Project proposal

1. **Relevance of the intervention**

Objective of the intervention.

There is increasing evidence that effective neonatal care of very sick babies does not need to be expensive or technical and that simple interventions like training local health workers to provide skilled care can make a significant impact in the health outcomes of a neonate.It has also been stated that a significant proportion of these mortalities and morbidities could also be addressed by developing community-based packaged interventions, which are supplemented by developing and strengthening linkages with the local health systems.

**DVF and AHC is seeking support to make a tangible and sustained impact on neonatal mortality rates in Cambodia through our Saving Babies Lives programme which will address challenges across the continuum of care from community-family care to clinical care at different levels of the health system.**

The specific aim of the proposed intervention is to **develop and evaluate a sustainable community-based programme that decreases the number of newborns dying in impoverished settings.** Activities will centre onhealth centres and health posts in Preah Vihear, one of Cambodia’s poorest provinces, and will include cost-effective interventions such as mobilising and engaging Village Health Support Groups (VHSGs), establishing baby saving areas, training front-line healthcare workers using a contextually relevant training programme, and developing a locally appropriate training programme for neonatal emergencies. The holistic programme will also address the delivery of neonatal care across the continuum of care from the community to the referral hospital.

The proposed DVF project in this application to CISU is a 1 year pilot programme, that covers training and mentorship of village health support group members and training of health staff in 12 heath clusters in Preah Vihear province and training for staff in a newly established neonatal unit in one of the two Provincial Referral Hospitasl. A health cluster is made up of a health centre and its health posts and villages in the catchment area. The proposed project interventions are taking place alongside AHC financed complementary activities in the same clusters that holistically support CISU funded activities. These AHC activities include supply of basic equipment to health facilities, ,mentorship of trained health staff, training of statt at the second Provincial referral Hopsitals neonatal unit and base line and ongoing registration of neonatal health data. If these interventions are proven successful, AHC intends to extend the activities into a larger 5 year programme that engages 27 provincial health clusters and is expected to result in and prove a one third reduction in neonatal mortality in the target province.

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| **Supporting public engagement and civil oragnisation through Participatory Action Research**In Cambodia there is a need to develop and expand community-based approaches to improving health outcomes by addressing inequality and ensuring the most vulnerable groups are empowered to take charge of health challenges within their villages. Participatory Action Research (PAR) will be a key programme tool to foster citizenship interventions. Addressing social needs and empowering communities to make decisions about health care using the PAR model will allow for the design of interventions that account for local practices and beliefs. Community assessment of health problems and barriers also increases the awareness of those problems and has been shown to increase social support and participation in problem solving. Most importantly, PAR uses facilitation and participation rather than just teaching to increase engagement and knowledge in community groups. Community engagement, when used to determine, prioritise and solve relevant health concerns can increase appropriate health seeking behaviour which in turn can positively impact neonatal mortality. It is expected that villagers will also make better healthcare decisions for their babies and develop their problem-solving skills which can also be applied in other aspects of their lives. PAR will be employed as part of Objective 1 of the programme which focuses on Village Health Support Groups (VHSGs). |

Across Preah Vihear province there are 27 clusters and 2 Referral Hospitals in total. In this 1 year programme proposed to CISU, a cluster is defined as a health centre, its relevant health posts and villages. This proposal covers 12 clusters that will receive training interventions at the community and health centre level, as well as in one of two provincial Referral Hospitals. These interventions will be performed in coordination with complementary activities financed by AHC in the same 12 clusters as mentioned above. Neonatal health data will be registered by AHC in all 27 health clusters, so that, while this pilot takes place, the other cluster can serve as a comparative control. This methodology has been chosen for its ability to satisfy the aim of saving as many children’s lives as possible whilst simultaneously providing scientific evaluations that can prove the success of the programme.

. An analysis of these pilot interventions will be performed, and adjustments and improvements will be made before deciding whether to roll out an improved programme out across the remaining 15 clusters of the province over the course of a 5 year programme..

If the present DVF/CISU 12 cluster + Referral Hospital programme is approved, funding and technical input for the full pilot programme has been secured (refer to the budget, excel sheet 3). AHC will supplement restricted donor contributions with unrestricted, general funds to ensure the implementation of the project. There has been a significant interest for the 5 year project from a variety of donors due to its methodology and expected impact, and its implementation (provided the pilot evaluation is positive), is a top priority programme for AHC. If ear-marked donor funding for the 5 year project is insufficient, AHC will provide funding from its un-ear-marked general funds, out of which approximately 50% are not ear marked.

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| **Aim:** Pilot a sustainable community-based programme that decreases the number of newborns dying in impoverished settings |
| **Objective 1:** | Increase community level health literacy and engage and empower communities to take ownership of healthcare for their babies. |
| **Objective 2:** | Improve the quality of neonatal service delivery in 12 clusters across Preah Vihear province.  |
| **Objective 3:**  | Adapt and scale up AHC’s best-practice models for neonatal care in Preah Vihear’s referral hospitals. |

Relevant aspects of the context in which the intervention is to take place.

Neonatal mortality in Cambodia

While Cambodia has reached the Millennium Development Goals in terms of reducing infant, child, and maternal mortality – the number of deaths that occur in the neonatal period (0-28 days of age) has not improved at the same rate. According to the World Health Organisation (WHO), newborns from the poorest, most geographically hard to reach populations are the most vulnerable and are three times greater at risk of death than their wealthier urban counterparts. This is particularly true of the north eastern provinces of Cambodia like Preah Vihear, where issues of inequality are rampant. It is estimated that newborns in Cambodia account for a staggering 47% of under-five mortality with the majority of these deaths occurring in the first days of life. Many of the deaths are preventable - due to complications at birth, limited postpartum care, and infections including pneumonia and diarrhoeal diseases.

The reasons why the fall in neonatal mortality has not mirrored that seen in child mortality are complex with interrelated issues of access to care, availability of quality specialist care, knowledge and practices of parents/caregivers, and resources. Access to healthcare is challenging for families living in rural and remote areas where neonatal care facilities are limited or do not exist altogether. In Cambodia for example, it is estimated that 79% of women, mostly those from poorer rural areas, give birth in Government run health centres or referral hospitals that do not have neonatal facilities or staff trained in neonatal care. Poorer families, many who still live on less than $1.25 a day, are further challenged as they are often unable to afford the cost of travel to their provincial capital where neonatal healthcare facilities are meant to be available through tertiary level hospitals.

To compound matters, few women visit healthcare facilities for routine yet potentially life-saving health check-ups for their babies because they lack the funds or are unaware of the benefits. Deep rooted health practices and beliefs like unhygienic cord-cutting practices also increases the risk of complications like infection, which further contributes to neonatal deaths. Endemic poverty means that access to adequate information and parenting education on a baby’s health and development needs is limited and basic health literacy is low. This low health literacy also results in a lack of awareness of when to access the existing health resources and support available which impedes their effective utilisation of health services. These rural hard to reach communities lack not only access to specialised neonatal care but also understanding in basic interventions that can improve their baby’s health and chances of survival such as good breast-feeding practices.

In 2011, the Cambodian Ministry of Health resolved to redouble efforts to achieve significant progress in neonatal mortality. Despite the recognition of the need to address the high neonatal mortality rates in the country, there has been no agreed national strategy on how best to achieve the reductions. This is part could be due to the misconception that neonatal care is difficult and expensive. There is an urgent need for well-designed intervention studies that identify simple and cost-effective means of addressing neonatal mortality in low-income settings.

1. **Partnership and partners**

AHC has a long history of partnership with the Royal Government of Cambodia including: relevant, legal Memorandums of Understanding with the Ministry of Health and Provincial Health Departments, official recognition as a paediatric teaching hospital, and informing paediatric healthcare policy through working groups on the national level. For the Saving Babies Lives programme, AHC has also obtained a formal, signed MOU with the Preah Vihear Provincial Health Department.

In 2014, DVF made its first visit to AHC to establish a connection as both organisations were working on child health issues in the Southeast Asian region. From 2015 – 2018, DVF has made three subsequent visits to AHC to exchange experiences and discuss possibility for cooperation in the field of community child health and community mobilisation which led to the present project proposal. In the last visit, DVF and AHC have also agreed on collaboration with the Global Health Unit at Rigshospitalet and have recently performed a course in Tropical Infectious Diseases in children for Danish and local Doctors at AHC, which has taken place in January 2019 with 29 Danish doctors participating. Both organisations hope to further strengthen the working partnership and sharing of best practices on ideas with the implementation of the Saving Babies Lives programme.

Each partner’s contribution in relation to this particular intervention.

DVF and AHC have the following to contribute to the successful delivery of this project:

* DVF and AHC share a strong dedication for and experience with child- and neonatal health in low- and middle income countries. DVF has extensive experience from 25 years work in Vietnam with child health, especially neonatal health, in cooperation with Children’s Hospital no 1 in Ho Chi Minh City and Ho Chi Minh City Welfare Association with programs supported by Danida and CISU. AHC has extensive experience in improving neonatal outcomes in Cambodia. From 2011 to 2016 AHC was able to achieve a staggering 80% reduction in neonatal mortality rates at its own facility from 25.7% to 4.8%.
* Both are experienced civil society actors, and AHC has a network in Cambodia with other civil society organisations, village stakeholders and local authorities.
* AHC has a demonstrated an ability to influence government health policy in relation to child health and intends to do so also in the future.
* AHC has a close relationship to the target group through previous projects as well as experience with the local culture and network of both public and non-public organisations working in various areas of children’s health in the locality.
* DVF will provide technical knowledge especially in newborn health, training, education, development of training materials as wells as funding.

The partners’ roles and areas of responsibility as regards the intervention.

* AHC will be responsible for implementation of activities in Cambodia by its staff at the Preah Vihear training centre with oversight from hospital management and the Global Child Health team as necessary, as well as for weekly monitoring. Quarterly progress and financial monitoring to DVF will be conducted by AHC.
* DVF will not have permanent staff in Cambodia, but will provide a minimum of three professional consultancies and reviews (and regular e-mail contact) during the one-year period dealing with the issues mentioned below during the project period, as well as be responsible for reporting to CISU.
* DVF will participate in the planning and ongoing adjustment of activities related to objective 1 (increase community health literacy and community ownership described below) by sharing its extensive experience from Vietnam with creation of community awareness, community mobilisation and organisation and advocacy for children’s rights in general and child health in particular. This experience includes work with Khmer ethnic minorities in the Mekong Delta in Vietnam.
* DVF will participate in updating training curricula and training methods for health workers and adapt the “safe delivery app”, a mobile phone, picture based training tool on safe delivery, simple neonatal resuscitation and neonatal management available to the program. One of DVF’s project group members has participated in the development of the app and its evaluation in Ethiopia for the organisation Maternity Foundation.
* DVF will provide professional advice on the establishment of a neonatal unit at Preah Vihear Hospital, in relation to training and introduction of bubble CPAP and tube CPAP, two simple technologies used for neonates with respiratory problems, with which DVF project group members have extensive experience.
* A joint DVF/AHC project steering group comprising of one member from the implementation team, AHC’s Director of Global Child Health Department and CEO who is also a senior research paediatrician with the University of Oxford and at least one from the DVF project group will be responsible for the oversight of the project and will deal with any issues arising that need joint decision.
* Ongoing monitoring and evaluation of activities and outputs, and an end of project KAPES survey will be conducted in order to ascertain the changes garnered from the project. The ongoing data collection and analysis along with the KAPES survey will help determine the successful steps and methods of a comprehensive programme package that can be replicated in other low-resource settings.

The project applied for will provide a basis for the development of a more long-standing partnership between the two organisations with a view to support and further develop AHC’s role as a civil society organsation sharing best practices and advocating for improved child and neonatal health. The one-year program will allow AHC and DVF test the potential for cooperation between the two organisations before a longer term engagement is pursued.

1. **Description of the intervention**

Who the target groups/participants in the intervention are.

The project will focus on neonates, their caregivers and the communities they come from, as well as local healthcare workers in 12 health clusters in Preah Vihear province. Preah Vihear is one of the most remote and isolated provinces in Cambodia. The province has a population of around 171,139 people spread out through 293 villages in seven administrative districts and one city. The mainly rural population survive on sustenance farming. Within the province, there are 28 government health centers, 17 health posts, and two referral hospitals, since one health center has been upgrading to a district level referral hospital in February 2018. Each health center serves a number of villages and is first point of access for health care. There are approximately 5,300 recorded deliveries in the province per year and infants born in this district needing hospital care are referred to the provincial level referral hospital.

**Rural and hard to reach communities like those in Preah Vihear bear a disproportionate burden of disease. Poor health here is a result of poverty, the lack of health services, low education levels and the low status of women.**

Consultations with the Preah Vihear Provincial Health Department has indicated that very few non-profits operate in the Province and those that do are not fully focusing on addressing neonatal health which is an urgent challenge that DVF and AHC are trying to address.

Direct beneficiaries of the proposed 1 year DVF programme:

* Over 2,200 children born in the DVF project area annually are expected to benefit from the general improvement in care available at the health centres and referral hospital.
* 56 nurses from 12 health centre and post clusters receiving intensive training and mentorship
* 208 Village Health Support Group members
* 40 medical and nursing staff from Cheam Ksan Referral Hospital who will receive intensitve, multi-day training to simulate and observe the best quality of neonatal care using Nursing Process and Essential Newborn Care (neonatal care, resuscitation and transfer).

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Project activities

Objective 1: Increase community level health literacy and engage and empower communities to take ownership of healthcare for their babies.

* **Mobilise 208 Village Health Support Group (VHSGs) volunteers covering 12 clusters (12 health centers, 6 health posts and 104 villages)**. The Saving Babies Lives team has already visited all villages and health centres and gave a presentation about the project to key members of the villages. These initial meetings were a necessary requirement for gaining access into the community and getting support, buy –in and local approval for the project which so far has been positive. The team utilised the monthly Health Centre Chief Management Committee (HCMC) meetings as an initial venue for presenting the programme aims and objectives and gaining initial details for the mobilisation of VHSG members to act as a catalysing agent for stimulating changes in practice and information link between the villagers, programme team and other health care providers. Each village has an average of two VHSGs that will participate in the programme.
* **Building the capacity of VHSGs to empower and mobilise their communities:** This will be achieved by organising Baby Health Meetings for the VHSGs to identify problems and concerns around neonatal health care in their own village. Monthly meetings (10 annually) will take place at the health centres in order for the VHSGs to discuss problems, attempt to arrive at solutions, and share learnings. Each Baby Health Meeting will be attended by two VHSGs from each of the villages served by the health centre. These meetings will be facilitated by the Saving Babies Lives team who will use a Participatory Action Research (PAR) methodology. The aim of the meetings will be to discuss the activities in the villages and the problems and solutions identified. The meetings will also allow the groups to discuss barriers in seeking, neonatal health care and possible solutions and what further input is needed. The AHC team will help the group plan ways of addressing these issues and to develop practical and achievable interventions. Finally, the meetings will allow the team to assess the group’s perception of the effectiveness of the programme.

Specific questions and prompts will be devised by the AHC team prior to the meeting and will be based on experiences gained from previous meetings. The meetings will be conducted in Khmer by one of the Saving Babies Lives team. A focus group discussion method will be used, with the Saving Babies Lives team member encouraging discussion and interaction in the group. The use of storytelling will be used to simulate discussions; these can then be relayed back to the villagers. At the end of each meeting the group will summarise the meeting and any conclusions drawn will be documented on a meeting conclusion form.

 Note: At the time of proposal submission, it was originally envisaged that Community Organisation Groups (COGs) would be formed with a combination of VHSG members as well as community members. However, upon further discussions with the Director of the Provincial Health Department, it was agreed that it would be more efficient to engage just VHSGs as they are already an existing entity operating within the current public health system.

* **Engage VHSGs to collect morbidity and mortality data.** The expected outcome of the pilot and a later full five year programme is a reduction in neonatal mortality. In order to assess the effectiveness of the programme an accurate measure of neonatal mortality rate is needed. Although births and deaths are required to be registered in Cambodia, often the births and deaths of young infants, particularly those born at home, are not registered. To accurately determine the neonatal mortality rate in Preah Vihear province, the VHSGs will be engaged to record details of all births and neonatal deaths in their villages. The data collected will include:village name,estimated date of delivery, date of delivery, gender, prematurity, place of delivery, birth weight, alive at 28 days.The data will be brought to monthly VHSG meeting and entered in to a database by a member of the programme team. If a neonate dies, a verbal autopsy will be performed by one of the Saving Babies Lives team using the WHO Verbal autopsy tool.

 **As part of the AHC’s coordinated project, follow-up KAPES surveys will be conducted with VHSGs to assess changes over the one year period**

Objective 2: Improve the quality of neonatal service delivery in 12 clusters across Preah Vihear province.

* **Deliver intensive training to 56 health center nurses in neonatal care.** The aim of the training is to build the capacity of health centre nurses to provide care for women in late pregnancy and the newborn and to competently manage complications during this crucial period. Training will cover simple interventions for neonatal care including for example methods to maintain optimum temperature and neonatal resuscitation. The five-day intensive training will be delivered at the Saving Babies Lives Training Centre and will be facilitated by the Saving Babies Lives nurses using scenario-based training, practical sessions, group work, and face-to-face methodologies. The KAPES assessment at the initial stages of the parallel AHC programme will allow the training to be contextually relevant to the current knowledge, skills, and capabilities of the health centre nurses and to address the gaps. Upon completion of the training, the nurses should be able to provide essential newborn care and identify and manage the any sick neonates, perform neonatal resuscitation, initiate referral and timely transfer of the unwell mother and/or neonate, practice effective infection prevention and control, and complete and utilise documentation.

Note: as part of AHC’s complementary, financially supported activities, health centre and health post nurses will also benefit from ongoing mentorship over the course of six months to support them after the intensive training. Health centres and health posts will also receive basic equipment to set up baby saving areas.

Objective 3: adapt and scale up AHC’s best-practice models for neonatal care in Preah Vihear’s referral hospital.

* **Build the capacity of 40 Cheam Ksan Referral Hospital nurses and doctors in newborn care**. This will include basic training and education activities for referral hospital nurses covering essential basic skills and knowledge for neonatal care including immediate newborn care and nursing process. Training will be conducted by AHC senior nurses. The training will focus on in-situ simulation and scenario-based skills training as well as infection prevention and control and building the capacity of referral hospital nurses to teach parents how to support their newborns care and development. Similar to the training of the health workers, the training of Referral Hospital medical staff will include residential training, clinical group observations at AHC and a six-month mentorship at the Referral Hospital.

 As part of AHC’s complementary, financially supported activities, similar interventions will be taking place at Preah Vihear Referral Hospital. A needs analysis of Cheam Ksan Referral Hospital will also be conducted and a Neonatal Unit will be established at both Referral Hospitals so that critically ill neonates can be referred from the community for more specialised care. The set up and analysis of Neonatal Unit needs and set-up is financed by AH

Timeline of major milestones and outputs:

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|  | 2019 - 2020 |
| Milestones and outputs (1st March 2019 – 28 February 2020) | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 |
| Monthly baby health meetings for 12 clusters |  |  |  |  |  |  |  |  |  |  |  |  |
| Neonatal Residential Training for 12 clusters |  |  |  |  |  |  |  |  |  |  |  |  |
| Neonatal Residential Training for Cheam Ksan Referral Hospital |  |  |  |  |  |  |  |  |  |  |  |  |
| Programme evaluation at end of the implementation |  |  |  |  |  |  |  |  |  |  |  |  |

**Indicators : The achievent of the outputs mentioned above, together with and external evaluation of the quality of the trainings performed , will serve as indicators for the DVF project. Evaluation of the concomitant AHC project including the impact on neonatal mortality will be done separately by AHC.**

What possible factors (risks) may hinder or delay fulfilment of the intervention’s objective.

Political

Cambodia has a long history of political instability and remains a developing country with a mostly one-party rule Government. Political instability at any time could have a major impact on the hospital as an organisation and our operations. We continue to closely monitor the situation and liaise with relevant ministries and government counterparts to ensure safety of our patients and staff.

Organisational

Currently AHC’s main operations are based in Siem Reap along with Sotnikum Operational District which is within a one-hour drive from Siem Reap’s main town. Preah Vihear is located much further from Siem Reap town which is a three-hour drive away. Due to the distances from Siem Reap town, the programme will require staff to be based at the Saving Babies Lives teaching centre over the working week. It is expected that there will be some challenges in recruitment of staff due to the requirement to relocate. The programme team is working with the Human Resources department to determine attractive packages for staff retention and will operate on a rotational basis. An additional three to five staff members are being recruited for the programme.

Economic

As a non-governmental organisation, AHC is reliant on donor support for financial and capital resources. AHC has a broad and varied donor base, however, to date has relied heavily on one-off commitments from corporates, foundations and individuals. Although AHC has cash reserves, there is a risk that the hospital is unable to fulfil its budgetary requirements however the organisation has consistently raised approximately $6 million USD each year over the past five years. To mitigate this risk AHC's five year (2016-2020) strategic plan included key action points for ensuring sustainability of fundraising with an emphasis on strategic partnerships with multi-year commitments. AHC also has a dedicated fundraising Department who are responsible for seeking additional funds for the programme with significant support from the Board of Directors. Several additional donors have been identified for the pipeline.

The plans with regard to systematising and using experiences

The need for health practices to be evidence based is becoming increasingly recognised. Because much of the evidence for bench marking clinical practice and other child-health interventions is based on research in higher-income settings, it is imperative to generate high-quality evidence about what works to reduce childhood and neonatal mortality and improve the efficacy of paediatric and neonatal care particularly in low-income countries like Cambodia. The Saving Babies Lives Programme will fill a critical need to test the efficacy and appropriateness of such practices in resource-poor environments. The programme will use implementation science and appropriate monitoring and evaluation methods in an applied form to demonstrate how simple but holistic and integrated interventions can make a sustained impact of neonatal mortality. We aim to feed results from our work into the national policy dialogue on neonatal healthcare as well as international literature and academic forums. However, the principal focus of our evaluations and this component of the programme is to understand what works to reduce neonatal mortality and improve children’s health in a challenging and resource-poor environment.

Quantitative data will be collected from all villages in Preah Vihear province as well as at AHC and the referral hospital. The quantitative data collected will be entered into a specifically designed database which will be stored on a secure server at AHC. Data visualisation will be led by the Global Child Health Data Analyst in order to present hospital-wide data in a more comprehensive way and facilitate understanding of impact and sharing of outcomes. Examples of quantitative data to be collected as part of the project include:

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| Quantitative data collected | Time points |
| Knowledge, attitudes, practice, equipment and staffing (KAPES) survey  | Pre-and post training |
| Birth details and neonatal morbidity | Birth and four weeks of age for all births in Preah Vihear |
| Preah Vihear Referral Hospital | Neonatal births and deaths at Referral Hospital |
| AHC | Infant presents to AHC Neonatal Unit |
| Death: verbal autopsy | On the death of a child living in Preah Vihear Province |

* **Collect qualitative programme data** Qualitative data will also be collected in order to contextualise the quantitative data. The programme will be assessed qualitatively by conducting meetings which will include the acceptability feasibility and success of the Community Organisation Group which will be conducted within each Community Organisation Group annually. Meetings will also be held to gather health centre staff and village health worker opinions on the programme and ideas for improvement. An analytical framework will be developed to identify common and emerging themes which will then be coded. Once the codes have been established, they will be applied to the whole data set to facilitate interpretation of the data. The UK Medical Research Council guidelines for evaluating complex interventions will be used as a guide.
* **Conduct annual KAPES assessment in health centres and referral hospital.** The KAPES assessment will follow the same methodology as the initial needs analysis conducted at the health centres during the preparatory stage of this programme. At the end of each yeah of the programme, an additional KAPES assessment will be conducted to assess the progress of project implementation and to allow for adjustments to programme design accordingly.

All programme results, best practices, and lessons learnt during this first phase of the programme will be used to adjust and inform future programme activities are required.

**4. Planned intervention-related information work in Denmark**

Project-related information work will be conducted in Denmark through DVF’s usual information channels including the quarterly DVF paper publication, the yearly “Culture day” and ad hoc member meetings. Photos and case studies of the intervention will be provided by AHC. Information work as part of this project does not require additional budget.

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