Our Mission

Through the coordinated work of a multidisciplinary team, we will improve the lives of mothers and infants in low-income countries. This will be accomplished through the creation of self-sustaining and scalable education programs for in-country health care workers.

Our Strategy

Align training programs with the priorities and support of the host country’s Ministries of Health. They know best what they need.

Train providers currently working in the newborn or maternal area of their hospital/clinic. Training is most effective when used immediately and consistently.

Train providers in places with the least access to medical care where simple and timely interventions make a huge difference. Resuscitation techniques with low-tech equipment save infants in the first minute of life.

Provide specialized education in neonatal care through an embedded team of experts who work side-by-side in the wards to reinforce the education. Our team lives and works in the host country getting to know the people and the culture.

Deliver a refresher course within 6-months to reinforce the training and see what other needs providers may have uncovered. We remain connected and committed to our host sites.

Create future educators with a train-the-trainer course. Put the ability to increase healthcare worker capacity in the hands of the local professionals.
Dear Friends and Supporters,

The Ohio State University Office of Global Health has developed health services and educational programs through its neonatal survival program that save the lives of mothers and newborns in developing countries.

Importantly, the training and clinical side-by-side mentoring of nurses, clinical officers, and physicians ensures that the program is sustainable while the “train the trainer” model creates an ever-widening network to spread that knowledge throughout the host country.

This year we were able to take the program as far as Rwanda and later this year we will deliver the Professional Practice of Advanced Neonatal Care in Tanzania. This geographic outreach is important because when we train one provider—we are creating the conditions for that training to extend far and wide.

Since joining the Office of Global Health as executive director in 2015, I have seen the incredible lifesaving results and it inspires and drives me and our team to do more for more! We are grateful to those whose support has made all this possible and we eagerly welcome individuals, corporations, and foundations who want to be a part of this tremendous success story.

We feel a deep commitment to changing the statistics on babies surviving the first 28 days of life. Saving one baby is a gift. Strengthening the workforce around the world that can save thousands of babies is a revolution. Please join us.

Diane Gorgas, MD
Executive Director
The Challenge

While neonatal mortality is on the decline, in 2015 approximately 2.7 newborns died within the first 28 days of life—a majority of which could have been prevented with timely, life-saving clinical interventions.

According to the World Health Organization, newborn, or neonatal, deaths account for 45% of all deaths among children under 5. The majority of all neonatal deaths (75%) occur during the first week of life, and between 25% to 45% occur within the first 24 hours.

The Neonatal Survival Program at Ohio State is part of the solution.

We have the expertise, the commitment, and the passion to move the needle on neonatal survival.

What follows is a summary of our program’s successes from the past year.

1. data.unicef.org/child-mortality/neonatal.html

If you want to touch the past, touch a rock.
If you want to touch the present, touch a flower.
If you want to touch the future, touch a life.
—Unknown

Kenya

The Ohio State University Greif Neonatal Survival Program 2016 Annual Report
“The training was so wonderful...in my place of work whenever I come into contact with neonates I’m able to resuscitate wherever it’s necessary, despite the little resources. For example, yesterday I was able to bring back two preterm babies in my facility to life. It was really unbelievable and I thank Ohio State for the knowledge and skills they offered me during the 6-weeks we were in the training.

—Joan Chepngenjo
Kenyan participant in the neonatal survival program.
Impact

Every year nearly 45% of all under 5 child deaths are among newborn infants,² those babies within the first 28 days of life.

Three quarters of all newborn deaths occur in the first week of life.² The survivability of this group is often established in management during their first hour of life.

In developing countries nearly half of all mothers and newborns do not receive skilled care during and immediately after birth.²

Up to two-thirds of newborn deaths can be prevented if known, effective health measures are provided at birth and during the first week of life.²

2. World Health Organization, Fact Sheet, January 2016

Changing outcomes and changing lives in St. Therese Hospital, Hinche, Haiti

Nearly all babies admitted to the NICU could have been predicted to die before the neonatal survival program. Education and equipment have helped improve the odds for those newborns in Haiti.

A select group of the St. Therese Hospital NICU nurses are conducting Helping Babies Breathe® training sessions for colleagues within the hospital as well as providers in the community.
Immediate and Demonstrable

St. Therese Hospital, Hinche Haiti, 2015-2016

Total deliveries St Therese .......... 2,630
Deliveries attended .................. 449
Babies admitted to NICU .......... 189
% Treated for hypothermia .......... 44
% Treated with oxygen .......... 30
% Treated with bag & mask .......... 31
Suspected sepsis .......... 77
% Premature (< 37 Weeks) .......... 33
% Extreme prematurity (>= 30 Weeks) 24
% Mortality rate .......... 24
Length of stay in days .................. 10

Step 1: Create a newborn care unit
Step 2: Train nurses in neonatal care
Step 3: Teach these nurses to become expert educators on resuscitation during the first hour of life
Step 4: Watch amazing things happen both locally and beyond
Multiplying Effectiveness

Sustaining Education

We work with our in-country hosts to identify natural leaders and teachers that emerge during the training and then offer them our intensive Train-the-Trainer course. The course equips them to carry the specialized newborn education to where it is most needed and often least available.

In the Train-the-Trainer program, based on our educating 25 RN trainers who in turn train 20 other healthcare workers in Helping Babies Breathe®, we anticipate:

- 500 new providers trained in Helping Babies Breathe® neonatal resuscitation each year,
- Each new provider attends an average of 200 deliveries per year totaling 100,000 deliveries annually,
- Approximately 25% or 25,000 of those will be high risk.
- 75% of those high risk Helping Babies Breathe®-assisted newborns will survive transport to higher level care at a district hospital resulting in 18,750 lives saved.
- The total number of lives saved over 20 years would be 375,000.
- If each of those babies lives an average of 50 years that is 18,750,000 Years of Life Gained,
I remember that during the training we saved two babies through monitoring their vitals with a pulse oximeter...One baby we saved, had not breast fed for 2 days—since delivery—and another in which we detected a congenital abnormality which could not have been done prior to our training. We thank Ohio State for the knowledge!

—Simon Nkipida
Clinical Officer, Ololulunga Sub County Hospital in Narok, Kenya

Making the (Tele)Rounds with Technology

In 2014, John W. Logan, MD, Amy Brown Schlegel, MD, and Leif Nelin, MD, neonatologists at Nationwide Children’s Hospital, joined the OSU team on a trip to Haiti and conducted in-person training for physicians at Hospital Mirebalais in the Central Plateau. Dr. Logan has since made subsequent trips that laid the foundation to continue the training through distance learning.

The last Wednesday of each month, Dr. Logan conducts teleconference rounds with doctors and doctors-in-training at a rural hospital in Haiti from a conference room in Columbus, Ohio. With support from the OSU Greif Neonatal Survival Program, Dr. Logan, who specializes in neonatal-perinatal medicine, Skypes with between 6 and 20 pediatric residents on core content neonatal topics. Post lecture, they present clinical cases for discussion. The impact of this program has been advancement of medical knowledge as well as technological improvements in patient care at the hospital and within the entire Haitian healthcare system. These pediatricians represent an elite group of physicians with specialized education in neonatal care. They will become lead instructors of perinatal medicine throughout the country.

Future plans include expanding the telemedicine education to other sites that lack neonatologists or other healthcare professionals.
Teaching

Our neonatal experts train healthcare workers in developing countries in advanced newborn care, who in turn train the caregivers at the clinics and hospitals where they work.

We deliver a 4-6 week specialty course, *Professional Practice of Advanced Neonatal Care* (PPANC), for college-trained nurses and clinical officers who are involved in deliveries and the care of newborns regularly in their facilities.

**The Ripple Effect of Knowledge**

When we train 25 participants in the PPANC program we anticipate: 10,000 births attended annually by all participants. Of these, 2,500 will be high risk. 1,875 newborns with HBB-assisted births survive transport to district hospital. 20 years of future RN service per provider times 400 deliveries attended annually potentially results in 21,000 lives saved per nurse and 1,050,000 years of life gained as a result of the training. Each nurse assists with 400 deliveries annually. 200 local persons trained in HBB. 1,500 NICU admissions per year resulting in 1,050 lives saved. At a cost of $3,200 (on average) this translates to 6.5 cents per life saved.
How we work

Teaching in Rwanda

Last November, a Newborn Survival Program advance team flew to Kigali to meet with the Honorable Dr. Agnes Binagwaho, MD, PhD, Minister of Health of Rwanda and Evodia Dushimimana, MD, MPH, maternal and child health specialist for the Ministry. In keeping with our commitment to work in alignment and partnership with the government of the host country, we had the opportunity to share our program and to learn what the Rwandan health priorities are in the area of maternal and newborn care. Minister Binagwaho approved the proposed curriculum and training course noting that it was integrated with Rwanda’s national protocols.

Partners in Health, our collaborators in Haiti are based in the eastern districts of Rwanda. We chose to focus on the western region for the following reasons, 1) there are fewer hospitals and clinics, 2) there are high neonatal mortality rates, and, 3) we could build upon established relationships between the Columbus Zoo and their partners in the Gisenyi area. Leveraging existing collaborations has been a conscious decision on the part of the program and we thank both Partners in Health and the Columbus Zoo for the introductions they provided.

The Professional Practice of Advanced Neonatal Care course is currently underway in Gisenyi with nurses who presently work in the NICU and providers from outlying clinics who will have 4-weeks of intensive side-by-side training in the classroom and at the bedside. It is precisely that longitudinal, hands-on mentoring that allows the material to be learned and practiced enough times to really be absorbed. The adaptability of the course allows for a tailored program based on the level of training already possessed by participants. We know this training will have a significant impact across the region as the graduates take the training back to their home institutions and impact the neonatal mortality in their catchment areas.
Delivering Advanced Neonatal Nursing Care

Education in Kenya

Twenty-seven nurses and clinical officers representing two counties and multiple clinics and hospitals in the region gathered in the Masai Mara region for the six-week neonatal intensive care program developed and delivered by The Ohio State University Greif Newborn Survival Program.

Working with our in-country partner, Free the Children/Me to We, the program was the culmination of careful preplanning from working with the Ministry of Health for course endorsement, with local health officials for participant selection and permission to leave their jobs for training, identifying clinical sites and recruiting instructors and preceptors to arranging transportation and accommodations for participants.

Previous exploration of the healthcare system told us that approximately 15-20 nurses receive specialty training in newborn care annually in the entire country of Kenya with a population of 45 million and an annual birthrate of just under 1.3 million. The objective of this program is to impact neonatal mortality and morbidity, through educational programs delivered to host country healthcare providers. The success of the Kenya program validated our belief that we are reaching our target demographic with the most relevant training.

The training program was conducted in Bomet and Narok counties, where the lack of knowledge and skills in relation to newborn care and resuscitation has resulted in quality indicator rankings far below the national average. Narok County Hospital and Longisa County Hospital each have an estimated delivery rate of 3,000-4,500 infants per year.
One of the keys to the training program is proving its efficacy. We are accomplishing this in a step-wise fashion, using scientific rigor in a double-blind trial to ensure that skills are acquired, retained, and that the educational product is culturally appropriate and sound. Ultimately, we anticipate with the expansive nature of the training, we will see significant impact in measurable outcomes.

Evaluation forms completed by program participants indicated that the most useful content was:

<table>
<thead>
<tr>
<th>Lecture topics</th>
<th>Clinical practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resuscitation and use of bag and mask</td>
<td>Participation in resuscitation</td>
</tr>
<tr>
<td>The “golden minute” (first minute of baby’s life)</td>
<td>IV fluid calculation and insertion</td>
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<tr>
<td>IV fluid calculation and insertion</td>
<td>Pulse oximetry use</td>
</tr>
<tr>
<td>Pulse oximetry and its’ proper use</td>
<td>overall newborn assessment</td>
</tr>
</tbody>
</table>

Through follow up contact we know that course participants have gone to their home facilities and trained others thereby spreading the knowledge even farther. In May, we returned to Kenya to conduct a 1-week train-the-trainer course. It is through that model that the program becomes truly sustainable.
Next Steps

In late 2015 we laid the groundwork for offering the Professional Practice of Advanced Neonatal Care in Tanzania in collaboration with the University of Dodoma (UDOM). This preparation included meeting with the leaders of the university and medical college, assessing the needs at the district hospital as well as the newly built university hospital, and learning from our future hosts about the unique needs of healthcare providers in Tanzania. This collaboration began closer to home with OSU’s Global Water Institute (GWI). GWI has programs currently ongoing at UDOM and invited the Newborn Survival Program to join forces with them. These overlapping OSU initiatives give Ohio State a strong presence and recognition on a global scale.

The Office of Global Health was invited to participate in the 1st Annual International Conference on Public and Global Health in Dodoma in March. Through the Neonatal Survival Program, we were able to supply neonatal resuscitation equipment (bag valve masks for ventilation, preemie masks, suction bulbs, etc.) for use during the conference. We congratulate the new crop of Master Trainers, who will spread the training across the country.

In addition to continuing to mentor our fledgling programs with Train-the-Trainers courses at previous teaching sites, we are conducting exploratory missions at sites in India and Sub-Saharan Africa to offer the specialized nursing care course as well as training more community health workers in Helping Babies Breathe®.

Acknowledgements

We want to thank the Greif Charitable Trust, without which this program would not have been possible. We are grateful to The Ohio State University for its ongoing support and our deeply valued partners, Free the Children, Ride for World Health (R4WH), Columbus Zoo and Aquarium, Global Water Institute at Ohio State University, Partners in Health, and the Masimo Corporation. We also want to recognize the invaluable contributions of our NICU nurse volunteers, neonatologist John Wells Logan, MD, and Cara Whalen, PhD.

It is imperative that we not lose the tremendous momentum we have established and we are actively pursuing additional support from Ohio State Alumni, corporate donors, foundations, and federal and local grant opportunities.

To support the life-saving and capacity building work of the OSU Greif Neonatal Survival Program please contact Pamela Potter in the Office of Global Health at 614-292-3684 or Pamela.Potter@osumc.edu.

Advanced Neonatal Resuscitation Program

“It has been an honor to work in partnership with Ohio State University in providing Neonatal Resuscitation Training to medical professionals across 2 counties in Kenya. Ohio State University, and more specifically the Office of Global Health, has shown true dedication, entrepreneurial spirit and a willingness to learn, adapt and change to fit the cultural context of Kenya. The program itself was expertly designed, offering participants both an opportunity to explore as a collective unit knowledge on how best to support the life of a newborn, as well as hand’s on experience of how to link the knowledge with the practical realities on the ground; the impact being lives saved. The lecturers’ knowledge base and expertise in the field of neonatal care is unrivaled and they skillfully facilitated the didactic experience for all participants. We are proud to be associated with this program and with Ohio State University. Our hope is that together we can continue to impact more lives and reduce infant mortality rates in marginalized communities across Kenya and beyond. Asante Sana”

—Free The Children

Michelle Hambly
East Africa Program Director

Joseph Gachira
East Africa Associate Program Director
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Ohio State Wexner Medical Center

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