported having engaged in related interpersonal communication after being exposed to the Bidan SIAGA campaign.

Warga SIAGA (alert community): At 27.5 percent, exposure to Warga SIAGA was found to be comparatively lower than exposure to Bidan SIAGA. Among the respondents who reported being exposed to the Warga SIAGA campaign, however, more than 90 percent recalled one or more of the messages contained in the campaign. In addition, more than half of those women and husbands exposed reported that they had taken action as a result. Sixty percent of exposed respondents reporting that they had discussed Warga SIAGA messages within their social networks.

Desa SIAGA (alert village): Respondents were asked whether they considered their village to be a Desa SIAGA; some 37.2 percent of the respondents said they did. Levels of awareness were highest among the midwives (58.5%). Half of the community influentials, 33.9 percent of the women, and 31.7 percent of the husbands felt the same way. When asked about actions respondents had taken to ensure that their village was a Desa SIAGA, slightly more than half of the respondents answered in the affirmative with regard to notification schemes. Slightly more than a third indicated that they had participated in establishing transportation and financial schemes. Some 46.4 percent of the respondents reported having engaged in interpersonal communication regarding Desa SIAGA within their social networks.

These results indicate that Desa SIAGA was conceptualized by respondents primarily in terms of transportation and notification and less so in terms of financial support and blood donor systems. On the one hand, this is not surprising because establishment of transportation schemes was a central focus for the Desa SIAGA intervention. However, the Desa SIAGA intervention also focused intensively on the establishment of financial systems, so the relatively lower levels of reported financial support systems might be a cause for concern. It may be advisable to look more closely at ways to strengthen the effectiveness of these activities as part of Desa SIAGA.

Radio vignettes: An overwhelming majority of the midwives (95.0%) recalled the radio vignettes. This is a positive sign given that the vignettes were intended to reach an audience of midwives. Almost all the midwives who reported being exposed to the radio vignettes also indicated that they had taken some specific actions as a result of exposure.

Kartu Amanat Persalinan (pledge campaign): Only 22.7 percent of the women and 13.1 percent of the husbands acknowledged being aware of Kartu Amanat Persalinan, a pledge campaign in which family and community members sign a card pledging to help the pregnant woman by establishing community systems for responding to emergencies. However, 3.8 percent each of the women and husbands were able to show their completed cards to the interviewers.

Overall SIAGA Campaign

A composite variable, measuring awareness of Bidan SIAGA, Warga SIAGA, and Desa SIAGA, was created to analyze exposure to the SIAGA campaign as a whole. Based on this variable, slightly more than 60 percent of the respondents were exposed to the SIAGA campaign as a whole. Analysis by type of village showed that awareness levels were higher in the SIAGA villages (82.7%) than in the scale-up (68.8%) and control villages (53.5%). Furthermore, a majority of the respondents (85.8%) reported comprehending the messages. High levels of message recall were observed across all respondent categories. As expected, a higher percentage of respondents in the SIAGA and scale-up villages than in the control villages were able to recall messages contained in the campaign. In terms of actionability, nearly three-fourths of the respondents reported using the information contained in the SIAGA campaign. The highest level of reporting was that of the midwives (99.5%) and the lowest was among the women (66.4%). Half of the respondents who were exposed to the campaign said that they had engaged in interpersonal communication within their social networks.

Impact of the SIAGA Campaign

This study dealt with a wide variety of issues. Specific indicators under consideration in this report include the following:

- Knowledge of specific danger signs during pregnancy, childbirth, and the postpartum period
- Knowledge of schemes in the community in order to prepare for safe childbirth
- Number of antenatal care visits during pregnancy
- Arrangements pertaining to transport, funds, blood donor, and notification
- Place of childbirth and type of assistance during childbirth

Knowledge of Danger Signs during Pregnancy

Some decreases occurred from baseline to endline in spontaneous reports by respondents regarding knowledge of bleeding as a danger sign during pregnancy. However, at endline those women exposed to the SIAGA campaign had significantly higher levels of awareness (40.7%) with regard to

bleeding as a danger sign than did those who were not exposed (16.4%). This was also true for all other respondent categories.

Knowledge of Danger Signs during Childbirth

Regarding knowledge of severe bleeding, prolonged labor, and retained placenta as danger signs during childbirth, changes from baseline to endline were marginal. However, significant differences were noted in awareness levels of exposed and unexposed respondents. For example, 30.8 percent of the women who were exposed to the SIAGA campaign reported severe bleeding to be a danger sign during childbirth. In comparison, 12.3 percent of the unexposed women were aware of severe bleeding as a danger sign at childbirth. Furthermore, respondents in the SIAGA villages appeared to be more knowledgeable (38.4% were aware of severe bleeding as a danger sign at childbirth) than were those in the scale-up (28.6%) and control villages (23.9%). While respondents who were exposed to the SIAGA campaign reported higher levels of knowledge of other danger signs at childbirth, including prolonged labor and retained placenta, in comparison to their unexposed counterparts, the overall awareness of these specific danger signs at childbirth was quite low.

Knowledge of Danger Signs during the Postpartum Period

Awareness levels of severe bleeding as an indication of danger during the postpartum period increased significantly from baseline to endline among all respondents. Also, those exposed to the SIAGA campaign were significantly more likely to be aware of this danger sign in comparison to those who were not exposed. For example, 29.2 percent of the women in the exposed group reported being aware of severe bleeding as a danger sign during the postpartum period. In comparison, 10.3 percent of the women in the unexposed group reported the same. As expected, respondents in the SIAGA villages were more likely to report being aware (35.5%) of severe bleeding as a danger sign than were those in the scale-up (25.6%) and control villages (23.1%).

Awareness levels of high fever as a danger sign during the postpartum period decreased from baseline to endline. Despite noting a decline from baseline to endline, a marginal increase at endline in knowledge levels was observed in the exposed group compared to the unexposed. Furthermore, respondents in SIAGA villages (4.2%) were more knowledgeable than those in scale-up (2.6%) and control villages (2.6%).

Knowledge of Community Schemes for Safe Childbirth

There were significant increases from baseline to endline across all respondent categories regarding knowledge of community schemes for safe childbirth. Awareness of a scheme for notification about pregnant women was highest (56.2% of women, 49.0% of husbands, 79.0% of midwives, and 72.0% of community influentials were aware of this scheme). The unexposed groups were less likely to report knowledge of such schemes than were those who were exposed to the SIAGA campaign. The increases in knowledge from baseline to endline, coupled with the significantly higher levels of knowledge among the exposed respondents compared to those not exposed, indicate that these differences may be attributable to the SIAGA campaign.

Antenatal Care Visits

At endline about 90 percent of women respondents reported accessing antenatal care four or more times during pregnancy (the baseline did not include a comparable question). Women and husbands who were exposed to the SIAGA campaign were more likely to report four or more antenatal care visits during pregnancy than were those not exposed.

Use of Arrangements for Safe Childbirth

In general, those exposed to the SIAGA campaign were more likely than those who were not exposed to report using arrangements for safe childbirth. In the case of funds such as *dasolin* and *tabolin* (designated funds for childbirth), a substantial 62.5 percent of those women who were exposed to the campaign acknowledged using this scheme, compared to only 36.5 percent of the women who were not exposed. However, with regard to funds for emergency childbirth expenses (such as the costs of cesarean section and hospitalization) and notification about pregnant women, a higher percentage of unexposed than exposed respondents reported using these schemes. One possible explanation is that exposed respondents—who are more likely to seek adequate and skilled antenatal care and to give birth with assistance from a skilled provider—were less likely to require the use of these emergency schemes.

Type of Assistance during Childbirth and Place of Childbirth

One of the main objectives of the MNH Program was to increase the use of skilled providers at birth. The SIAGA campaign had a positive impact on this objective. Fewer women and husbands at endline reported giving birth with a traditional birth attendant (38.9% women; 37.4% husbands) compared to at baseline (44.6% women; 44.7% husbands). Particularly noteworthy is the consistently and significantly higher use of skilled providers at childbirth reported by those who were exposed to the SIAGA campaign. The reported presence of a skilled provider among exposed women was 69.8 percent, compared to 44.2 percent among those women who were not exposed. At the same time, the use of traditional birth attendants was much lower among the exposed group (27.4%) than among those who were not exposed (54.4%).

The number of respondents who reported giving birth at a hospital increased from baseline (6.3%) to endline (9.1%). There was a marginal decline from baseline (28.4%) to endline (27.6%) with regard to use of a private midwife's practice as the place of childbirth. However, a substantial difference was noted among respondents in the exposed and unexposed groups. Those exposed to the SIAGA campaign were significantly more likely (34.4%) than their unexposed counterparts (18.3%) to use a private midwife's practice for childbirth. At the same time, significantly fewer women who were exposed to the SIAGA campaign reported that they gave birth at home than did those who were not exposed (49.1% versus 72.4%).

MEASURING THE EFFECTS OF THE SIAGA CAMPAIGN IN INDONESIA

INTRODUCTION

Of the 4.5 to 5 million women who give birth in Indonesia each year, approximately 18,000 die as a result of pregnancy and childbirth. For almost a decade, reduction in maternal mortality has been one of the top program priorities for the Indonesian Ministry of Health (MOH). Since the late 1980s, Indonesia has been an active participant in all global movements to reduce maternal mortality and has been supported in its efforts by many international development agencies. Starting in 1991, the government concentrated its resources on the *bidan di desa* (village midwife) program, which trained and deployed approximately 54,000 community midwives to villages throughout the country. With nearly 70 percent of childbirths taking place at home, having skilled care available nearby is key to maternal health.²

More recently, the government has focused on improving the performance of the village midwife, strengthening the quality of care, and increasing service coverage for mothers and infants. The Mother-Friendly Movement (Gerakan Sayang Ibu), launched in 1996 by the Ministry for Women's Empowerment, used communication and advocacy activities to mobilize various sectors in the government and community to address factors that lead to maternal mortality. The Mother-Friendly Movement adopted Thaddeus and Maine's Three Delays framework, which emphasizes taking steps to reduce delays in deciding to seek care, reaching a healthcare facility, and receiving care.³

Despite these targeted efforts, women did not perceive the need to have a skilled provider at childbirth. Women and their families continued to depend on the *dukun* (traditional birth attendant) for labor and birth assistance. In 1997, traditional providers attended 54 percent of births, while midwives attended 40 percent. However, most women do seek antenatal care from a skilled provider at some point during their pregnancy: 89 percent sought a medical professional, and 79 percent of those sought a nurse/midwife.⁴

The MNH Program in Indonesia began in 1999 and focused on increasing skilled attendance at birth. The Program was USAID/Indonesia's primary support to the country's overall Safe Motherhood Program, to which it contributed in the areas of policy improvement, health systems strengthening, and empowerment of women and families to become responsible for their health. The MNH Program in Indonesia was multifaceted in its approach and was designed to improve quality in clinical training, to enhance the policy environment, and to strengthen community participation in safe motherhood.

While community involvement in maternal health was historically strong in Indonesia, interventions did not necessarily reflect communities' needs. Indonesia's emerging democracy expanded community involvement from a centrally driven, message dissemination network to engaging the community through the emerging civil society and nongovernmental organizations. The MNH

² Central Bureau of Statistics (CBS) [Indonesia] et al. 1998. *Indonesia Demographic and Health Survey 1997*. CBS and Macro International: Calverton, MD.

³ Thaddeus S and D Maine. 1994. Too far to walk: Maternal mortality in context. *Social Science and Medicine* 38(8): 91–111.

⁴ Central Bureau of Statistics (CBS) [Indonesia] et al. 1998. *Indonesia Demographic and Health Survey 1997*. CBS and Macro International: Calverton, MD.

Program built on this foundation through its Behavior Change Interventions (BCI) component and its promotion of shared responsibility for the well-being of women during pregnancy, childbirth, and the postpartum period. MNH Program interventions were concentrated in West Java, but activities at the national level, including behavior change communications for the SIAGA campaign, helped to strengthen maternal and newborn care by promoting birth preparedness and complication readiness (BP/CR) throughout several provinces and the country.

Shared responsibility for BP/CR is the strategic focus of the MNH Program. The BP/CR framework is represented visually in the Program's BP/CR Matrix (*Birth Preparedness and Complication Readiness: A Matrix of Shared Responsibility*). This matrix outlines the key actions and responsibilities of each player on the safe motherhood continuum—policymakers, healthcare facilities, providers, communities, families, and individual women. It shows the actions stakeholders can take during pregnancy, labor and childbirth, and the postpartum/newborn period.

In Indonesia, BP/CR was represented by the concept of SIAGA, which means *alert/ready* and is formed from the words *SIap* (ready), *Antar* (take, transport), and *jaGA* (stand by or guard). The SIAGA campaign was launched in 1999 as part of Indonesia's Mother-Friendly Movement. The initial campaign—Suami SIAGA (alert husband)—was aimed at promoting desirable behaviors that the husband could practice to reduce delays in deciding to seek care, reaching care, and receiving care.⁵ A Suami SIAGA is aware of the possibility of complications, arranges for transport prior to childbirth, and helps to ensure that his wife receives care at a facility.

As a concept, SIAGA held great appeal because of its applicability across a variety of audiences. Accordingly, the campaign was expanded under the MNH Program to embrace the community (Warga SIAGA), the midwife (Bidan SIAGA), and the village (Desa SIAGA). SIAGA thus became a unifying concept, embodying the notion of shared responsibility that is central both to the MNH Program's BP/CR approach and to the Indonesian value of *gotong royong* or community help. The campaign also incorporated training in clinical and counseling skills for midwives, radio vignettes, and a pledge campaign (Kartu Amanat Persalinan), which was designed to involve communities in supporting pregnant women and ensuring safe childbirth.

Each phase of the SIAGA campaign shared a common look, featuring a popular singer (Iis Dahlia) as the spokeswoman and print materials with a consistent color scheme and logo, which helped to make SIAGA a safe motherhood brand name. At the same time, each phase of the campaign had distinctive audiences, with appropriately tailored goals and approaches.

The SIAGA Campaign: Phases and Approaches

The **Suami SIAGA** campaign, which was implemented in 1999–2001 by the Indonesian Ministry of Women's Empowerment, UNFPA, and the Johns Hopkins University Center for Communication Programs (JHU/CCP), was the first campaign ever directed toward involving men in safe motherhood. The campaign made husbands alert about the delays that can prevent a pregnant woman from receiving appropriate care during an emergency. Programs and advertisements on television and radio, along with print materials and community events, informed husbands how to avoid these delays. Taking the messages to heart, husbands encouraged their wives to visit midwives, accompanied their wives during childbirth, found out when and where to seek obstetric care, and made transportation plans in case of emergencies. The Suami SIAGA campaign demonstrated that

⁵ Thaddeus S and D Maine. 1994. Too far to walk: Maternal mortality in context. *Social Science and Medicine* 38(8): 91–111.

communication interventions are able to effectively engage men in improving women's health outcomes.⁶

The **Warga SIAGA** campaign, launched in November 2001, encouraged individual citizens to be alert and prepared for childbirth by doing their part in arranging for transport, funds, and a blood donor, and by recognizing danger signs, in the spirit of *gotong royong* (community help). Warga SIAGA spoke to all citizens, aiming to establish SIAGA behaviors as a norm.

The **Bidan SIAGA** campaign, launched in March 2002, promoted the midwife as a skilled and friendly provider. The media campaign sought to position the midwife as the preferred provider during pregnancy, childbirth, and the postpartum period. Because midwives are connected to facilities, they are also more likely to refer in case of a serious complication. As mentioned above, Indonesia has made a substantial investment in training community midwives, yet the demand for their childbirth services has remained relatively low. The Bidan SIAGA campaign aimed to increase the demand for midwifery services. The MNH Program used a two-pronged approach to position the midwife as the skilled and caring provider: a) strengthening midwives' knowledge and skills, and b) promoting midwifery services.

Strengthening the midwife's knowledge and skills. The MNH Program strengthened the midwives' clinical skills through clinical training. In addition, an interpersonal communication and counseling (IPC/C) program was designed to strengthen midwives' skills in communicating the basics of BP/CR to their clients in antenatal care sessions and establishing rapport and trust with clients. The content of the clinical training sessions and of the IPC/C training was reinforced through a series of 39 radio vignettes, lasting 7–10 minutes each and following an entertainment education format. The radio vignettes included topics such as how to perform active management of the third stage of labor, the importance and use of the partograph, care of the newborn, how to communicate the importance of preparedness, how to work in partnership with the traditional birth attendant, and how to establish rapport with the community. The vignettes were broadcast twice a week from seven radio stations simultaneously over a 10-month period from July 2002 to May 2003. Midwives could also register for discussion groups that met to discuss the vignettes and to receive a workbook with additional information about each topic. The midwives met twice a month to discuss the radio vignettes (two episodes were discussed in each meeting). These discussion groups were facilitated by MNH Program-trained midwives and often featured resource people who were specialists on the topic being discussed. Data on exposure to and impact of the radio vignettes is included in this study, but the research did not cover the midwives' IPC/C and clinical training.

Promoting the midwife's services. The media campaign highlighted the skilled and friendly midwife, lifting the image of the midwife and portraying her as available, always prepared to help, a member of the community, and knowledgeable and dependable—characteristics that were appreciated by the communities.

Suami, Warga, and Bidan SIAGA aimed to establish a normative foundation for behavior change and were national in scope. They were chiefly conducted through communication campaigns, relying on television, radio, and mass events, including public relations, launches, press gatherings, and karaoke contests. All media events and materials were supported with print materials, including posters, calendars, and leaflets.

⁶ Shefner-Rogers C and S Sood. 2004. Involving husbands in safe motherhood: Effects of the Suami SIAGA campaign in Indonesia. Manuscript accepted for publication in the *Journal of Health Communication*.

Desa SIAGA was a grassroots campaign that encouraged villages to become alert by creating notification, transport, funding, and blood donation systems to ensure safe motherhood. Village heads gathered the needed political commitment and facilitated setting up life-saving schemes. Religious leaders interpreted cultural values as they are related to safe motherhood. Midwives supported provision of childbirth care. Individual citizens volunteered their goods and services to help mothers. MNH Program-trained organizers facilitated community participation in identifying community resources and problem-solving techniques to identify how to bridge gaps. Like Warga SIAGA, Desa SIAGA was grounded in the value of *gotong royong* or community help. In the 55 villages where the MNH Program concentrated its efforts, Desa SIAGA helped to rebuild the community help system. As a result of the decentralization movement in Indonesia, control of resources had devolved to communities. The formation of a Desa SIAGA relied on mobilizing community resources to set up systems to ensure that all pregnant women could be identified (notification) and that blood, finance, and transportation would be available to women who needed them. A Desa SIAGA (or alert village) also included a midwife for providing skilled care and referrals. Although each Desa SIAGA was required to have these systems, the details of the systems varied according to the realities and resources in the village.

The formation of a Desa SIAGA depended on participatory and facilitative techniques for problem solving, such as Identifikasi Masyarakat Partisipatif (IMP), which is based on participatory appraisal methodology. Trained organizers used IMP to identify community resources with community members. Using IMP, they facilitated the identification of traditional ways of collecting funds, values and issues related to blood and childbirth, how to set up systems for transport, stakeholders who needed to be involved, and the need and availability of resources.

The **Kartu Amanat Persalinan** (pledge campaign) was designed as an easy way for women, families, midwives, community leaders, cadres, and village facilitators to plan and ensure safe childbirth for mothers and newborns. The Kartu Amanat Persalinan consisted of a card signed by the pregnant woman, her husband or other family members, and some members of her community—particularly the health provider and facilitator. The card featured a pledge made by members of the community to help the pregnant woman by making available to her all four BP/CR schemes—namely, transportation, financial support, blood donor, and notification. The card noted the blood type of the pregnant woman as well as the names of those people who pledged to give her blood in case of an emergency. The names of individuals/groups who would help the pregnant woman with transportation in case of emergency and the names of the people in charge of the funding system were also listed on the card.

Objective of the Endline Survey

The MNH Program conducted a baseline survey in Indonesia in April 2001. The baseline was followed by a midline in December 2002 and an endline in February 2004. The main objective of the endline study was to assess the effects of the SIAGA campaign and interventions. This report focuses on the results of the endline survey, compares endline and baseline results, and evaluates the possible impact of the SIAGA campaign on knowledge and action related to BP/CR.

METHODOLOGY

Before the endline survey was conducted in February 2004, the MNH Program conducted baseline and midline studies of the Program's behavior change communication activities in Indonesia.

Baseline: The baseline survey had two key purposes: 1) to feed into the program design of the SIAGA campaign, and 2) to provide indicators against which to measure the impact of the MNH Program's behavior change communication activities. The baseline included two components:

- Quantitative face-to-face interviews were conducted with pregnant women (N=563), the husband of every third woman, and midwives and community influentials in the villages where the women resided. This research was implemented in the three core program districts of Kota Cirebon, Kabupaten Cirebon, and Kabupaten Kuningan.
- Quantitative face-to-face interviews were conducted with women who had had a live birth in the previous 15 months (N=2,269), the husband of every third woman, and midwives and community influentials in the villages where the women resided. This group was to serve as the main data source for measuring the overall impact of the Program's behavior change communication activities. This research was implemented in the three core program districts of Kota Cirebon, Kabupaten Cirebon, and Kabupaten Kuningan, and in three additional districts—Bandung, Sukabumi, and Purwakarta.

Midline: The midline survey, implemented in December 2002, was designed to re-interview the women who had been pregnant at baseline and the husband of every third woman.⁷

Endline: Quantitative face-to-face interviews were conducted with women who had had a live birth in the previous 15 months, the husband of every third woman, and midwives and community influentials in the villages where the women resided.⁸

Endline Sampling Strategy

Research sites for the endline survey included the same six districts where the baseline survey was conducted: Kabupaten Cirebon, Kabupaten Kuningan, Kota Cirebon, Bandung, Sukabumi, and Purwakarta. The sampling strategy for the districts of Bandung, Sukabumi, and Purwakarta involved returning to a subsample of the same villages where the baseline was undertaken and selecting a cross-section of women with a live birth in the previous 15 months. Ten women per village were selected from a random selection of 30 villages each from the original baseline villages (of which 46 were in Bandung, 58 were in Purwakarta, and 64 were in Sukabumi). The total number of villages in the endline sample across the three districts was 90.

⁷ The purpose of this study was to examine: 1) whether intention to have a skilled provider attend the birth was related to actually using a skilled provider, and 2) the effect of the SIAGA campaign in ensuring those intentions were translated into practice. The total sample at midline included 457 women and 140 husbands (with a response rate of 81% for women and 78% for their husbands). In addition, semi-structured interviews were conducted with 90 midwives and 92 community influentials at midline.

⁸ In addition to the quantitative research, 19 in-depth interviews were held with women selected from the 55 Desa SIAGA villages, and interviews were conducted with up to five key informants involved in each woman's BP/CR plans. Results from the qualitative in-depth interviews are not included in this report.

A comprehensive list of all the women who had had a live birth in the previous 15 months was created from sources such as official health records and interviews with key informants. From this comprehensive list, systematic random sampling procedures were followed to determine a sample of 15 women. From this sample of 15 women, 10 were interviewed (the other five served as alternates to allow for replacements).

A new sampling strategy was devised for the three core districts of Kabupaten Cirebon, Kabupaten Kuningan, and Kota Cirebon. The sampling strategy included the selection of villages from three categories: SIAGA villages, scale-up villages, and control villages. These three groups were determined based on the program intervention design. Villages where the MNH Program implemented intensive community mobilization activities associated with the Desa SIAGA intervention (55 in all) were designated “SIAGA villages,” and 35 such villages were included in the endline sample. Villages that independently initiated and implemented SIAGA activities, with a facilitator trained by an MNH Program-trained facilitator for an adjacent village, were designated “scale-up villages.” Of 62 villages that undertook scale-up SIAGA activities, 31 were included in the endline sample. The endline sample also included 186 “control villages”—96 in Kabupaten Kuningan, Kabupaten Cirebon, and Kota Cirebon, and 90 in Bandung, Sukabumi, and Purwakarta.

To the extent possible, the sampling frame for the core districts included the same villages that were covered in the baseline. In all, three groups of villages from the core districts were included in the endline sample:

- All of the villages covered in the baseline that were within the SIAGA intervention (either Desa SIAGA or scale-up) were automatically included in the endline sampling frame (35 of 55 were selected).
- A group of “new” villages (31 of 62 selected) were included at endline that were not part of the baseline sample but that had implemented the SIAGA intervention (Desa SIAGA or scale-up).
- A group of 120 villages covered at baseline where the SIAGA intervention (Desa SIAGA or scale-up) had not been implemented were added as potential control villages from the core districts of Kabupaten Kuningan, Kabupaten Cirebon, and Kota Cirebon.

Selection of Respondents

The total sample for endline survey was 2,925 and included the following:

- 1,782 women with a live birth in the previous 15 months (of the 1,797 women interviewed, 15 were dropped from the analysis as their interviews were incomplete)
- 583 husbands
- 200 midwives
- 360 community influentials

Table 1 shows the composition of the endline survey.

Table 1. Endline Survey Sample, by Respondent Type and District

District	Women	Husbands	Midwives	Community Influentials	Total
Kabupaten Kuningan	335	101	40	68	544
Kabupaten Cirebon	333	114	41	68	556
Kota Cirebon	220	75	39	44	378
Bandung	295	91	29	59	474
Purwakarta	299	102	23	61	485
Sukabumi	300	100	28	60	488
Total	1,782	583	200	360	2,925

The number of respondents in the sample fell short of the recommended sample (see Table 2). The shortfall is most evident in the proposed sample of midwives. The main reason for the shortfall was that many villages had only one midwife and not three midwives as the recommended sample had envisioned. In some cases, the sampled villages did not have a midwife at all.

Table 2. Recommended Endline Sample, by Respondent Type and District

District	Women	Husbands	Midwives	Community Influentials	Total
Kabupaten Kuningan	340	114	68	68	590
Kabupaten Cirebon	340	114	68	68	590
Kota Cirebon	280	94	56	56	486
Bandung	300	100	60	60	520
Purwakarta	300	100	60	60	520
Sukabumi	300	100	60	60	520
Total	1860	622	372	372	3,226

As noted above, this report provides comparisons of baseline and endline results. The total sample at baseline was 3,364, including the following:

- 2,269 women with a live birth in the previous 15 months
- 741 husbands
- 202 midwives
- 152 community influentials

Table 3 shows the composition of the sample for the baseline survey.

Table 3. Baseline Survey Sample, by Respondent Type and District

District	Women	Husbands	Midwives	Community Influentials	Total
Kabupaten Kuningan	389	128	41	25	583
Kabupaten Cirebon	361	106	31	27	525
Kota Cirebon	381	128	25	25	559
Bandung	383	125	37	26	571
Purwakarta	381	125	33	25	564
Sukabumi	374	129	35	24	562
Total	2,269	741	202	152	3,364

The baseline and endline samples reported in some of the tables and figures in this report vary due to missing responses and skip patterns in the questionnaire.

Data Quality Control

The research team consisted of six field coordinators (one for each district), six assistants to a field coordinator (who also carried out fieldwork), and between six and nine interviewers (recruited locally from nursing or midwifery academies). Data collection was carried out over a period of about 2 weeks. An extensive 3-day training was held at two points in time—first at the offices of the Center for Health Research/University of Indonesia (the agency that conducted the field work) in order to train the field coordinators and assistants; and then in the field setting to train the investigators. The field coordinators and assistants facilitated the second training.

While carrying out the fieldwork, the interviewers took care to distinguish questions that were coded as “spontaneous” from those that were coded as “prompted.” When asking a spontaneous question, the interviewer provided no help to the respondent other than probing with the phrase “anything else?” When asking a prompted question, the interviewer was sometimes instructed to read aloud the options for responses. For some questions, the investigators showed cards to the respondent and also read aloud the various responses for the respondent to choose from.

Quality control of the data was performed by supervisors, who cross-checked the questionnaires filled out by interviewers.

Profile of Respondents

Age

At baseline, the mean age of the women respondents was 26.4 years and the mean age of the husbands was 26.6 years. The mean ages for midwives and community influentials at baseline were 32.6 years and 51.5 years, respectively. At endline, the mean age of women respondents was 27.9 years, while that of the husbands was 33.9 years. The mean age of the midwives was 35.8 years. The community influentials had a mean age of 43.2 years (see **Table 4**).

Table 4. Mean Age of Respondents, by Type and Survey

	Women	Husbands	Midwives	Community Influentials
Baseline				
Mean Age	26.4	26.6	32.6	51.5
SD	6.1	6.2	8.7	11.1
Min	15	15	21	27
Max	45	45	61	82
Endline				
Mean Age	27.9	33.9	35.8	43.2
SD	6.0	7.6	8.2	10.4
Min	16	20	24	18
Max	45	73	68	65

Baseline: Women—2,269; Husbands—741; Midwives—202; Community Influentials—152; Total—3,364

Endline: Women—1,782; Husbands—583; Midwives—200; Community Influentials—360; Total—2,925

Some significant differences ($p < .05$) were observed between baseline and endline respondents, specifically with regard to the mean ages of husbands and community influentials. The husbands were generally older at endline, while the community influentials tended to be considerably younger.

Educational Status and Occupation

Some significant differences were noted with regard to educational level between baseline and endline respondents, particularly among the women and community influentials (see **Table 5**). Women respondents at baseline were less likely than women at endline to report having received no formal education (0.8% at baseline versus 2.5% at endline). At the same time, more women at baseline reported receiving a university education (1.3% at baseline versus 0.7% at endline). A similar trend was noted for the husbands and community influentials, but the differences for husbands were not significant. These findings should be interpreted with caution since the relatively small distribution of cases in individual cells is likely to have affected the significance testing. Overall, a majority of the women and husbands in both surveys reported completing at least primary school. The community influentials appeared to be slightly more educated, with higher numbers reporting a higher level of education, including completion of university-level education.

Table 5. Percent Distribution of Respondents, by Educational Status and Survey

Educational Status	Women***	Husbands	Community Influentials***
Baseline			
No formal education	0.8%	1.0%	—
Informal religious school	0.4	0.4	—
Primary school not completed	11.3	8.1	2.0%
Primary school completed	47.3	39.4	22.4
Junior high school not completed	—	—	2.0
Junior high school completed	21.0	21.2	14.5
Senior high school not completed	—	—	4.6
Senior high school completed	16.5	26.2	32.2
Higher education not completed	—	—	0.7
Higher education completed	1.5	2.2	9.2
University not completed	—	—	0.0
University completed	1.3	1.6	10.5
Others	—	—	2.0
Total	2,267	737	152
Endline			
No formal education	2.5%	2.2%	—
Informal religious school	0.2	0.5	—
Primary school not completed	14.2	10.3	4.2%
Primary school completed	40.0	33.6	21.7
Junior high school not completed	—	—	5.0
Junior high school completed	21.9	21.4	23.1
Senior high school not completed	—	—	6.7
Senior high school completed	18.1	26.2	27.8
Higher education not completed	—	—	2.2
Higher education completed	2.4	1.9	4.2
University not completed	—	—	0.6
University completed	0.7	3.8	4.7
Others	—	—	0.0
Total	1,782	583	360

* Significant at .05 level between baseline and endline respondents

** Significant at .01 level between baseline and endline respondents

*** Significant at .00 level between baseline and endline respondents

The educational level of midwives is not presented above, because the question measuring the midwives' educational level was asked using different response categories at baseline and endline, and thus we cannot adequately compare and test for statistical significance. However, at both baseline and endline, all midwives reported having at least a junior high-level education.

The analysis of the occupational structure of the respondents does not take into account that of the midwives. Slightly more than 90 percent of the women reported being housewives at baseline. At endline the percentage of women reporting they were housewives was 88.9 percent (see **Table 6**).

Table 6. Percent Distribution of Respondents, by Occupation and Survey

Occupation	Women***	Husbands	Community Influentials
Baseline			
High rank officer	0.1%	0.7%	3.9%
Middle rank officer	0.2	2.0	3.9
Assistant level		0.4	0.7
Ordinary staff	2.1	13.6	14.5
Professional	0.1	0.3	
Big trader		0.1	0.7
Small trader	1.5	8.2	1.3
Entrepreneur	1.1	15.9	9.9
Skilled worker	1.2	17.1	1.3
Unskilled worker	0.8	17.3	1.3
Farmer	0.4	10.4	9.9
Fisherman	0.0	0.9	
Retired	0.0		13.2
Housewife	91.4	8.6	1.3
Unemployed	0.3	0.8	0.7
Others	0.8	2.7	37.5
Refused	0.0	0.8	
Total	2,269	741	152
Endline			
High rank officer	0.3%	1.4%	2.8%
Middle rank officer	0.7	3.1	21.7
Assistant level	0.0	0.2	1.9
Ordinary staff	2.2	7.6	6.7
Professional	0.1	0.3	0.8
Big trader	0.0	0.3	0.6
Small trader	1.6	8.8	2.2
Entrepreneur	1.6	28.8	8.9
Skilled worker	0.5	10.8	0.6
Unskilled worker	1.0	17.5	1.7
Farmer	2.0	12.0	6.7
Fisherman	0.2	0.7	0.0
Retired	0.1	0.3	6.1
Housewife	88.9	0.0	33.1
Unemployed	0.3	2.2	2.2
Others	0.5	6.0	4.2
Refused	0.1	0.0	0.0
Total	1,782	583	360

* Significant at .05 level between baseline and endline respondents

** Significant at .01 level between baseline and endline respondents

*** Significant at .00 level between baseline and endline respondents

Monthly Expenditures

At baseline a majority of the respondents (83.1% of women and 84.2% of husbands) reported monthly expenditures of Rp. 150,000–Rp. 500,000 (see **Table 7**). Only some of the midwives and community influentials reported an average monthly expenditure of more than Rp. 700,000. In contrast, at endline some six out of ten women (63.2%) and more than half of the husbands (54.1%) reported monthly household expenditures of Rp 150,000–Rp. 500,000 per month (**Table 7**). Nearly nine out of ten midwives reported an average monthly expenditure of more than Rp. 700,000.

Table 7. Percent Distribution of Respondents, by Monthly Expenditure and Survey

Household Expenditure	Women***	Husbands***	Midwives	Community Influentials
Baseline				
Rp. 150,000 or less	3.3%	2.3%	—	0.7%
Rp. 150,000–Rp. 500,000	83.1	84.2	17.4%	25.7
Rp. 500,001–Rp 700,000	13.7	13.5	28.2	38.8
Rp. 700,001–Rp. 1,000,000	0.0	0.0	25.2	18.4
Rp. 1,000,000 or more			29.2	16.4
Total	2,269	741	202	152
Endline				
Rp. 150,000 or less	6.0%	3.6%	—	1.7%
Rp. 150,000–Rp. 500,000	63.2	54.1	4.0%	31.7
Rp. 500,001–Rp 700,000	26.6	35.7	6.0	20.8
Rp. 700,001–Rp. 1,000,000	4.3	6.6	14.5	20.3
Rp. 1,000,000 or more			75.0	24.7
Refused			0.5	0.8
Total	1,782	577	200	360

* Significant at .05 level between baseline and endline respondents

** Significant at .01 level between baseline and endline respondents

*** Significant at .00 level between baseline and endline respondents

Women and husbands at endline reported significantly higher levels ($p < .00$) of monthly household expenditures than their counterparts reported at baseline. It was not possible to test for statistical significance when comparing the responses related to monthly household income of midwives and community influentials at baseline and endline, because the response categories were different in the two surveys. However, the numbers reported above indicate that midwives and community influentials at endline reported higher levels of expenditures than did their baseline counterparts.

Religion and Ethnicity

Almost all the respondents at both baseline and endline were Muslim—98.4 percent at baseline and 99.4 percent at endline. At baseline, at least seven of ten respondents belonged to the Sunda ethnic group. This was true for all respondent types and also held true at endline (see **Table 8**). Almost all of the remaining respondents were Javanese. Other ethnicities, such as Batak, Minang, Keturunan, and Cina, were reported by less than 1 percent of the respondents.

Table 8. Percent Distribution of Respondents, by Ethnicity and Survey

Ethnic Group	Women	Husbands	Midwives	Community Influentials
Baseline				
Java	25.6%	26.3%	15.8%	27.0%
Sunda	73.2	71.8	77.2	72.4
Endline				
Java	21.3	22.6	24.0	20.0
Sunda	77.7	75.8	70.0	79.4

Baseline: Women—2,269; Husbands—741; Midwives—202; Community Influentials—152; Total—364

Endline: Women—1,782; Husbands—583; Midwives—200; Community Influentials—360; Total—2,925

Type of Midwife and Community Influential Respondents

Comparing baseline and endline data turns up some significant differences ($p < .00$) in the type of midwife interviewed (see **Table 9**). Some 60 percent of the midwives at baseline were *bidan di desa* (village midwives), whereas at endline only slightly more than a third of the midwives belonged to the *bidan di desa* category. The *bidan puskesmas* (midwives based at health centers) present an opposite picture: slightly less than 40 percent of the midwives at baseline reported that they worked in this capacity, whereas at endline almost 60 percent of midwives reported that they were *bidan puskesmas*. Although no private bidans were interviewed at baseline, about 5 percent of the midwives in the endline sample were private bidans. Although the makeup of the samples differed, the knowledge and skills of the *bidan puskesmas* and *bidan di desa* are the same.

Table 9. Percent Distribution of Midwives, by Survey

Midwives	Percentage
Baseline	
Bidan puskesmas	38.4%
Bidan di desa	61.6
Private bidan	0.0
Total	198
Endline	
Bidan puskesmas	59.0
Bidan di desa	36.5
Private bidan	4.5
Total	200

*** Significant at .00 level between baseline and endline respondents

Some of the reasons behind the difference in the sampling are structural in nature and outside the control of the research. The endline research design required the field trams to interview approximately two midwives in each village. However, there are no village midwives in Kota Cirebon, since it is an urban area. At the same time, while theoretically every village in the districts is supposed to have a village midwife, in reality this is not the case. In addition, there were fewer practicing village midwives in 2004 than in 2001 (when the baseline was undertaken), because some of the village midwives who were not civil employees quit their work when their contracts ended. According to MOH predictions, only about 40 percent of village midwives still live in the villages to

which they were originally assigned. The rest (especially those who finished their contracts) have been moved to cities. When the health system in Indonesia was centralized, the MOH paid the village midwives' salaries. However, with the new decentralized system, local governments are responsible for midwives' salaries. If for some reason the local government did not pay a midwife's salary, it is quite possible that the midwife would have left the village. Thus, the decision to interview two midwives per village may have resulted in the private midwife interviews and the higher numbers of puskesmas at endline.

There were significant differences ($p < .00$) noted between baseline and endline in terms of the position occupied by the community influentials interviewed (see **Table 10**). The baseline sample included significantly more religious leaders (38.2%) than did the endline (9.2%). At the same time, while volunteers composed about a third of the sample at endline, less than 2 percent of the baseline community influentials reported being posyandu volunteers.

Table 10. Percent Distribution of Community Influentials, by Position in Community and Survey

Main Position in the Community	Percentage
Baseline	
Head of village	17.8%
Religious leader	38.2
Head of subdistrict	7.9
PKK chief lady	0.7
Posyandu volunteer	1.3
Others	34.2
Total	152
Endline	
Head of village	8.6%
Religious leader	9.2
Head of subdistrict	4.7
PKK chief lady	4.2
Posyandu volunteer	34.7
Others	38.6
Total	360

***Significant at .00 level between baseline and endline respondents

The differences in the community influential samples at baseline and endline are interesting. The baseline sample of community influentials was selected based on their reported involvement in any community-based activity in their respective villages. However, at endline the selection of community influentials was based on their reported involvement in the MNH Program. The more diverse sample at endline suggests that as a result of the SIAGA campaign, entire communities became involved.

Limitations of the Study

One of the major limitations of this study is that the SIAGA interventions were implemented in villages that were not included in the baseline sample. Consequently, additional villages had to be

selected for sampling purposes. To ensure comparability, villages selected at endline were as similar as possible to those selected during baseline.

Because there were quality and responsiveness issues with the contractor responsible for implementation, data structure, and analysis of the baseline, a new local contractor was selected to conduct the endline study. Special attention was given to ensuring the comparability of the fieldwork for the two surveys, but the use of different local research agencies to conduct the fieldwork and enter the data made the analysis of the data particularly challenging.

The SIAGA campaign was comprehensive, cutting across a variety of audiences and media. The analysis presented in this report focuses on the Bidan SIAGA, Warga SIAGA, and Desa SIAGA campaigns. Some questions on the Suami SIAGA campaign, radio vignettes, and Kartu Amanat Persalinan were also included in the study and are reported here. However, this report cannot be considered a comprehensive evaluation of the overall campaign.

EXPOSURE TO SIAGA CAMPAIGN

In order to facilitate analysis of individual components of SIAGA as well as the SIAGA concept, this section focuses first on the analysis of the individual components of the SIAGA campaign and then on the overall campaign. Analysis of exposure to individual components of the SIAGA campaign was undertaken by respondent type (i.e., women, husbands, midwives, and community influentials). Because the Suami SIAGA campaign was implemented prior to the baseline, comparisons between baseline and endline are made only with regard to exposure to the Suami SIAGA campaign. Exposure to the other components of the campaign, which were implemented after the baseline survey, is measured among endline respondents only.

The overall measure of exposure to SIAGA used in this report is based on exposure to one more of three campaigns implemented under the MNH Program—Bidan, Warga, or Desa SIAGA. The analysis also covers the level of message recall related to the SIAGA campaign, the level of reported actions taken as a result of exposure, and the levels of interpersonal communication related to campaign messages reported by those who were exposed to the campaign.

For the overall SIAGA campaign, the analysis of exposure, message recall, actions taken as a result of exposure, and interpersonal communication is based on two parameters: respondent type and type of village. Total exposure across the four respondent types is also presented. As noted previously, the endline sample included 35 SIAGA villages from the 55 villages in the core districts of Kabupaten Kuningan, Kabupaten Cirebon, and Kota Cirebon; 31 scale-up villages from the 62 villages that took up scale-up activities associated with Desa SIAGA; and 186 control villages—96 in the core districts, and 90 in Bandung, Sukabumi, and Purwakarta. The analysis by type of village in this report is further segmented by respondent type.

Individual Components of SIAGA Campaign

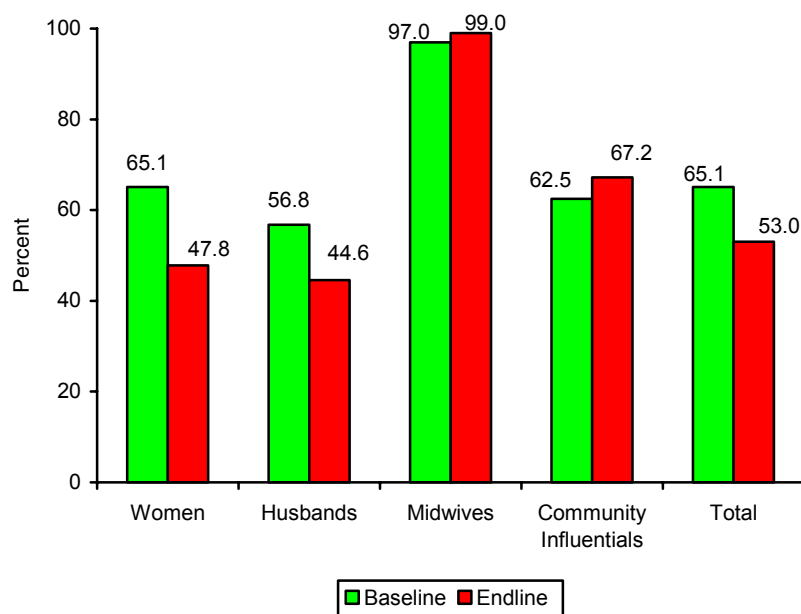
Suami SIAGA

When the Suami SIAGA campaign was implemented in 1999–2001, it was the first-ever campaign to involve men in safe motherhood in Indonesia. The campaign urged husbands to be alert (SIAGA) about the delays that can prevent a pregnant woman from receiving appropriate care during an

emergency. Programs and advertisements on television and radio, along with print materials and community events, informed husbands how to avoid delays in seeking, reaching, and receiving care for their wives. The campaign focused on East Java, South Sumatra, and South Sulawesi. The MNH Program undertook the broadcast of Suami SIAGA messages in West Java.

Of the total sample of 3,364 respondents to the baseline survey, nearly two-thirds (65.1%) were exposed to the Suami SIAGA campaign in the target districts. Analysis by respondent type shows that 65.1 percent of the women and 56.8 percent of the husbands reported being exposed to the Suami SIAGA campaign. An overwhelming majority (97.0%) of the midwives said that they were exposed to Suami SIAGA, and about 63.0 percent of the community influentials reported the same (see **Figure 1**).

Figure 1. Exposure to Suami SIAGA Campaign, by Survey



Baseline: Women—2,269; Husbands—741; Midwives—202; Community Influentials—152; Total—3,364

Endline: Women—1,782; Husbands—583; Midwives—200; Community Influentials—360; Total—2,925

The endline survey included only one question regarding exposure to the Suami SIAGA campaign. Slightly more than half (53.0%) of the total respondents said they were aware of the campaign. Interestingly, less than half of both the women (47.8%) and the husbands (44.6%) reported being cognizant of this campaign. Almost all of the midwives (99.0%) and more than two-thirds of the community influentials were aware of the campaign (see **Figure 1**).

Bidan SIAGA

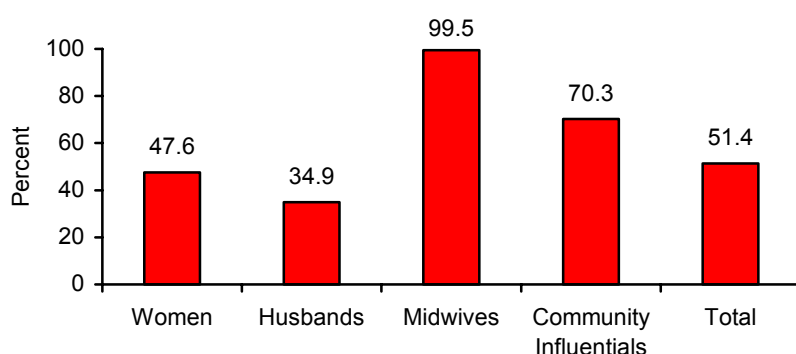
The Bidan SIAGA campaign, launched in March 2002, promoted the midwife (bidan) as a skilled and friendly provider. The media campaign sought to position the midwife as the preferred provider during pregnancy, childbirth, and the postpartum period. Because midwives are connected to facilities, they are also more likely than other birth attendants to refer in case of any serious complication. Indonesia has made a substantial investment in training community midwives, yet the demand for their services has remained relatively low. Bidan SIAGA aimed to increase the demand for midwifery services during childbirth. The MNH Program's effort to position midwives as skilled

and caring providers included two approaches: 1) strengthening the midwife's knowledge and skills, and 2) promoting her services.

The Program's initiatives designed to improve the midwife's knowledge and skills included an intensive IPC/C training (not included in this research) and the broadcast of distance education radio vignettes (some information on the radio vignettes is provided later in this section). The program initiatives designed to promote midwife services included radio and television messages featuring Iis Dahlia, and these are included in this analysis.

The endline survey included a series of questions designed to measure awareness, recall of messages, new learnings, interpersonal communication, and actionability pertaining to Bidan SIAGA. The results show that awareness of the Bidan SIAGA campaign was highest among midwives and lowest among husbands (see **Figure 2**).

Figure 2. Exposure to Bidan SIAGA Campaign (Endline)



Endline: Women—1,782; Husbands—583; Midwives—200; Community Influentials—360; Total—2,925

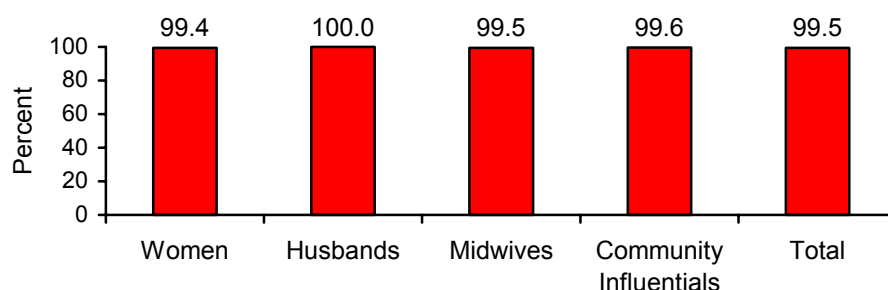
Message Recall from Bidan SIAGA

The study examined the following specific messages contained in Bidan SIAGA:

- Bidan is friendly and easy to reach.
- Bidan is ready to give help any time.
- Bidan prepares the family and neighbors to provide help.
- Bidan accompanies and takes the pregnant woman to the nearest health facility when required.
- Bidan gives referral to the nearest health facility should an emergency arise.
- Bidan ensures service quality.
- Bidan handles the problem without referral.
- Bidan has adequate basic equipment.

Nearly all respondents of all types recalled one or more of these messages (see **Figure 3**). Interestingly, although husbands reported the lowest exposure to Bidan SIAGA, all husbands recalled at least one of the Bidan SIAGA messages.

Figure 3. Awareness of Information Contained in Bidan SIAGA (Endline)



Endline: Women—848; Husbands—204; Midwives—199; Community Influentials—253; Total—1,504

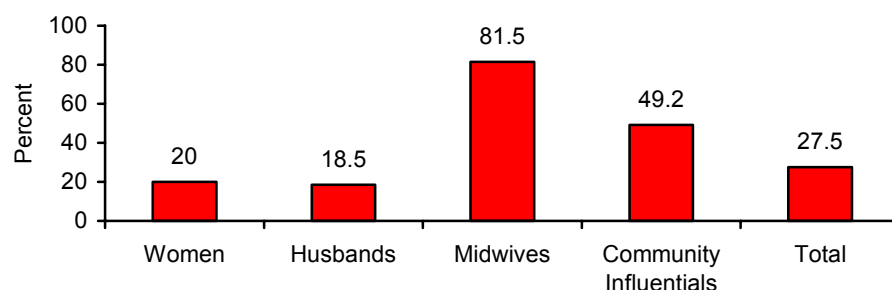
With regard to actionability, 43.6 percent of the women and 49.0 percent of the husbands reported taking action after being exposed to Bidan SIAGA. In addition, approximately one-third of the women and husbands reported that they had discussed the Bidan SIAGA campaign within their social networks. Seven of ten community influentials and almost all midwives reported having engaged in interpersonal communication about the messages. Thus, the Bidan SIAGA campaign had a positive impact on those exposed to the messages.

Warga SIAGA

The Warga SIAGA campaign, launched in November 2001, encouraged individual citizens to be alert and prepared for childbirth by doing their part in arranging for transport, funds, and a blood donor, and by recognizing danger signs, in the spirit of *gotong royong* (community help). Warga SIAGA spoke to all citizens, aiming to establish SIAGA behaviors as a norm.

The endline survey asked a series of questions to measure exposure to and impact of Warga SIAGA, including sources of awareness, recall of messages, new learnings, interpersonal communication, and actionability. This report focuses on exposure, recall of messages, interpersonal communication, and actions taken after exposure to Warga SIAGA. Only slightly more than a fourth of all respondents at endline recalled being exposed to the Warga SIAGA campaign. Two of ten women were exposed to this campaign, while eight of ten midwives were exposed. Moreover, nearly half of the community influentials were exposed to Warga SIAGA campaign (see **Figure 4**). As with Bidan SIAGA, it was husbands who were least likely to be exposed to Warga SIAGA messages.

Figure 4. Exposure to Warga SIAGA Campaign (Endline)



Endline: Women—1,782; Husbands—583; Midwives—200; Community Influentials—360; Total—2,925

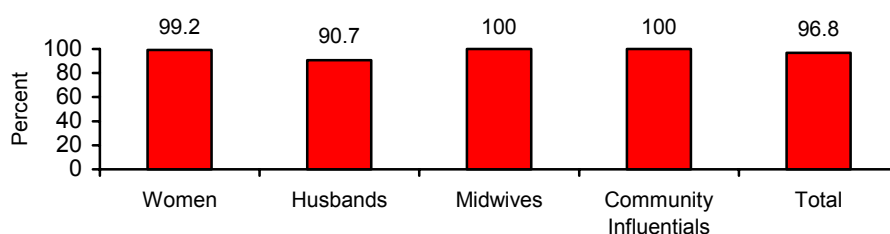
Message Recall from Warga SIAGA

The following Warga SIAGA messages were included in this analysis:

- Warga SIAGA is prepared to help pregnant women.
- Warga SIAGA is prepared with transportation for pregnant women to reach the place of childbirth.
- Warga SIAGA is willing to accompany pregnant women during childbirth.
- Warga SIAGA advises husbands to accompany their wives during pregnancy and childbirth.
- Warga SIAGA prepares funds for pregnant women during childbirth.

More than 90 percent of the respondents recalled one or more of the messages contained in Warga SIAGA (see **Figure 5**).

Figure 5. Awareness of Information Contained in Warga SIAGA (Endline)



Endline: Women—357; Husbands—108; Midwives—163; Community Influentials—177; Total—805

Despite low levels of exposure to Warga SIAGA messages, the Warga SIAGA campaign appears to have had a positive impact on the respondents. More than half of the women and husbands exposed reported that they had taken some action as a result of exposure to the campaign.

The Warga SIAGA campaign also elicited high levels of interpersonal communication, with 60 percent of exposed respondents reporting that they had discussed Warga SIAGA messages within their social networks. Midwives (at 94.5%) were most likely to report discussing the messages, while husbands (at 31.5%) were least likely to report discussing them.

Desa SIAGA

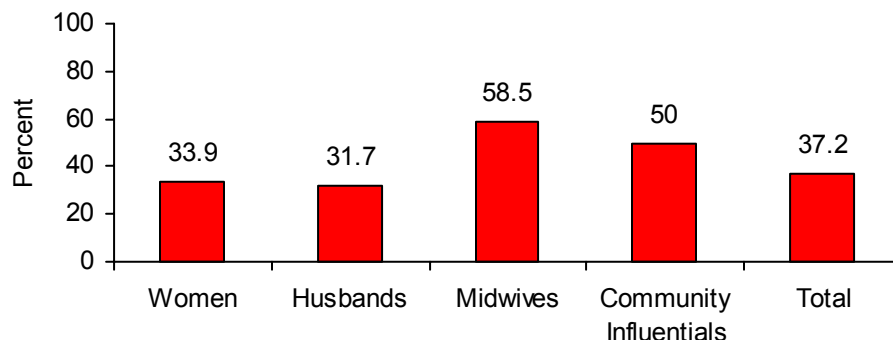
Desa SIAGA aimed at motivating people to establish life-saving systems within their villages, and thereby engaging village heads, community influentials, religious leaders, health providers, and individual citizens. Village heads gathered the needed political commitment and facilitated setting up life-saving schemes; religious leaders interpreted cultural values as they relate to safe motherhood; midwives supported provision of childbirth care; and individual citizens volunteered their goods and services to help mothers. MNH Program-trained organizers facilitated community participation in identifying community resources and problem-solving techniques to identify how to bridge gaps. Like Warga SIAGA, Desa SIAGA was grounded in the value of *gotong royong* or community help. The formation of a Desa SIAGA (or alert village) relied on mobilizing community resources to set up systems to ensure that all pregnant women were identified (notification) and that blood, financial resources, and transportation were available to women who needed them. A Desa SIAGA also included a midwife who could provide skilled care, including referrals.

At endline, respondents were asked a series of questions regarding Desa SIAGA to measure (1) their exposure to the campaign, (2) their reasons for considering their village to be SIAGA, (3) who was

actively involved in making a SIAGA village, (4) interpersonal communication, and (5) actionability. This report includes the analysis of exposure to the Desa SIAGA campaign, reasons for considering the village a Desa SIAGA, interpersonal communication, and actionability.

When asked whether their village was a Desa SIAGA, 37.2 percent of those interviewed responded positively. Awareness was highest among the midwives (58.5%). Half the community influentials, 33.9 percent of the women, and 31.7 percent of the husbands also considered their village to be a Desa SIAGA (**Figure 6**).

Figure 6. Identification of Village as a Desa SIAGA (Endline)



Endline: Women—1,782; Husbands—583; Midwives—200; Community Influentials—360; Total—2,925

Awareness of Community Systems Characterizing a Desa SIAGA

More than half (57.5%) of those respondents who considered their village to be SIAGA reported the existence of a transportation system for use during an obstetric emergency (see **Table 11**). More than 50 percent of the women and nearly 44 percent of the husbands reported the same. Awareness of such systems was higher among midwives (85.5 %) and community influentials (76.7%). A similar trend was observed for knowledge of a financial support system in the community for use in case of an obstetric emergency, but awareness of such systems was generally lower than that of transportation systems.

The availability of an emergency blood donor system for pregnant women was identified by 71.8 percent of the midwives and 58.9 percent of the community influentials. By contrast, only 41.3 percent of women and 30.3 percent of husbands identified the availability of such a system.

Women and husbands were more likely to identify a notification system for pregnant women in their village than to identify the other systems that make a Desa SIAGA—69.9 percent of women and 55.7 percent of husbands identified a notification system in their village.

Table 11. Awareness of Community Systems Characterizing a Desa SIAGA

System	Women	Husbands	Midwives	Community Influentials	Total
Transportation for pregnant women in case of emergency	50.6%	43.8%	85.5%	76.7%	57.5%
Financial support for pregnant women in case of emergency	44.3	34.6	65.0	55.0	46.6
Blood donor for pregnant women in case of emergency	41.3	30.3	71.8	58.9	45.6
Notification for pregnant women to get a quick response in case of emergency	69.9	55.7	80.3	71.7	68.9

Endline: Women—605; Husbands—185; Midwives—117; Community Influentials—180; Total—1,087

In summary, it appears that Desa SIAGA was conceptualized by respondents primarily in terms of transportation and notification, and less so in terms of financial support and blood donor systems. This finding is not surprising, because establishing transportation schemes was a central focus of the Desa SIAGA intervention. However, given that Desa SIAGA also stressed the establishment of financial systems, the relatively lower levels of awareness of these systems might be cause for concern. A closer look at the interventions related to setting up the systems might be warranted.

When asked about actions taken to ensure that their village was a Desa SIAGA, slightly more than half of the respondents answered that they had participated in notification schemes. Slightly more than a third indicated that they had participated in establishing transportation and financial schemes. Participation in blood donor schemes was reported by less than 25 percent of the women and husbands. The midwives were significantly more likely to report participating in all schemes than were the other respondents (see **Table 12**).

Table 12. Actions Taken to Make the Village a Desa SIAGA

Actions Taken	Women	Husbands	Midwives	Community Influentials	Total
Transportation system for pregnant women in case of emergency	24.3%	33.5%	77.8%	42.2%	34.6%
Financial support system for pregnant women in case of emergency	35.5	26.5	67.5	32.8	37.0
Blood donor system for pregnant women in case of emergency	23.8	23.2	71.8	36.1	30.9
Notification for pregnant women to get a quick response in case of emergency	49.4	49.7	80.3	50.0	52.9

Endline: Women—605; Husbands—185; Midwives—117; Community Influentials—180; Total—1,087

Some 46.4 percent of the respondents reported having engaged in interpersonal communication regarding Desa SIAGA within their social networks. Again, midwives reported the highest levels of interpersonal communication (94.0%). Overall, it appears that the establishment of Desa SIAGA

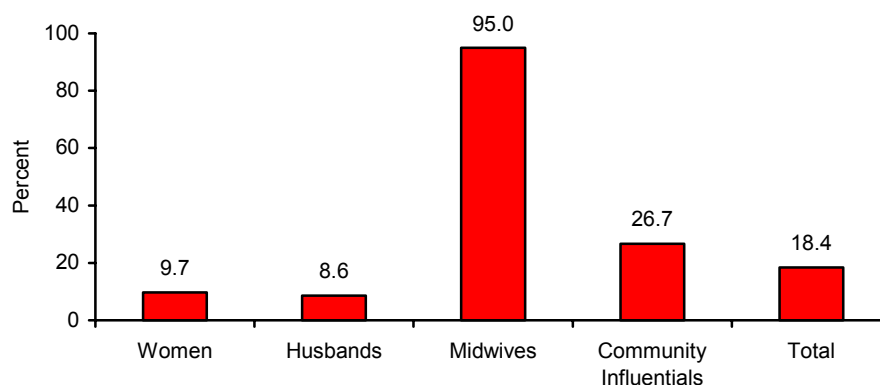
systems for transportation, financial support, blood donors, and notification was undertaken with active participation from the communities themselves.

Radio Vignettes

During the Bidan SIAGA campaign, a series of 39 radio vignettes called “Radio Sahabat Bidan” (Radio Midwife Friend), which lasted 7–10 minutes each and followed an entertainment-education format, were broadcast simultaneously from seven radio stations twice a week over a 10-month period (July 2002–May 2003). The vignettes were aimed at midwives and reinforced the content of the MNH Program’s clinical training sessions and the IPC/C training. The topics included how to perform active management of the third stage of labor, the importance and use of the partograph, care of the newborn, how to communicate the importance of preparedness, how to work in collaboration with the traditional birth attendant, and how to establish rapport with the community. Midwives could register to receive a workbook with additional information about each topic. Midwives who registered met twice a month to discuss the radio vignettes. Two episodes were discussed at each meeting, and an MNH Program-trained midwife led the discussions.

During the endline survey, respondents in the intervention districts (Kabupaten Kuningan, Kabupaten Cirebon, and Kota Cirebon) were asked to respond to questions regarding exposure to the radio vignettes. An overwhelming majority of the midwives (95.0%) reported being exposed to the radio vignettes (see **Figure 7**). Interestingly, 9.7 percent of the women, 8.6 percent of the husbands, and 26.7 percent of the community influentials also reported being exposed to the radio vignettes. Almost all the midwives who reported being exposed to the radio vignettes indicated that they had taken some specific actions as a result of exposure. Hence, not only did the radio vignettes reach the intended audiences, but they also had considerable impact.

Figure 7. Exposure to Radio Vignettes (Endline)



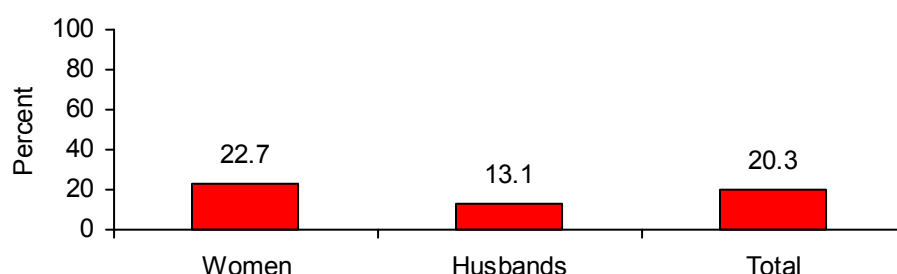
Endline: Women—887; Husbands—290; Midwives—120; Community Influentials—180; Total—1,477

Kartu Amanat Persalinan

The *Kartu Amanat Persalinan* pledge campaign captured the concept of BP/CR and interpreted it within the Indonesian context. By signing a pledge card, the pregnant woman’s husband, family members, and members of her community (including the health provider and facilitator) promised to support the pregnant woman by making available all four BP/CR schemes—namely, transportation, financial support, blood donor, and notification. The card noted the pregnant woman’s blood type and the names of the people who pledged to give her blood in case of an

emergency. Names of individuals/groups who would help the pregnant woman with transportation and of people in charge of the community's emergency funding system were also included. At endline, women and husbands in the intervention districts were asked whether they knew of the Kartu Amanat Persalinan and whether they had filled out a pledge card. Midwives and community influentials were asked whether they had ever used a Kartu Amanat Persalinan for a pregnant woman. Only 22.7 percent of the women and 13.1 percent of the husbands acknowledged being aware of the Kartu Amanat Persalinan (see **Figure 8**). With regard to actually using it, 3.8 percent each of the women and husbands showed the filled-out card to the interviewers.

Figure 8. Awareness of Kartu Amanat Persalinan (Endline)



Endline: Women—887; Husbands—290; Total—1,177

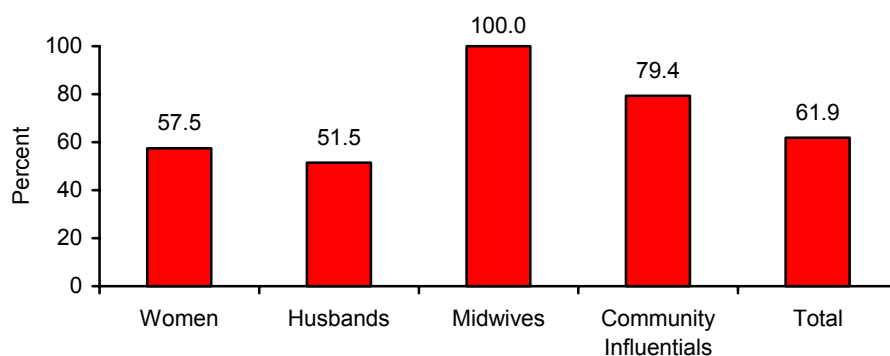
SIAGA Campaign as a Whole

For the purpose of this report, a composite variable—based on exposure to Bidan SIAGA, Warga SIAGA, and Desa SIAGA—was created to analyze the impact of the SIAGA campaign as a whole. The analysis focuses on exposure, awareness and recall of SIAGA messages, actions taken as a result of exposure to campaign messages, and interpersonal communication about the campaign messages.

Exposure to SIAGA Campaign

Sixty percent of the respondents affirmed that they had been exposed to the SIAGA campaign (N=1,810). While all of the midwives reported being exposed, just over half of the women (57.5%) and husbands (51.5%) said that they were aware of the campaign. Furthermore, more than three-fourths of the community influentials (79.4%) acknowledged exposure to the campaign (see **Figure 9**).

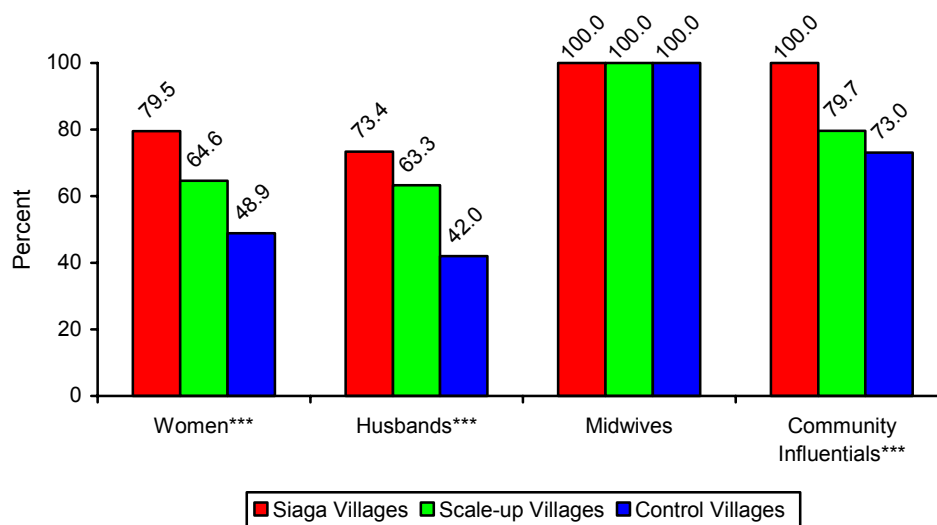
Figure 9. Exposure to SIAGA Campaign in Target Districts (Endline)



Endline: Women—1,782; Husbands—583; Midwives—200; Community Influentials—360; Total—2,925

Awareness was higher among all respondent types in the SIAGA villages than among respondents in the scale-up and control villages (see **Figure 10**). This finding is consistent with the MNH Program's expectation that awareness would be higher in villages where a greater number and more intensive activities were undertaken.

Figure 10. Exposure to SIAGA in Target Districts, by Type of Village and Respondent (Endline)



***Significant at .00 level

Women: Siaga—346; Scale-up—302; Control—1,134; Total—1,782

Husbands: Siaga—109; Scale-up—98; Control—376; Total—583

Midwives: Siaga—52; Scale-up—38; Control—110; Total—200

Community Influentials: Siaga—71; Scale-up—59; Control—230; Total—360

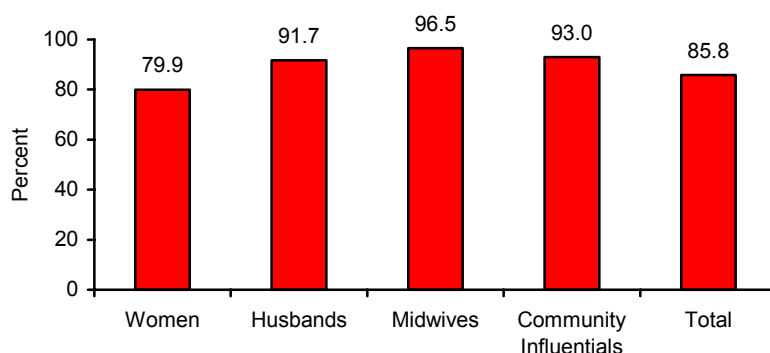
Significant differences in levels of exposure were found across the village types in three of the respondent categories. Not surprisingly, respondents in the SIAGA villages reported very high levels of exposure to the overall SIAGA campaign. Close to three-fourths of the women and husbands residing in the SIAGA villages reported that they had been exposed to the overall SIAGA campaign. In contrast, 48.9 percent of the women and 42 percent of the husbands in the control villages reported being exposed to the campaign. Note that the “control villages” were not truly controls, because although they were not part of the study, they were exposed to the intervention through the mass media. The level of exposure found in these control villages may be attributable to the fact that the mass media component of the SIAGA campaign reached across West Java and thus included the control villages in the core intervention districts of Kabupaten Kuningan, Kabupaten Cirebon, and Kota Cirebon as well as individuals with access to mass media in the districts of Sukabumi, Purwakarta, and Bandung.

Interestingly, all of the midwives interviewed at endline, regardless of the type of village they resided in, indicated that they were exposed to the overall SIAGA campaign. All of the community influentials in the SIAGA villages reported being exposed to the overall SIAGA campaign, whereas nearly 80 percent of those in the scale-up villages and 73 percent of those in the control villages reported exposure. Given that the community influentials played a key role in implementing the Desa SIAGA community mobilization efforts, the high level of exposure is to be expected. Indeed, the fact that some 20 percent of the community influentials interviewed in the scale-up villages reported that they were not exposed to the SIAGA campaign might be considered surprising (**Figure 10**).

Awareness of Information Contained in SIAGA Campaign

Respondents who were exposed to the SIAGA campaign were asked whether they comprehended the messages contained in the campaign. A majority (85.8%) affirmed that they had understood the messages. More than 90 percent of the husbands, midwives, and community influentials and approximately 80 percent of the women reported comprehending the messages (see **Figure 11**).

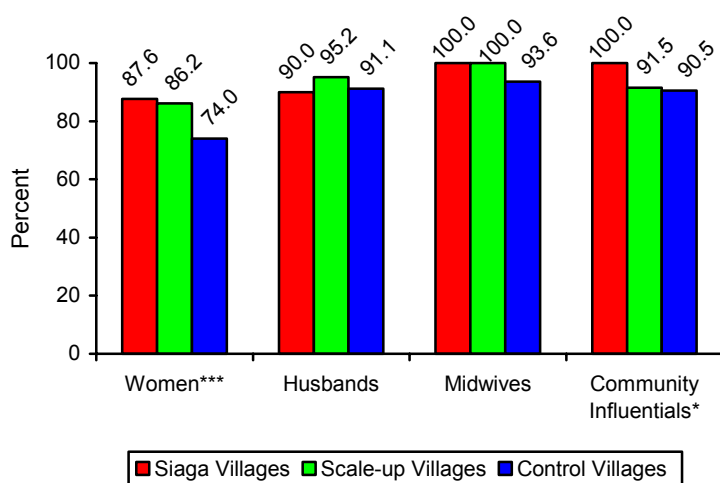
Figure 11. Understanding of SIAGA Messages (Endline)



Endline: Women—1,024; Husbands—300; Midwives—200; Community Influentials—286; Total—1,810

Among respondents who reported being exposed to the overall SIAGA campaign, the recall of the specific messages contained in the overall SIAGA campaign was universally high (see **Figure 12**). Women were slightly less likely than the other respondents to recall specific messages contained in the SIAGA campaign. At the same time, the women in SIAGA villages were significantly more likely ($p < .00$) than their counterparts in the control villages to recall specific messages. All of the midwives and community influentials in SIAGA villages who were exposed to the SIAGA campaign were able to recall specific messages contained in the campaign. At the same time, there was no significant difference among the midwives and husbands in different types of villages with regard to the recall of messages.

Figure 12. Recall of SIAGA Messages, by Type of Village and Respondent (Endline)



***Significant at .00 level; *Significant at .05 level

Women: Siaga—346; Scale-up—302; Control—1,134; Total—1,782

Husbands: Siaga—109; Scale-up—98; Control—376; Total—583

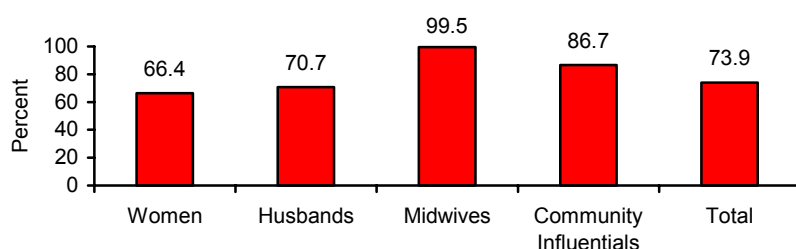
Midwives: Siaga—52; Scale-up—38; Control—110; Total—200

Community Influentials: Siaga—71; Scale-up—59; Control—230; Total—360

Actionability

According to the behavior change model developed by Piotrow et al., intention and use are the final stages in the adoption of any new behavior.⁹ Thus, the impact of any communications campaign should be evaluated in part by actions taken as a result of exposure to the campaign. Respondents who were exposed to the SIAGA campaign were asked whether they had used the information contained in the campaign. Nearly three-fourths of the respondents answered in the affirmative (see **Figure 13**). Among them, 99.5 percent of midwives and 66.4 percent of women reported taking action. The fact that more than two-thirds of the women and husbands reported taking some action as a result of exposure to the SIAGA campaign clearly shows the impact of the campaign.

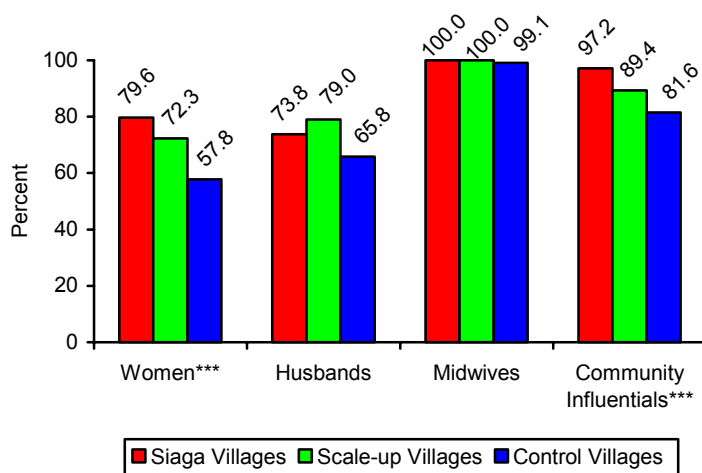
Figure 13. Use of SIAGA Campaign Information (Endline)



Endline: Women—1,024; Husbands—300; Midwives—200; Community Influentials—286; Total—1,810

In the SIAGA and scale-up villages, more respondents of each type reported taking action than did their counterparts in the control villages (see **Figure 14**). The high levels of use reported by respondents in the control villages point to the considerable diffusion of SIAGA messages beyond the areas where intensive activities occurred and to the power of mass media to ignite behavior change.

Figure 14. Use of SIAGA Campaign Information, by Type of Village and Respondent (Endline)



*** Significant at .00 level

Women: Siaga—346; Scale-up—302; Control—1,134; Total—1,782

Husbands: Siaga—109; Scale-up—98; Control—376; Total—583

Midwives: Siaga—52; Scale-up—38; Control—110; Total—200

Community Influentials: Siaga—71; Scale-up—59; Control—230; Total—360

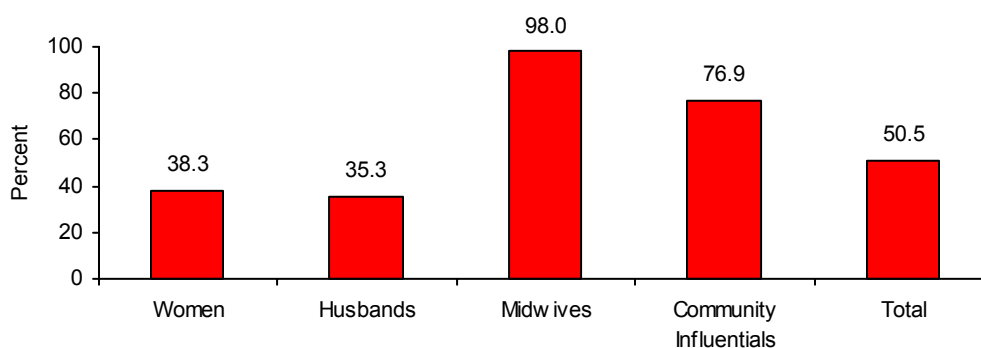
⁹ Piotrow PT et al. 1997. *Health Communication: Lessons from Family Planning and Reproductive Health*. Praeger: Westport, CT.

Almost all midwives reported having taken some action as a result of exposure to the SIAGA campaign, regardless of the type of village they resided in. Although husbands in the SIAGA villages were slightly less likely than husbands in the scale-up villages to report having taken some action as a result of exposure (73.8% in SIAGA villages compared to 79.0% in scale-up villages), these differences were not significant. The women and community influentials who live in the SIAGA villages were significantly more likely ($p < .00$) to report having taken some action than were their counterparts in the scale-up and control villages.

Interpersonal Communication

Interpersonal communication is also an indicator of actionability. Midwives and community influentials were more likely than women and husbands to report communicating about the SIAGA messages. Less than 40 percent of the exposed women and husbands said that they had engaged in interpersonal communication within their social networks as a result of exposure to the SIAGA campaign, but nearly 77 percent of community influentials and close to 100 percent of midwives reported engaging in interpersonal communication about the SIAGA campaign (see **Figure 15**).

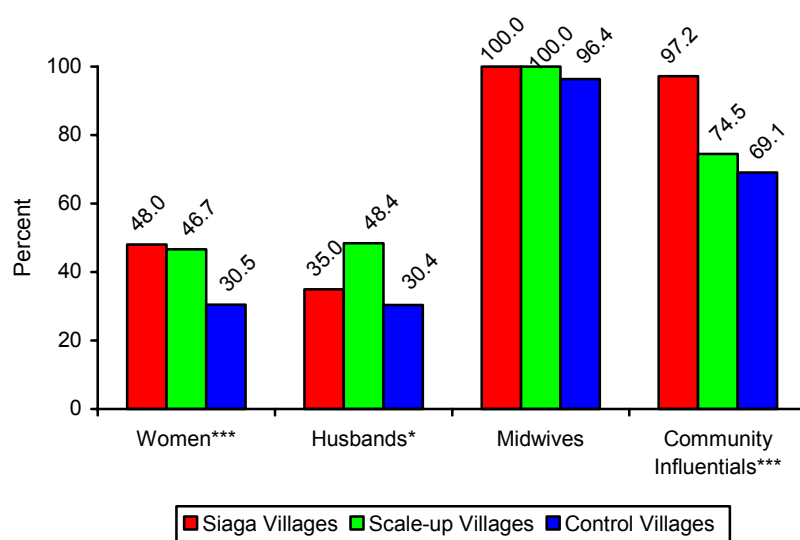
Figure 15. Interpersonal Communication about SIAGA (Endline)



Endline: Women—1,024; Husbands—300; Midwives—200; Community Influentials—286; Total—1,810

Close to half the women in the SIAGA and scale-up villages reported that they had engaged in interpersonal communication related to the SIAGA campaign (see **Figure 16**). At 30.5 percent, women from the control villages were significantly less likely to report interpersonal communication. The findings related to interpersonal communication by the husbands were somewhat puzzling. More husbands in the scale-up villages (48.4%) reported having engaged in interpersonal communication than did husbands in either the SIAGA villages (35%) or the control villages (30.4%). Given the relatively small sample size of husbands, it is hard to generalize these findings. Almost all midwives, regardless of the type of village, reported that they had discussed the SIAGA campaign within their social networks. Among the community influentials, 97 percent of those who lived in SIAGA villages reported having engaged in interpersonal communication, while about 75 percent of the those in scale-up villages and 70 percent of those in control villages reported the same.

Figure 16. Interpersonal Communication, by Type of Village and Respondent (Endline)



***Significant at .00 level; *Significant at .05 level

Women: Siaga—346; Scale-up—302; Control—1,134; Total—1,782

Husbands: Siaga—109; Scale-up—98; Control—376; Total—583

Midwives: Siaga—52; Scale-up—38; Control—110; Total—200

Community Influentials: Siaga—71; Scale-up—59; Control—230; Total—360

IMPACT OF THE SIAGA CAMPAIGN ON BP/CR

This section presents findings from an analysis of respondents' knowledge and practices related to BP/CR, based on responses to the baseline and endline surveys of the MNH Program. This chapter includes some comparisons by type of village at endline, and the analysis by type of village is further segmented by type of respondent. Comparisons are also made between those exposed and those not exposed to the SIAGA campaign at endline. Exposure to SIAGA for this analysis is based on the composite measure of reported exposure to the specific components—Bidan SIAGA, Warga SIAGA, and Desa SIAGA.

The study dealt with a wide variety of issues related to pregnancy and preparation for childbirth, including arrangements to be made in case of an obstetric emergency. The following specific indicators are considered in this report:

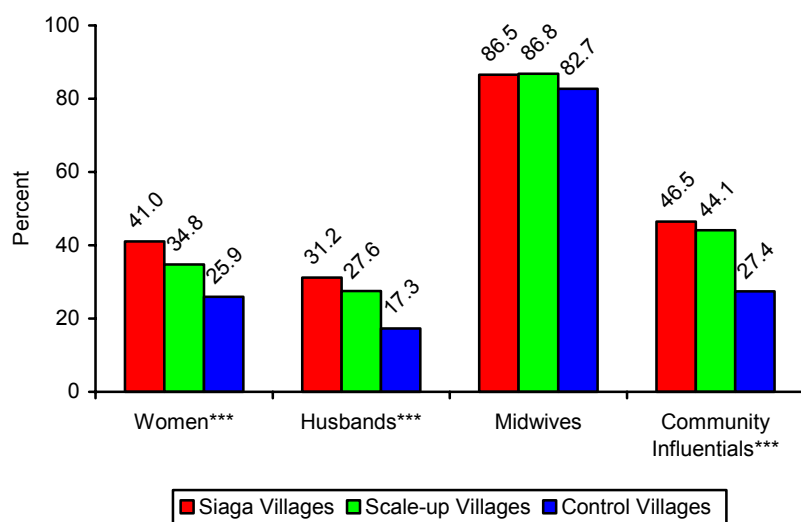
- Knowledge of danger signs during pregnancy, childbirth, and the postpartum period
- Knowledge of schemes in the community to support safe childbirth
- Number of antenatal care visits during pregnancy
- Arrangements pertaining to transport, funds, blood donor, and notification
- Place of childbirth and type of assistance during childbirth

Knowledge of Danger Signs during Pregnancy

Bleeding

Bleeding is an indicative danger sign during pregnancy. **Figure 17** illustrates the spontaneous mention of bleeding as a danger sign by the respondents at endline by type of village.

Figure 17. Knowledge of Bleeding as a Danger Sign during Pregnancy, by Type of Village (Endline)



***Significant at .00 level.

Women: Siaga—346; Scale-up—302; Control—1,134; Total—1,782

Husbands: Siaga—109; Scale-up—98; Control—376; Total—583

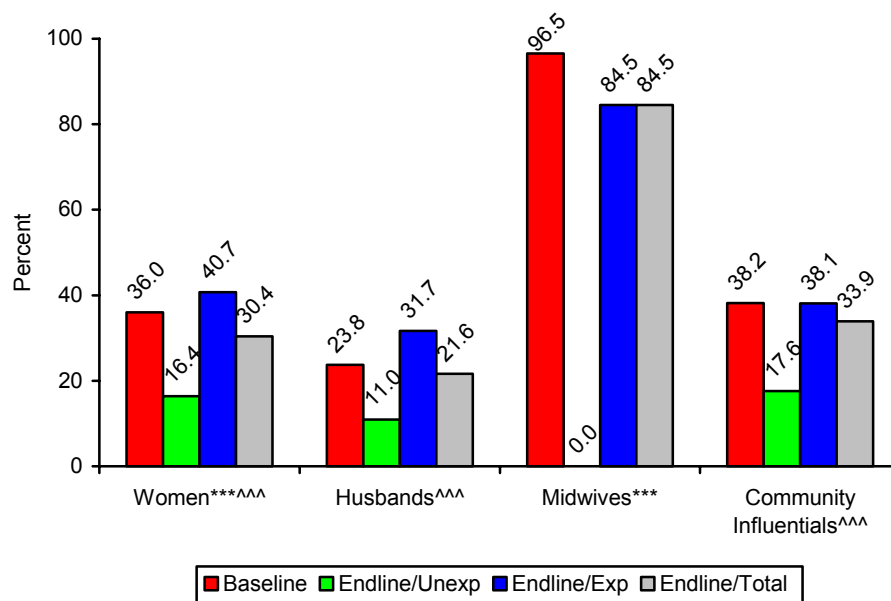
Midwives: Siaga—52; Scale-up—38; Control—110; Total—200

Community Influentials: Siaga—71; Scale-up—59; Control—230; Total—360

There were significant differences ($p < .00$) among women, husbands, and community influentials in spontaneous reporting of knowledge of bleeding as a danger sign during pregnancy. As expected, respondents from SIAGA villages, where the mass media and intensive community mobilization efforts were undertaken, had significantly higher levels of knowledge of bleeding as a danger sign at pregnancy than did respondents in control villages (where mass media efforts reached, but where there were no MNH Program-sponsored community mobilization efforts). Midwives generally had much greater spontaneous knowledge of bleeding as a danger sign during pregnancy than did the other respondent groups, but there was no significant difference in knowledge between the midwives in SIAGA villages and those in control villages. This is surprising, given that the midwives in the core intervention districts where the SIAGA villages were located received intensive training and information from the MNH Program.

Figure 18 compares all four respondent types on spontaneous knowledge of bleeding as a danger sign during pregnancy at baseline and endline, and compares unexposed and exposed respondents at endline. The comparison of baseline and endline responses reveals that, surprisingly, women and midwives were significantly less likely ($p < .00$) at endline than at baseline to spontaneously mention bleeding as a danger sign during pregnancy, despite the fact that the questions were asked in the same manner during baseline and endline. Analysis of endline data by respondent type and exposure to the overall SIAGA campaign showed that 30.4 percent of the women and 84.5 percent of the midwives were aware of this danger sign. At baseline, 36.0 of women and 96.5 percent of midwives were aware of bleeding as a danger sign during pregnancy. Among both husbands and community influentials, there were no significant differences between baseline reporting and endline reporting of bleeding as a danger sign during pregnancy.

Figure 18. Knowledge of Bleeding as a Danger Sign during Pregnancy, by Survey and Exposure



*** Significant at .00 level between baseline and endline respondents

^^ Significant at .00 level between unexposed and exposed endline respondents

Baseline: Women—2,269; Husbands—741; Midwives—202; Community Influentials—152

Endline Unexposed: Women—758; Husbands—283; Midwives—0; Community Influentials—74

Endline Exposed: Women—1,024; Husbands—300; Midwives—200; Community Influentials—286

Endline Total: Women—1,782; Husbands—583; Midwives—200; Community Influentials—360

On the positive side, those respondents who were exposed to the SIAGA campaign were significantly more aware than those who were not exposed of bleeding as a danger sign during pregnancy. Women, husbands, and community influentials who were exposed to the SIAGA campaign spontaneously reported significantly higher levels ($p < .00$) of bleeding as a danger sign during pregnancy. Given that all midwives at endline reported being exposed to the SIAGA campaign, it was not possible to check for significant differences by exposure among the midwives.

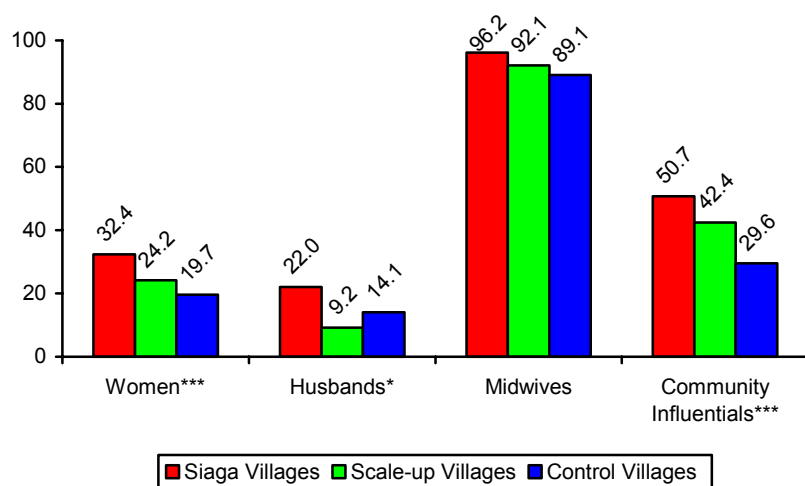
Knowledge of Danger Signs during Childbirth

Respondents were asked about three danger signs during childbirth—severe bleeding, prolonged labor, and retained placenta.

Severe Bleeding

Respondents in the SIAGA villages appeared to be more knowledgeable than respondents in either the scale-up or the control villages about severe bleeding as a danger sign during childbirth (see **Figure 19**). Surprisingly, there was a significant decline ($p < .00$) between baseline and endline in knowledge of bleeding as a danger sign as reported by women and husbands. Some 30.7 percent of women and 21.6 percent of husbands reported being aware of bleeding as a danger sign during childbirth at baseline. The endline figures were 22.9 percent for women and 14.8 percent for husbands. These findings are particularly puzzling given that the questions were asked in the same manner at the two points in time. A similar decline in knowledge occurred among community influentials—from 42.1 percent at baseline to 35.8 percent at endline. However, this decline is not statistically significant.

Figure 19. Knowledge of Severe Bleeding as a Danger Sign during Childbirth, by Type of Village (Endline)



*** Significant at .00 level; ** Significant at .01 level; * Significant at .05 level

Women: Siaga—346; Scale-up—302; Control—1,134; Total—1,782

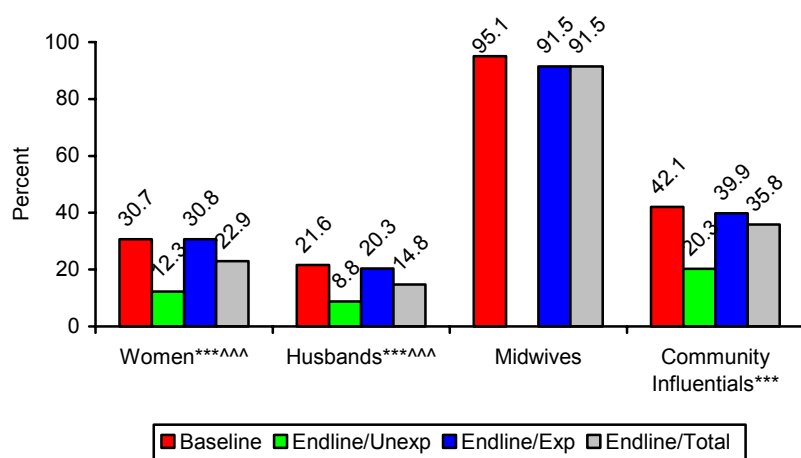
Husbands: Siaga—109; Scale-up—98; Control—376; Total—583

Midwives: Siaga—52; Scale-up—38; Control—110; Total—200

Community Influentials: Siaga—71; Scale-up—59; Control—230; Total—360

Respondents who were exposed to the campaign were more aware of severe bleeding as a danger sign than were the unexposed respondents (see **Figure 20**). About 30 percent of women and 50 percent of husbands who were exposed to the SIAGA campaign knew that severe bleeding is a danger sign during childbirth. A very high percentage of the midwives (91.5%) and a smaller but significant percentage of the community influentials (39.9%) also were aware of this danger sign.

Figure 20. Knowledge of Severe Bleeding as a Danger Sign during Childbirth, by Survey and Exposure



*** Significant at .00 level between baseline and endline respondents.

^^ Significant at .00 level between exposed and unexposed respondents.

Baseline: Women—2,269; Husbands—741; Midwives—202; Community Influentials—152

Endline Unexposed: Women—758; Husbands—283; Midwives—0; Community Influentials—74

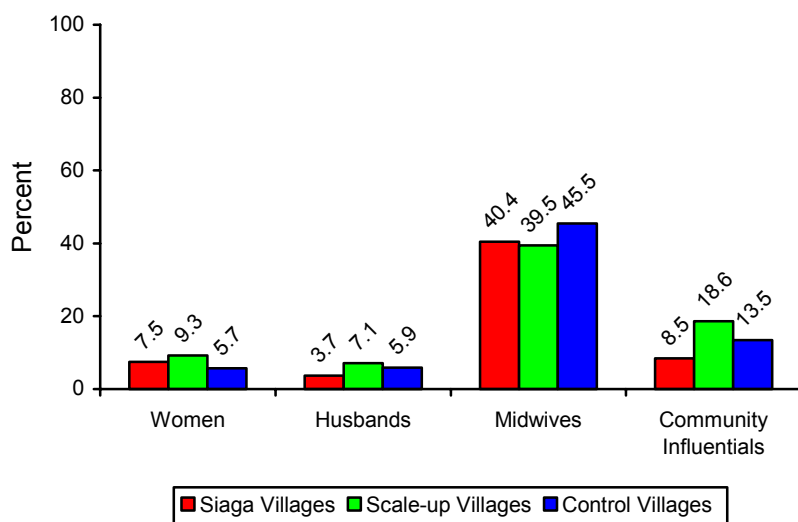
Endline Exposed: Women—1,024; Husbands—300; Midwives—200; Community Influentials—286

Endline Total: Women—1,782; Husbands—583; Midwives—200; Community Influentials—360

Prolonged Labor

Respondents showed no significant differences based on type of village in knowledge of prolonged labor as a danger sign, perhaps because the sample size of each respondent type who reported being aware of this danger sign was relatively small (see **Figure 21**). Surprisingly, midwives in the SIAGA villages, where the supply components of the SIAGA campaign were implemented, did not exhibit greater awareness of this danger sign.

Figure 21. Knowledge of Prolonged Labor as a Danger Sign, by Type of Village (Endline)



Women: Siaga—346; Scale-up—302; Control—1,134; Total—1,782

Husbands: Siaga—109; Scale-up—98; Control—376; Total—583

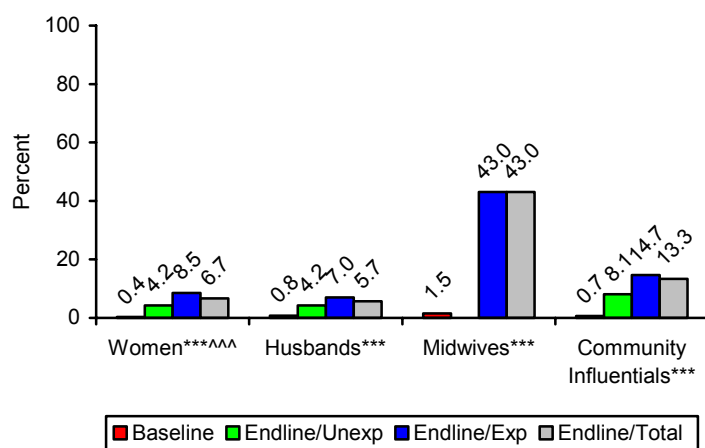
Midwives: Siaga—52; Scale-up—38; Control—110; Total—200

Community Influentials: Siaga—71; Scale-up—59; Control—230; Total—360

Figure 22 illustrates a significant and positive trend between baseline and endline in knowledge of prolonged labor across all four respondent types. However, at baseline, knowledge of prolonged labor (or “labor lasting more than 12 hours”) as a danger sign was found to be negligible; and even at endline, awareness levels were quite low among the women (6.7%), husbands (5.7%), and community influentials (9.8%). In contrast, 43 percent of the midwives knew that prolonged labor is a danger sign during childbirth. However, this is still a disappointingly low result among midwives who were exposed to the SIAGA campaign.

Respondents who were exposed to the SIAGA campaign were comparatively more aware of prolonged labor than were those in the unexposed group. Exposed women were significantly more aware than unexposed women (8.5% exposed versus 4.2% unexposed). The trends were positive among unexposed and exposed husbands and community influentials as well, but not significantly so. Since all midwives interviewed at endline reported being exposed to the SIAGA campaign, it is not possible to conduct significance tests among exposed midwives at endline. Although endline respondents who were exposed to the SIAGA campaign were more likely than their unexposed counterparts to report awareness of prolonged labor, the relatively low percentages of respondents in all categories who reported knowledge of this danger sign underscores the need for greater programmatic emphasis on the potential impact of prolonged labor.

Figure 22. Knowledge of Prolonged Labor as a Danger Sign, by Survey and Exposure



*** Significant at .00 level between baseline and endline respondents

^^ Significant at .00 level between exposed and unexposed respondents

Baseline: Women—2,269; Husbands—741; Midwives—202; Community Influentials—152

Endline Unexposed: Women—758; Husbands—283; Midwives—0; Community Influentials—74

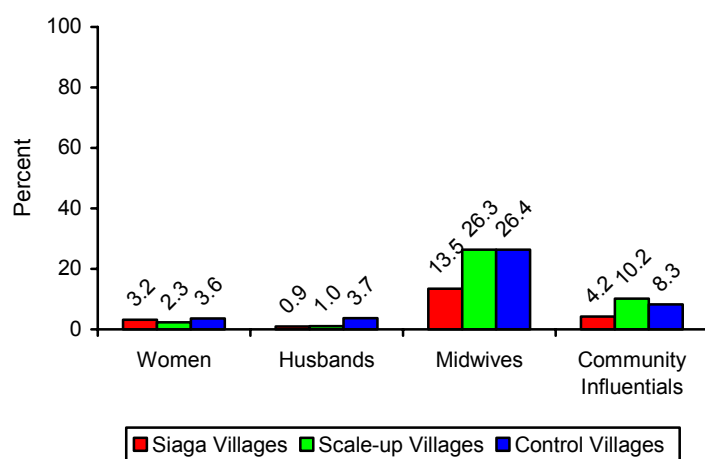
Endline Exposed: Women—1,024; Husbands—300; Midwives—200; Community Influentials—286

Endline Total: Women—1,782; Husbands—583; Midwives—200; Community Influentials—360

Retained Placenta

A surprising finding was that those in the SIAGA villages reported lower levels of knowledge of retained placenta as a danger sign than did those in the scale-up and control villages (see **Figure 23**). However, there were no significant differences within the four respondent types across the different types of village. One reason for this finding could be that a relatively small proportion of respondents within each respondent type reported being aware of this danger sign. Surprisingly, the midwives in the SIAGA villages, where the supply components of the SIAGA campaign were implemented, were less aware, although not significantly, of retained placenta as a danger sign during childbirth.

Figure 23. Knowledge of Retained Placenta as a Danger Sign, by Type of Village (Endline)



Women: Siaga—346; Scale-up—302; Control—1,134; Total—1,782

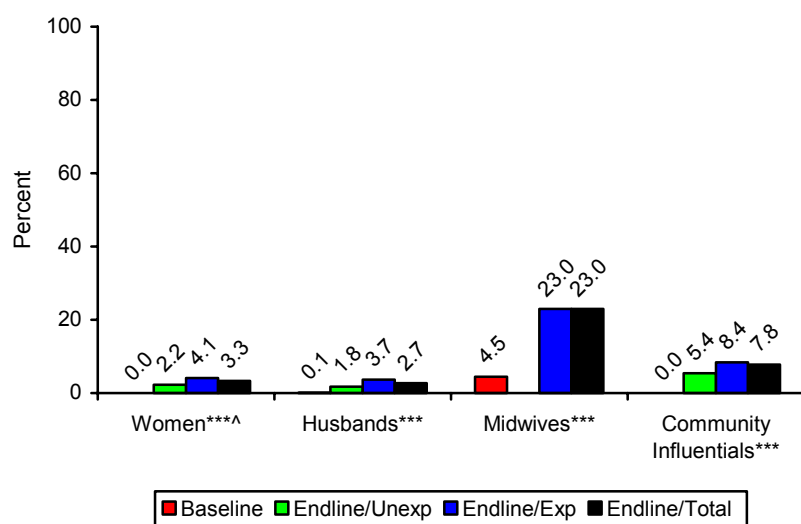
Husbands: Siaga—109; Scale-up—98; Control—376; Total—583

Midwives: Siaga—52; Scale-up—38; Control—110; Total—200

Community Influentials: Siaga—71; Scale-up—59; Control—230; Total—360

Respondents' knowledge of retained placenta as a danger sign at childbirth was quite low in both surveys (see **Figure 24**). At endline, only 3.3 percent of women, 2.7 percent of husbands, and 7.8 percent of community influentials reported being aware of retained placenta as a danger sign. Even the midwives were significantly less aware of retained placenta (23.0%) than of other danger signs. Despite this low awareness, however, knowledge did increase significantly between baseline and endline across all four respondent types. The increase is particularly pronounced among midwives.

Figure 24. Knowledge of Retained Placenta as a Danger Sign, by Survey and Exposure



*** Significant at .00 level between baseline and endline respondents.

^ Significant at .05 level between exposed and unexposed respondents.

Baseline: Women—2,269; Husbands—741; Midwives—202; Community Influentials—152

Endline Unexposed: Women—758; Husbands—283; Midwives—0; Community Influentials—74

Endline Exposed: Women—1,024; Husbands—300; Midwives—200; Community Influentials—286

Endline Total: Women—1,782; Husbands—583; Midwives—200; Community Influentials—360

Judging from the difference, albeit marginal, in awareness between exposed and unexposed respondents, the SIAGA campaign has had a positive impact on awareness of retained placenta as a danger sign. Women who were exposed to the SIAGA campaign were significantly more likely ($p < .05$) to report retained placenta as a danger sign than were their unexposed counterparts (4.1% exposed; 2.2 % unexposed). Exposed husbands and community influentials were also more likely to report awareness of retained placenta as a danger sign than were those not exposed to the SIAGA campaign. However, these differences were not significant. Knowledge among exposed midwives at endline (23%), while significantly higher ($p < .00$) than at baseline, was still disappointingly low.

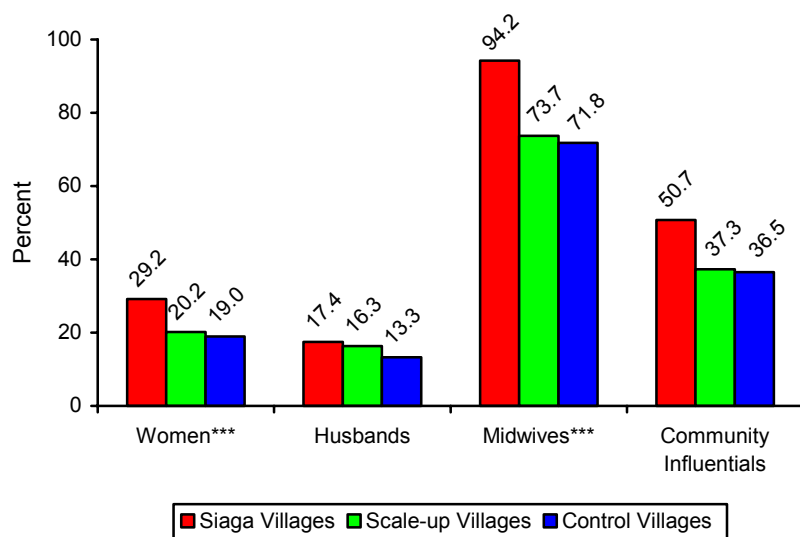
Knowledge of Danger Signs during the Postpartum Period

Respondents were asked about their awareness of severe bleeding and high fever as danger signs during the postpartum period. For the purpose of this research, postpartum period was defined as immediately after childbirth.

Severe Bleeding

At endline, women and midwives in the SIAGA villages were significantly more likely ($p < .00$) than those in the scale-up and control villages to know about bleeding as a danger sign during the postpartum period. Given that postpartum bleeding is the single greatest cause of maternal mortality, it is heartening to note that 94.2 percent of the midwives in the SIAGA villages who underwent training as part of the MNH Program's supply-side interventions reported awareness of postpartum bleeding as a danger sign. Similarly, husbands and community influentials in the SIAGA villages were also more likely their counterparts in the scale-up and control villages to be aware of postpartum bleeding as a danger sign, although not significantly so (see **Figure 25**).

Figure 25. Knowledge of Severe Bleeding as a Danger Sign during the Postpartum Period, by Type of Village (Endline)



*** Significant at .00 level

Women: Siaga—346; Scale-up—302; Control—1,134; Total—1,782

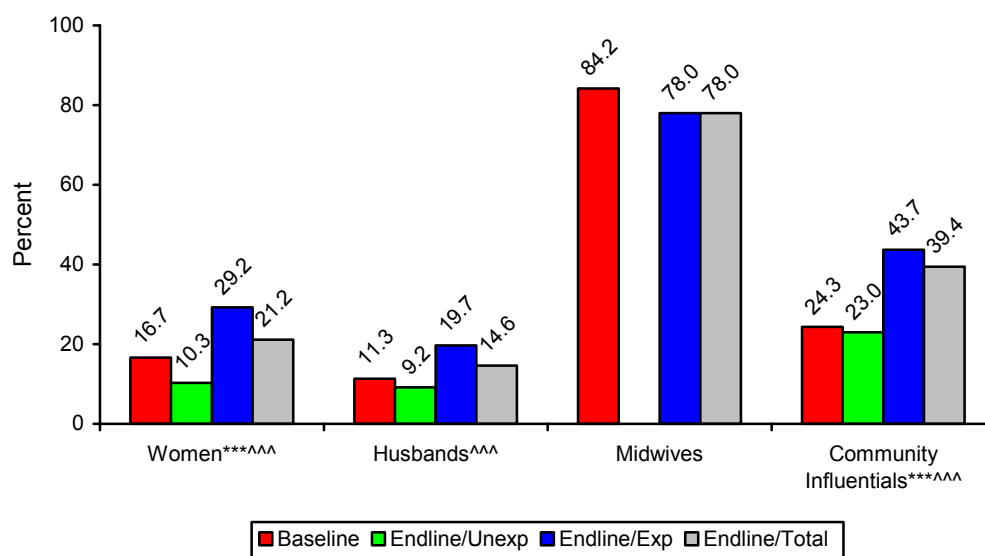
Husbands: Siaga—109; Scale-up—98; Control—376; Total—583

Midwives: Siaga—52; Scale-up—38; Control—110; Total—200

Community Influentials: Siaga—71; Scale-up—59; Control—230; Total—360

Surprisingly, midwives at endline reported lower levels of awareness of postpartum bleeding as a danger sign than did midwives at baseline, although the levels are not significantly lower (see **Figure 26**). Women and community influentials, on the other hand, were significantly more likely at endline ($p < .00$) to report postpartum bleeding as a danger sign. Husbands were also more likely at endline than at baseline to be aware of postpartum bleeding as a danger sign, but not significantly so.

Figure 26. Knowledge of Severe Bleeding as a Danger Sign during the Postpartum Period, by Survey and Exposure



*** Significant at .00 level between baseline and endline respondents

^^ Significant at .00 level between exposed and unexposed respondents

Baseline: Women—2,269; Husbands—741; Midwives—202; Community Influentials—152

Endline Unexposed: Women—758; Husbands—283; Midwives—0; Community Influentials—74

Endline Exposed: Women—1,024; Husbands—300; Midwives—200; Community Influentials—286

Endline Total: Women—1,782; Husbands—583; Midwives—200; Community Influentials—360

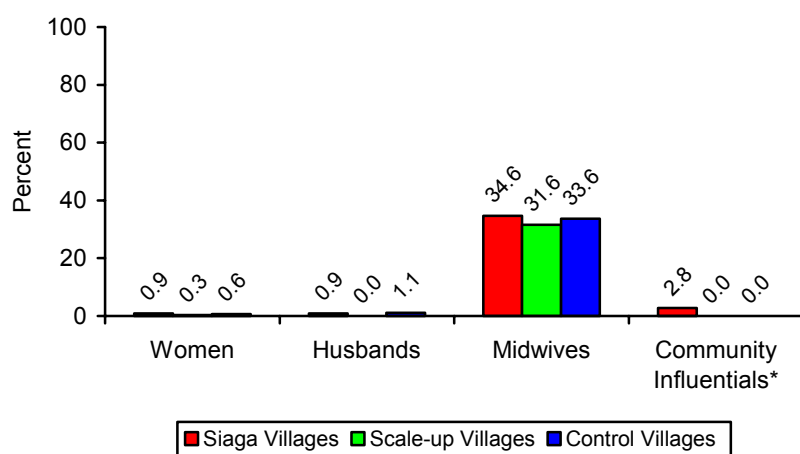
At endline, respondents exposed to the SIAGA campaign reported consistently and significantly higher levels of awareness of postpartum bleeding as a danger sign than did their unexposed counterparts (**Figure 26**). More than 10 percent of the women in the unexposed group reported being aware of severe bleeding as a danger sign during postpartum period. In contrast, 29.2 percent of the women in the exposed group reported the same. Nearly 10 percent more husbands in the exposed group than in the unexposed group reported knowledge of postpartum bleeding as a danger sign. Among community influentials, 23 percent with no exposure reported severe bleeding to be a danger sign, and 43.7 percent of those who were exposed reported aware of this danger sign.

The fact that more than 20 percent of the midwives who were exposed to the SIAGA campaign were unable to spontaneously identify postpartum bleeding is a cause for concern, particularly because postpartum bleeding is the most common cause of maternal mortality in Indonesia.

High Fever

Knowledge of high fever as a danger sign during the postpartum period was very low. Even among midwives, only about a third of the midwives across the SIAGA, scale-up, and control villages were aware of high fever as a danger sign in the postpartum period (see **Figure 27**).

Figure 27. Knowledge of High Fever as a Danger Sign during the Postpartum Period, by Type of Village (Endline)



*Significant at .05 level

Women: Siaga—346; Scale-up—302; Control—1,134; Total—1,782

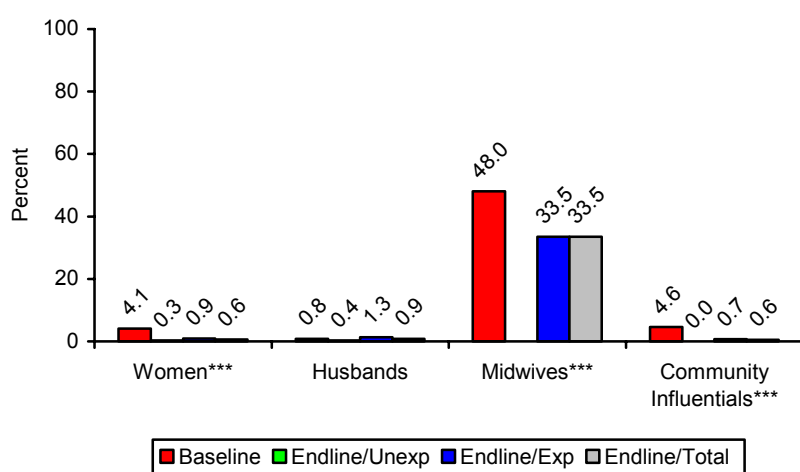
Husbands: Siaga—109; Scale-up—98; Control—376; Total—583

Midwives: Siaga—52; Scale-up—38; Control—110; Total—200

Community Influentials: Siaga—71; Scale-up—59; Control—230; Total—360

As **Figure 28** indicates, knowledge of high fever as a danger sign decreased from baseline to endline among all respondents except husbands. Among husbands, there was a very marginal increase in awareness, from 0.8 percent at baseline to 0.9 percent at endline. Although this finding was significant for women and community influentials, the number of respondents who responded positively was so low that the findings must be interpreted with caution. Regardless, the fact that midwives were significantly less likely at endline than at baseline to report knowledge of high fever as a danger sign (33.5% endline; 48.0% baseline) is rather surprising.

Figure 28. Knowledge of High Fever as a Danger Sign during the Postpartum Period, by Survey and Exposure



*** Significant at .00 level between baseline and endline respondents

Baseline: Women—2,269; Husbands—741; Midwives—202; Community Influentials—152

Endline Unexposed: Women—758; Husbands—283; Midwives—0; Community Influentials—74

Endline Exposed: Women—1,024; Husbands—300; Midwives—200; Community Influentials—286

Endline Total: Women—1,782; Husbands—583; Midwives—200; Community Influentials—360

Although knowledge of high fever as a danger sign in the postpartum period appears to have declined between baseline and endline, knowledge among exposed respondents at endline was marginally higher than knowledge among the unexposed respondents. This was true for all respondent categories, although no significant differences were found. Because the number of respondents reporting awareness was so low (at least among women, husbands, and community influentials), no generalizations can be made based on these findings.

Knowledge of Community Schemes for Safe Childbirth

Respondents were asked whether they were aware of any schemes in their communities that would help women prepare for safe childbirth. The survey focused on the four schemes pertaining to BP/CR—transportation, funding, blood donors, and notification about pregnant women.

A substantial and significant increase ($p<.00$) in knowledge occurred across all respondent types from baseline to endline. The sole exception was found in husbands' knowledge of notification systems, which showed a marginal and nonsignificant decline from baseline to endline (baseline 37.5%, endline 36.5%).

Across all respondent types, the unexposed groups were significantly less likely ($p<.00$) than their exposed counterparts to report knowledge of community schemes for safe childbirth (see **Table 13**). (Significance testing among midwives was not possible because all the midwives at endline were in the exposed group.) Awareness of notification systems was highest among pregnant women. Given the relatively low awareness at baseline and the fact that those not exposed to the SIAGA campaign continued to display relatively low levels of awareness, it appears that the increase in awareness of schemes can be attributed to the SIAGA campaign.

Respondents in the SIAGA villages were substantially more aware of community schemes for safe childbirth than were respondents in the scale-up and control villages (see **Table 14**). Among women respondents, there were substantial and significant differences ($p<.00$) between women in the SIAGA villages and women in the scale-up villages. Women in the control villages exhibited the lowest level of knowledge of specific schemes. The same trends were found among husbands, midwives, and community influentials. These findings were consistent with our expectations: Because the Desa SIAGA campaign focused on the actual establishment of schemes for transport, finance, blood donors, and notification in individual villages, one would expect that knowledge of such schemes would be highest in villages where Desa SIAGA activities were implemented.

A few exceptions to these findings were found. For example, husbands in scale-up villages were marginally more likely than those in the SIAGA villages to report knowledge of notification schemes (51.0% in scale-up villages; 49.5% in SIAGA villages). In addition, midwives in the scale-up villages reported greater knowledge of notification schemes than did their counterparts in SIAGA villages (92.1% in scale-up villages; 84.6% in SIAGA villages).

Table 13. Percent of Respondents Who Know of Community Schemes for Safe Childbirth

Community Schemes	Women				Husbands				Midwives				Community Influentials			
	Base-line	E	U	T	Base-line	E	U	T	Base-line	E	U	T	Base-line	E	U	T
Transportation arrangements for emergency during pregnancy	2.4%	21.9%	4.4%^^^	14.4%***	1.9%	21.0%	4.6%^^^	13.0%***	11.4%	50.5%	0.0	50.5%***	2.0%	45.1%	21.6%^^^	40.3%***
Transportation arrangements for emergency when giving birth	3.4	22.1	3.4%^^^	14.1%***	2.7	18.7	3.5%^^^	11.3%***	9.9	51.5	0.0	51.5%***	7.2	46.2	17.6%^^^	40.3%***
Funds for pregnant women such as tabolin or dasolin	1.3	27.6	6.9%^^^	18.8%***	0.7	24.7	4.6%^^^	14.9%***	7.9	36.5	0.0	36.5%***	1.3	40.6	10.8%^^^	34.4%***
Funds to cover emergency childbirth expenses (C-section/hospital)	2.2	14.2	2.4%^^^	9.2%***	1.4	12.0	1.1%^^^	6.7%***	6.4	28.0	0.0	28.0%***	8.6	31.8	10.8%^^^	27.5%***
Blood donor for pregnant women in case of emergency	1.0	20.1	2.0%^^^	12.4%***	0.9	14.3	0.4%^^^	7.6%***	7.9	43.5	0.0	43.5%***	3.9	41.6	9.5%^^^	35.0%***
Blood donor for emergency during childbirth	0.9	21.0	1.5%^^^	12.7%***	0.7	15.0	1.1%^^^	8.2%***	8.9	44.5	0.0	44.5%***	4.6	36.7	8.1%^^^	30.8%***
Notification about pregnant women so they can get quick response when needed	38.2	56.2	31.5%^^^	45.7%***	37.5	49.0	23.3%^^^	36.5	59.9	79.0	0.0	79.0%***	53.9	72.0	47.3%^^^	66.9%***

E=Exposed; U=Unexposed; T=Total;

*** Significant at .00 level between baseline and endline respondents; ^^Significant at .00 level between exposed and unexposed endline respondents.

¹ All midwives report being exposed at endline, so significance testing cannot be conducted.

Baseline: Women—2,269; Husbands—741; Midwives—202; Community Influentials—152

Women: Endline Exposed—1,024; Endline Unexposed—758; Endline Total—1,782

Husbands: Endline Exposed—300; Endline Unexposed—283; Endline Total—583

Midwives: Endline Exposed—200; Endline Unexposed—0; Endline Total—200

Community Influentials: Endline Exposed—286; Endline Unexposed—74; Endline Total—360

Table 14. Percent of Respondents Who Know of Community Schemes for Safe Childbirth, by Type of Village

Community Schemes	Women				Husbands				Midwives				Community Influentials			
	SIAGA	Scale-up	Control	Total	SIAGA	Scale-up	Control	Total	SIAGA	Scale-up	Control	Total	SIAGA	Scale-up	Control	Total
Transportation arrangements for emergency during pregnancy	35.0%	21.5%	6.3%	14.4%***	28.4%	22.5%	6.1%	13.0%***	71.2%	65.8%	35.5%	50.5%***	73.2%	40.7%	30.0%	40.3%***
Transportation arrangements for emergency when giving birth	33.2	21.2	6.4	14.1***	27.5	18.4	4.8	11.3***	71.2	71.1	35.5	51.5***	77.5	39.0	29.1	40.3***
Funds for pregnant women such as tabolin or dasolin	48.3	32.8	6.1	18.8***	38.5	28.6	4.5	14.9***	67.3	47.4	18.2	36.5***	69.0	44.1	21.3	34.4***
Funds to cover emergency childbirth expenses (C-section/hospital)	26.0	12.9	3.0	9.2***	19.3	10.2	2.1	6.7***	50.0	42.1	12.7	28.0***	46.5	28.8	21.3	27.5***
Blood donor for pregnant women in case of emergency	34.4	19.5	3.8	12.4***	22.0	9.2	2.9	7.6***	80.8	57.9	20.9	43.5***	80.3	44.1	18.7	35.0***
Blood donor for emergency during childbirth	34.4	21.5	3.7	12.7***	22.9	9.2	3.7	8.2***	80.8	63.2	20.9	44.5***	74.7	40.7	14.8	30.8***
Notification about pregnant women so they can get quick response when needed	63.6	50.7	38.9	45.7***	49.5	51.0	29.0	36.5***	84.6	92.1	71.8	79.0*	87.3	67.8	60.4	66.9***

*Significant at .05 level; *** Significant at .00 level

Women: SIAGA—346; Scale-up—302; Control—1,134; Total—1,782

Husbands: SIAGA—109; Scale-up—98; Control—376; Total—583

Midwives: SIAGA—52; Scale-up—38; Control—110; Total—200

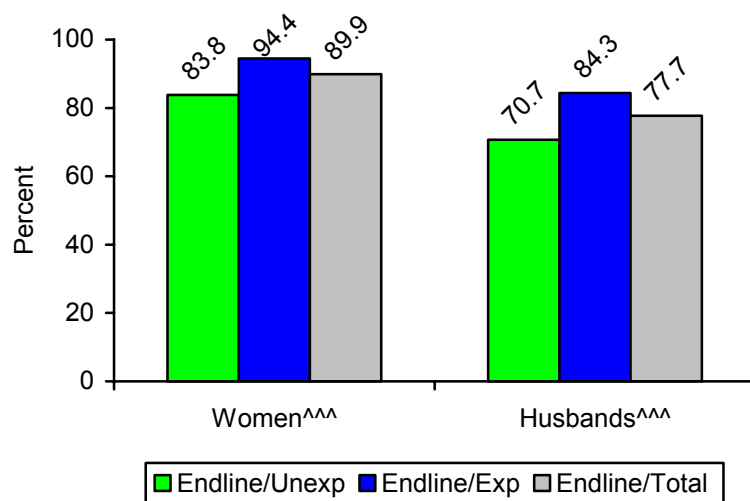
Community Influentials: SIAGA—71; Scale-up—59; Control—230; Total—360

Antenatal Care Visits

The endline survey asked respondents how many antenatal care visits they made during pregnancy. Because the baseline did not include such a question, no comparison can be made between antenatal baseline and endline. In addition, antenatal care visits were not heavily promoted as part of the SIAGA campaign. Nonetheless, the endline data demonstrated that exposure to the SIAGA campaign had some effect on behavior in this area.

At endline, women and husbands who were exposed to the SIAGA campaign were significantly more likely to report four or more antenatal care visits (see **Figure 29**). Some 94.4 percent of the women and 84.3 percent of the husbands who were exposed to the SIAGA campaign reported four or more visits. Among the unexposed, 83.8 percent of the women and 70.7 percent of the husbands reported four or more visits. At the same time, those exposed to the SIAGA campaign were more likely than their unexposed counterparts to receive antenatal care from a skilled provider and less likely to go to a traditional birth attendant (data not shown).

Figure 29. Four or More Antenatal Care Visits at Endline, by Exposure



^^ Significant at .00 level between exposed and unexposed respondents

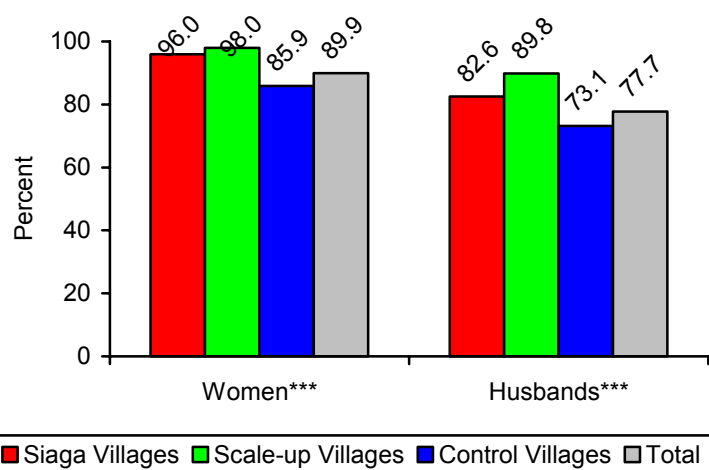
Endline Unexposed: Women—758; Husbands—283

Endline Exposed: Women—1,024; Husbands—300

Endline Total: Women—1,782; Husbands—583

When analyzed by type of village, the differences in reported antenatal care visits are quite interesting (see **Figure 30**). On the one hand, there was a substantial and significant difference between the control villages and the SIAGA and scale-up villages. Women and husbands in control villages were much less likely than their counterparts in the scale-up and SIAGA villages to report four or more antenatal care visits. However, women in the SIAGA villages were marginally less likely than women from scale-up villages to report four or more visits (96.0% of women in SIAGA villages; 98.0% of women in scale-up villages). Surprisingly, husbands in the scale-up villages were substantially more likely than husbands in the SIAGA villages to report that their wives received four or more antenatal care visits (89.8% in scale-up villages; 82.6% in SIAGA villages). This anomaly might be attributable to the relatively small sample size of husbands in the two categories of villages, to the already high positive response, which leaves little room for improvement, or to the fact that promotion of antenatal care visits was not a key part of the SIAGA campaign.

Figure 30. Four or More Antenatal Care Visits at Endline, by Type of Village (Endline)



*** Significant at .00 level

Women: Siaga—346; Scale-up—302; Control—1,134; Total—1,782

Husbands: Siaga—109; Scale-up—98; Control—376; Total—583

Use of Arrangements for Safe Childbirth

Respondents' reported use of arrangements for childbirth was higher at endline than at baseline (see **Table 15**). The increases in use of funding for pregnant women and notification schemes were particularly pronounced. In addition, husbands were significantly more likely at endline ($p < .01$) than at baseline to report use of emergency transportation schemes during pregnancy and childbirth. For most of the community schemes, those exposed to the SIAGA campaign were more likely than those who were not exposed to report using arrangements for safe childbirth. Specifically, women who were exposed to the SIAGA campaign were significantly more likely ($p < .00$) than those not exposed to report using funding schemes such as the *tabolin* and *dasolin* (designated funds for pregnancy and childbirth) (62.5% exposed; 36.5% unexposed). However, certain variations were observed in the use of funds to cover emergency expenses for childbirth (e.g., cesarean section and hospitalization): 22.2 percent of women who were not exposed reported using the funds, compared with 16.5 percent of women who were exposed. Another anomaly that merits further analysis is the significantly lower percentage ($p < .05$) of exposed women (65.9%) than unexposed women (74.1%) who reported using the notification scheme. Similarly, among husbands, a significant variation ($p < .05$) was noted, with 78.8 percent in the unexposed group and 62.6 percent in the exposed group acknowledging the use of a notification scheme (**Table 15**). One possible explanation is that by being more likely to seek adequate and skilled antenatal care and to give birth with assistance from a skilled provider, the exposed respondents were less likely to require the use of these specific schemes.

Table 15. Percent of Respondents Who Reported Use of Community Schemes for Safe Childbirth

Community Schemes	Women				Husbands			
	Base-line	Endline			Base-line	Endline		
		Exp	Unexp	Total		Exp	Unexp	Total
Transportation arrangements for emergency during pregnancy	10.9% (55)	16.1% (224)	15.2% (33)	16.0% (257)	0.0% (14)	34.9% (63)	30.8% (13)	34.2%** (76)
Transportation arrangements for emergency during childbirth	19.2 (78)	21.7 (226)	19.2 (26)	21.4 (252)	5.0 (20)	35.7 (56)	40.0 (10)	36.4%** (66)
Funds for pregnant women such as tabolin or dasolin	23.3 (30)	62.5 (283)	36.5^^ (52)	58.5*** (335)	0.0 (5)	55.4 (74)	38.5 (13)	52.9* (87)
Funds to cover emergency expenses (C section/hospital)	12.2 (49)	16.6 (145)	22.2 (18)	17.2 (163)	10.0 (10)	22.2 (36)	0.0 (3)	20.5 (39)
Blood donor for pregnant women in case of emergency	4.6 (22)	5.8 (206)	0.0 (15)	5.4 (221)	0.0 (7)	9.3 (43)	0.0 (1)	9.1 (44)
Blood donor for emergency during childbirth	0.0 (21)	6.5 (215)	0.0 (11)	6.2 (226)	0.0 (5)	13.3 (45)	0.0 (3)	12.5 (48)
Notification about pregnant women so they can get quick response when needed	45.0 (867)	65.9 (575)	74.1^ (239)	68.3*** (814)	40.3 (278)	62.6 (147)	78.8^ (66)	67.6*** (213)

Exp=Exposed; Unexp=Unexposed

Figures in parentheses are the Total N for each figure.

*Significant at .05 level between baseline and endline respondents; ** Significant at .01 level between baseline and endline respondents; *** Significant at .00 level between baseline and endline respondents

^Significant at .05 level between exposed and unexposed endline respondents; ^^Significant at .01 level between exposed and unexposed endline respondents; ^^Significant at .00 level between exposed and unexposed endline respondents

Place of Childbirth

One of the main objectives of the MNH Program in Indonesia was to increase the use of skilled care at birth. The number of women who reported giving birth at a hospital increased significantly ($p < .05$) from baseline to endline (see **Table 16**). At baseline, 7.1 percent of the women interviewed stated that they had given birth in a hospital. At endline, the percentage had increased to 9.0 percent. Although husbands reported a similar increase, from 7.2 percent to 9.3 percent, this change was not significant. At endline, women who were exposed to the SIAGA campaign were significantly more likely ($p < .00$) than those who were not exposed to report giving birth at a hospital (11.4% exposed; 5.7% unexposed). A similar trend was observed among husbands: those exposed to the campaign were significantly more likely ($p < .05$) to report that their wives gave birth at a hospital than those who were not exposed (12.7% exposed; 5.7% unexposed).

Although there was a marginal decrease in the number of respondents who reported that their preferred place for childbirth was the private midwife's practice (28.4% at baseline; 27.6% at endline), those women and husbands who were exposed to the SIAGA campaign were significantly more likely ($p<.00$) than their unexposed counterparts to use the private midwife's practice for childbirth. At the same time, significantly fewer exposed women ($p<.00$) reported that they gave birth at home than did those who were not exposed to the campaign (49.1% exposed; 72.4%).

A marginal yet significant increase occurred between baseline and endline in the proportion of women who reported giving birth in the home of a traditional birth attendant (1.0% at baseline; 1.9% at endline). At the same time, the exposed group of women appeared to be more likely to report childbirth at a traditional birth attendant's house than those who were not exposed (**Table 16**). However, these numbers are too small to draw any valid conclusions.

Table 16. Percent Distribution of Women by Place of Childbirth

Place of Childbirth	Women				Husbands			
	Base-line	Endline			Base-line	Endline		
		E	U	T		E	U	T
Hospital	7.1%	11.4%	5.7%^^^	9.0%*	7.2%	12.7%	5.7%^^^	9.3%
Health center	1.0	0.8	0.3	0.6	1.4	0.7	2.1	1.4
Polindes	0.9	1.8	0.7^	1.3	0.8	1.0	0.7	0.9
Private midwife's home	28.3	34.4	18.3%^^^	27.6	29.2	36.3	16.6%^^^	26.8
Traditional birth attendant's home	1.0	2.0	1.9	1.9*	1.5	1.0	2.5	1.7
Pregnant woman's home	61.3	49.1	72.4%^^^	59.0	59.5	48.3	71.0%^^^	59.4

E=Exposed; U=Unexposed

*Significant at .05 level between baseline and endline respondents; ** Significant at .01 level between baseline and endline respondents; *** Significant at .00 level between baseline and endline respondents

^Significant at .05 level between exposed and unexposed endline respondents; ^^Significant at .01 level between exposed and unexposed endline respondents; ^^^Significant at .00 level between exposed and unexposed endline respondents.

Baseline N: Women—2,269; Husbands—741

Endline N: Women Exposed—1,024; Women Unexposed—758; Women Total = 1,782

Endline N: Husbands Exposed—300; Husbands Unexposed—283; Husbands Total—583

Type of Assistance during Childbirth

The SIAGA campaign appears to have had a significantly positive impact ($p<.00$) on the use of a skilled provider at childbirth. As **Table 17** illustrates, fewer women and husbands reported giving birth with a traditional birth attendant at endline than at baseline. Interestingly, the type of skilled provider used varied from baseline to endline, with fewer respondents at endline reporting giving birth with assistance from a doctor (although this difference was marginal and not significant). At the same time, significantly fewer ($p<.05$) women and husbands reported giving birth with a midwife *pukesmas* (midwife based at a health center) at endline than at baseline. However, a significantly higher ($p<.05$) percentage of women reported using an obstetric specialist or a private midwife for childbirth at endline than at baseline.

Particularly noteworthy for the SIAGA campaign is the consistent and significantly higher reporting of assistance from a host of skilled providers by women who were exposed to the campaign compared to those who were not exposed. The same trend holds true for husbands. The higher use of skilled providers among exposed women is mirrored by a significantly lower ($p<.00$) reported reliance on traditional birth attendants (27.4% exposed; 54.4% unexposed). Exposed husbands were also significantly less likely ($p<.01$) to report that their wife used a traditional birth attendant for childbirth (20.3% exposed husbands; 55.5% unexposed husbands).

Table 17. Percent Distribution of Women and Husbands, by Type of Assistance during Childbirth

Type of Assistance	Women				Husbands			
	Base-line	Endline			Base-line	Endline		
		E	U	T		E	U	T
Doctor	1.1%	1.1%	0.7%	0.9%	1.4%	2.0%	1.1%	1.5%
Obstetric specialist	4.4	7.8	3.4 ^{^^}	6.0*	4.5	6.7	3.9	5.3
Midwife puskesmas	18.7	8.9	5.9 [^]	7.6***	18.6	11.3	6.0 [^]	8.8***
Village midwife	21.6	22.9	17.8 ^{^^}	20.7	21.5	26.7	17.3 ^{^^}	22.1
Private midwife	20.5	29.2	16.4 ^{^^}	23.7*	21.6	29.0	13.1 ^{^^}	21.3
Traditional birth attendant	44.6	27.4	54.4 ^{^^}	38.9***	44.7	20.3	55.5 ^{^^}	37.4**

E=Exposed; U=Unexposed; T=Total

All categories above except traditional birth attendant are considered skilled providers.

*Significant at .05 level between baseline and endline respondents; ** Significant at .01 level between baseline and endline respondents; *** Significant at .00 level between baseline and endline respondents

[^]Significant at .05 level between exposed and unexposed endline respondents; ^{^^}Significant at .01 level between exposed and unexposed endline respondents; ^{^^^}Significant at .00 level between exposed and unexposed endline respondents.

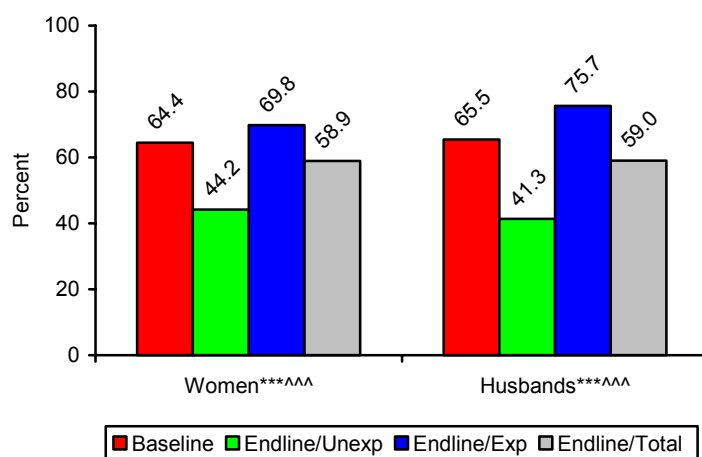
Baseline N: Women—2,269; Husbands—741

Endline N: Women Exposed—1,024; Women Unexposed—758; Women Total—1,782

Endline N: Husbands Exposed—300; Husbands Unexposed—283; Husbands Total—583

Interestingly, women's reported use of a skilled provider at childbirth significantly decreased from baseline (64.4%) to endline (58.9%). The main component in this surprising decline is the lower reported use of midwife *puskesmas* (18.7% at baseline; 7.6% at endline). The same trend was evident among the husbands: the reported use of skilled providers declined from 65.5 percent at baseline to 59.0 percent at endline. Again, the reported use of midwife *puskesmas* dropped, from 18.6 percent at baseline to 8.8 percent at endline. At the same time, the reported use of any skilled attendance at childbirth was significantly higher among exposed women than among those who were not exposed to the SIAGA campaign (69.8% exposed; 44.2% unexposed). The same trend was apparent among husbands. Finally, the much lower use of traditional birth attendants reported by the exposed women and husbands is a positive sign.

Figure 31. Use of a Skilled Provider, by Survey and Exposure



*** Significant at .00 level between baseline and endline respondents; * Significant at .05 level between baseline and endline respondents; ^^ Significant at .00 level between exposed and unexposed respondents

Baseline: Women—2,269; Husbands—741;

Endline Unexposed: Women—758; Husbands—283

Endline Exposed: Women—1,024; Husbands—300

Endline Total: Women—1,782; Husbands—583

CONCLUSIONS

The SIAGA campaign appears to have created a favorable impression on the intended audiences. Nearly 62 percent of the respondents at endline were exposed to the overall campaign, and there was a high level of awareness noted of the individual components of the campaign: Bidan SIAGA, Warga SIAGA, Desa SIAGA, the radio vignettes, and Kartu Amanat Persalinan.

The results on exposure to the SIAGA campaign among respondent groups by type of village clearly demonstrate the power of the community mobilization efforts. For example, there are clear trends with regard to exposure among women, husbands, midwives, and community influentials. Across the board, the respondents in SIAGA villages were significantly more likely than the respondents in scale-up villages to report exposure to the SIAGA campaign. Respondents from the scale-up villages, on the other hand, reported higher levels of exposure than did respondents in the control villages. At the same time, that control villages also reported fairly high levels of exposure to the overall SIAGA campaign is heartening. In part, the reason for this is that these villages were not “controls” as usually defined in experimental research design. The mass media efforts of the SIAGA campaign reached all villages across West Java, reaching a wide audience and making a considerable impact. The impact of these efforts is validated by the high recall of Suami SIAGA even 5 years after its original launch and by the fact that more than 95 percent of the midwives in the intervention districts reported being exposed to the radio vignettes.

In addition to achieving broad exposure, the overall SIAGA campaign appears to have made a lasting impression: The level of message recall was remarkable, indicating that the respondents not only received, but also comprehended and remembered messages. Nearly three-fourths of the respondents who were exposed to the overall SIAGA campaign said that they had used information contained in the campaign—a testament to the clear call to action of the messages and the fact that the respondents were able to apply the SIAGA information to their lives. In addition, the fairly high

level of interpersonal communication regarding the SIAGA messages reported by 50.5 percent of respondents is an indication that SIAGA sparked an interest and discussion among respondents' social networks. This is undoubtedly an important contributor to the high level of diffusion of SIAGA messages across West Java.

The findings indicate that the difference between respondents from SIAGA villages and those from scale-up villages is negligible with regard to recall of specific messages contained in the SIAGA campaign. Husbands and midwives reported similar actions and interpersonal communication about the SIAGA campaign regardless of the type of village. However, women and community influentials in SIAGA villages revealed higher levels of actionability and interpersonal communication than did their counterparts in the scale-up and the control villages. These findings illustrate the impact of the SIAGA mass media efforts, while the most positive findings in terms of both exposure and impact on knowledge and practices come from respondents in the SIAGA villages, where intensive interventions were implemented. In other words, clear differences were found between baseline and endline respondents and between exposed and unexposed respondents in knowledge and practices pertaining to BP/CR. For instance:

Knowledge of specific danger signs during pregnancy, childbirth, and the postpartum period: Some 40.7 percent of the women who were exposed to the SIAGA campaign, compared to 16.4 percent of unexposed women, were aware of bleeding as a danger sign during pregnancy. Similarly, 30.8 percent of women who were exposed to the SIAGA campaign were aware of severe bleeding as a danger sign during childbirth, compared to 12.3 percent of those not exposed to the SIAGA campaign. Finally, more than 29 percent of the exposed group recognized severe bleeding as a danger sign during the postpartum period, compared to 10.3 percent of those not exposed.

Knowledge of community schemes for safe childbirth: Knowledge of community schemes increased significantly between baseline and endline for all four respondent types. Further, those exposed to the SIAGA campaign were significantly more likely to be aware of these schemes than those not exposed to the SIAGA campaign. For example, while only 31.5 percent of women in the unexposed group were aware of a notification scheme in their community, 56.2 percent of exposed women knew of this scheme. These increases in knowledge between baseline and endline, coupled with the significantly higher levels of knowledge among the exposed respondents, allow us to hypothesize that these changes can be attributed to the SIAGA campaign.

Number of antenatal care visits during pregnancy: More than 90 percent of the women who were exposed to the SIAGA campaign reported four or more antenatal care visits during pregnancy. Among the unexposed, 83.8 percent reported four or more visits. Similarly, among the husbands, 84.3 percent of the exposed and 70.7 percent of the unexposed reported four or more visits.

Use of arrangements to ensure safe childbirth: For most of the community schemes, exposed women and husbands were significantly more likely to report using arrangements for safe childbirth. For example, in the case of funds for childbirth (*dasolin* or *tabolin*), 62.5 percent of the women who were exposed to the campaign reported using this scheme, while just 36.5 percent of the unexposed women used the scheme. Some variations occurred in the use of specific schemes, such as emergency funds for expenses such as a cesarean section and notification to community members in case of an obstetric emergency. Respondents who were not exposed to the SIAGA campaign reported higher levels of use of these schemes, which may be because more exposed respondents sought adequate and skilled antenatal care and gave birth with assistance from a skilled provider and thus were less likely to face emergency situations requiring these specific schemes.

Place of childbirth and type of assistance during childbirth: Overall, place and type of assistance at childbirth did not vary substantially between baseline and endline. These results are not surprising given the fairly high levels of use of skilled providers reported at baseline. On the positive side, women who were exposed to the SIAGA campaign were more likely to report childbirth at a hospital than those who were not exposed (11.4% exposed; 5.7% unexposed). Similarly, husbands who were exposed to the campaign were more likely than those who were not exposed to report that their wives gave birth at a hospital (12.7% exposed; 5.7% unexposed). The use of a skilled provider at childbirth among exposed and unexposed respondents illustrates the impact of the SIAGA campaign. Reported use of any skilled attendance at childbirth among women exposed to the campaign was 69.8 percent—significantly higher than that reported by unexposed women (44.2%). The same trend occurred among husbands, with well with over 75 percent of the exposed husbands and only 41.3 percent of the unexposed husbands reporting the use of any skilled attendance at childbirth. Another positive sign is that the exposed women and husbands reported much lower use of traditional birth attendants for childbirth than did their unexposed counterparts (exposed women— 27.4%; unexposed women—54.4%; exposed husbands— 20.3%; unexposed husbands—55.5%).

In addition to these key indications that the SIAGA campaign had a positive impact on the intended audiences, there is also some evidence of improved knowledge of bleeding as a danger sign during pregnancy, childbirth, and the postpartum period. Given that bleeding is responsible for most maternal deaths, this is indeed a positive sign.

In conclusion, we observe that there are at least two areas where the SIAGA campaign has made an undeniable contribution:

Community shared responsibility for safe childbirth: The SIAGA campaign was able to build on traditional cultural practices in Indonesia with the unifying concept of SIAGA, which embodies the notion of shared responsibility that is central to the Indonesian value of *gotong royong* (community help), and to translate and express this value through communities coming together to save maternal and newborn lives.

Skilled attendance at childbirth: Trained providers at the local level are a wise investment for maternal and newborn health as well as other health issues. Midwives played a critical role in creating and executing the SIAGA initiative, serving as resource persons in the community. Since most births in the developing world occur outside of facilities, skilled attendance increases the chances of survival for mothers and newborns.

