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# Global Health *link*

ENCOURAGING ACTIVISM IN GLOBAL HEALTH THROUGH KNOWLEDGE, INNOVATION AND ENGAGEMENT

## Helping Babies Breathe, 2nd Edition: Lessons Learned from 5 Years and 80 Countries



*The World Health Organization (WHO) reported that between 1990 and 2003, mortality of children under five years old fell from 12.7 million to 6.3 million. During the same time, the proportion of deaths that occurred in the neonatal period (the first 28 days) actually increased from 37% to about 44%. Global recognition of this gap has motivated many in the field of neonatal care to scale up effective and affordable interventions to address the primary causes of neonatal mortality: asphyxia, low birth weight, and infection.*

*Among those leading the effort to improve newborn survival worldwide is Susan Niermeyer, MD, MPH, FAAP, Professor of Pediatrics, Section of Neonatology at the University of Colorado School of Medicine and Professor of Epidemiology at the Colorado School of Public Health both located at the Anschutz Medical Campus.*

Susan Niermeyer, Senior Investigator at the Center for Global Health, Colorado School of Public Health is one of the chief architects of Helping Babies Survive (HBS), a comprehensive suite of trainings designed to improve neonatal survival by combining evidence-based resuscitation practices with adult education and implementation science.

HBS, an initiative of the American Academy of Pediatrics, is composed of three distinct 1-2 day trainings, Helping Babies Breathe, Essential Care for Every Baby, and Essential Care for Small Babies.

Helping Babies Breathe (HBB) was developed first, because it focuses on risks present at the moment of birth.

Dr. Niermeyer explains, “HBB really is the cornerstone because it prepares health workers to act at birth to help babies who are not breathing spontaneously or effectively on their own. It also establishes the whole educational methodology and learning system [of the later trainings].”

Thinking back to the initial phases of HBB development, Dr. Niermeyer recalls the early objectives, “Our main goal was to demystify resuscitation because the global health community

had a vision of resuscitation as intensive care. Those of us teaching neonatal resuscitation internationally knew that very simple steps could be very effective. We wanted to present these steps in a way that was accessible, scientifically valid, and supportive of the same care that a baby would get anywhere else in the world.”

Five years of implementation activities in 80 countries have generated an abundance of new information and data along the way. Teaching experiences in the field, feedback from

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# Science Communication: LAPIS Takes Students Out of the Classroom and Into the World of International Media

*“Despite the physical distance and difference in language, the Latin American Publication Initiative for Scholars (LAPIS) is interacting with the Guatemalan public by acting as a bridge between the world of medical information and the world of publishing to deliver medical information in a non-medical format,” stated Merlin Ariefdjohan, PhD, MPH, an original writer and editorial board member for LAPIS and currently a Research Specialist in the Department of Psychiatry at the Pediatric Mental Health Institute at Children’s Hospital Colorado.*

Did you ever wonder about the pros and cons of gastric by-pass surgery or is there such a thing as ‘maternal brain’ or ‘can I drink too much water’?

In February of 2013, Edwin Asturias, MD, Director of Latin American Projects at the Center for Global Health and an Associate Professor of Pediatrics, Section of Pediatric Infectious Disease at the University of Colorado, School of Medicine and Epidemiology at the Colorado School of Public Health, presented the idea of a student-driven writing initiative of evidence-based articles spanning different topics in healthcare.

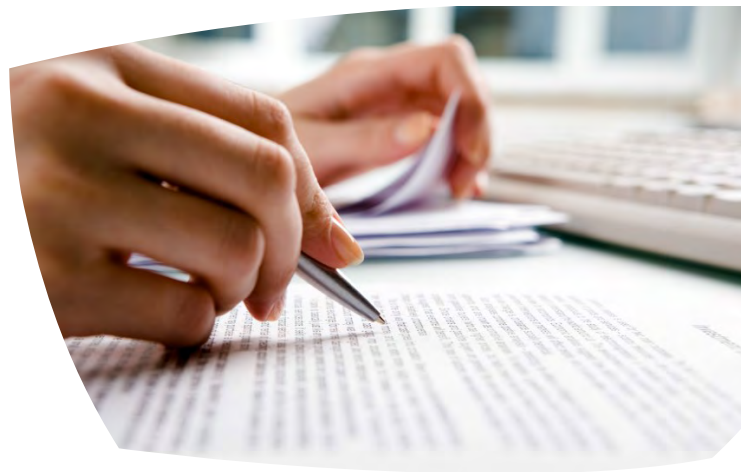
With the goal of publishing the articles in a variety of magazines in Guatemala, his focus was to communicate scientific information to the general public in Guatemala who might otherwise not have access to this type of information.

To gauge the interest of the University of Colorado Anschutz Medical Campus students in writing for a national Guatemalan magazine, a call was initiated in April of 2013. The interest spoke for itself!

The call generated interest from students attending many different programs on the CU AMC. After an intense selection process, Dr. Asturias realized his idea would soon be a reality.

Sponsored by the Center for Global Health the editorial board comprised of communications and media experts, administrative staff, and faculty members at the University of Colorado School of Medicine and the Colorado School of Public Health, and students from various graduate programs.

In its creation, LAPIS took on the task of “support[ing] the dissemination of scientific and health-related knowledge that promotes the comprehensive improvement of family and maternal-child health as well as human development in Guatemala”. Quickly after its creation, LAPIS began



publishing articles in the national Guatemalan magazine, *Contrapoder*.

Merlin believes the goals of LAPIS are twofold: both writer- and reader-oriented.

“Our writers get the opportunity to develop their writing skills, especially with regards to communicating medical information to the general public. It takes a certain level of writing proficiency to be able to gather medical information from various sources then reduce the comprehensive information to a level that can be understood by the general

public. The writers also have to think about how the information will translate into Spanish. Cultural considerations have to be a part of the writing process. The readers then have their medical questions answered in a way that is informative, current, and in an easily absorbable format,” she reflected.

Even though there are many assets to LAPIS, its strength lies in its authors: “They come from different disciplines with writing skills and interests. None of them are paid to do this activity. They research their topics, write their articles, and edit others’ work on their own time. Yet, this group has

churned out a large number of articles about various topics in a timely manner. The fact that the group has lasted this long is a testament to the dedication of the writing team,” said Merlin.

Although LAPIS often writes very scientific articles on topics such as vaccines, the effects of caffeine on the body, and protecting your skin from the sun, LAPIS extends its topics to perhaps more off -beat health topics such as the effects of long distance running on your body, yoga for health, and the new role of 3D printing in medicine.

**“Despite the physical distance and difference in language, LAPIS is interacting with the Guatemalan public by acting as a bridge between the world of medical information and the world of publishing to deliver medical information in a non-medical format.”**

**Merlin Ariefdjohan, PhD, MPH, writer and editorial board member for LAPIS**

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# Helping Babies Breathe, 2nd Edition: Lessons Learned from 5 Years and 80 Countries

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local partners, and meetings with ministries of health and in-country leadership have all inspired changes in the HBB curriculum.

These influences, along with new clinical guidelines from ILCOR (International Liaison Committee on Resuscitation), resulted in the development of Helping Babies Breathe, 2<sup>nd</sup> Edition.

Dr. Niermeyer elaborates, “The original program was developed simultaneously with the WHO Basic Neonatal Resuscitation guidelines that came out in 2012, but there are new 2015 ILCOR guidelines, so we made some scientific changes based on those recommendations. We also formally surveyed a number of frontline users in-country through a web survey about a year ago when we started ramping up the revisions. We heard that people wanted more support for course facilitators, and wanted more clear guidance on how they could follow up the training workshop itself. We also collated lots of comments that came in through the website.”

In addition to this feedback, the second edition of HBB is informed by three distinct scientific disciplines. “There are three bodies of research and evidence that we used in creating and updating this program,”

Niermeyer explains. “One is resuscitation science, and what you need to do to take care of newborns to prevent them from dying. There is a truly global body of scientists working on this. Then there is a body of educational research that is really about active learning, adult learning, and the value of hands-on simulation, feedback, and debriefing. The third big area is implementation science. What happens after the workshop? The whole HBS suite is a tool for quality improvement teams to apply what they have learned to address specific gaps in their facilities.”

This focus on quality improvement teaches HBB learners how to implement changes in their hospitals and clinics and track results after changes have been made.

For Dr. Niermeyer, the quality improvement piece was a new and exciting challenge in her own career. “It was very interesting to me to move into quality improvement. We worked to de-jargonize quality improvement so it could



become a seamless part of everyday clinical practice even in low- and middle-income countries. Quality improvement is wonderful and rewarding. If you instill the appreciation that the data you collect every day can actually be used to improve your patient’s care, it can increase your job satisfaction,” she explains.

To encourage adoption of this behavior, new skills-practice activities and data collection guidance are included in the 2<sup>nd</sup> edition HBB learning materials.

The idea is to get learners to think critically about the standard procedures in their facility by asking questions like, “If a suction device is used [to clear a baby’s airway], is it disinfected before being used again?”

**“Those of us teaching neonatal resuscitation internationally knew that very simple steps could be very effective. We wanted to present these steps in a way that was accessible, scientifically valid, and supportive of the same care that a baby would get anywhere else in the world.”**

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**Susan Niermeyer, MD, MPH, FAAP,  
Professor of Pediatrics, Section of  
Neonatology, University of Colorado  
School of Medicine**

For the facilitators teaching the course, there is also expanded educational advice and teaching tips to emphasize key points and reinforce specific skills.

Dr. Niermeyer and colleagues created a detailed guide to describe each of the changes made to the training, and where these changes are reflected in the printed materials. This is no small task considering the HBB curriculum has been translated into 26 languages!

To encourage awareness and dissemination of the program, all course materials are available

online.

Similarly, there is an opportunity for in-country health authorities to work with the American Academy of Pediatrics to translate and adapt materials to fit local contexts. Adaptations may include exchanging pictures in the flip charts for ones that are more culturally appropriate, or adjusting certain recommendations to align with national newborn care strategies issued by the ministry of health.

Mentorship of in-country champions like program managers, HBB master trainers, and academicians allows the HBB program to assimilate with clinical practices across several systems. Strong emphasis is placed on conducting HBS

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# Helping Babies Breathe, 2nd Edition: Lessons Learned from 5 Years and 80 Countries

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trainings to complement and support national policies, service standards, and training programs.

“In countries where there is a central ministry of health and a strong national health program, these changes need to work their way through the system to become the operational guidelines,” Dr. Niermeyer explains.

“More than anything, we have tried to make sure that these programs are integrated with a health system’s policies. Many countries adopt newborn protocols or guidelines, and HBS trainings have really filled a need in many countries by adapting to specific policies that may exist in Nepal but not in Guatemala, for instance. The basic steps in care really remain the same but they may be accomplished by different people or in different ways. Ultimately, though, the HBS suite supplies a scientifically valid framework that countries can build upon,” she continues.

The next five-year implementation cycle will bring new challenges and lessons. Dr. Niermeyer plans to explore the use of mobile platforms like cell-phone and tablet-based systems that facilitate knowledge maintenance, and encourage data collection to enhance quality improvement efforts.

Another objective is to increase coverage and sustainability by working with the in-country professional associations and academic institutions to include HBB in midwifery, nursing, and medical school curricula.

“This program has reached 80 countries, but have 100% of the providers in these countries been trained? No.” she states.

Dr. Niermeyer plans to continue updating the HBB curriculum in correspondence with ILCOR’s guidelines. She says, “One of our commitments from early on was to bring the same science that was rolling out in the developed world to developing areas on the same five year cycle. We kept that commitment.”



Learn more about *Helping Babies Survive* by going to the [American Academy of Pediatrics web page](#).

Want to participate in an in-person HBB, 2nd Edition training? Join us on the Anschutz Medical Campus in 2018 — see page 7!

◆By Molly T Moss

## Helping Babies Survive

**Helping Babies Breathe (HBB)** teaches the initial steps of neonatal resuscitation to be accomplished within The "Golden Minute" to save lives and give a much better start to many babies who struggle to breathe at birth.

**Essential Care for Every Baby (ECEB)** teaches health care providers essential newborn care practices to keep all babies healthy from the time of birth to discharge from the facility.

**Essential Care for Small Babies (ECSB)** builds on the skills taught in ECEB, guiding providers on the specialized care of small and preterm baby’s needs.

# Science Communication: LAPIS Takes Students Out of the Classroom and Into the World of International Media

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The broad spectrum of topics covered by LAPIS are internally directed from student writer's interests as well as from readers. As LAPIS articles became more frequently published, *Contrapoder* readers and editorial staff began posing questions for LAPIS to answer.

The first article ever published under the LAPIS brand-name was entitled, "Is it True that Mother Always Knows Best?" written by John Soltys, who was a MD, PhD student at the University of Colorado at the time. Since LAPIS's creation nearly 5 years ago, LAPIS has published 51 articles with additional topics spanning from autism spectrum disorders, to breastfeeding, to Zika.

Writing for LAPIS has provided students, staff and faculty the unique opportunity to embrace science communication in the international sector.

Additionally, meeting once a month to discuss and edit articles provides a valuable learning resource for students and writers to gain editorial advice and feedback from communications experts, inevitably strengthening their writing skills.

Due to its continued success and enthusiasm amongst involved students, LAPIS became a formal student organization on the Anschutz Medical Campus in 2014.

Because of the appeal of evidence-based health information, the Denver Museum of Nature and Science now collaborates with LAPIS and the Center for Global Health and publishes the Spanish-translated and original English articles on their blog.

The student contributors have both enjoyed and grown from the opportunity to pack important scientific information into these 500-word columns in a way that is approachable to a non-scientific audience.

LAPIS continues to grow by continually adding student writers who are passionate about global health and education, adding to the variety of perspectives and expertise of the writing team as a whole. "For a 'free' initiative, LAPIS has been doing a great job in keeping the momentum in sharing medical information with the world!" Merlin stated.

*If you are interested in writing for LAPIS, please contact Molly T Moss at [Molly.Terhune@ucdenver.edu](mailto:Molly.Terhune@ucdenver.edu).*

*To see a full list of articles published by LAPIS, [go to the LAPIS web page](#).*

*To access the Denver Museum of Nature and Science's blog that incorporates LAPIS articles, [please click here](#) and look under 'Recent Updates' to check out our stories.*

## Current LAPIS Editorial Team

- **Merlin Ariefdjohan, PhD, MPH** | Research Specialist, Department of Psychiatry
- **Katie Arnolds, MS** | Student, Graduate School
- **Edwin Asturias, MD** | Editor in Chief, LAPIS and Director of Latin American Projects, Center for Global Health
- **Steve Berman, MD** | Director, Center for Global Health
- **Roberto Delgado Zapata, MD** | Student, Public Health
- **Gretchen Domek, MD, MPhil** | Senior Investigator, Center for Global Health
- **Tonya Ewers** | Director of Communications and External Relations, Colorado School of Public Health
- **Nicole Garneau, PhD** | Chair of Health Sciences Department, Denver Museum of Nature and Science
- **David Kelly** | Media Specialist, University Communications
- **Molly T Moss** | Editorial Assistant, LAPIS and Program Assistant, Center for Global Health
- **Kelsey Repine** | Intern, Center for Global Health and Student, School of Medicine
- **Veronica Searles, PhD** | Graduate, School of Medicine
- **Michelle Shiver** | Administrator, Center for Global Health



## Colorado School of Public Health's Center for Global Health Adds Jon K Andrus, MD, to Leadership Team

*Andrus is one of the world's leading experts  
on vaccines and immunizations*

**DENVER** (March 1, 2017) – The Colorado School of Public Health's Center for Global Health is proud to announce the addition of Jon Kim Andrus, MD, as adjoint professor and senior investigator. Dr. Andrus, who is known for his work on vaccines and immunizations around the world, comes to the Center from the Sabin Vaccine Institute in Washington, DC, where he was Executive Vice President and Director of Vaccine Advocacy and Education.

Prior to his time at the Sabin Vaccine Institute, Dr. Andrus has served as Deputy Director of the Pan American Health Organization (PAHO); Chief, Vaccines and Other Biologicals, on assignment from the Centers for Disease Control and Prevention (CDC) to the South-East Asia Regional Office of the World Health Organization (WHO) in New Delhi, India; and Regional Advisor for Polio Eradication, on assignment from the CDC to the Expanded Program on Immunization of the South East Asia Regional Office of the WHO also in New Delhi.

“The Center for Global Health is designated as a [WHO Collaborating Center for Promoting Family and Child Health](#) and with the addition of Dr. Andrus, collaborations with the WHO, PAHO, other United Nations organizations, foundations, and ministries of health will expand significantly,” said Stephen Berman, MD, FAAP, director for the Center for Global Health. “We will be better positioned to promote policies that will yield public health benefits of vaccines and immunizations, provide technical assistance to national vaccine programs, and carry out vaccine-related research.”

Dr. Andrus' work will complement and enhance the existing strong vaccine- and immunization-related work funded by the Gates Foundation, CDC, NIH and USAID. This work is currently being carried out at the Center by Edwin Asturias, MD; Gretchen Domek, MD, MPhil; Eric Simoes, MB, BS, DCH, MD; and Wayne Sullender MD, FAAP. With the involvement of Dr. Andrus, the Center will be developing vaccinology courses that will be held in Colorado, Latin America and Southeast Asia. Dr. Andrus will continue to be based in Washington DC, to facilitate these international collaborations.

***Look for the June 2017 issue of the [Global Health link](#) to learn more about Dr. Andrus' global health experience and the work he will be doing with the Center for Global Health.***

# Helping Babies Breathe, 2nd Edition:

## Master Trainer Course



**NEW** 2nd Edition of HBB has scientific updates to harmonize with 2015 *ILCOR Consensus on Science with Treatment Recommendations* and the 2012 WHO *Basic Newborn Resuscitation Guidelines*. It also contains strengthened educational advice and new guidance on program implementation and quality improvement.

Helping Babies Breathe teaches the initial steps of neonatal resuscitation to be accomplished within *The Golden Minute* to save lives and give a much better start to many babies who struggle to breathe at birth. HBB neonatal resuscitation techniques that have been shown to reduce neonatal mortality by up to 47% and fresh stillbirths by 24%.

The  
**Golden Minute**<sup>®</sup>  
is the most important  
time of a newborn's life

Join Susan Niermeyer, MD, MPH, FAAP and team, for an in-person, hands-on *Helping Babies Breathe, 2nd Edition* master trainer course!

**When:** Spring 2018

**Where:** University of Colorado Anschutz  
Medical Campus



Want to stay up to date on ALL Center for Global Health activities? [Click here.](#)

# Center for Global Health

Global Health Lecture Series

Fall 2017 | Global Health Lecture Series Schedule

## *Make it a Watchathon!*

The Global Health Lecture Series is taking a summer hiatus. So, while you are waiting for the new season to begin, get caught up on what you missed!

[Click here.](#)

Look for the Fall 2017 Schedule in a future issue of the Global Health *link*!!



## Center for Global Health

*WHO Collaborating Center*

Colorado School of Public Health

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