Evaluation of Community Health Workers’ upskilling training in maternal and newborn care at Mount Hagen in Western Highlands Province, Papua New Guinea.

Jolly KULIMBUA
Midwife and CHWs Upskilling Trainer, Mount Hagen Provincial Hospital, Western Highlands Province, Papua New Guinea. Correspondence: jollykulumbu@yahoo.com

ABSTRACT
Background: Community Health Workers (CHWs) in the Western Highlands Province were given a six-month upskilling training to enable them to provide essential maternal-newborn care, arrange timely referral of high risk clients and refer emergencies to hospital. Five trainings were conducted over a five-year period. Forty-seven (47) CHWs were upskilled over that five-year period.

Aim: To evaluate the effectiveness of the CHW upskilling training during 2012 to 2016.

Methods: A post-training assessment was conducted by direct observation of the CHWs and the Officer in Charges (OICs) at their workplaces. Assessors observed the application of knowledge and skills and determined if there were improvements in the health facilities. Purposeful discussions were carried out to elicit qualitative feedback from CHWs and OICs of the health facilities.

Findings: The organisation of health facilities improved with specific schedules made for priority reproductive and maternal health services. The recording of maternal and newborn care services indicated great improvement. The antenatal care, family planning and labour ward registers indicated the services provided including management of life-threatening conditions.

Conclusions: The CHW upskilling training program is an effective intervention to improve reproductive health and maternal-newborn services in remote areas of Papua New Guinea. The CHWs upskilling program is recommended for all CHWs in Papua New Guinea to fill gaps in health facilities where there are no midwives or doctor.

BACKGROUND
Papua New Guinea (PNG) is faced with a critical shortage of manpower in almost all hospitals. Doctors and midwives are prioritised to fill these hospital positions, leaving gaps for midwives at the health facilities in remote communities. PNG is the largest South Pacific nation with a population of 7.06 million people. The majority (87%) of these live in rural areas, while 12% live in urban settings.1 Maternal mortality is a serious problem in PNG. It rates the second highest in the Asia Pacific region with a Maternal Mortality Ratio (MMR) of 733 per 100, 000 live births. This is high in comparison to the rest of the world along with Infant Mortality Ratio (IMR), which is at 58 deaths per 1,000 live births.2,3 Mothers are dying of pregnancy related problems that are widely avoidable. It was estimated that 1,500 to 1,600 mothers die every year during pregnancy or while giving birth.4 In 2013, the Maternal Mortality Reporting Forms (MMRF) showed that 97% of maternal deaths could have been avoided with appropriate Family Planning (FP), quality antenatal care and appropriate obstetric emergency care. Most of these deaths are happening in the rural majority areas of PNG. The Demographic and Health Survey (DHS 2006) Maternal Mortality Rate (MMR) reported that in rural areas, approximately 1 in every 25 women (compared with 1 in 35 in urban areas) died from maternal related causes.2,3
Vallely et al reported factors that affect women's access to health facilities including geographical and transport barriers. Consequently, health facility services for supervised births were underutilised. The findings from the MMRFs in 2013 confirmed that deterioration of referral pathways, lack of skilled health workforce and a low percentage of women accessing health services during pregnancy and child birth highly contributed to maternal and infant mortality in the rural areas. Health sector review data from 2001 to 2008 shows that four women die every day as a result of low rates of supervised deliveries and Family Planning (FP) coverage in PNG. In PNG, 53% of the births are attended by skilled health personnel and 47% go unsupervised, especially in remote rural communities, due to the lack of skilled birth attendants.

The ratio of a health worker to 1,000 population in PNG was 0.58 in 2011. This is low in comparison to other Pacific countries such as Fiji with 2.23 per 1,000 and Samoa with 2.74 per 1,000. The PNG National Health Plan 2011 to 2020 indicates that community health workers (CHWs) make up 75.4% of the health workforce in PNG covering 70% of the rural health facilities delivering maternal and child health services, including referral of emergencies with insufficient skills. Rural health in PNG has made very few improvements in the past 30 years and the lives of women and young girls from the age of 12 years are still at stake.

In 2009 the PNG Ministerial Taskforce highlighted that women play a significant role in the community as a wife, mother and daughter, and they deserve healthy lives however their lives are at risk of mortality and morbidity with pregnancy and childbirth-related complications that can be prevented. Given this priority, the Taskforce developed a program that was flexible, affordable and achievable to help CHWs who were based at rural facilities participate in six months of advanced training, with an essential and comprehensive maternal health care package designed to enable them to provide skilled health services at the rural health facilities.

Upskilling CHWs in maternal and newborn care commenced at Mount Hagen Provincial Hospital in 2012 and 47 CHWs from the remote parts of Western Highlands Province (WHP) were trained. Mount Hagen is the capital of the WHP.

PNG has 22 provinces with four regions (Southern, Momase, Highlands and New Guinea Islands). Western Highlands is one of the seven Highlands regions with a population of 362,850 inhabitants (2011 census). WHP covers an area of 4,229 km² lying in the centre of the Highlands region with four districts. The Western Highlands Provincial Health Authority (WHPHA) was established in 2011. It has one provincial and two district hospitals, three health centres, 20 sub-health centres, six urban clinics, six Community Health Posts (CHP) (two under construction), and 40 Aid Posts (17 Aid Posts closed due to social and economic factors). Of the total 77 health facilities in the province, 22 of these were run by Non-Governmental Organisations (NGOs) while the rest were government run. The WHPHA has one obstetrics and gynaecology specialist and four registrars. There were 38 qualified midwives in the province, however most of these midwives worked in urban areas providing maternal health services and doing administrative work. Shortages of obstetricians and midwives in rural areas meant that CHWs need upskilling with relevant maternal health care skills that enable them to identify maternal and newborn complications earlier and make management plans for appropriate lifesaving interventions.

Similarly, in 2005 the University of Goroka in PNG offered a Bachelor of Maternal and Child Health (BMCH) program for nurses, incorporating Village Birth Attendants (VBA) training to improve maternal health outcomes in rural communities.

The aim of the CHW upskilling training is to equip CHWs to competently provide maternal and newborn care in rural areas and facilitate safe referral for hospital care. The aim of this report is to evaluate the effectiveness of the CHW's upskilling training during the five years from 2012 to 2016.

METHOD

Post-training assessment was conducted by direct observation involving individual interviews and discussions at two different remote rural health facilities. One facility is run by the Government and is a newly established Community Health Post (CHP); the other is a Church-run Health Sub Centre (HSC). The two facilities were purposely selected to identify the different impacts of the training in both a newly established and an existing facility.

The assessors were the trainers of the upskilling program and the people involved in the interviews and discussions were the Officer in Charges (OIC) and the upskilled CHWs. Visitation to the Health facilities were made at different times. The interviews and discussions with the OIC and the trained CHW took place during inspection of the facility. The assessment format
was planned to take note of how the facility was set up and organised for delivery of comprehensive reproductive, antenatal and birthing services with the application of the trained CHW’s new concepts.

The OICs were interviewed about their perspectives regarding any improvements made at the facility upon return of the CHW from the training and the effectiveness of their referrals. The officers were briefed 2 weeks earlier via phone contact about the purpose of the visitation by the trainers; to be prepared and available for the assessment process.

The assessors constructed questions to guide them during the observation, discussion and interviews, however there were additional questions that came up during the inspection that have also contributed meaningfully to their findings. The inspection and the structured questions tailored around: (a) arrangement of the antenatal clinics (ANC) and family planning (FP) clinics; (b) the availability of well-defined schedules for each clinic; (c) the type of family planning methods that are used at the facility; (d) health education plans and supportive materials for delivering the message; (e) clinic space and comfort of the mother and family; (f) availability of awareness programs; (g) commitment and keenness in delivery of the new knowledge and skills; (h) whether the delivery room and postnatal area is conducive for patients; (i) availability of equipment and consumables; (j) the use of oxytocics and storage; (k) statistics from the register books were reviewed for signs of improvement; (l) the effectiveness of the referral system; (m) look for innovative programs to improve their practice (n) appearance and presentation of the trained CHW in appreciation of the training received; and finally (o) discussion of the achievements and challenges in their new experience.

**First Visit**

The first visit was made to Kwinka CHP in the Mul/Baiyer District. The CHP is located 25 kilometres to the North of Mount Hagen city and approximately one-hour drive by rough road. It has a staff ceiling of three; one Nursing Officer (OIC) with two CHWs. One CHW was upskilled with the Maternal and Newborn Care Program. The CHP serves a catchment of approximately 5,000 people.

The OIC of the CHP was asked if he was experiencing any differences from the trained officer and the effectiveness of referrals in obstetric emergencies. He mentioned that many things have improved for the better:

“I am so grateful for the way the officer is performing with her new skills. She appears very confident, competent and dependable when it comes to maternal and newborn health. Our communication system is improving along with the training. We don’t have a problem in calling Mount Hagen Hospital for help in terms of management or transport (ambulance) for referrals. As soon as the trained CHW alerts me of the emergency we both use the Closed User Group (CUG) mobile phone that was provided for free calls within the WHPHA and seek for the Obstetrician doctor’s assistance at Mount Hagen hospital and discuss the interventions. We either do the management together through verbal orders or refer after stabilising with the first steps.”

In the past the community has not had such reproductive and maternal health services. They had an Aid Post that has been replaced by the CHP, and a Health Centre which is approximately one-hour walking distance from the CHP.

**Second Visit**

The second visit was made to Mitiku Sub Health Centre (HSC). Mitiku HSC is in the Dei District of WHP and is located 30 kilometres by road from the highlands highway and Mount Hagen Provincial Hospital. The HSC is staffed with one Nursing Officer (OIC) and three CHWs, one of whom was training in this program. Their catchment population is approximately 8 – 9,000 people. They have two Aid Posts, each about five km away from the HSC.

The OIC of the HSC expressed his impressions about the impacts of the upskilling training:

“I’m overwhelmed to see how confident and competent (the trained CHW) is when attending to obstetric emergencies with her specialist skills that she attained from the upskilling training. I have also attended the five days EmOC workshop which enables me to work hand-in-hand to deal with emergencies but the CHW is the lead officer on the scene. Since her training we do not refer unnecessarily like we used to in the past. The CUG phone is very helpful when it comes to seeking help and needing immediate referral.”
Ethical consideration

Approval and support were granted by the Management of WHPHA and verbal consent obtained from the officers and participants of the health facilities for publication purposes.

FINDINGS

Our findings from the health facilities were notable. The facilities were well set up and organised appropriately to deliver maternal and reproductive health services. The trained CHW at the CHP attended her upskilling in 2014 while the CHW from the HSC completed her training in 2013.

a) Arrangement of ANC and FP clinics

The setup of the two facilities was similar. Antenatal and family planning clinic rooms were perfectly arranged and labelled in respect to different areas of activities with posters, charts and weekly schedules displayed appropriately to guide these activities.

b) Clinic schedules

Both the trained officers had monthly and weekly schedules pinned to the wall to guide their daily activities. At the CHP the ANC revisits were scheduled Tuesdays and Thursdays and FP every Wednesday. At the HSC the ANC revisits were seen on Tuesdays and FP on Thursdays. Both facilities saw antenatal new patient visits every day.

c) Types of FP methods

The FP methods used at the two facilities were Oral Contraceptive Pills (OCP), Depo-Provera® Injection, Condoms and the Calender Method. Implants were only used at the CHP because the trained officer attended special training for the insertion of implants.

d) Health education programs

Health education (antenatal health and family planning) was provided for first time mothers every day in both facilities. The use of posters, flip charts and hand written charts with routine health education were arranged in the order of use for easy flow of education.

The CWH of the HSC explained when she was asked about her written routine antenatal education list that was placed on the wall of the ANC room:

“I write them out purposely and pin them on the wall so that in my absence another health worker can easily follow the order to provide comprehensive health education to every new mother that comes for the first time.”

e) Clinic space, Clients’ privacy and comfort

All mothers that come for FP and ANC were seen in the clinic rooms. The rooms were made comfortable and at ease for mothers to have privacy in their conversation with the trained CHW.

f) Special awareness

Both officers strongly emphasise services provided at the facility to make families aware and prevent mothers by-passing the facility or avoiding it due to past experiences of maternal or neonatal deaths. They expressed that their best time to conduct awareness was on the weekly community work day and during immunisation week, especially for upper primary school where female students reach their reproductive age, or during women fellowships and church gatherings.

g) Upskilled CHWs’ commitment and enthusiasm

Both the trained CHWs appeared confident in their job and the organisation of each section proved their commitment and level of understanding in their specific tasks. The trained CHW at the CHP conducted health education on FP and awareness on her specific training and the services she was providing at the facility. There was a crowd because the community was informed that we were visiting the facility. The trained CHW knew her content well and delivered the message competently with strong emphasis on the importance of the services available at the facility.

“Please make an attempt to come and see me if you think you have a problem and need help. Never stay at home and continue, like if you (women and girls) have missed your period for 3 months. She also assured them that they “must not deliver in their facility or pass the facility or make use of their facility.”

She was content, focused and spoke competently, in an assuring and respectful manner to encourage women and girls to utilise the services that are available in their community.

h) Delivery and postnatal room conditions

The delivery room and the postnatal rooms were adequate with toilet and shower facilities for freshening up while labouring and after delivery. The rooms were arranged to create a convenient space for patients and workers. Postnatal mothers remained inpatient for at least two days.
to monitor for complications. Mothers were discharged home after education on how to care for herself and the new baby, including the importance of FP and the Well Baby Clinic that commences four weeks after delivery.

i) Availability of equipment and consumables
The labour wards had the necessary equipment available including delivery bundles, intravenous fluids, indwelling catheters and other consumables (except for vacuum extraction kits). The equipment was arranged neatly and safely unless or until use. There was no infant resuscitation kit at the CHP. The CHW mentioned that having this in mind she monitors the labour closely including the status of the unborn baby:

"I try to refer early if I anticipate a risk factor during pregnancy or during the onset of labour. In the event where I deliver a baby with a poor Apgar score in the first 30 seconds I dry the baby thoroughly and put the baby skin to skin on the mother's bare abdomen with the baby's back covered to keep the baby as warm as possible and I give the Vit K and Hep B vaccine to stimulate the baby to cry if the baby is not crying. I apply delay cord clamping until the pulsation stops. The babies normally pick up from there and cry, so I have not yet had a problem."

In most of the deliveries they have been using the birthing kits that were donated to the rural facilities by the Birthing Foundation, Australia through Birthing in the Pacific (BIP) and Soroptimist International (SI). Both CHWs acknowledged the SI organisation and added that:

"We are very thankful for the birthing kits that we are able to use them once and discard them. They are very helpful and handy especially in the rural settings."

The birthing kits were provided to all the trained CHWs by their trainers upon completing their training. They are advised to return for more whenever they run out of stock. They had their Obstetrics and Gynaecology Standard Treatment and text books available in the delivery room to use when needed.

j) The use and storage of oxytocics
The officers mentioned that the oxytocics are vital drugs to prevent postpartum haemorrhage (PPH) in the third stage of labour and help accelerate contractions in the second stage with oxytocin. They were stored in the solar fridges that were provided by WHPHA in both facilities. All four OICs and CHWs had a clear understanding that PPH is the foremost cause of maternal mortality in PNG (29%) and that these drugs will save PPH. There was a good supply of Misoprostol tablets and they look after them strictly and check on them regularly to ensure sufficient supply. They described that misoprostol tablets have been of great help in preventing further uterine bleeding.

k) Statistics from the register books
The ANC, FP and birth register books were kept in their respective rooms to keep an accurate record of attendance. Complicated cases were written in red coloured ink and the details of these cases, their management and referrals were recorded in a separate hard cover book each month for self-evaluation of performance. Tables 1 and 2 summarise the total figures of antenatal and family planning attendance, births, maternal and perinatal deaths (PNDs) and referrals from the register books according to the trained CHWs' post-training records.

Statistics in Table 1 indicate 279 people came to seek help at the CHP facility from 2015 to 2016 post-training. Of the total, 125 (44.8%) enrolled for ANC, 94 (33.7%) registered for FP, 47 (16.8%) had deliveries, 13 (4.7%) were referred cases and there were no maternal or neonatal deaths reported in the two-year period. The reproductive and maternal-newborn care services were provided for the first time at the CHP after the CHW received her training. Before this the mothers travelled one hour by foot to access care at the nearest health centre or pay PGK5.00 (NZ$2.25) to Mount Hagen Provincial hospital and other NGO urban clinics.

From the records, the main complications and emergencies encountered at the CHP facility were delayed 2nd stage, babies born flat and eclampsia. Some of these cases were managed at the facility with the assistance of the hospital midwives and Obstetrics and Gynaecology doctors via phone orders and some were referred for hospital care.

The HSC statistics are shown in Table 2 with pre-training records from 2012 to 2013 and post-training records from 2014 to 2016. Of the 276 women evaluated pre-training, 132 (47.8%) were antenatal women, 78 (28.3%) registered for FP, 57 (20.7%) had deliveries, 8 (2.9%) were referrals and there was 1 (0.36%) neonatal death. Of the 321 women post-training, 147 (45.8%) were antenatal mothers, 81 (25.2%) registered for FP, 81 (25.2%) had deliveries, 12 (3.7%) were referrals and there was no record of maternal or perinatal deaths. With small absolute numbers and a short time period, it is difficult to draw conclusions. It is important to consider that the number of referred cases improved significantly
over time to 1 in 154 (0.65%) in 2016 and there were no maternal or perinatal deaths following the training.

The main complications encountered at the HSC facility were twin pregnancies and deliveries, shoulder dystocia, postpartum haemorrhage, breech births, fetal distress and babies born flat. The CHW expressed being challenged with complicated cases such as shoulder dystocia and commented highly on the up-skilling training. Likewise, some of the emergencies were managed together with verbal instructions from the hospital Obstetrics and Gynaecology doctors and midwives via phone orders; or with earlier referral for hospital care.

I) Referral system

Referral systems in both facilities were effective. Both had CUG phones with several contact numbers of doctors, midwives, drivers (ambulance) and even some members of the management team, in particular the Public Health Directors of provincial hospital and the WHPHA, to seek help when needed. When confronted with an emergency the CHWs call a doctor or a midwife first and if they are unable to get through and the condition is severe then they directly call for the ambulance drivers at the hospital for emergency referral. Communication is seen as an important tool when dealing with complications. The officers reported that conducting obstetric emergency care via phone orders is a challenge and expands their experience.

m) Innovative programs to improve practice

The trained CHWs have been proactive in organising the clinics and the ward sections with neat hand-written charts pinned on the walls for easy access of necessary information. In the delivery room at the CHP there were charts on the wall with a list of emergency care for complicated cases such as PPH, severe pre-eclampsia and shoulder dystocia. When asked how this helps the CHW at the CHP described:

“I find it very easy just to look at the list and apply my care when I am approached with such emergencies at any odd hours of the day or night.”

Both trained CHWs created a more user-friendly environment at the facility and encouraged respectful care to all women and young girls. They strongly emphasised FP, considering the method most appropriate for each individual. They told the assessors they feel accountable for the lives of all pregnant women in the community to have supervised deliveries and do not intend to have any mother or child die from pregnancy related causes in their catchment population.

n) Appearance and presentation

A quiet CHW turned out to be a vital person, motivated with all the challenges, energetic and keen to learn. They were well prepared in their presentation and led the assessors through smoothly in a short time. They spoke proficiently with a tone of appreciation when they shared their skilled performance at the time of life-threatening emergencies.

o) Achievements and challenges

Both the trained officers were asked about their inspiration regarding their work experience from the past and after the training. They expressed that this training changed them to be more responsible and concerned for women and girls reaching reproductive age to achieve safe pregnancy and childbirth for all.

The CHW from the CHP described:

“I feel more confident than before and I also feel that I have am able to make decisions after my findings, unlike before when only the OICs made the decision. In one instance I had a pregnant mother who was booked at my clinic brought in unconscious at 30 weeks gestation and I diagnosed her with severe pre-eclampsia. With support from my OIC, I managed to give the loading dose of Magnesium Sulphate, including other immediate nursing cares using the O&G Standard Treatment book at the facility, and referred the case to the hospital. The doctors at Mount Hagen Hospital were so impressed with what I did. There are also cases that we don’t have to refer unnecessarily. I feel more motivated with my extra knowledge and skills and even feel accountable for every mother of the reproductive age and those that are pregnant in this community.”
Table 1: Attendance statistics from 2015 to 2016 in the CHP (No pre-training record of such services from this facility).

<table>
<thead>
<tr>
<th>Year</th>
<th>ANC</th>
<th>FP</th>
<th>Deliveries</th>
<th>Referrals</th>
<th>Maternal &amp; Perinatal Deaths</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>67</td>
<td>61</td>
<td>24</td>
<td>6</td>
<td>0</td>
<td>158</td>
</tr>
<tr>
<td>2016</td>
<td>58</td>
<td>33</td>
<td>23</td>
<td>7</td>
<td>0</td>
<td>121</td>
</tr>
<tr>
<td>TOTAL</td>
<td>125</td>
<td>94</td>
<td>47</td>
<td>13</td>
<td>0</td>
<td>279</td>
</tr>
</tbody>
</table>

Table 2: Attendance statistics from 2012 to 2016 at the Health Sub Centre (figures from 2 years pre-training and 3 years post training)

<table>
<thead>
<tr>
<th>Year</th>
<th>ANC</th>
<th>FP</th>
<th>Deliveries</th>
<th>Referrals</th>
<th>Maternal &amp; Perinatal Deaths</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>49</td>
<td>40</td>
<td>30</td>
<td>5</td>
<td>0</td>
<td>124</td>
</tr>
<tr>
<td>2013</td>
<td>83</td>
<td>38</td>
<td>27</td>
<td>3</td>
<td>1 stillbirth</td>
<td>152</td>
</tr>
<tr>
<td>Total pre-training</td>
<td>132</td>
<td>78</td>
<td>57</td>
<td>8</td>
<td>1</td>
<td>276</td>
</tr>
<tr>
<td>2014</td>
<td>80</td>
<td>30</td>
<td>41</td>
<td>8</td>
<td>0</td>
<td>159</td>
</tr>
<tr>
<td>2015</td>
<td>67</td>
<td>51</td>
<td>40</td>
<td>4</td>
<td>0</td>
<td>162</td>
</tr>
<tr>
<td>2016</td>
<td>65</td>
<td>41</td>
<td>47</td>
<td>1</td>
<td>0</td>
<td>154</td>
</tr>
<tr>
<td>Total post training</td>
<td>147</td>
<td>81</td>
<td>81</td>
<td>12</td>
<td>0</td>
<td>321</td>
</tr>
</tbody>
</table>

The CHW from the HSC also expressed her experiences and gave the following case:

“I had a mother in labour with undiagnosed twins. She was unbooked and the cervix was fully dilated on admission, so I assisted her to deliver the first baby and diagnosed the second twin in breech position. I immediately called for help at the facility and we were able to get one of the O&G Registrars at Mount Hagen Hospital on the phone. I followed his instructions via phone and manage to deliver the second twin alive. Later found out that the second twin had poor sucking, so I referred to Mount Hagen Hospital after three days the mother and the twins were discharged home safely. Each day I seem to gain more experience with different cases and I am very proud and privileged that I have had this training.”

Further discussions revealed that booked mothers from both facilities are continuing to give birth in the villages despite awareness raised at the facilities and within the communities. When the trained CHWs were asked why booked mothers are giving births in the village, they answered that they asked the same question of these mothers and indicated that the mothers have no good reasons. They only say, “it was in the night, my husband was not around, or I did not have much pain.” Sometimes they find it challenging when the solar lights go off in the night because they are dependent on the weather. For this reason, they were given a manual rechargeable torch, so they could maintain their practice with light from the torch unless there were no batteries, or they forgot to charge it. They stated that the behaviour of mothers needs to change over time not to have home births but to have them supervised at the health facility.

DISCUSSION

The findings from the two facilities demonstrates reduced referrals, deaths and cost through skilled maternal and newborn health care services. Improved communication among skilled health care providers within the health sector was also identified as a means of reducing unnecessary maternal and newborn deaths. The improved services had a significant impact in the rural communities, especially in the CHP where these services were lacking due to no skilled health personnel or decent health facility, the cause of an alarming rate of maternal mortality in PNG.2 The
CHW upskilling program has developed the CHW to be more responsible, encouraging and respectful, and this influences the families to actively participate in the services that are provided at the facility in the community. Ideally it is the women’s basic right to achieve optimal health care throughout pregnancy and childbirth for themselves and for the newborn. According to the National Department of Health (NDOH) through the Health Information System (HIS), 46% of staff at health facilities lacked the necessary skills to assist women during pregnancy and childbirth when complications occur, and 85% of all deaths recorded could have been avoided. Essential health interventions to provide safe pregnancy and childbirth, early neonatal care, and access to sexual and reproductive health services have been neglected and will need to come from skilled health professionals in maternal and child health. Most of the mothers and babies who die are in the villages or in the urban poor with no money to access services, lack of awareness, cultural barriers or poor understanding. They may either die at home with no trained assistance or present late to the health facility, unbooked with a life-threatening emergency.

The upskilling of the current workforce (CHWs) is one of the many efforts made to achieve the Millennium Development Goals (MDGs) targeting MDG 5 Target 5A, a call for the reduction of maternal mortality by three quarters between 1990 and 2015; and Target 5B, to achieve universal access to reproductive health by 2015. This also aligns with the PNG Health Vision 2050, aiming to reduce the alarming rate of maternal mortality from 733 per 100,000 live births to below 100, and to reduce the under-5 mortality rates from 75 per 1,000 to below 20 by 2050. PNG was not able to achieve its targets by 2015. However, to reduce the number of maternal deaths, women need to have access to good quality reproductive health care and effective interventions. For this to happen PNG is now directed towards the Sustainable Development Goals (SDG) to end maternal mortality by 2030. The upskilling of CHWs is part of achieving PNG’s vision by 2050, in line with PNG’s bigger development plans (PNG Medium Term Development Plans 2011-2015, PNG Development Strategic Plan 2010-2030) to strengthen service delivery, especially to the rural majority and the urban poor.

The Childbirth Emergency Phone project in Milne Bay Province in Papua New Guinea has improved communication among health workers within the health sector when approached with life-saving emergencies. Likewise in our findings, communication within the health sector was improved with CUG phones which helped to manage and save high risk mothers.

A similar study was conducted in Eastern Uganda to evaluate a CHWs upskilling program. The program developed the role of CHWs in improving maternal and newborn care in Uganda and referrals of high-risk mothers were successfully linked to health facilities to receive quick services with written referral notes. Likewise, this PNG study’s findings revealed improved maternity services by innovative approaches to providing information and quality care with improved and effective referral pathways for more complex cases.

Two studies were conducted in Tanzania and Malawi in Africa evaluating the ETAMBA (Enhancing Training and Appropriate Technologies for Mothers and Babies in Africa) project two years after training. The first study evaluated the implementation of the training; the second study explored the impact of the training on health outcomes of maternal and neonatal indicators in the facilities. Both studies discovered that training the non-physician clinicians can make a difference to maternal and neonatal health if given the proper recognition of their value and the tools to do their job. The second study identified no significant differences in maternal, neonatal and birth complication variables across the time points. A lack of conducive working environment with inadequate supply of equipment/consumables was found to be barriers to achieving good results in the study.

This present study demonstrates a reduction in referrals in one centre and no maternal or perinatal deaths following the training, however future audit is required to assess ongoing trends across all areas. The facilities have improved to provide the necessary consumables through the efforts of the skilled health worker and the management of the WHPHA to have them available in anticipation of emergencies. Further downward trends in PNG’s health indicators will be observed if the resources are regularly checked and maintained.

The evaluation of the two sites demonstrates the beginning of the positive difference of the CHWs upskilling program to Papua New Guinea’s maternal and newborn care. There is a need for ongoing review, including another study capturing all the facilities that have the upskilled CHWs and the community’s (recipients) perception of the services provided.
CONCLUSION
The CHWs upskilling training program is an effective intervention to improve reproductive health and maternal and newborn health care services in the remote areas of Papua New Guinea where there are no skilled health care providers or midwives. It has the capacity to reduce maternal, perinatal and early neonatal deaths through skilled care and effective referral pathways. Furthermore, the program is economical and accessible in providing service at the door steps of a community. The CHWs upskilling training is recommended for all CHWs who are practicing midwifery, particularly in the remote health facilities.

ACKNOWLEDGEMENT
My word of thanks goes to the following people who have supported and assisted me in the training and the evaluation: Dr Joseph Kuk, Senior O&G Specialist at Mount Hagen Hospital; Professor Glen Mola, UPNG; Nellie Newman, Training Coordinator WHPHA; Jenny Philip (CHW) and Philip Kond (OIC), Kwinka CHP; Judy Kapun (CHW) and Albert Duu (OIC), Mitiku Health Sub Centre – for their participation with providing the information. Thanks also to Dr Benny Kombuk, Senior O&G Specialist who started the program with us and left in 2016, the management of WHPHA for all the support in the program and Theresa Mittermeier from PJRH for editing my paper.

REFERENCES


