

File Form 673

Maternity & pathology equipment for Borkeo Referral Hospital and training for 25 regional midwives in life-saving skills, Ratanakiri Province

Interim Report for the Eagle Foundation – February 2024

Donor name: Fondation Eagle

Fondation Eagle reference: FF 673

Name of Charity: IMPACT UK

Introduction: Borkeo Referral Hospital is located in Ratanakiri, one of Cambodia's least developed and remotest Provinces. The hospital has received scant investment in recent years and we are so grateful to Fondation Eagle for enabling IMPACT Cambodia to upgrade the delivery equipment in the Maternity Unit and provide potentially life-saving refresher training to 25 of the region's midwives. Furthermore, your grant has equipped the hospital with two essential pathology instruments – a Hemogram and Biochemistry machine – both of which are now in use by all departments of the hospital to diagnose a wide range of illnesses, infections and disease.

Date of grant accepted: 27/06/2023 (funds received by IMPACT UK 05/07/2023)

Amount: GBP 33,807

Conversion rate, date & amount in local currency: USD 43,272 Exchange rate based on 1 GBP = 1.28 USD (16/06/2023)

Expenditure: GBP 33,002

Amount remaining: GBP 805

Name and exact location of the project: Borkeo Referral Hospital, Ratanakiri Province, Cambodia

Period of Project: 05/07/23 – 04/07/24

Project beneficiaries: Borkeo Referral Hospital serves a population of 76,841 people (20,467 are women of reproductive age and 9,444 are under the age of five). In a typical year, 300 women and 300 babies will directly benefit from the new maternity equipment. 25 midwives have already benefited from intensive training. It is anticipated that this will positively impact the care that they will collectively provide to 5,500 mothers and their



Ratanakiri: By the age of 19 one-third of women will already have had their first child. Pregnancy and childbirth is much riskier for teenagers and more closely linked to adverse outcomes for both mother and baby.

babies each year. Now that the pathology equipment is in place, it is expected to benefit approximately 7,800 patients per year – we will report on progress made towards this goal in the final report.

Details of the project:

IMPACT Cambodia (IC) has been working in Ratanakiri Province since 2019 – an expansion of their programme which was made possible thanks to a new Eagle-funded project vehicle (FF 0511-32) which enabled the team travel to this geographically isolated and underserved region. The new project area is one of the least developed in Cambodia. Stark health and development indicators for women include an average life expectancy of just 43 and high rates of teenage pregnancy. Indeed by the age of 19, more than one in three women will already have had their first child.

The national Khmer language is not widely spoken locally, which presents a real challenge for service providers. However this is one of the main reasons why Borkeo Referral hospital is so popular with the communities it serves: *'This hospital is indispensable to people in the area because 95% of the nurses and doctors here speak minority languages. People do not like to be transferred to any other place because of the language issues that can cause them.'* – IMPACT Cambodia.

Borkeo Hospital is one of 14 health posts and hospitals that IMPACT Cambodia has been working with in the region. It was granted 'referral' status in 2011 but as is often the case, they have received limited government funding to reflect this enhanced status. Of particular concern to IMPACT Cambodia was the lack of recent investment in the Maternity Unit, since the hospital acts as the specialist referral unit for 11 smaller health centres. The staff were found to be poorly equipped to manage a complex caseload and lacked recent training in dealing with obstetric emergencies, especially post-partum hemorrhage (PPH). If not treated quickly, PPH can lead to shock and death. According to the World Health Organisation (2022), it is the leading cause of maternal mortality worldwide, experienced by 14 million women and resulting in around 70,000 maternal deaths globally.

IMPACT Cambodia worked with the hospital's 11 midwives to draw up a plan for how services for the 30-55 women who give birth at the Maternity Unit each month could be improved. The need for upgraded equipment was a top priority and we are grateful to Fondation Eagle for providing a range of new equipment, to enhance safe medical practices during childbirth; reduce the spread of infection; and improve postpartum recovery. It was also agreed that improving the overcrowded conditions and comfort of labouring and post-partum women was of critical importance. The hospital beds were in such a state of disrepair that the Director had personally paid for them to temporarily repaired. IMPACT Cambodia report that the staff are so glad that your grant has provided 15 new beds and that women are no longer sharing beds or having to use mattresses placed on the floor.

In terms of equipment, the hospital was also in urgent need of two vital pieces of pathology equipment. Pathology services underpin all points of a patient's hospital journey – from early diagnosis, through to treatment and preventing further disease. Thanks to Fondation Eagle, the hospital can now provide speedy and accurate lab results on site using their new Hemogram Machine, which measures patients' red blood cell count,



September 2023: The equipment arriving at Borkeo Referral Hospital

white blood cell count and platelet count; and Biochemistry Machine, which is used to measure disease indicators present in biological samples such as blood or urine.

Equipment timeline:

August 2023: IMPACT Cambodia placed the equipment order from Medical Equipment & Electro-technical services (MEES), a medical supplier in Phnom Penh with whom IMPACT Cambodia have a long-standing partnership. Their competitive prices include freight (most typically from Korea or China), local transportation, taxes and installation. Onsite training is provided for the more complex items.

September 2023: The new equipment was delivered and installed by MEES representatives, overseen by IMPACT Cambodia, the hospital Director and heads of the hospital's various departments.

The many maternity items include a baby warmer; updated delivery instruments; forceps to stem excessive bleeding; foetal dopplers to measure heart rate; improved and adjustable gynaecological examination tables; a replacement autoclave machine to sterilise equipment; a suction unit; delivery lamp; oxygen production machine; and delivery chairs. These items are all now in situ and already helping healthcare workers to make life-saving decisions during childbirth.



Above: The delivery room is now fully equipped



Doctors and midwives checked the smaller pieces of equipment and installed them in the Maternity Unit



New hospital beds were delivered to the pre-delivery room and post-delivery room.

Left: 'Dr. Pann Sarorn, director of Borkeo Referral Hospital (third photo) was very happy to show us all the room in maternity unit after all new equipment were installed' – IMPACT Cambodia

Pathology equipment: The biochemistry machine and hemogram machine were delivered and installed in the hospital's laboratory the day after the maternity equipment was installed. In the period between September and December 2023, the instruments have already been used in 954 cases. The staff report that the equipment is straightforward to use and functioning very well.



Advanced training for regional midwives

Of the 297 births that took place at Borkeo Referral hospital in 2023, 70 (24%) were categorised as high-risk (this includes vacuum or forcep deliveries; breech births; premature births; and sub chorionic and postpartum hemorrhage). The midwives at Borkeo and their regional colleagues are all well-trained at the start of their careers but there are rarely opportunities for ongoing professional development in rural hospitals, refresher training of any kind, or opportunities to stay abreast with new developments in the field of maternal and child health. A full training programme was therefore proposed for 25 midwives from the Borkeo and Banglung operational districts in managing birth complications; and covering advancements in sexual/reproductive and child/maternal health services.

In particular, head midwives presented a strong request to IMPACT Cambodia for in depth-training in the identification and treatment of postpartum hemorrhage, and the use of non-pneumatic anti-shock garments (NASG). These low-cost first-aid body worn devices reduce blood flow to the uterus and treat hypovolemic shock (an emergency condition which reduces the heart's ability to pump enough blood to the body). They can save lives in low-resources settings – keeping a woman with PPH alive for up to 48 hours. The United Nations Population Fund (UNFPA) had recently donated NASG kits to all the hospitals in Boreko and Banlung, but the accompanying instruction had been brief and theoretical. More practical training had become an imperative.

Training in the management of postpartum hemorrhage (PPH) and use of non-pneumatic anti-shock garments

The first portion of the training funded by Fondation Eagle commenced on 15th August 2023 and was attended by 25 midwives. The trainers successfully covered all matters relating to the prevention, early identification and management of PPH, as well as providing practical, hands-on instruction in the use of the anti-shock garment.

'The training has strengthened midwifery capacity to confidently perform at every dangerous sign presenting in a pregnant women when receiving health services, and will help contribute to reducing maternal and infant mortality rate in response to government strategies in improving welfare and health in Cambodia. Thank you for your strong cooperation!'- IMPACT Cambodia.



Training on postpartum care, the '1,000 Day Model' and birth spacing

The second tranche of the training funded by Fondation Eagle was a week-long training course held at the Ratanakiri Health Department, commencing 11th December 2023. There were 27 participants from different health centres and hospitals across the Province. The training was carefully designed to address the needs of the local context and aimed at deepening the skills and knowledge of participants relating to the recognition of pregnancy complications; aspects of ante and postnatal care; the importance of birth spacing; innovations in contraceptives; enhancing outreach to at-risk groups, such as teenagers; and promoted the 1,000 day model for improving nutrition from a conception to a child's second birthday.

'The training emphasised 'Children by choice, not by chance' as unplanned and young pregnancies contribute very much to the high maternal and infant mortality rates in these rural areas. The course was prepared to develop and enhance the competence, knowledge, attitude and skills of local midwives. The participants were so happy to take part. They want to learn and provide a better health care service for all patients, regardless of their language or where they come from. More healthworkers would have joined if we had more capacity and there is now a request to have more training like this! Thank you for your support for all activities of IMPACT Cambodia' – IMPACT Cambodia.

The training encouraged trainees to transmit their learnings more widely amongst their healthworker colleagues. Over the next six months of the project, IMPACT Cambodia aims to follow up and provide educational materials to support them with this.



Above: role play learning
Left: Midwives received certificates on completing the course



We look forward to updating you further in our final report in July.

Expenditure

Equipment	Hospital department	Unit	Unit Cost £	Budget £	Expenditure £
Delivery materials: Episiotomy & Mayo dissecting scissors x2; Allis tissue forceps; Vaginal speculum (different sizes); Forceps (Long haemostatic, tissue, artery and dressing x 2); Dressing scissors x2 ;scalpel handle x 2, Kidney basin x 2; Needle holder x 2; Urinary catheters x 2; Portable aspirator x 2; Tray instruments x 2; Sterile instrument boxes x 2; Compress box; Foetal doppler	<i>Maternity Unit</i>	4	670	2,680	2,680
Baby warmer machine	<i>Maternity unit</i>	1	2,800	2,800	2,800
Oxygen production machine	<i>Maternity unit</i>	1	1,400	1,400	1,400
Gynecological examination table	<i>Maternity unit</i>	2	1,422	2,844	2,844
Autoclave	<i>Maternity unit</i>	1	750	750	750
Suction unit	<i>Maternity unit</i>	2	142	284	284
Delivery chairs	<i>Maternity unit</i>	2	106	212	212
Delivery lamp	<i>Maternity unit</i>	2	146	292	292
Hospital beds	<i>Maternity unit</i>	15	169	2,535	2,535
Hemogram machine	<i>Pathology laboratory</i>	1	4,500	4,500	4,500
Biochemistry machine	<i>Pathology laboratory</i>	1	2,800	2,800	2,800
Training for 25 nurses and midwives (including educational materials, lecturing fees, transport and accommodation for 12 days)		25	444	11,100	11,100
Sub Total				32,197	32,197
Project management @5%				1,610	805
Grand Total				33,807	33,002