

INNOVATION AT
SEMPU COMMUNITY HEALTH CENTRE,
BANYUWANGI DISTRICT, EAST JAVA:



REDUCING MATERNAL & INFANT MORTALITY

VIA HIGH RISK-
PREGNANCY HUNTERS



implemented by:
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für Internationale
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Prepared by



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The situation before the program was implemented

In 2015, a total of 567 women died during labour and childbirth in the province of East Java. Around 5,000 babies also died at birth or shortly thereafter. In Banyuwangi, one of the districts in East Java, 25 pregnant women died in 2015, as well as 163 babies. Although the local government (LG) in Banyuwangi had already taken various steps to address this, the incidence of maternal and infant deaths remained stubbornly high.

These high death rates were caused by several factors. Firstly, there was a lack of data concerning the existence and whereabouts of women with high-risk pregnancies. This weakness in terms of available data was the consequence of an insufficient number of village midwives to cover all corners of Banyuwangi, plus the district's topography, which makes accessing some areas incredibly challenging. In Banyuwangi, hundreds of villages are located in isolated areas, where midwives rarely stay for very long. As a result, a full range of activities at integrated health-service posts and pregnancy checks are not always available in these areas.

The second factor was the already heavy workload on midwives. In addition to the provision of healthcare services, midwives also undertake a number of administrative tasks that require a great deal of time and energy. These include overseeing finances, programme coordination, administration, and managing auxiliary health clinics. Midwives also regularly assume responsibility for Healthcare and Social Security Agency (HSSA) administration, so that their primary function is effectively eroded to a side job. As a result, interac-



Some of the high risk-pregnancy hunters who operate in Puskesmas Sempu's catchment area in Banyuwangi.



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would be unable to fulfil all their tasks without the assistance provided by the volunteers. Basically, the more people available to monitor the condition of at-risk pregnant women, the greater the likelihood of good results. The information provided by the pregnancy hunters merely paves the way; thereafter, it is the midwives and health volunteers who support the women throughout their pregnancies on up to their deliveries and during the initial post-natal period.

A positive work culture can become a catalyst for change. Puskesmas Sempu, as a frontline agency alongside the local community, created and launched a novel way to find women with high-risk pregnancies. This new way was unique as it utilised the potential offered by mobile vegetable sellers. Moving on from this initiative, Banyuwangi's District Head takes every opportunity to motivate local leaders to be creative when addressing public services by encouraging them to learn from Puskesmas Sempu's innovative programme rather than waiting for orders from above.



Lessons learned & recommendations

Commitment and cooperation are the keys to success. The High Risk-Pregnancy Hunters initiative has succeeded due to the commitment and bureaucratic reform of the programme's leader. Collaboration among all interested parties and key figures within the local community was also an essential ingredient. Responsibility for community development lies not only with medical staff at local health centres but also with members of the community themselves. One does not need to be a health worker in order to make a valuable contribution; the role played by the vegetable sellers is proof of this. All the potential that exists within local communities can be utilised to support improvements to the quality of public healthcare.

Cross-sector cooperation is another extremely important factor. Close collaboration with subdistrict and village administrations helps to

safeguard the sustainability of this innovation. Village administrations, which since 2015 have received significant amounts of village funding from the national government, are prepared to allocate Rp 100,000 (US\$10) per month to each of the pregnancy hunters. Initially, there was a lack of optimism about what could be achieved by embracing village administrations. However, thanks to the approach adopted by the head of Puskesmas Sempu, who actively participated in Village Development Planning Meetings (Musrenbangdes), they were moved to provide monthly contributions. They are fully aware of just how much the High Risk-Pregnancy Hunters' efforts benefit local residents in their villages.

Just as important is the role played by local communities – especially by volunteer health workers who immediately follow up on the pregnancy hunters' findings. Village midwives



tions with members of their local communities were increasingly limited. This essentially prevented efforts to locate women with high-risk pregnancies in villages, given the lack of time available to carry out necessary checkups at existing healthcare facilities. A different approach was therefore needed to assist midwives in their task of identifying at-risk pregnant women living in remote areas.

Thirdly, there was a lack of awareness about women with high-risk pregnancies in these village areas. Pregnant women did not always report their pregnancies or seek regular checkups, resulting in many cases where

women did not know whether their pregnancies would be regarded as high risk. Moreover, many pregnant women only sought the services of a midwife a few days before they were due to give birth, which left midwives only able to help during childbirth rather than enabling them to make the necessary preparations to help ensure safe deliveries.

Overcoming these three main challenges required a proactive effort on the part of the LG to ensure that community health centers (*pusat kesehatan masyarakat – puskesmas*) obtained initial data about women with high-risk pregnancies in their catchment areas.

The form of innovation

In order to address the aforementioned problems, one of Banyuwangi's community health centres, Puskesmas Sempu, launched a new initiative in October 2016 called the "High Risk-Pregnancy Hunters" programme. The aim of the programme was first of all to identify and locate pregnant women, and then to ascertain whether any of them were at high risk of developing complications.

The so-called high risk-pregnancy hunters

needed to be individuals who were already well-known and accepted by local communities in Banyuwangi, and who had their own means of transportation. One group of people considered eminently suitable for this task was mobile vegetable vendors, who are familiarly known in Banyuwangi as *mijo*.

Utilising these local vegetable sellers as high risk-pregnancy hunters fulfilled at least three strategic criteria. Firstly, mobile vegeta-



A motorbike belonging to a vegetable seller in Banyuwangi that also acts as a means of publicising some of the signs and dangers of high-risk pregnancy.

ble sellers visit virtually every village between them every day, from just after dawn prayers to around 10 a.m. The total number of *mlijo* was estimated to be in the hundreds so, by using these vegetable vendors, villages in the district could be reached and accessed more easily. This ultimately meant that public health facilities did not need to recruit additional staff to specifically carry out this task.

Secondly, in keeping with local tradition, the

primary subscribers of mobile vegetable sellers are housewives. They interact with each other every day, providing a well-established level of closeness and trust. As is the custom, information beyond the immediate task of buying and selling vegetables is often shared, including information about who is pregnant as well as their social, physical and mental condition. By providing the vegetable sellers with a little training on the key characteristics of high-risk pregnancies, they became reliable and accurate high risk-pregnancy hunters.

Thirdly, vegetable sellers in Banyuwangi possess fairly good knowledge and skill in using information technology (IT). Based on initial observations by members of the Banyuwangi Health Office's Zero Maternal/Infant Mortality Team, almost all the vegetable vendors owned a mobile phone, while the majority were also familiar with smartphones. Their knowledge and experience of using mobile phones made the vendors all the more suitable to be high risk-pregnancy hunters.

A smartphone application was developed to enable the high risk-pregnancy hunters to report any cases of high-risk pregnancies that they found, while an incentive scheme is also offered for those who successfully identify women with high-risk pregnancies.

team created a smartphone application that could be used to report real-time data concerning high-risk pregnancies. The high risk-pregnancy hunters use the application to upload photographs of the home or living conditions of a woman with a high-risk pregnancy together with her name, age, address, husband's name, and symptoms.

This information appears immediately on the screen of the information system at Puskesmas Sempu. This same screen also displays a map of

was the first time they had used a smartphone and applications. Until then, they only used basic mobile phones for telephoning and sending and receiving SMS messages.

This was resolved by providing additional assistance to the hunters who experienced difficulties with the smartphones, and the WhatsApp group was also formed to help overcome this challenge.

A second challenge were several points in three villages within the programme's working areas that had no 3G signal or data access, meaning that no applications could be used other than SMS. To overcome this problem, the pregnancy

hunters were advised to send information about at-risk pregnant women via SMS to a midwife at Puskesmas Sempu, who then entered the data onto the health clinic's information system.

When the programme was first launched, there was also a concern about securing the necessary funding to cover the pregnancy hunters' operational costs – especially those relating to the provision of their monthly mobile-phone credit. This challenge was solved, however, by including them as part of the Health Ministry's Health Operational Assistance (Bantuan Operasional Kesehatan – BOK) allocation.

Sustainability and opportunities for replication

The innovative High Risk-Pregnancy Hunters programme continues to be implemented. The uniqueness of this innovation even captured the attention of the Banyuwangi District Head, who promoted it on a number of occasions, resulting in different media entities (electronic, online and print) showing an interest and reporting on it. The district head's commitment is also shown by his allocating Rp 1.7 billion (US\$125,500) from the LG budget to renovate buildings and facilities belonging to this programme's innovative Puskesmas.

Ongoing appreciation and support for the programme has also come from Indonesia's Ministry of Health, which has awarded a new ambulance to the health centre to assist in its day-to-day operations. This help has been offered because the ministry rates Puskesmas Sempu as being highly innovative by initiating this programme to tackle and reduce maternal and infant mortality. The High Risk-Pregnancy Hunters are among several innovative groups to receive such recognition, including Stop Ma-

ternal and Infant Mortality (Stop Angka Kematian Ibu dan Anak – SAKINA) and the Come On, Return to Breastfeeding (Ayo, Kembali ke ASI) movement. Without stopping there, the Ministry of Health also sent a team of documentary filmmakers to Puskesmas Sempu to make a record about the innovative pregnancy hunters.

It should be noted that this innovation, which is barely one year into its implementation, does not yet possess strong legislation such as a regional regulation or district head decree. Nevertheless, the intense coverage that the programme has received and the number of visits from people in other areas in Indonesia proves that it is hugely beneficial for local communities, which is acknowledged by many parties. This is a tremendous encouragement to Puskesmas Sempu and the Banyuwangi Health Office to continue implementing the programme. A number of other regions have been studying and learning from this innovation, including Central Java, South Sulawesi, East Nusa Tenggara, and several other districts/cities in East Java.

would become the focus of the whole district, including Banyuwangi's District Head.

The programme has also brought about beneficial changes in behaviour among those living in local communities. During the first six months of 2017, for instance, all pregnant women located within Puskesmas Sempu's catchment area sought and received pregnancy checkups at healthcare facilities. Even more noteworthy, thanks to information submitted by the pregnancy hunters and followed up by midwives and healthcare volunteers, has been the dramatic increase in the level of care and support provided to pregnant women by their husbands. Health data concerning mothers and babies through to the middle of 2017 shows that 90% of women undergoing pregnancy checks were accompanied by their husbands. This is a huge increase from two years earlier, when the figure stood at only 36%.

There has also been an improvement in the degree of community participation in the programme's development. Collaboration between the pregnancy hunters, village midwives and healthcare volunteers is a direct form of community participation. Added to this, the support of key local figures increasingly paved the way for the success of this initiative. Thanks to this community participation, data on pregnant women is more complete and assistance for deliveries is provided more quickly.

Finally, there has been an increase in the level of community satisfaction with the services provided at their local health centre. According to a survey covering the first half of 2017, community satisfaction with Puskesmas Sempu in June 2017 stood at 92.4%; an increase of more than 5% from the previous survey results in December 2016, when community satisfaction was recorded at 87.2%.

Monitoring and evaluation

Monitoring and evaluation (M&E) meetings are conducted once a month, and involve all the puskesmas- and village-based teams as well as representatives from the high risk-pregnancy hunters. The M&E agenda is to review and assess the number of newly-pregnant women, the number of women with high-risk pregnancies, the number of deliveries, and the level of maternal and infant wellbeing. In addition, M&E efforts also address cases of women with high-risk pregnancies who have been referred to specialists.

These meetings also provide a forum to discuss the implementation of activities in the field, such as

the provision of direct assistance to at-risk pregnant women and activities at integrated service posts, and they allow for direct input and commentary from the pregnancy hunters. One key issue covered at these meetings is to ensure that all the pregnancy hunters have received their monthly fuel allowance.

Every year, the Banyuwangi Health Office also assesses the level of performance at Puskesmas Sempu through health-profile reports. These annual reports contain, among other things, the level of achievement regarding visits by pregnant women to the health centre, the number of babies delivered at the health centre, and the condition of those newborns.

Challenges

The innovative High Risk-Pregnancy Hunters programme encountered several challenges in its implementation. Firstly, although the pregnancy hunters were provided

with smartphones, they encountered some difficulties using them, particularly when the programme was first implemented. Six of the 10 vegetable sellers recruited admitted that this

the health centre's catchment area complete with each one of its villages and hamlets. All the information sent by each of the high risk-pregnancy hunters becomes a red dot on the map, in accordance with where the woman in question lives. If the information system's cursor is moved onto the red dot, the picture of the woman's house appears along with her name and the other relevant information.

An increasing number of red dots in one place is very valuable for the head of the health centre and midwife coordinator, who can use this information to deploy sufficient resources to assist the women in the area. Before this programme was introduced, nothing was available that offered a visual picture of how women with high-risk pregnancies were distributed across the health centre's work areas.

2 | Recruit high risk-pregnancy hunters.

Recruitment was carried out by holding consultations with women living in villages throughout the catchment area. Teams of midwives and puskesmas staff visited every village to identify vegetable vendors operating in each of them, with the aim of securing 10-15 high risk-pregnancy hunters in each section of the puskesmas' overall work area. One of the priorities during the recruitment process was to find vegetable sellers that already had smartphones.

If a vegetable seller in a particular section did not own a phone of any kind, the health centre would purchase a smartphone for him, as the cost was quite cheap but its reliability was assured. On the other hand, if a vegetable seller only had an ordinary mobile phone, he could use it to send relevant information via SMS to the nearest available midwife, who would then upload the data onto Puskesmas Sempu's information system.

3 | Train the high risk-pregnancy hunters. The aim of the training was to enable the hunters to understand the key indicators linked to high-risk pregnancies; these include being pregnant under the age of 20 or over the age of 35, being too close to delivery, already having a lot of children,

being under 140 centimetres in height, having previously had a caesarian section, a swollen face and legs, being too slim during pregnancy, being very pale, having previously suffered a miscarriage, having had twins, and if a child had previously died in the womb. The hunters were also trained on how to use the smartphone application.

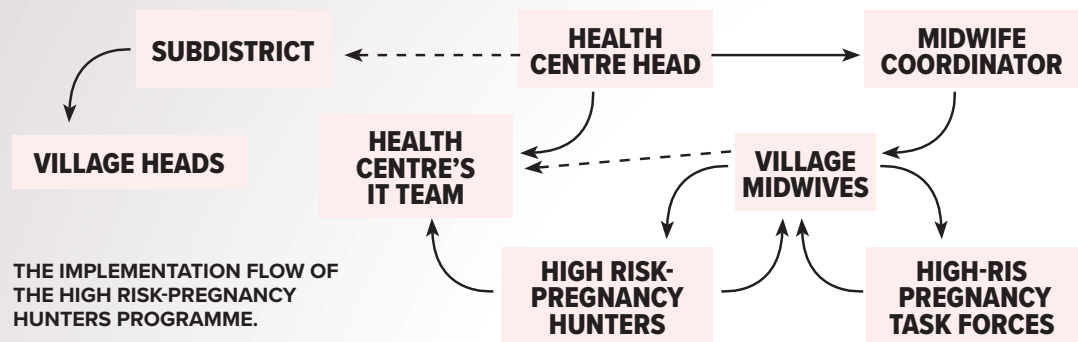
In addition, the high risk-pregnancy hunters were also given special vests, with "High Risk-Pregnancy Hunter" emblazoned on the back, which they wear every day while selling their vegetables. In order to promote the programme, their motorbikes and trading baskets (known as tobos in Javanese) were also given a branding makeover with information relating to high-risk pregnancies painted on them.

4 | Establish a high-risk pregnancy task force to follow up on the hunters' findings. The head of the community health centre formed the task force, which is provided with all relevant data that includes the locations of women with high-risk pregnancies.

The task force consists of the head of the catchment area's midwives, volunteer health workers from integrated service posts and nutrition/breastfeeding motivators. Women belonging to Family Welfare Empowerment (Pemberdayaan Kesejahteraan Keluarga – PKK) chapters and wives of village officials are also free to become involved. In addition to monitoring and assisting women with high-risk pregnancies, members of the task force also supplement data and report and/or refer pregnant women to health facilities if they discover complaints. Moreover, all the task force's members conduct regular first-stage pregnancy checks (ie: during the first 12 weeks) to detect and confirm new pregnancies.

5 | Determine the role of each of the parties involved:

a. The person leading the health centre team is the head of the puskesmas. He is responsible for the programme's overall planning, budgeting and coordination, and is assisted by the midwife coordinator and the IT team based at the puskesmas.



The puskesmas head, via the midwife coordinator and village midwives, provides instructions about each team's formation or additional tasks for a team that is already present in a village to assist a previously-documented at-risk pregnant woman.

The head of the community health centre also coordinates with subdistrict leaders to ensure that village administrations support the High Risk-Pregnancy Hunters' programme. Such coordination is necessary to ensure that village heads understand that at least 5% of their total village funding must be channelled into the health sector. Financial incentives for the high risk-pregnancy hunters are provided from these village-fund allocations.

b. The IT team, via coordination with the head of the puskesmas and with input from the midwife coordinator, created an information system that displays a real-time map on a screen at the health centre showing the distribution of at-risk pregnant women across

the local area. This visual information provides a necessary foundation for the puskesmas head's decision-making and instructions.

The IT team is also responsible for ensuring that all the data entered on the system is provided to the midwife coordinator so that women with high-risk pregnancies receive the assistance they need.

c. The midwife coordinator, on the instruction of the health centre head, coordinates with village midwives to recruit, train and supervise high risk-pregnancy hunters.

d. The high risk-pregnancy hunters come under the auspices of village midwives when submitting data about at-risk women via the smartphone application to the information system at the puskesmas.

e. If a high risk-pregnancy hunter does not have a smartphone, he can send the data via SMS through a village midwife. The midwife is then responsible for uploading the information provided onto the health centre's system.

Required funding

According to the Head of Puskesmas Sempu, Hadi Kusairi, the vegetable sellers are very dedicated when carrying out these social tasks alongside their regular work. Given that finding at-risk pregnant women is an additional responsibility

to their vegetable selling, Puskesmas Sempu introduced an incentive scheme for the hunters. Every month, they are provided with up to Rp 100,000 (US\$10) to cover their fuel and transportation costs. This money comes from official Village Fund Allocations (Alokasi Dana

Desa – ADD), as the pregnancy hunters operate at the village level.

In addition to this incentive, Puskesmas Sempu also rewards the hunters with monthly operational funding of Rp 60,000 (US\$6) plus mobile-phone credit to the value of Rp 25,000 (US\$2.50).

The total budget, when the high risk-pregnancy hunters programme was initially launched, amounted to Rp 53,100,000 (US\$3,900). The details are listed below:

No	ITEM	JUMLAH (RP)
1	Creating the smartphone app and buying a mini server	12.000.000
2	Purchase of a 32-inch LCD TV	4.600.000
3	Modification of trading baskets	5.000.000
4	Purchase of smartphones (10 x Rp 2,000,000)	20.000.000
5	Procurement of boots (10 x Rp 150,000)	1.500.000
6	Procurement of branded vests (10 x Rp 250,000)	2.500.000
7	Procurement of helmets (10 x Rp 250,000)	2.500.000
8	Training costs (5 x Rp 1,000,000)	5.000.000
TOTAL		53.100.000

Programme results & impact

The results of the programme have been quite significant. Before this initiative was launched, there was no programme to identify women with high-risk pregnancies in Banyuwangi. Now, a team of high risk-pregnancy hunters is in place that operates in three villages located within Puskesmas Sempu's catchment area.

Between the launch of the programme in November 2016 and September 2017, high risk-pregnancy hunters successfully identified 37 women with high-risk pregnancies. Of this total, 24 women gave birth safely, while the remaining 13 women have yet to go into labour.

The information system at Puskesmas Sempu is far more complete than before this programme was introduced. Now, the system has a map detailing the whereabouts of women with high-risk pregnancies, as well as complete data and referral reports on all pregnant women across the health centre's working areas. Previously, data on women with high-risk pregnancies was only noted in midwife journals. In order to provide more detailed information, volunteer health workers conducted widespread first-stage checks to detect new pregnancies early

on. During the whole of 2016, these first-stage checks revealed only 92 pregnancies; whereas in August 2017 alone, the number of first-stage checks confirmed 97 new pregnancies.

The main benefit that has come about as a result of the high risk-pregnancy hunter programme is a significant reduction in maternal and infant mortality. Prior to the programme's introduction, from 2014 to 2016, 16 pregnant women and 48 newborns died within Puskesmas Sempu's catchment area. However, data covering January-August 2017 reveals that the number of women and babies dying during and/or shortly after childbirth fell to zero. Any women identified with high-risk pregnancies in the area are now closely monitored and supported during labour and childbirth by trained medical staff.

Village administrations have also been helped by this innovative programme as they now offer improved healthcare services, especially to local women who are pregnant. In Banyuwangi, this is an important point because if a woman should die during childbirth, both the head of the village in question and the head of the puskesmas