



Angkor Hospital for Children
2019 ANNUAL REPORT



**20 Years of Transforming
Paediatric Healthcare**

angkorhospital.org

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At the beginning of 2019, we introduced our new, three-year strategic plan. The framework is designed to strike a balance between continuity and progress in paediatric healthcare. Our aspirations remain consistent with our founding vision: for all Cambodian children to have access to quality, compassionate medical care. Yet our purpose keeps pace with the shifts, needs and realities of the landscape in which we operate.

Our strategic goals prioritise remaining challenges where we can achieve the most impact, methodically narrowing our focus within our hospital walls, while extending our reach outside. We are leading the way in providing specialty care available nowhere else, building capacity beyond our walls, and embodying exemplary governance in our approach.

AHC's capacity to deliver, the increasing demand for specialist care, and the gravity of impact we've seen just 12 months into the formal implementation of our new strategic plan confirms its relevance and reinforces our efforts. The summer's record dengue outbreak underscored the need for specialised care as we sought to treat the most critical cases, while supporting the government to prevent and more accurately diagnose the disease. A marked increase in oncology patients necessitated the development of a dedicated oncology ward months earlier

than planned. We were able to meet these changing needs thanks to our strategic partnerships, generous donors and the ongoing support from our volunteers.

We recognise that our progress does not exist in a vacuum. A culture of collaboration – which has fostered two decades of committed, long-term government support – means success is not defined as a silo, but as a stronger, sustainable Cambodian healthcare system. Our priorities and their results are aligned to the Ministry of Health's health development goals; they are built to accelerate progress and address remaining challenges. As the government continues to implement a district-based health system that extends access to primary healthcare, we're building capacity in healthcare workers that extends quality and expertise. In Cambodia's most rural province, government support and integration have allowed us to pioneer a model for transformative, high-quality, accessible neonatal care. Within our walls, our specialty services were considered blueprints for replication, as government staff spent weeks visiting, training and studying the model of our neonatal, intensivist and medical social work units.

As part of our efforts to refocus our objectives and continuously improve our approach, we also aim to report richer and more meaningful information to our stakeholders. In 2019, we undertook the exercise

of defining our impact. We developed a theory of change model, reviewed our organisational quality assurance programme for areas of improvement and efficacy, and made strides in data monitoring and visualisation. This work underscores how our outputs, outcomes, and the long-term, sustained change they deliver exist in layers of connected environments – from individual to societal levels – transcending sectors and scale in a whole-systems approach. By further formalising these underpinning frameworks and refining processes for performance measurement and reporting, we are able to communicate our value quantitatively and qualitatively, delivering effectiveness and accountability to the donors who invest in our work.

We will continue to transform paediatric healthcare in Cambodia and maintain the highest of standards because of your belief in our mission. Your sustained partnership and generosity touch each child and family who walk through our gates. To our donors, volunteers and those who have spent time in our wards, you have made all of this possible.

**Gratefully,
AHC Executive Committee**



Prof. Claudia Turner,
MB BS, PhD, FRCPCH
Chief Executive Officer

Ngoun Chanpheaktra,
MD, DCH, DTMH
Hospital Director

Tep Navy,
RN, MBA, PhD (Hon)
Chief Operating Officer

Gregor Mckellar,
BAcc, CA, MSt
Chief Commercial Officer

Robert Gazzi
Board Chairman

Paediatric healthcare in Cambodia today

Over the past two decades, Cambodia has made significant progress.

As one of the fastest growing economies in the world, Cambodia has sustained an average growth rate of 8% (World Bank, 2019).

While poverty continues to fall, it remains an issue. Three million are poor, and 4.5 million near-poor (or vulnerable to falling back into poverty if difficulties arise). Despite economic growth in and around the capital, Phnom Penh, where the population has more than doubled in the past 15 years, 90% of the poor live in the countryside (World Bank, 2019).

Health outcomes have improved as the country's health system has expanded and strengthened. Cambodia now has a well-established, district-based health system with a network of facilities across the central, provincial and community level. Outside of the capital, however, most health centres only offer basic, primary health services provided by nurses and midwives. Many provincial hospitals are unequipped to provide emergency, intensive or specialty care. Throughout, the care offered is of variable quality, facilities lack resources, and competency and knowledge among healthcare staff is rudimentary.

There are almost five million children in Cambodia – one third of the country's total population (Cambodian Ministry of Planning, National Institute of Statistics, 2014). Almost half suffer from malnutrition, and maternal, neonatal, and childhood mortality rates remain some of the highest in the region.

The need to improve the safety and quality of health services, as well as overcoming remaining health inequities – both geographically and among various economic and social groups, remain persistent issues. Progress also brings challenges, as the prevalence of noncommunicable diseases (NCDs) begins to rise sharply and cancer, chronic respiratory issues, and diabetes pose new and urgent threats.

There is work to be done as health remains one of Cambodia's most critical development priorities, and its most challenging.



42%

of Cambodia's children suffer from malnutrition

14

neonatal mortality rate (deaths per 1,000 births)

1 in 3

Cambodian children do not receive the basic healthcare they need¹

¹ Cambodian Ministry of Planning, National Institute of Statistics, 2016



Our approach and alignment with the Ministry of Health

AHC contributes to national progress on the most pressing paediatric healthcare issues in Cambodia by aligning our strategic priorities and activities with national health policy.

Together, our unified agenda contributes to better health outcomes, as we optimise our resources for national impact in reducing morbidity and mortality, addressing preventable illnesses, and enhancing equity in paediatric healthcare.

The ministry's main health development objective is to improve and extend primary healthcare through implementation of a district-based health system that brings basic health services closer to the patient population in rural areas.

AHC's corresponding programmes and initiatives address remaining challenges in quality and expertise by delivering specialty care unavailable elsewhere and building capacity in the healthcare workforce.



135,488

total treatments provided, from outpatient care to specialty services

100,686

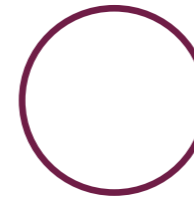
attendances recorded at AHC educational sessions, including external healthcare professionals, nursing and medical students, and AHC staff

105,089

attendances recorded at AHC community prevention activities, within villages, schools and communes

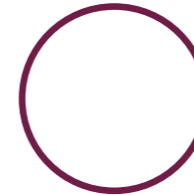
KEY PERFORMANCE INDICATORS

AHC measures quality and effectiveness by monitoring Key Performance Indicators across departments, in line with international best practices, to improve clinical practice and health outcomes.



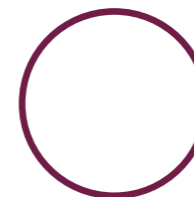
Hand hygiene levels above 90%

AHC departments maintained an average 91% compliance to hand hygiene standards in 2019, more than 50% higher than the average healthcare setting (WHO, 2009).



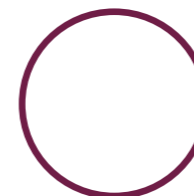
Stabilised waiting time

Waiting time has a significant impact on patients' overall experience and can act as a barrier to care. Average waiting time in AHC's Outpatient Department remained stable at 194 minutes.



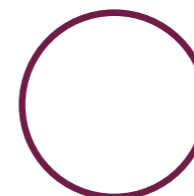
Healthcare-associated infections (HCAI) below average

An average of 4.7 infections per 1,000 bed days placed AHC's healthcare-associated infections rate lower than the average developed country.



12 publications in premier journals

AHC aims to utilise our insight and experience as a leading child health organisation in a low-resource setting to influence the larger global child health conversation. In 2019, AHC contributed 12 publications to premier journals.



Continued decrease in readmission rate

AHC measures readmission rates to ensure quality management and to aid in performance reporting. From 2017 to 2019, there was a 50% decrease in readmission.

For two decades, AHC has transformed healthcare in Cambodia by advancing paediatrics as a specialty. Today, we are building on this legacy by providing paediatric subspecialty care available nowhere else.

The importance of providing care for paediatric specialty conditions cannot be overstated. Research continues to highlight the significance of subspecialty care, leading to improved outcomes, higher quality of life, and increased survival rates for children with complex and chronic health conditions (UCLA Center for Health Policy Research, 2013).

Currently, the majority of Cambodia's trained medical specialists are not accessible to the population. At the community and provincial levels, patients with specialty conditions often go undiagnosed or untreated. For those with chronic conditions, follow-up care is not commonly offered, and patient return rates are generally low.

As the government prioritises increased access to and expansion of primary care, forging closer links between rural populations and local and regional facilities, AHC's prioritisation of clinical expertise fills the gap. We will lead the way in providing paediatric subspecialty care that's needed to treat children with the most complex conditions.

By providing comprehensive, coordinated and holistic specialty care available nowhere else, our response addresses where need is greatest, accelerating progress within Cambodia's healthcare system, and towards the attainment of international development goals and targets.



What is subspecialty care?

Subspecialty care addresses specific diseases or systems of the body, and requires advanced clinical care provided by highly trained specialists uniquely qualified to treat complex, serious, rare or chronic conditions.

79%
of all medical specialists in Cambodia work in Phnom Penh¹

¹ Cambodian Ministry of Health, 2016



“ When everything is focused on a specialty — team, training, technical support — then, care happens best. ”

Dr Ngoun Chanpheaktra
Hospital Director

2 out of 3

patients attended AHC follow-up appointments in 2019

35%

increase in patient registrations requiring specialty care in 2019

Growing our specialty services

The need for paediatrics expertise and quality was clear early in AHC’s founding. Just a year after opening, our Emergency Room and Surgical Unit were established.

The lack of care for chronic conditions requiring ongoing, holistic support was also apparent: in 2003, we developed a HIV/Homecare programme based on an interdisciplinary approach that today, serves as a vetted model of care for chronic conditions.

By 2006, we opened dedicated specialist units: an Intensive Care Unit (ICU), as well as Dental and Eye Clinics, which together treated thousands of children yearly.

After 2012, our specialty care multiplied as we aimed to improve survival rates for our most vulnerable and critical patients. We developed a Neonatal Unit, the first of its kind in Cambodia. When our Oncology Programme launched, we were one of only two hospitals in Cambodia capable of providing chemotherapy to children.

In 2019, we formalised and integrated our approach of addressing where need is greatest, by narrowing our focus on paediatric subspecialty care available nowhere else.

The year was marked by progress towards this goal.

We created an integrated care pathway to streamline visits for patients requiring

specialty, coordinated and concentrated care. In a modified block scheduling system, patients are assigned appointments based on their specialty condition and receive holistic support during a singular visit.

For instance, all neurology patients are seen Tuesday mornings by a lead subspecialist and specialist nurse, and if necessary, a counsellor, nutritionist, physiotherapist or other holistic support. With difficult cases, subspecialists seek advanced testing, treatment and consultation assistance from our international technical partners and specialist volunteers.

These emerging specialist teams will provide integrated, comprehensive treatment plans, working together to monitor a child’s progress and provide coordinated care that is timely, patient-specific, and achieves best outcomes.



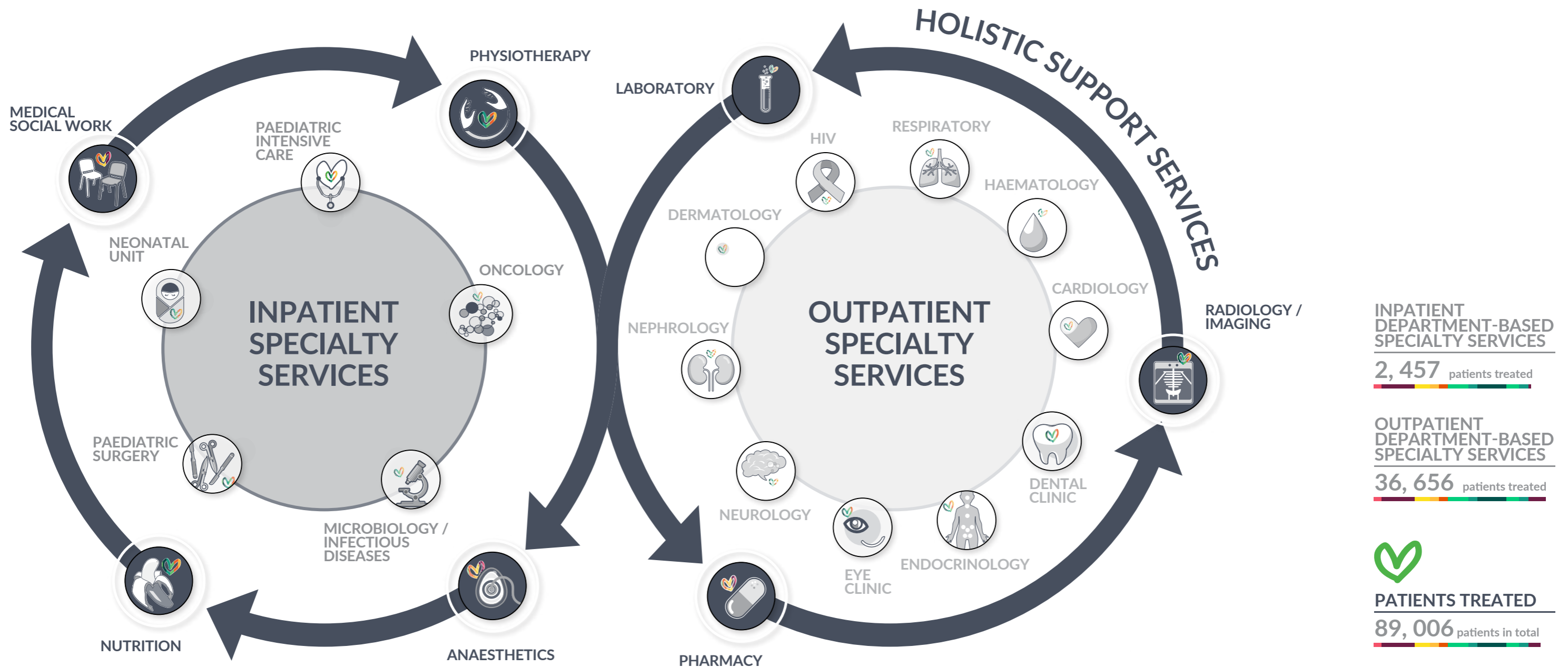
AHC’s Specialist Care Model

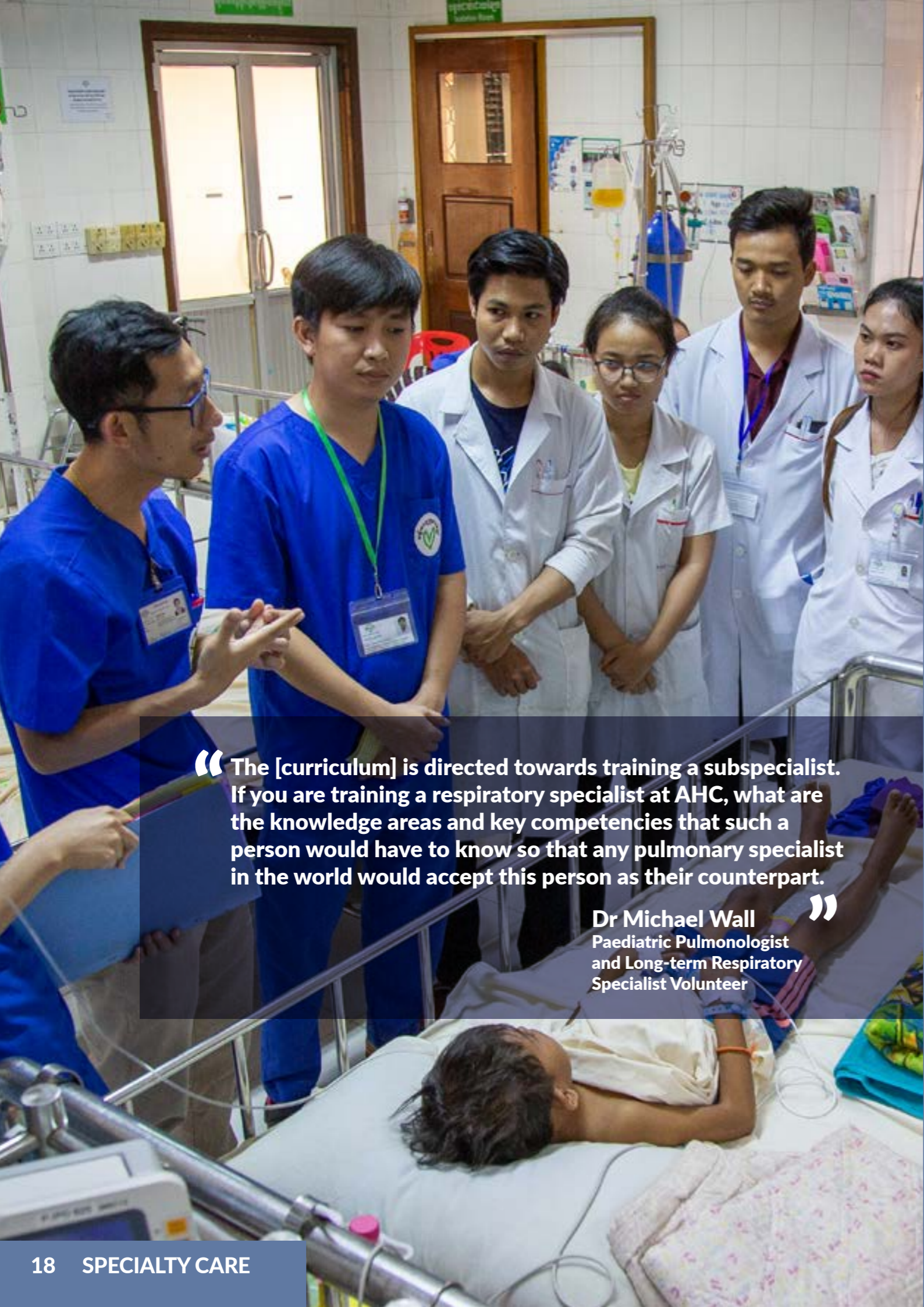
AHC'S SPECIALTY SERVICES

Our Neonatal Unit and Oncology Programme, two of our first formal subspecialties, have become our gold standard in subspecialty care. The services will continue to provide a blueprint for modelling subspecialty care in a low-resource setting: high-quality clinical service, delivered by a specialist team, developed through a robust training programme, supported by dedicated volunteers and ongoing mentorship.

Since the formal implementation of our new specialty care model, demand for AHC's specialty services has increased. Patients are increasingly returning to AHC for follow-up care, with the number of specialty patients registering growing monthly. This follows a steady increase nationally in the number of children being diagnosed with such conditions, necessitating our work.

With advanced specialty care and an integrated approach, children will go beyond surviving conditions that were once life-threatening – they will thrive.





“ The [curriculum] is directed towards training a subspecialist. If you are training a respiratory specialist at AHC, what are the knowledge areas and key competencies that such a person would have to know so that any pulmonary specialist in the world would accept this person as their counterpart. ”

Dr Michael Wall
Paediatric Pulmonologist
and Long-term Respiratory
Specialist Volunteer

Training specialists, building teams and refining curricula

Our growth in the level of care we offer our patients allies with our efforts in education.

The innovative, subspecialty curricula we've developed are directly influenced by the patients we treat; similarly, our subspecialists' clinical learning experiences enhance the care we offer. Ultimately, we're able to both improve healthcare for patients and enrich medical education: what happens in our wards extends to our classrooms.

2019 marked a year of increased standardisation and the implementation of our subspecialty care curricula. Years in the making, each subspecialty's curriculum has been modified through an iterative, structured process: based on clinical guidelines that meet international standards, adapted for relevancy in Cambodia, and edited and reviewed by expertise, including our specialist volunteers and technical partners.

Today, the curriculum is tailored to training a subspecialist fellow. Each subspecialty has a senior-grade doctor, many of whom have come through AHC's three-year paediatric residency programme, as well as middle-grade doctors who are training as fellows in their specialisation.

The curriculum entails foundational theoretical knowledge in the subspecialty as well as embedded clinical application and self-directed learning. Fellows develop a mastery of core symptoms, conditions

and clinical decision-making, and build competency in available tools to accurately diagnose, treat and manage subspecialty conditions.

Currently, curricula are in place for all subspecialties. They are also continually revisited and refined; our curriculum reflects the changing dynamics of the level of care we're able to offer. AHC also plans to make the curricula available for other healthcare facilities, health ministries and councils, to use as a blueprint for replication of subspecialty development and service delivery.

Fundamental in building subspecialty capacity is the international expertise afforded to AHC staff through volunteers and technical partners. In some cases, partnerships are formalised, like AHC's Oncology Programme with Boston Children's Hospital and Harvard Medical School. In other cases, AHC staff receive on-the-ground training from specialist volunteers who dedicate their own time and resources through regular visits to AHC. These volunteers continue to guide fellows' development through ongoing remote mentorship, keeping communication lines open to discuss cases.

In addition to subspecialty training at AHC, fellows are also sent externally to courses, attachments and consultations overseas to build practical proficiency. Because of this continuing education and ongoing coaching from dedicated experts, fellows are able to master and excel in their subspecialty.

With thanks to our volunteers:

144 volunteers from **12** countries

OUR SPECIALIST VOLUNTEERS: IN THEIR OWN WORDS

“ Each year, as time went on, [AHC Paediatric Cardiology Subspecialist Dr Kimseng] became more and more independent. Initially, I would interact with him several times a month. If he had a difficult case, he'd send an email with a clinical problem or an echocardiogram (ECG). I would then give him my opinion. As time has gone on, his personal knowledge and experience have grown and he required less and less support. Now, we continue our personal education as equals. I would send my own family to him for care.

”
Dr Mark Duster
Paediatric Cardiology Specialist and Clinical Professor of Pediatrics, Cardiology, at University of Colorado School of Medicine

“ [AHC Neurology Subspecialist Dr Rachana] arranged for her most challenging patients to come to the clinic during the weeks I visit. Rachana sees the children and we discuss each child in turn. Occasionally we go to consults in the ward... Between and since these visits, I have been able to support Rachana by email with difficult cases. In addition, we have been able to arrange for Rachana to come to Oxford and stay with my wife and me whilst attending a three-week programme in the paediatric neurology department in the Oxford Children's Hospital. This has been helpful to Rachana in two ways – first seeing a range of paediatric neurology cases and discussing diagnosis and management; second, developing links with my colleagues so that, hopefully, there will be a wider circle to support her directly and by email over the coming years. It has been such a pleasure and privilege for me to get to know Dr Ke, Dr Rachana and their enthusiastic and welcoming clinic colleagues.

”
Dr Michael Pike
Honorary Consultant Paediatric Neurologist, Oxford Children's Hospital and Honorary Senior Lecturer, University of Oxford

“ My entire focus is now working directly with [AHC Respiratory Specialist Dr Chinda]. I see change in her because she was a neophyte when we started, and now, is becoming the leader of AHC's respiratory programme. She is maturing and learning more, and has been for two and a half years. While I'm only there for a period of time – once a year – we make our time useful. It's a forced march; I'm with her all day and every day.

”
Dr Michael Wall
Paediatric Pulmonologist and Professor of Pediatrics, Oregon Health & Science University

“ [AHC Medical Education Director Dr Bopthal and I] would go through the endocrinology curriculum, and he was very good about ensuring that what was included wasn't out of the organisation's capacity nor super complex, but geared towards the cases they would actually be seeing... The teaching has moved from being didactic to being case-based and hands-on – the same way we teach residents in the US. In my first years volunteering, it wasn't as hands-on. But now, during rounds, they're feeling the thyroid gland, making sure it's not enlarged, doing the exam assessment as a group.

”
Dr Areej Hassan
Adolescent Medicine Specialist, Boston Children's Hospital and Assistant Professor of Pediatrics, Harvard Medical School

“ We have a weekly conference, even if there are no new patient cases to discuss. They email me any time they have questions, so we don't have to wait for our weekly conference to take care of a patient. We've come a long way, we've got a long way to go, but [what we're doing now] is the best on offer.

”
Dr Bruce Camitta
Paediatric Haematologist-Oncologist, Children's Hospital of Wisconsin



“ If we can't find them,
we have to grow our own. ”

Tep Navy
COO

Progress brings challenges

12.3

Average number of specialists available for recruitment each year, nationally¹

¹ WHO, 2014

One of AHC's great strengths has been the expertise of our healthcare workforce. In 2019, this strength – and the need to fill our ranks with talent – made hiring one of the year's greatest operational challenges.

A shortage of highly qualified healthcare workers in-country made recruitment an extremely difficult task. Finding several subspecialists, including paediatric ophthalmologists and paediatric surgeons, proved near impossible.

In Cambodia, training for medical specialists is supported for only a small number of advanced students from the country's four public medical training institutions (WHO, 2014). Training does not yet exist in-country for most paediatric subspecialties, requiring doctors to leave Cambodia to obtain specialised education.

The difficulty in finding expertise outside of our walls, and the need to reach a critical mass of highly qualified specialists within, means training our own subspecialists is imperative.

In doing so, we encounter resource implications, including time and costs associated with building subspecialty expertise and offering specialty care. Our fellows undertake an enormous amount of sacrifice to expand their expertise. Along with self-directed learning outside of work hours, the vital international clinical attachments they require demand time and cost – costs which often cannot be afforded without sponsorship or scholarship.

The path to overcoming this issue is prioritising subspecialty training to ensure viability in the next generation of paediatric healthcare workers.

5,561

total number of dengue treatments provided in 2019

365%

more than 2018

\$588,453

spent on dengue treatment in 2019

10%

of our 2019 budget

In gratitude for:

\$217,000

raised by

36

donors in

12

countries

SPOTLIGHT

The dengue outbreak

Our resilience was tested within our wards in 2019 as we responded to AHC's worst dengue outbreak on record.

We functioned over-capacity throughout the summer, adding beds in our units and hallways. Our staff worked extra shifts and longer hours around-the-clock to treat the most severe cases.

During that critical time, the generosity of our donors reminded us of how impactful our supporters are in not just driving our success, but in helping us overcome. Because of this support, no patient was sent home without the care they needed, and every critical case was admitted.



The multidisciplinary, coordinated care team

AHC's values-driven, holistic approach in treating the whole child has always put the needs of patients and their families first.

Through coordinated, multidisciplinary care provided in a singular setting, holistic support teams address the root cause of the condition along with eliminating symptoms.

This is particularly important for patients staying in our ICU or our Inpatient Department, the heart of our hospital. Here, our holistic support services coalesce, as staff carry out 360° assessments of all factors that can affect a child's health including their psychological, physiological and sociological status.

In 2019, our seven holistic support services – Pharmacy, Medical Social Work, Nutrition, Physiotherapy, Laboratory, Radiology and Anaesthetics – became increasingly interdisciplinary as they embedded within wards and the patient care setting, working interdepartmentally to provide coordinated care.

This multidisciplinary and holistic methodology is unique within Cambodian hospitals. By considering the impact of social determinants of health, AHC is able to improve not only treatment strategies but also overall patient outcomes, unattainable through fragmented care.



SPOTLIGHT

The NAM project

AHC's cleft specialist team is the embodiment of high-quality, holistic and multidisciplinary specialist care. The team includes staff from Dental, Nutrition, Surgical, Physiotherapy and Medical Social Work units, whom together offer a unique cleft lip and palate treatment like nowhere else in Cambodia.

The Dental Unit uses Nasoalveolar Moulding (NAM) to reshape the gums, lip and nostrils of a cleft patient. Using a plastic plate inserted into a child's mouth, it is a nonsurgical intervention that reduces a cleft in the months before surgery, decreasing the number of major surgeries a child needs to repair their cleft. The NAM plate also acts as the roof of a child's mouth, which is critical to create suction when breastfeeding.

The breastfeeding counselling provided by the Nutrition team teaches proper feeding techniques so babies with cleft can feed properly and gain weight, building the strength needed to undergo surgery. AHC's Surgery team initially repair the cleft lip; then, over several years, repair the palate by grafting bone to the roof of the mouth. NAM treatment is essential for effective surgeries and a full recovery of a cleft.

Without NAM and the full range of multidisciplinary treatment offered at AHC, the dozens of cleft patients who come to AHC for treatment each month would not have their cleft fully repaired, leading to major dental, speech, developmental, and social issues in the future.



HOLISTIC CARE AT AHC: INCREASINGLY INTERDEPARTMENTAL



Medical Social Work

A new title and team structure – placing counsellors within units and assigning specialties to each – formalised the Medical Social Work Unit's efforts as it becomes ever more specialised. With dedicated oncology, neurology and other subspecialist counsellors, as well as enhanced psychological assessments and therapy, the unit is moving beyond provision of general social service needs for short-term interventions.



Nutrition

The Nutrition Unit expanded its team and formed a Nutrition Committee, designed to share knowledge and information interdepartmentally by delineating care protocols within each unit and conducting nutrition training for staff, along with the creation of a new curriculum.



Pharmacy

Pharmacists can now be found in hospital wards, working directly with medical and nursing staff to develop and implement medication plans that are appropriate and meet patient care goals, optimise medication therapy, and contribute to better coordination of care and improved outcomes. A new clinical pharmacy curriculum is in development.



Radiology

Interdepartmental since its establishment, the Radiology team continues to conduct monthly conferences related to radiology cases in the OPD as referrals continue to increase. Conferences cover basic radiology, case review, and proper protocol for imaging requests.



Laboratory

AHC's Laboratory strives for excellence in diagnostics and testing, and through clinical care support, maintaining a team of laboratory technicians committed to efficiency and efficacy in interdepartmental collaboration.



Physiotherapy

As one of few healthcare facilities in Cambodia that offers specialised physiotherapy specifically for children, staff undertook trainings to address increasingly specialised conditions, including cerebral palsy.



Anaesthetics

Along with improving access to and quality of anaesthesia care for providers across Cambodia, AHC's Anaesthetics team trained nurse anaesthetists at Lao Friends Hospital for Children, receiving the Health Volunteers Overseas (HVO) Golden Apple Award in 2019 for their dedication and efforts.

A health system is only as strong as the sum of its parts. To advance Cambodian intellectual sustainability and healthcare and strengthen health systems, AHC builds capacity that transcends sectors and scale in a whole-systems approach.

While health system strengthening is a national priority, the Ministry of Health is primarily engaged in two fronts: improving the health status of the population against specific targets, and increasing the access and efficiency of networks providing health services. The attainment of these goals, however, is constrained by a system that is not yet equipped to deliver the education, tools and training needed to achieve significant progress.

To support and expedite greater change, AHC is building capacity within and across Cambodia's healthcare system by developing and delivering multi-tiered programmes at the individual, community and institutional level.

This has been made possible because of the technical cooperation and integration AHC has fostered with government departments and national institutions over two decades. Today, as an established advocate and respected actor for paediatric healthcare in Cambodia, AHC delivers impact within the health profession, in the community, across the country and beyond.

By training students and healthcare professionals to the highest standards, we're fostering excellence and advancing medical expertise across the continuum of care.

We're improving health literacy in the community through interventions and education that empowers children, caregivers, villagers, and community health workers to decrease preventable illness.

Our replicable, integrated healthcare training programmes and innovative solutions are building organisational capacity, ensuring sustainability, and saving babies' lives.

By sharing our best practices, evidence-based knowledge and data-based analysis, we're developing robust research, informing national policy and contributing to the global child health dialogue.



What is capacity building?

Capacity building is the development of knowledge, skills, commitment, structures, systems and leadership that enables effective health promotion (WHO, 2006).

Mechanisms improve health at three levels:





IMPACT IN THE PROFESSION

Since its inception, AHC recognised that in order to deliver the highest level of care, we must train top medical talent.

Only with appropriately trained doctors, nurses, and other healthcare workers, informed by the health needs of the communities they serve, can child health outcomes continue to improve across Cambodia.

At the time of AHC's founding, public health institutions were beginning to rebuild. There was no unified medical curricula and few medical experts. Students were deployed to government-run clinics without sufficient classroom and clinical training.

In response, AHC built a literal cornerstone in medical education, aimed at providing the best education possible to Cambodian healthcare workers. By 2001, increasing numbers of health workers were arriving at AHC to receive advanced medical, nursing and administrative training. That year,

construction on a Medical Education Centre began to accommodate the success of AHC's training programmes.

Just four years later, AHC was recognised as a leader in medical education, receiving national accreditation from the Ministry of Health as a paediatric training facility.

In the following years, AHC would train hundreds of doctors, nurses, and other healthcare workers annually, in programmes ranging from the flagship paediatric residency to WHO-endorsed training courses.

AHC would produce professionals with the skills to not only practise, but teach and lead in each of Cambodia's 25 provinces, serving as advocates for improving the healthcare system around them.

Today, AHC remains one of only three paediatric training facilities nationwide, and the only offering formalised subspecialty training.

CONTINUITY IN VISION

AHC's founding aspirations remain consistent with today's strategic goals.

In 2001, AHC established the following goals for its medical education programme. Today, these goals continue to resonate as our footprint grows larger.

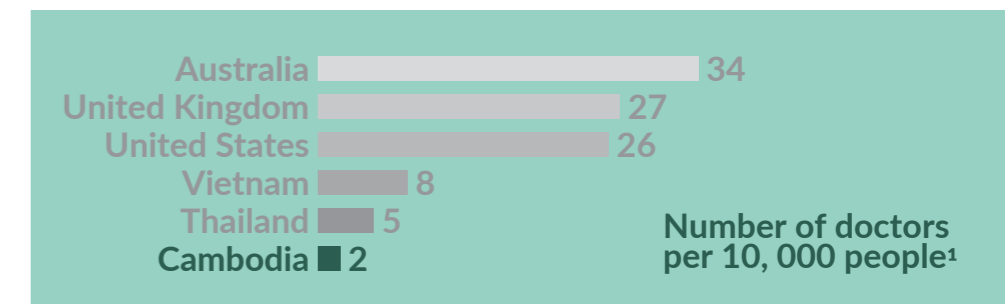
- 1 Provide advanced paediatric training so trainees will in-turn train others
- 2 Increase the number of qualified medical personnel
- 3 Strengthen the medical programmes of local governmental hospitals and health centres
- 4 Increase collaboration between government hospitals and other NGOs
- 5 Establish codes of ethics and conduct to be emulated by other health centres



“ As a clinical training site, AHC ensures students and residents experience practice conditions that resemble the conditions graduates ultimately face ”

Duong Vibol
Director of Education

Moving quality in the education agenda forward



¹ WHO, 2014

Since AHC's founding, the number of health education institutions in Cambodia has significantly expanded.

The number of healthcare professionals in the workforce has also dramatically increased. Yet, critical health workforce issues remain. These include the lack of opportunities for in-service training and continuing professional education, and the lack of evaluation against international standards (WHO, 2013).

Of greatest consequence, however, is the lack of quality and profundity in medical education. Traditionally, professional health training in Cambodia has been passive, teacher-centred and hierarchical.

A lack of paediatric exposure, academic depth, on-the-job and hands-on training, as well as ongoing mentorship, has resulted in a calibre of new graduates that are undertrained and inexperienced.

As the government works towards sheer increase in cadres of providers—including nurses, midwives, doctors, and other health workers, AHC's education agenda addresses the more complex problems within the health workforce: improving quality, clinical integration and proficiency in paediatrics – across grades and disciplines.



SPOTLIGHT

Partnerships

AHC's transformative approach to medical education relies on intersectoral engagement of institutional partnerships and government collaboration.

A strong history of technical cooperation with the Ministry of Health, Provincial Health Departments, medical schools, nursing schools and private clinics across the country allows AHC to train students and healthcare staff in the highest standards of paediatric care.

In 2019, increased numbers of students arrived from partner universities, including the University of Health Sciences, International University and University of Puthisastra.

“ The government has recognised the way we train is unique; some of the major hospitals in Phnom Penh prefer students who have trained here. We turn out strong doctors. ”

Dr Lov Ke
Chief of Outpatient Department

AHC'S EDUCATION TENANTS

Training at AHC goes beyond traditional teaching methods, striking a balance between local relevance and international excellence. At AHC, our training methodology is:



Experiential

Case-based microteaching takes place within AHC's wards, beyond the classroom and alongside expert paediatric subspecialists.



Holistic

Clinical competence is paired with training on compassionate care, self-care, quality improvement, pedagogy, mentorship and communication.



Learner-Centred

Hands-on training is participatory and active, involving practical application over rote learning and memorisation.



Responsive and Contextual

Trainees learn in conditions that prepare them for the environment they will ultimately face; programmes are continuously updated and improved based on feedback and other quality indicators.




Standardised

Programme curricula aligns and expands along national guidelines to represent international standards for training.

“ When they leave, they say they were taught a good model at AHC. They weren't observers here. They're not just doing theory, they're practicing. We throw them into the sea, and help them swim.

Dr Lov Ke 
Chief of Outpatient Department

“ At AHC, students are seeing things they've never seen before. ICU infrastructure, like mechanical ventilation and blood-gas machines, are not available anywhere else. We have protocols for treatment – protocols they are learning for the first time. And, here, they learn teamwork.

Dr Chheng Keng 
Chief of ER/ICU





Developing pathways to progress

34%

average yearly increase in attendances at AHC courses and workshops since 2017

In 2019, increases were recorded across AHC's education indicators: from the number of medical, nursing, continuing professional development (CPD) courses and workshop sessions offered, to the number of students, staff and government healthcare workers who attended.

AHC's newest programmes gained momentum, thanks to expanded partnerships and increased integration with public health institutions.

The new one-year medical fellowship programme, which replaces the three-year paediatric residency, launched in 2019. The fellowship is a training programme for practicing Cambodian doctors that builds knowledge and confidence in general paediatrics. Each fellow completes three-month rotations in AHC's Outpatient Department, Inpatient Department, Emergency Room and Neonatal Unit, treating patients under the supervision and guidance of the unit's chief. Clinical education, case-based assignments, and robust performance assessments are used to advance fellows' clinical skills and competence.

AHC's newest nursing programme, the two-year Certificate of Paediatric Nursing (CPN), graduated its first cohort in 2019. The CPN is the first and only one of its kind in Cambodia, equipping AHC-employed nurses with advanced training and knowledge in paediatrics. It comprises weekly classroom-based sessions covering the nursing process, child health promotion and paediatric subspecialties.

“ With the CPN, nurses are equipped with paediatric expertise and competencies that take them farther in their careers. Many nurses who leave AHC and go on to government hospitals are offered increased responsibilities and promoted to nursing manager or deputy. Hospitals acknowledge and respond to the capacity of our staff. ”

Som Sophal
Nursing Director

EDUCATION AT AHC

“ Unfortunately, paediatric specialists are simply not here. We do not have a trained populous in Cambodia. So what we have to do is roll up our sleeves, and do the training ourselves - the only way forward is for us to train. ”

Dr Claudia Turner
CEO

MEDICAL

80
interns

Medical Internships | AHC hosts medical interns from Cambodia's public health institutions in 2-5 month clinical placements across departments.
(5 months)

5
residents

UHS Residency | Final-year University of Health Sciences medical students learn through practical, hands-on training in paediatric subspecialty attachments.
(6 months)

21
residents

AHC Paediatric Residency | AHC's own paediatric residency programme will graduate its final cohort in March 2020.
(3 years)

4
fellows

Paediatric Fellowship Programme | Practising physicians from government facilities rotate through each of AHC's four core units (OPD, IPD, ER/ICU, Neonatal Unit), engaging in high-quality paediatric care.
(1 year)

NURSING

595
students

Mandatory Pre-Service Training | Every final-year nursing student in Cambodia is required to spend two weeks at AHC in order to learn the nursing process: a government-required, AHC-developed protocol for quality nursing.
(2 weeks)

107
nurses

Certificate of Paediatric Nursing | The only certification of its kind in Cambodia, AHC nurses learn to apply the nursing process and deliver high-quality, holistic paediatric subspecialty care.
(2 years)

CONTINUING PROFESSIONAL DEVELOPMENT (CPD)

15
subspecialties

Paediatric Subspecialty Training | AHC doctors and nurses, as well as government staff, on request, train in paediatric subspecialties through self-directed learning and AHC-developed curricula, with mentorship and instruction from volunteers and technical partnerships.
(ongoing)

3,288
sessions

Continuing Medical & Nursing Education | Refresher courses, workshops, unit-specific conferences, and weekly teaching sessions taught by senior doctors or visiting experts help maintain and build staff skill and knowledge in paediatric care.
(ongoing)

90
trainings

Short Courses for External Healthcare Workers | Since 2004, AHC has provided training for government healthcare workers from across Cambodia on request; courses cover a wide range of subjects and last from three days to three months, with curricula tailored to the needs and facilities of each request.
(ongoing)

101
trainees

Advanced Paediatric Life Support (APLS) & Paediatric Life Support (PLS) Training | As the only provider of this course in Cambodia, practising healthcare providers learn lifesaving paediatric trauma care; for select candidates, training of the trainer (TOT) courses are offered to encourage sustainability and allow for independent trainings and ongoing skill replication elsewhere.
(2x/year)

International and National Conferences
147 staff in 13 countries

AHC Paediatric Healthcare Conference
290 attendees



SPOTLIGHT

A holistic approach to capacity-building

Soft-skills and management training are essential in developing human resources for long-term health system strengthening.

In low-resource settings like Cambodia, however, these skills are rarely prioritised in healthcare training and sustained capacity building in this area is limited. According to the WHO, adequate attention to such foundational skills is critical in order to enable large-scale, sustainable change in healthcare delivery.

In 2019, AHC scaled up management training for medical and nonmedical staff alike. Courses were designed to equip staff with specific soft skills in communication, leadership, succession planning and conflict resolution.

Beyond our walls, AHC took a holistic approach to capacity building for government healthcare workers. In programmes like Saving Babies' Lives, training included tangential aspects of healthcare delivery, like supply chain management. Processes and support systems were put in place to improve efficiencies and optimise operations.

AHC mentored health centre chiefs in protocols to monitor stock, enabling health centre staff to replenish medicine and supplies before they run out. The approach is designed not to change existing systems, but simply empower healthcare workers to better utilise them.

“ We looked at our staff – all staff – as a whole picture. After providing training on soft-skills such as leadership and communication, we saw a remarkable response and demonstrated improvements amongst staff. ”

Dr Claudia Turner
CEO



SPOTLIGHT

Harnessing the power of presence

Shortly after its founding, AHC began providing healthcare education to caregivers who were waiting for treatment or whose child was admitted.

These initiatives have continued today through one-on-one and group sessions, helping caregivers understand and address the underlying causes of childhood illnesses. Sessions cover topics like hygiene, healthy habits, nutrition and seasonal diseases like dengue.

In 2019, AHC provided health education, one-on-one nutrition counselling and breastfeeding counselling to 80,942 caregivers in-hospital.

80,942

caregivers



IMPACT IN THE COMMUNITY

AHC's community-based, equity-focused holistic healthcare initiatives deliver health education, increase access to care, address rural health inequalities, and ultimately, improve health outcomes.

A year after the organisation's founding, it was clear that the majority of families who visited AHC were struggling to meet basic needs.

Children admitted to AHC were arriving with preventable conditions, including measles, diarrhoea and acute respiratory infections, all underscored by a high incidence of malnutrition. Poverty, poor sanitation, a lack of education and limited health care provision were all compounding factors compromising child health.

In 2001, a community outreach programme was conceived to begin to address these fundamental

problems. The Capacity Building and Health Education Programme (CBHEP) was founded to improve rural health, confront preventable ailments, decrease health inequalities, and raise the overall standard of health in the community at large.

The programme began in two health centres in Siem Reap province, reaching 30,000 people in its first year. Within a decade, CBHEP served a catchment area of 250,000 villagers with a team of 1,228 village health volunteers.

Today, however, challenges linger due to low health literacy and vulnerability to poverty, as well as the absence of simple interventions at the community level, like health screenings, health education, and other preventative measures (World Bank, 2014).

CAMBODIA TODAY

Even with progress, the health status of Cambodians remains low by regional standards

20%

of Cambodians still live well below the poverty line. 40% live just above the poverty line¹

3x

Cambodian children living in poorer rural communities are three times at greater risk of death before their fifth birthday than their wealthier urban counterparts. Preventable illnesses remain some of the leading causes of these deaths²

¹ World Bank, 2014

² Cambodian Ministry of Planning, National Institute of Statistics, 2014

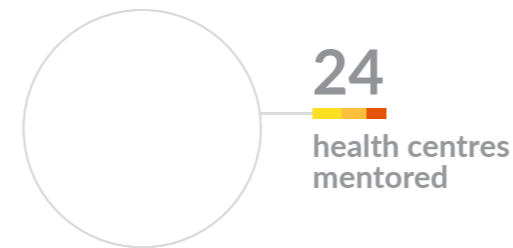
Outreach across fronts and on the frontlines

Working in rural districts in Siem Reap province, AHC's community outreach programme continues to address these fundamental issues across fronts: by improving quality of healthcare delivery through health system strengthening, and improving prevention and health literacy through interventions and education that empower children, caregivers, villagers, and community health workers to better understand and maintain their health.

AHC's community outreach team partners with key actors and stakeholders within communities, maintaining constant dialogue with the health centres and villages it serves. The team tailors interventions to the specific needs of each village, quantitatively and qualitatively monitoring response. Initiatives are designed to continue beyond the end of AHC's involvement, ensuring training can occur independently.

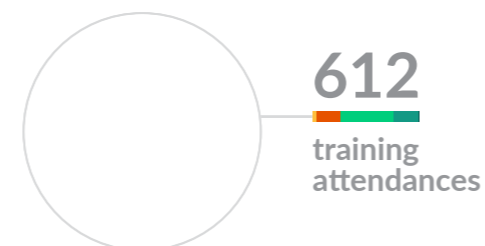
2019 COMMUNITY OUTREACH IMPACT

AHC's community outreach programme works across all levels: strengthening health centres, training village health workers, providing health education in communities, and conducting prevention interventions and education in schools. Activities are designed to be as accessible as possible, taking into account low literacy levels and pre-existing knowledge and beliefs.



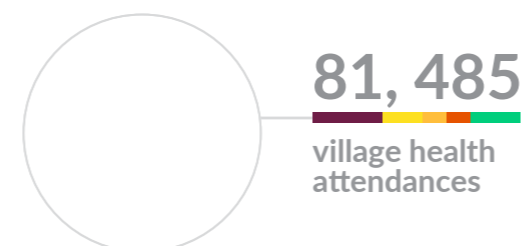
Health system strengthening

AHC provides tailored training, technical support and ongoing mentorship to health centre staff, strengthening pre-existing health systems that provide healthcare and education to the community and equipping staff with the skillsets needed to carry out training themselves, ensuring sustainability.



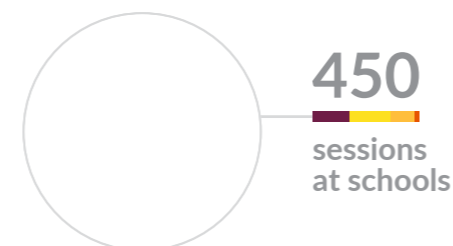
Village Health Support Group (VHSG) workers

We train government-initiated village health workers to provide care in villages, support community-based health activities and make referrals to health services. Capacity building of village health workers enables them to deliver basic health and nutrition education, learn the skills to screen children for malnutrition, and provide follow-up and monitoring sessions as AHC interventions phase out.



Village health education & nutrition

Contextual health knowledge and interventions are provided in communities through a variety of engagement events that increase awareness of good health practices, disease prevention and disease treatment. Through child-centric health promotion events, cooking demonstrations, health awareness cinema showings and nutrition screenings/follow-ups, local children and their families can build a greater awareness and understanding of core child-health issues to prevent future morbidity.



School-based interventions

Interventions focused on prevention are incorporated into school health and hygiene curricula, as AHC conducts – and trains teachers to conduct – basic health education, screening, dental checks, eye checks, and peer-to-peer education.

A group of children, including a young girl in the foreground and a child being held by an adult, are smiling and making peace signs. The background is a plain, light-colored wall.

SPOTLIGHT

Prevention takes hold

From 2001-2016, AHC's community team carried out its four-year programme in 25 different rural communities in Siem Reap province.

Throughout the programme's duration, baseline, endline and follow-up surveys were conducted with samples of households to monitor the programme's impact on health practices and health awareness.

In early 2019, a formal assessment of the programme's data was conducted by research volunteer Meg Peyton Jones, revealing the effectiveness of the programme's initiatives.

Over a five-year period, significant positive outcomes were measured on a range of areas of health knowledge, attitudes and behaviours related to child health, proving the longstanding impact of AHC's community initiatives.

Statistical tests showed the programme was strongly effective at improving villager health knowledge and health practices. Comparisons of baseline and endline surveys indicate increased treatment-seeking and antenatal care after AHC programmes.

In addition, qualitative programme review shows that villagers, health centre staff and village health workers are eager to receive training and support, with activities recording consistently high attendance and responses.

43%

increase in proper handwashing before eating

10%

decrease in diarrhoea in children under 5 years old

44%

increase in providing complementary nutrition during breastfeeding

53%

increase in mothers with basic knowledge of acute respiratory infection (ARI) symptoms



SPOTLIGHT

Ensuring sustainability: Training of Trainers (ToT)

In 2019, AHC began scaling education for life-saving courses and programmes, by training key local staff to become trainers themselves.

In advanced paediatric life support (APLS)

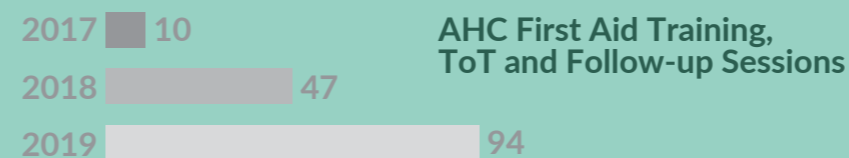
Since 2005, AHC has been the only provider of the Advanced Paediatric Life Support (APLS) course in Cambodia, an internationally recognised paediatric accreditation that teaches lifesaving skills in emergency and trauma care.

In 2019, 16 high-scoring candidates from the courses were chosen to become trainers themselves, equipped to pass along vital skills in life support, diagnosis and management of a seriously ill or injured child.

In first aid

In 2018, AHC's community outreach team provided a record number of first aid trainings to over 950 school staff, police and commune members – a training not currently offered by any other institution.

In 2019, the team provided double the number of first aid trainings, as well as First Aid ToT training to 56 candidates. That training proved invaluable, as three teachers were able to employ cardiopulmonary resuscitation (CPR) to four children in emergency situations – successfully saving each child's life.





IMPACT BEYOND

AHC turns evidence into impact and momentum into action through replicable programmes, innovative solutions, policy recommendations and internationally published research.

At the heart of AHC's approach to responding to national and international challenges in child health is an unwavering commitment to evidence-based knowledge, data-based analysis and implementation science.

Through the formation of our Global Child Health Department in 2016, and the formalisation of the Cambodia-Oxford Medical Research Unit (COMRU) as a department in 2019, AHC began to utilise efforts and effects within our walls to galvanise national and global impact, extending our expertise across Cambodia and beyond.

By curating, disseminating and open-sourcing our methods, lessons learned and best practices, the departments help leverage insights from our work to contribute to a stronger Cambodian healthcare system and elevate global child health.



Saving Babies' Lives: turning evidence into impact

In neighbouring Preah Vihear province, where neonatal mortality is amongst the highest in Cambodia, AHC is pioneering a programme that will transform the quality of neonatal care available.

the beginning of Training of Trainers (ToT) courses. High-scoring and highly proficient candidates were identified to become SBL instructors to teach and evaluate neonatal resuscitation training to their colleagues, ensuring sustainability.

IN CONTEXT

While the Ministry of Health resolved to redouble efforts to achieve significant progress in neonatal mortality a decade ago, there has been no agreed national strategy on how best to achieve the reductions.

Beyond training and implementation, the programme was also successful in achieving buy-in from stakeholders across levels of the programme, from village health workers to the Provincial Health Department and other relevant government ministries. SBL was officially recognised and endorsed by the Nursing, Midwifery, and Medical Councils of Cambodia, and received renewal approval from the National Ethics Committee.

Saving Babies' Lives (SBL), launched in 2018, is a sustainable, community-based programme that aims to decrease the number of newborns dying in Preah Vihear province by one-third. The programme uses simple and cost-effective interventions to address challenges across the continuum of care.

Perhaps most notably, the programme recorded its first lives saved, thanks to SBL interventions utilised by newly trained health workers.

Beyond

In 2019, the programme's pilot phase commenced: the first full cycle of interventions and trainings were implemented in communities, health posts, health centres and referral hospitals.

By utilising evidence-based approaches in the implementation of activities in the programme, AHC is garnering an understanding of how each intervention is impacting neonatal health and those that are enacting it.

Using lessons learned from this pilot phase, SBL staff improved the programme's efficacy, refining activities and prioritising programme sustainability – instrumental to scaling SBL interventions elsewhere. Standard operating procedures were developed for all aspects of the programme.

At the Royal College of Paediatrics and Child Health Conference in England, staff presented research conducted on SBL programme design and assessment tool creation, which can be used as a blueprint to develop similar programmes in other low-resource settings. This will also strengthen AHC's role in advocacy for child health in Cambodia and globally.

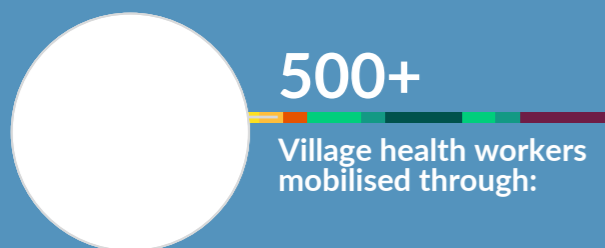
While the SBL team have trained hundreds of health workers in their two years on the ground, 2019 marked

“Our goals were achieved quantitatively, but you can also see a change in the behaviour of the health workers. They now have confidence – you can see it. The team spirit has also made it successful. Staff are sharing difficulties and successes together, and this has become contagious in the health centres. But our biggest accomplishment? That the Ministry of Health wants us in other provinces.”

Manila Prak
Director of Global Child Health

In the Community

Interventions educate, engage and empower village health workers – and by extension the local community – to improve neonatal healthcare in their own villages.



INTERVENTIONS:

- **Baby Surveys:** A real-time data collection tool that tracks pregnancies, births, and deaths.
- **Verbal Autopsies:** A discussion tool that aids in identifying the causes of newborn deaths and their contributing factors, essential for evidence-based policy planning. Data recorded in 2019 showed the main causes of death are due to stillbirth and prematurity.
- **Participatory Action Research (PAR):** Focus group discussions that engage village health workers to identify challenges, strategies and evaluate solutions to neonatal healthcare problems within their own village.

Pilot PAR groups identified three main challenges in 2019: delay in recognising a sick newborn, access to and cost of treatment, and poor perception of health centres. Village health workers have begun generating solutions for these challenges.

A key output of PAR will be a Village Health Worker Teaching Handbook that will be shared nationally to support neonatal care training.

In Health Centres and Posts

The majority of births in Preah Vihear province occur at a health centre or health post. With the right equipment, training and mentorship for health workers, neonatal deaths can be prevented.



INTERVENTIONS:

- **Neonatal Residential Training:** A three-day course delivers the essential knowledge and skills required to respond to and identify neonatal health issues.
- **Baby Saving Areas:** Each health centre/post was assessed in order to establish a dedicated space with essential equipment, including stethoscopes, bag valve masks and thermometers.
- **Mentorship:** Working side-by-side, the SBL team supports healthcare staff to become fully competent in neonatal care.

In 2019, pilot health worker staff demonstrated improved knowledge and skills in neonatal resuscitation.

“ Our lessons learned from 2019 will provide vital evidence to strengthen and inform our work going forward. ”

Dr Claudia Turner
CEO

In the Referral Hospital

In the province’s referral hospital, infrastructure, training and ongoing support have transformed what was possible in neonatal care.



INTERVENTIONS:

- **Neonatal Residential Training:** A three-day course delivers the essential knowledge and skills required to respond to and identify neonatal health issues.
- **Clinical Attachments:** A three-week course prepares referral hospital paediatric staff to run their own neonatal unit.
- **Installation of a Neonatal Unit:** The province’s first Neonatal Unit was established, comprised of five beds and essential equipment, including critical care packages funded by appeal donors.
- **Mentorship:** Staff who work in the newly established Neonatal Unit are mentored to become fully competent in neonatal care with the overall goal of independently running the unit to provide high quality neonatal services.

In 2019, staff demonstrated increased knowledge and improved competency in providing treatment and care to neonates independently.

SPOTLIGHT

BaRT: Turning momentum into action

Every day in Southeast Asia, almost 2,000 newborn babies will suffer from birth asphyxia, taking their first and final breath.

Neonatal resuscitation, done by properly trained health workers using bag valve mask (BVM) ventilation, is a simple intervention that could save their lives.

In low-resource settings like Cambodia, however, the lack of neonatal resuscitation practise and follow-up training means skills are not being maintained and lives are being lost.

In 2019, AHC biomedical engineer Peter Boyer led development of an innovative and sustainable solution to reduce neonatal mortality due to breathing-related deaths: the Baby Resuscitation Training system (BaRT).

BaRT is a digital solution that can help health workers learn how to administer correct ventilation technique, build muscle memory, and foster competency and confidence in neonatal resuscitation.

The device measures, collects, and displays data on ventilation pressure and rate on a tablet or phone in real time, providing the user with immediate feedback and recommendations. By regularly practising with the BaRT system, health workers are able to maintain neonatal resuscitation skills that can save lives.

Currently, no such device is available that is affordable in a low-resource setting.

Over the next two years, AHC will pilot BaRT with rural health workers in Preah Vihear province, which has some of the highest rates of newborn deaths in Cambodia. If proven successful, the system could be replicated in low-resource settings around the world, helping millions of newborns take their first breath.



SPOTLIGHT

Models for replication

AHC's training, protocols and procedures are open-sourced for adaptation and replication in government facilities across the country.

In 2019, several referral hospitals visited AHC to study subspecialist units as models for adaptation in their own hospitals.

Neonatal Unit

Two nurses and one doctor from Kampot Referral Hospital spent three months in AHC's Neonatal Unit learning expert neonatal care. It was the first time the team participated in neonatal basic care and advanced care courses—training they will take back to the provincial hospital in Kampot as they build its first Neonatal Unit.

Medical Social Work Unit

Five staff from Battambang Referral Hospital and other NGOs did a study tour of AHC's Medical Social Work Unit. The study tour was the first step in implementing a Medical Social Work Unit to aid in addressing child abandonment and neglect issues seen at other facilities.

The unit is now looking at playing a greater role in advancing the medical social work sector and child protection mechanisms in Cambodia and other resource-limited settings. Plans to formalise efforts and roll out holistic child protection methodologies through capacity building, networking, and sharing of best practices are in place for 2020.

“ We're focused on linking theory to practice. ”

Dim Sophearin
Medical Social Work
Unit Manager

Pædiatric Anaesthetics

Nurse anaesthetists from Kampot Referral Hospital completed a three-month paediatric anaesthesia training at AHC. AHC's expert paediatric anaesthetics have become regarded as a resource regionally, visiting Laos Friends Hospital to build capacity by training anaesthetists.

“ We've moved away from more formal teaching to more shadowing and clinical attachments for government staff. Rather than sitting people in a classroom, we're getting them to work alongside our staff in a more collaborative partnership that leads to better learning, better retention of that learning – and the realisation of what actually is doable, achievable in Cambodia. ”

Dr Ngoun Chanpheaktra,
Hospital Director



SPOTLIGHT

Introducing Cambodia's first screening tool for developmental milestones

In low-income countries like Cambodia, western tools and performance reference charts can be inappropriate and invalid when identifying and characterising functional limitations across social, language, cognitive, and physical skillsets in children.

Identifying a need for a culturally-adapted milestone assessment tool, AHC hospital director Dr Ngoun Chanpheaktra and board member Lina Saem Stoey co-developed the Cambodian Developmental Milestone Assessment Tool (cDMAT).

The assessment tool facilitates early identification of delays and disability in Cambodian children using the the Denver Development Screening Tool (DDST II) milestones, modified for the Cambodian setting.

AHC is aiming for formal adoption and integration of the tool into protocol by the Ministry of Health. Already, international institutions like the WHO, RTI, Humanity & Inclusion (formally Handicap International), Save The Children and United Nations Research Institute for Social Development (UNRISD) have endorsed the dissemination of cDMAT to other institutions in Cambodia.

Recently, the cDMAT has been recognised as an essential tool in the five-year USAID-funded integrated early childhood development programme in Cambodia. The tool has received support from the National Paediatric Hospital in Phnom Penh, and is listed in the World Bank database.

POLICY SETTING

As a respected actor in healthcare nationally, AHC's practices, methods, and interventions inform and contribute to policy and guidelines in Cambodia, accelerating the adoption of healthcare best practices to systemically improve patient outcomes.

AHC has contributed to over 25 policies, guidelines and tools since its founding, from pioneering the nursing process framework, to developing the paediatric basic life support clinical guidelines, to advising on neonatal care nationwide.

The data and knowledge generated at AHC has the potential to not only strengthen health systems in Cambodia, but also influence global child health policy and inform the development of new diagnostics and treatments that could directly affect the health and wellbeing of children worldwide.

RESEARCH

AHC produces a robust body of evaluated work, resulting in 12 papers in 2019 that contributed to international knowledge in child health.

Our research, regularly published in international, peer-reviewed journals, informs the hospital's provision of care, contributes to the national dialogue on pressing healthcare issues, and influences child health on a global scale.

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eLife 2019, 8:e50468

When AHC was founded, good governance was to be a guiding principle. Today, transparency and effectiveness remain paramount, through frameworks that allow for rigorous evaluation of our progress.

Our unrelenting commitment to quality improvement ensures accountability for our stakeholders, and underpins AHC's sustainability, relevance and impact in the years ahead.

In 2019, executive leadership undertook the exercise of defining AHC's impact and the long-term, sustained change our activities deliver. We developed our theory of change, and reviewed underpinning frameworks for areas of improvement in quality and efficacy.

We refined processes for performance measurement and reporting, enabling us to better communicate our value quantitatively and qualitatively to our donors.

We made strides in data monitoring and visualisation, achieved progress in moving towards digitisation, and prioritised initiatives for financial and operational sustainability.

Because our activities – and in turn, our impact – is designed to scale and transcend sectors, across individual and societal levels, we hold ourselves accountable at every juncture: internally, organisationally, nationally, and beyond.





“ To ensure the significance of data at AHC, a culture of accountability – with a human face – is important.

Vanna Dary
Data Manager ”

Becoming data-centric

The increasing credibility, availability and depth of data at AHC today has become intertwined with our monitoring and evaluation system: the latter ensures the quality of the former.

AHC's Data Unit, which emerged in 2017, was born from the need to formalise ways of assessing, maintaining, and analysing quality throughout the hospital, with the aim of putting AHC on par with global standards of care. Previously, only basic hospital metrics were in place to monitor hospital quality, service provision and efficiency.

Since its establishment, data collection and analysis at AHC has seen tremendous expansion and innovation, enhancing our capability to use and manage information to deliver high quality healthcare and education. Our data provides insights that in the short-term, improve quality of service and patient outcomes, and in the longer term, provides evidence that proves the efficacy of interventions, programmes and

our solutions' impact on child health.

In 2019, AHC's evolution towards data-centrism continued. The technical aspects of AHC's data programme became sound, outputs increasingly visual, and the organisation itself more data-savvy. AHC was regarded as an expert in healthcare data management in Cambodia, as data Manager Vanna Dary presented on the topic at the UHS Nursing Conference – the only presentation covering data during the conference.

Looking ahead, efforts will be aimed at building and refining dashboards for programmes and activities that allow for real-time, instantaneous data visualisations. The goal is to make data collection and compilation automatic.

To do this, AHC must strengthen and scale its data infrastructure and ecosystem: currently, data is still logged in numerous silos, including handwritten logbooks, before manual input into a database.

Challenge: cultivating a culture of data

Despite significant advances in monitoring and evaluation, creating a data-driven culture has been slow. An ongoing task is providing training hospital-wide about the importance of data. Staff learn what key performance indicators (KPIs) are and why it is critical to identify and track them.

Moreover, staff learn how data is a dynamic force: fundamental in identifying if there is a problem, its extent, and in addressing the issue, they understand how vital data is to improving quality.

While building a culture of data is ongoing, staff have begun to increasingly take ownership over the quality of their unit's work.

In 2019, the Data Unit held focus groups sessions to better understand existing beliefs around data collection and monitoring. The team discovered that in order to empower staff, they must understand how data serves a purpose, conveys a bigger picture, and tells a story. Data visualisation workshops are planned for AHC staff and students to help achieve this.

Towards digitisation

Several years ago, AHC identified the need to begin transitioning to a digital Health Information System (HIS). This digital transformation would enable the organisation to more efficiently process electronic medical records and data, reduce paperwork and errors, improve the quality of treatment offered, and enable a better understanding of population health trends.

Initially, the intention was to outsource a solution, due to the enormity of the project, its complexity, and the expertise it would require. But because of the expense of external software solutions – even those considered open-sourced – it was decided to build the solution in-house.

Sun Sopheary, Information Technology Manager, led the IT Department in development on the HIS in early 2019. The system will be built on open-source technology, modelled off existing solutions, and designed for scale. Development and implementation of the new HIS will occur in two phases over the next few years.

The HIS will prevent human error and medical mistakes, allow for enhanced reporting, improve efficiencies, save space, reduce waiting time, identify emerging diseases, and enhance the patient experience at AHC.

Beyond, the long-term vision is to extend the system's functionality nationally, where a unified HIS is currently lacking within the public healthcare system.

PHASE 1

Consultation Module:

Core system allows for medical record processing within Registration, Outpatient Department, and all departments and units that consult: Dental, Eye, Physiotherapy, Social Work, Laboratory, Minor Operations and Imaging.

PHASE 2

Admissions Module:

Medical record processing for patient admissions (Inpatient Department, Intensive Care Unit, Neonatal Unit) as well as integration with other activities, including Human Resources, Logistics, Inventory and other centralised data.

“ We hope to become a role model for other hospitals and expand functionality to the government. ”

Sun Sopheary
Information Technology Manager

A year of infrastructure improvements

To ensure quality in operations, 2019 saw numerous improvements in infrastructure:

Oxygen and medical air system:

Oxygen tanks and medical air are now mechanical, improving patient safety and infection prevention.

Hospital grounding and lightning system:

The new grounding system protects against electrical shocks and lightning.

Archive room:

Above the Registration and Triage area, a new medical records room was extended to meet the increasing number of patient records and store all documents in singular, secure area.

Automated blood culture instrumentation & antimicrobial susceptibility testing (AST) instrumentation:

New instrumentation in the Microbiology Laboratory allows for increased efficiency, standardisation, and a minimisation of variation in results.

Sequencing technology:

New sequencing technology in the microbiology laboratory allows AHC-COMRU to do whole genome sequencing (WGS) of bacteria on-site, improving epidemiology, outbreak investigations and genomic research.

NICU & ICU equipment:

In-kind donations from the Japanese Embassy in Phnom Penh included two ventilators, a cardiac monitor and a blood-gas machine. Three new baby warmers were donated to AHC's NICU from an anonymous Singaporean donor.



“ We have become recognised by the MOH as advisors. ”

Seng Soklin
IPC Unit Manager

80%

of all infectious disease globally are transmitted by our hands

1 in 10

patients get an infection while receiving care¹

¹ WHO, 2019

A model for Cambodia

295

AHC staff and government healthcare workers received IPC courses in 2019

Infection prevention and control (IPC) measures are critical to ensuring patient safety and effective healthcare delivery.

IPC limits the spread of disease, antimicrobial resistance, and dangerous healthcare-associated Infections (HCAIs), or infections that develop at a healthcare facility.

Since 2010, AHC has had a dedicated Infection Prevention and Control Unit – the first unit of its kind in Cambodia – mandated to increase the capacity, knowledge and skills of all staff, with the aim of preventing HCAIs and reducing antimicrobial resistance.

Our IPC programme has become a model for Cambodia, and our staff have become trusted advisors nationally.

The programme consists of education and training, appropriate use of guidelines, surveillance and behavioural change interventions.

IPC refresher workshops are required for all staff, covering topics like hand hygiene, cleaning/disinfecting equipment and disposing of medical waste. IPC education is coupled with enforcement checks and audits to ensure that IPC compliance is maintained across all major units within the hospital, employing

implementation science to record the scale of infection burden and efficacy of infection control interventions. The unit has also developed an IPC manual and guidelines for use hospital-wide.

Because of the programme’s track record and efficacy, AHC was informally recognised by the Ministry of Health as IPC advisers in 2019, requesting AHC to develop IPC and HCAI surveillance programmes for government facilities. Historically, there has not been a formal HCAI surveillance programme in Cambodia.

Through the course of the year, AHC worked with Kampong Cham, Takeo, Siem Reap and Kratie Referral Hospitals to develop their own IPC programmes. Each programme is tailored to the facility, designed around the resources available. Government health workers first visit AHC to learn about the programme and how to develop IPC and HCAI surveillance programmes of their own. Later, AHC staff visit their facilities to review the implementations, provide feedback and offer additional training.

The programme has become a sustainable, replicable, and cost-effective model of HCAI control and prevention for low-resource healthcare facilities.



“ We are continuing to develop through a mind-set of optimisation, reviewing programmes, policy, etc. to ensure growth. ”

Tep Navy
COO

Remaining anchored in quality

In 2016, executive leadership developed AHC’s first organisational quality assurance programme (OQA), rooted in a patient-centred approach.

Indicators based on international best practices became overarching benchmarks for quality healthcare. An OQA committee of local staff was formed, meeting regularly to review self-selected KPIs and to empower staff to self-manage and prioritise quality improvements within the organisational framework. Subsequent evaluations found that staff valued the OQA programme. The ability to measure and visualise the quality of care delivered increased staff’s commitment to OQA.

In 2019, a comprehensive review of the programme took place, where all activities and measurements were evaluated, modified and streamlined. Additional updates to the programme were also enacted to ensure relevance, continual review, and enhanced problem-solving.

QUALITY HEALTHCARE AT AHC



A new look

In order to more authentically communicate AHC’s growth, credibility and values, AHC underwent a rebrand in 2019. We refreshed our visual identity to match AHC’s evolution, unveiling a new look and website that marries compassion, innovation and purpose.

The new visual identity strengthens coherence around our mission, uniting our origin story with data-centrism, transparency, and our patient-centred focus.

The updated branding was developed by Canadian multi-disciplinary design firm Aubs & Mugg. For years to come, it will illustrate the forward-thinking that defines AHC, without losing its cornerstone in compassion.



First funding strategy

In 2019, AHC developed its first-ever funding strategy, which outlines a five-year plan for sustainable, diversified revenue streams. The portfolio aims to build donors globally, pursuing an increase in individual donors. By the end of 2024 the plan will see 50% of AHC's income derived from in-country sources, will improve the organisation's resilience, and ensure AHC can provide care for all Cambodia's children for decades to come.

“ In 2019, we created an ambitious new fundraising strategy with an optimal funding mix to support its delivery. ”

Gregor McKellar
Chief Commercial Officer

Towards sustainability

84%

of AHC's patients would continue to come to AHC and seek care at a private sector price point.

In order to provide maximum value to our stakeholders, it's important to examine our model and activities against the fast-changing Cambodian landscape.

In an effort to better understand our beneficiaries, AHC conducted a survey among our patients evaluating their willingness and ability to pay for services. It was identified that some families have the ability and willingness to make contributions towards the cost of their healthcare.

In response, and coupled with the need to diversify income streams to reduce reliability on international funding, AHC is planning for the introduction of patient contributions for those who can afford to pay.

Patient contributions will help to increase the proportion of funding secured from within Cambodia and protect the social impact of AHC by ensuring access to high-quality, affordable care for those who can contribute whilst continuing to provide completely free care for those who cannot.

To understand whether a caregiver can offer a contribution, every patient will have the right to a confidential means test completed by a trained social worker

to determine their socio-economic circumstances. Through the means test and in line with the Ministry of Health Strategic Plan, AHC's contributions model will offer significant social protection from large medical bills, preventing any patient's household from being pushed into poverty by a need for our services.

Even with a full contribution, only a partial cost of treatment is covered, with AHC continuing to leverage philanthropy to deliver a level of healthcare not supported by the private or public sectors. Based on our market research, the initiative is expected to generate up to 22% of our annual operating budget from the local economy whilst continuing to put our patient needs above all other considerations – leaving no child unwell.

In line with AHC's vision and mission to provide equitable care regardless of whether a family is rich or poor, we will provide exactly the same clinical service to those who pay as those who do not.

AHC has co-developed plans together with all stakeholders, including our donors, government authorities and our patient community, and will continue to work with our stakeholders as we transition to this patient-orientated financial model.



“ It’s a system of surveillance that can deliver information that is useful to make patient-focused decisions, as well as provide the data that national and global systems need. It links data on the patient’s condition and the bacteria in a way that translates to patient benefit. ”

Dr Paul Turner
Director of COMRU

A patient-centred approach to antibiotic stewardship

Antimicrobial resistance (AMR), also known as drug-resistant infections, are one of the most urgent global health problems today. The breadth of impact of drug-resistant infections is universal, cross-cutting and could undermine modern medicine.

In developing countries like Cambodia, drug-resistant infections are particularly challenging, as the burden of infectious disease is high and improper antibiotic practices are widespread.

In 2016, AHC-COMRU recognised the need for urgent and coordinated action to minimise the emergence and spread of drug-resistant infections, and established a comprehensive antibiotic stewardship programme.

The programme is designed for replication across Cambodia and other resource-limited settings. A key aspect involves surveillance: providing information on resistance incidence, prevalence, and trends to improve understanding and response to drug-resistant patterns and drivers.

With furthering this aim in mind, AHC-COMRU launched ACORN in 2019, a new project that unites traditional, bacteria-based surveillance with a patient-centred perspective.

ACORN (A Clinically-Oriented Antimicrobial Resistance Network) links a patient’s clinical information with their microbiology laboratory test results to better understand which patients are most at risk of drug-resistant infections, and what the impacts of resistance are.

While most surveillance systems are passive and focused on bacteria, ACORN is active, implemented alongside routine clinical care in low- and middle-income countries. Real-time data is visualised in a bespoke, interactive dashboard accompanied by analysis and reporting tools.

The fully integrated patient and laboratory-based surveillance system will generate data that informs infection treatment guidelines, monitors resistance trends, assesses opportunities for and impact of interventions, and ultimately, could contribute to policy-making.

ACORN launched its pilot phase at AHC and other hospitals in Laos and Vietnam in 2019, with plans for implementation at 15 additional sites across Asia in the years to come.

AHC-COMRU ANTIBIOTIC STEWARDSHIP PROGRAMME AGENDA

- 1 Continual evaluation of national and international antibiotic practice
- 2 Improve awareness and understanding of drug-resistant infections through effective communication, education and training
- 3 Reduce the incidence of infections through effective sanitation, hygiene and infection prevention and control measures
- 4 Strengthen knowledge and evidence base through surveillance and research



“ Throughout Cambodia, AHC has become well-known and trusted – more than ever before. ”

Arun Sinketh
Director of Cambodia
Public Relations

Broadening local awareness

AHC’s Cambodia Public Relations Department marked their best fundraising year on record in 2019.

The team raised more than \$1 million by growing existing relationships and diversifying and expanding new partnerships, through in-country supporters, corporate partnerships, digital tactics, media outreach and local events.

The department also spearheaded forward-thinking health promotion efforts through social media channels. Weekly Facebook Live Q&A sessions with AHC senior doctors, paired with text-to-give fundraising campaigns, draw high engagement rates and result in real-time donations.

The department received expert in-country strategy and support, thanks to the PR Cambodia Advisory Group, which has provided oversight for local fundraising for several years.

Going green

16%

AHC reduced use of rubbish bags by almost 700 kg, or 16%, in 2019

The Going Green Working Group, led by Natasha Frost, is AHC’s environmental awareness project promoting environmental sustainability organisation-wide.

In 2019, the Going Green Working Group was awarded a Plastic Free Cambodia Award, recognising the group’s work in reducing plastic usage around AHC.

Efforts made in 2019 included replacing single-use plastics with

reusable equipment, like donated glass jars, in the Nutrition kitchen.

In collaboration with Saving Babies’ Lives (SBL), Going Green also designed and produced reusable metal water bottles to replace the 7,200 single-use plastic bottles used yearly by the team in Preah Vihear province. The new reusable bottles are used by the SBL team as well as the Preah Vihear government staff that work on the project.

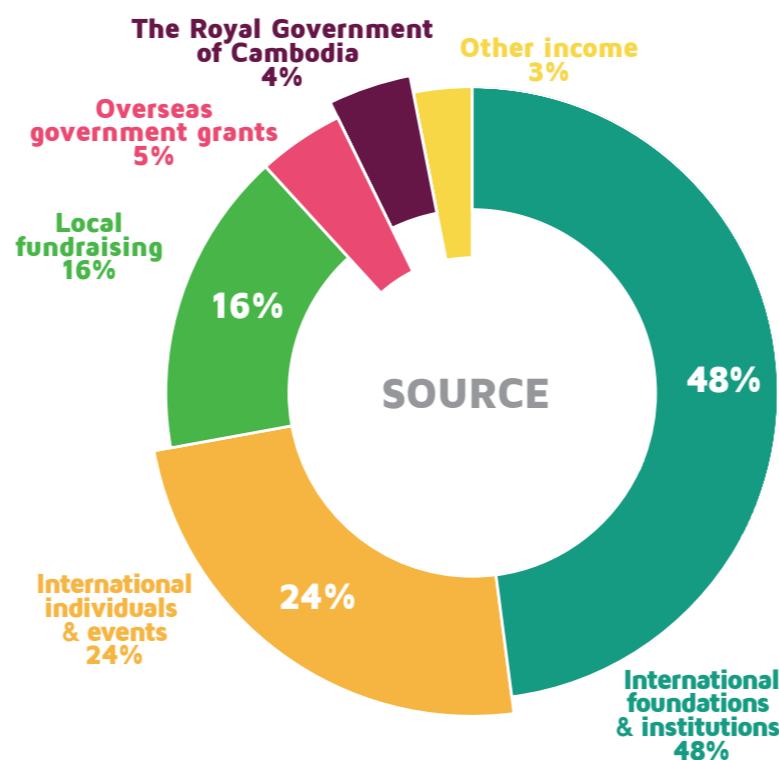
Making every dollar count

As a non-governmental organisation, our emphasis on excellence in child health is underscored by excellence in governance. Nowhere is this more evident than in how we steward the generous contributions made by our donors.

Audited Financial Statements

AHC produces annual financial statements in accordance with Hong Kong Financial Reporting Standards and these are audited by Baker Tilly Hong Kong.

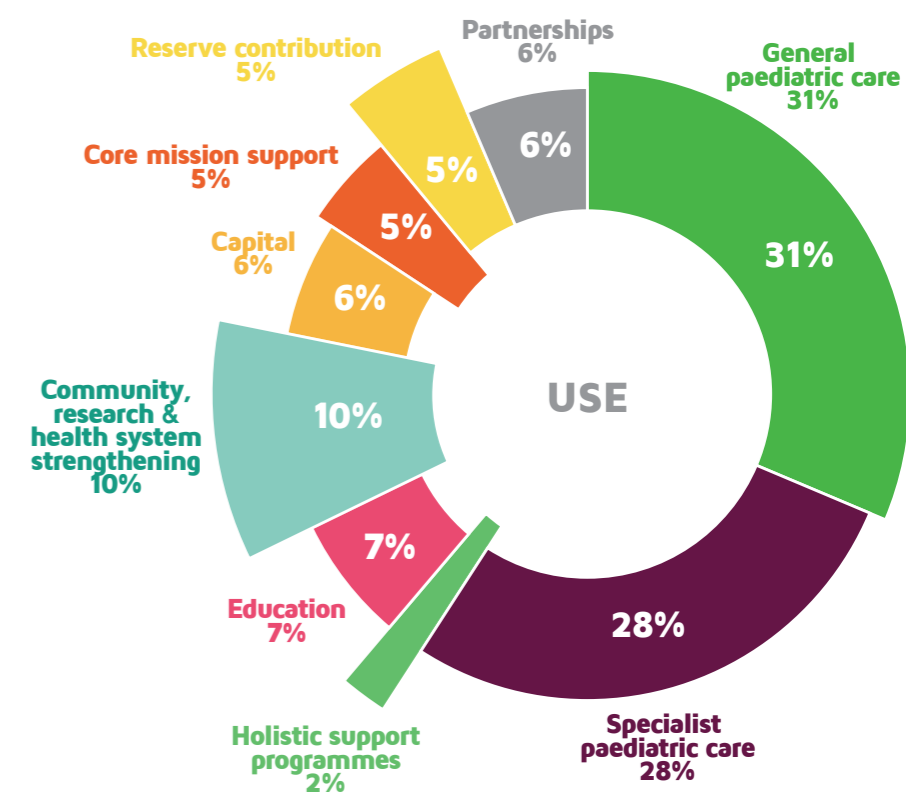
To see our financial statements for the year ended 31st December 2019, visit angkorhospital.org/report



SOURCE OF FUNDS

\$6,842,000

total funds raised in 2019



USE OF FUNDS

\$6,842,000

total budget in 2019

Governance

AHC is governed by a volunteer Board of Directors.

The Board is responsible for overseeing AHC strategy, managing strategic risk, and providing managerial leadership and accountability.

To learn more about AHC's Board of Directors, visit angkorhospital.org/our-board

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Thank you.

For over 20 years, our community of supporters has helped us provide the best care possible for children across Cambodia and reach new heights in paediatric healthcare. 2019 was no exception - everything that was achieved was made possible by our donors, partners and volunteers.

We are profoundly thankful for the commitment and generosity of those who donate their time and money to improve child health in Cambodia. With you by our side, we will continue to transform paediatric healthcare in Cambodia.

Thank you to all of our donors for your generous support.

A special thank you to the Royal Government of Cambodia. We value the opportunity to work closely with the Royal Government of Cambodia, and we acknowledge their kind support.

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 Singapore Asia Brokers Asset Managers Charity

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 T&J Meyer Family Foundation
 The Jagclif Charitable Trust
 Tondo Foundation
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 Zau Foundation

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 Yeoh Guan Huah

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 Cambodia Oxford Medical Research Unit (COMRU)
 Cambodian Society, University of Technology Sydney and University of New South Wales
 Civil Society in Development (CISU)
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Fundraising Events

Angkor Wat International Half Marathon
 Annual Bon Phka Prak
 AOS Charity Cycling
 Banteay Meanchey Cycling
 Bon Phka Prak Banteay Meanchey
 Bon Phka Prak Wat Promroth
 Cambodia Friends of Friends New York Dinner
 Chateau des Gem Jewellery Exhibition
 Children Are The Future
 Cycling for Environment and Health
 Ex-High School Friends Party
 Friendship Football Event for Charity
 GTVC Cycling
 Hong Kong Fundraising Dinner
 New Year's Eve Gala Dinner
 Run to Give
 Running for Children's Lives Cambodia
 Singapore Fundraising Dinner
 Trecking the Angkor Jungle
 USEA Charity Fund Raising

