INTERNATIONAL

MEDICAL

OUTREACH





Sustainable Healthcare Through Donations and Education







# **Dear Friends** and Colleagues,



Our International Medical Outreach (IMO) program is well-known for its diligence in providing healthcare facilities abroad with more modern, functional equipment to meet the most urgent, basic medical needs in their communities. Supplies and equipment as critical as patient beds and defibrillators remain in high demand, as do machines that can help prevent future health events, such as echocardiogram equipment for heart and maternal screenings. To date, our contributions have helped more than 1 million patients worldwide, a feat that would not have been possible without the ongoing support of our committed donors and partners.

But equipment donations without the proper education – for both clinicians and patients - would limit success in these communities. That is why, over the years, we have expanded our goals to incorporate more medical and general health education into our projects.

Clinicians and technicians in hospitals and clinics abroad involved with IMO initiatives receive necessary education, ranging from trainings for using medical equipment to learning how to diagnose and treat health conditions. Most education initiatives are facilitated by medical teams from Charlotte, NC, who also benefit from these experiences and dialogue with care teams abroad throughout the year (see page 10). These exchanges of knowledge and information have become a key ingredient to building lasting relationships with medical facilities worldwide, ensuring the sustainability of our work.

Knowledge is power. Information is liberating. Education is the premise of progress, in every society, in every family. - Kofi Annan

We also actively seek to empower patients and their families through education initiatives and screenings for disease prevention. For decades, we have made this part of our projects in the hospitals and clinics; more recently, we have taken this education into patients' communities. For example, we are now in our fourth year hosting free heart-health education sessions and screenings in remote towns in Belize and Guatemala, where limited access to medical facilities and lifestyle choices contribute to high rates of heart disease (page 11). IMO also supports mobile clinics, which make both healthcare and related education available in the most remote of towns in countries like Nicaragua (page 4). As always, we will continue our efforts to help patients and families near and far to lead the healthiest lives that they can.

FRANCIS ROBICSEK, MD, PhD

Vice President International Medical Outreach

President Heineman Medical Outreach, Inc.

THERESA R. JOHNSON

International Medical Outreach

#### **Our Mission**

The International Medical Outreach (IMO) program, a collaborative partnership between Heineman Medical Outreach, Inc., and Atrium Health (formerly Carolinas HealthCare System), provides medical and educational assistance globally to promote sustainable healthcare and enhanced living standards in underserved communities.

## **Our Impact**

Over more than 60 years, the IMO program has touched the lives of thousands of patients and families in 45 countries. Ongoing support from institutions, individuals and non-profit partners allows IMO to offer free educational opportunities to international medical personnel and free equipment to hospitals and clinics worldwide.

#### **Our Commitment**

Unlike most charitable organizations, IMO spends 100% of donated funds on designated projects. We do not use donations on fundraising or administrative expenses.

### At a Glance

We donate new, used and refurbished medical equipment and supplies, and we offer training and consultation services. We work side by side with medical care teams and with government officials dedicated to improving the quality of life in their communities.



## 8-Year Impact



**45 Countries** with IMO initiatives (full list, pages 4-5)



**519,535 pounds** of medical and computer equipment recycled

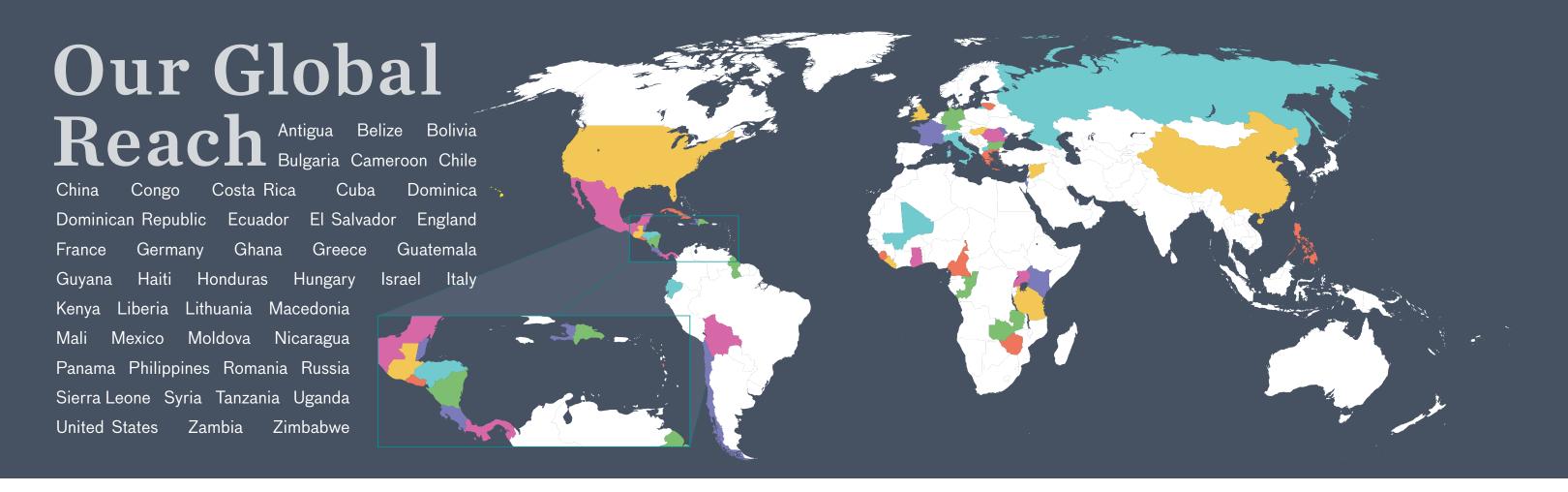


> 1 Million
adult and pediatric
patient lives touched



> \$34.4 Million of medical and electronic equipment donated





#### **Antigua, West Indies**

We send volunteer surgical teams from Atrium Health's Sanger Heart & Vascular Institute and the University of Florida Health Shands Hospital to Mount St. John's Medical Center. They provide surgical support for kidney dialysis access and complex vascular graft cases, and in 2018 they supported vascular surgery for 34 patients. Medical education and training of Mount St. John clinicians continues on-site and in Charlotte, NC.

#### Belize

In addition to collaborating with Karl Heusner Memorial Hospital (KHMH) on the fourth annual Heart of Belize Community Outreach event (page 11), we are in the process of installing an indoor, static cardiac catheterization laboratory at KHMH.

#### Guatemala

Equipment donations and free community heart screenings continue to enhance healthcare and education nationwide (pages 8-11). This year we began a project with Obras Sociales del Santo Hermano Pedro, home to 250 children and adults living with disabilities (e.g., cerebral palsy and stroke), most of them wheelchair bound. In October, 10 therapists from Atrium Health volunteered therapy sessions to residents to maximize their functional mobility and quality of life (see story on page 5). They plan to continue their volunteer efforts in 2019.

#### 

A mobile medical clinic we donated to the Coen Foundation in 2015 continues adding rural towns to its routes, and in 2018 had more than 7,600 patient encounters. It currently serves 11 rural communities and educates residents.



#### Volunteer story: Andrew Kohler, Physical Therapist at Atrium Health

"This year, I had the pleasure of leading a group of Atrium Health volunteer physical, occupational and speech therapists at the Obras Sociales center. We helped nurses and other staff with a variety of tasks, including feeding and moving patients, assisting with adaptive sports and splint fabrications, performing wheelchair alterations, and prepping meals. We also provided education to Guatemalan therapists on best practices (e.g., safe feeding and swallowing) and were able to donate equipment to help the center's staff with safer, faster patient transfers and interventions. Our therapists also gleaned a better understanding of cultural differences in medicine and learned to implement therapeutic approaches in a foreign healthcare system with limited resources. We







hope to develop a long-term relationship with Obras Sociales and to train Guatemalan medical and humanitarian advocates to contribute so that these efforts are sustainable."



New Hope nurse holding the first baby delivered by C-section at the hospital, a procedure made possible thanks to its newly-furnished operating room (opposite top).

In attendance at the August ceremony: (left to right) Manuel Rodriguez, Heineman Board member; Theresa Johnson, IMO director; Dr Maklin Eugene, New Hope executive director; and Dr. Robert Higgins, chairmain of Atrium Health's OB/GYN department. Haiti's Health Ministry director and the Mayor of Plainedu-Nord were also in attendance.

# Equipping Haiti's New Hope Hospital

#### to Enhance Medical Care and Maternal Health

In August, IMO commemorated its partnership with New Hope Hospital in Plaine-Du-Nord, a partnership aimed at enhancing healthcare services and maternal health for residents through medical equipment donations and education. Since December 2017, IMO has donated enough materials to New Hope to fully equip its: operating room, ultrasound station, dental unit, labor and delivery unit, four wards, exam rooms and X-ray station. The donations were made possible by the George W. and Ruth R. Baxter Foundation and Harrison United Methodist Church in Pineville, NC.

New Hope is a community-based referral facility that serves 250,000 residents in northern Haiti. It has treated nearly 36,000 patients since it opened in October 2016, a volume greater than other regional facilities. As of December 2018, care teams at New Hope have performed more than 320 surgeries and 570 ultrasounds, and they have delivered more than 650 babies.

In Haiti, the infant mortality rate remains high at 47 infant deaths per 1,000 live births – this is compared to 6 infant deaths per 1,000 live births in the United States. IMO's equipment donations – such as ultrasound machines, labor and delivery beds, fetal monitors, exam tables and defibrillators – can help medical teams better diagnose high-risk pregnancies and increases the number of infant deliveries.

Alongside Atrium Health OB/GYN (obstetrics and gynecology) specialists, who have assessed New Hope's top needs, IMO is supporting the hospital with education programs and on-the-ground support for maternal care and services (e.g., labor, C-section deliveries, and cervical cancer screenings and treatment).





Lack of materials and equipment at our hospital would often force us to refer patients elsewhere, making follow-up care challenging," says Maklin Eugene, MD, executive director at New Hope. "These donations alone have helped us increase the number of services we can offer and patients we can treat. Through this partnership, we feel confident that we can make quality care sustainable at New Hope and for the region.





Before (above) and after (right) images of New Hope's labor and delivery unit, which was filled with the donated equipment.

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Medical care teams at the Peggy Hynes NICU-PICU in Escuintla (above) more than tripled their capacity to deliver life-saving care to children severely injured from the volcano eruption (below) thanks to equipment and supply donations a year prior from IMO and the Secretaría de Obras Sociales de la Esposa de Presidente (SOSEP)

# Children Saved in **Peggy Hynes NICU-PICU** after Volcano Disaster in Guatemala

We are pleased to watch our network of healthcare partners continue to grow, creating partnerships founded on a commitment to enhance the health and lives of families near and far through medical equipment, and supplemental education and training. Many of our partners have wonderful success stories to share. We would like to spotlight one in particular due to a recent natural disaster that put its medical abilities to the test.

This year, a partner hospital in Escuintla, Guatemala, was swarmed with patients when nearby Volcano "Fuego" erupted, sending children and adults rushing to the hospital for emergency care (below). Clinicians in Escuintla saved many lives that month, due in large part to their proactive approach and commitment to medical advancements - they were ready and able to control emergency outcomes. Whether it is a Level I hospital or a small clinic, like Fundazúcar (see page 9), medical facilities and their care teams should be equipped with the resources and skills necessary to meet the demands of families in local and nearby communities.

#### **FERNANDO PAIZ**

Vice President Heineman Medical Outreach, Inc.

#### In June, the Guatemalan Volcano "Fuego" erupted, creating a need for emergency care for nearby residents with burns and other injuries. Fuego is only 30 miles from Escuintla, where IMO has worked with the National Public Hospital to equip and train medical teams to deliver care more quickly. We are proud to report that our efforts helped make the hospital integral in saving the lives of dozens of families, including severely injured children. Escuintla's hospital became a primary treatment center for volcano victims, many passing through its Neonatal and Pediatric Intensive Care Units (NICU-PICU), which we helped furnish and expand in 2017. The National Public Hospital of Escuintla is now a referral center for smaller neighboring hospitals, which are sending their pediatricians and nurses to train at the NICU-PICU. 8 I INTERNATIONAL MEDICAL OUTREACH

# **Outfitting Outpatient Clinics**,

#### New Equipment Delivered to Escuintla

In November, IMO joined Guatemala officials to celebrate the opening of a newly refurbished outpatient clinic at the National Public Hospital of Escuintla. The clinic - built in 1993 with support from the non-profit organization Fundación del Azúcar (Fundazúcar) - specializes in ophthalmology (eye care) but treats pediatric and adult patients for general health concerns and several other needs, including dermatology and dental care.

The Fundazúcar clinic's 40,000 medical encounters each year quickly aged its equipment. With shipping and delivery support from Chiquita Brands, we outfitted several rooms with refurbished equipment, including surgical machines, a stretcher for eye surgery, exam tables, an EKG (electrocardiogram) machine, laboratory equipment and much more.



Before (above) and after (below) pictures of the general clinic station expansion.



María José Coronado, health director at Fundazúcar, gives a tour of the refurbished dental clinic.



# Clinical Education and Training

IMO supports robust clinical education and training programs in several countries to share and examine best practices, enhance patient care and ensure the short- and long-term use of donated equipment. In Guatemala, more specifically, these opportunities continue to flourish.

Volunteer medical teams from Atrium Health's Levine
Children's Hospital have supported education in

neonatal and pediatric critical care and point-of-care ultrasounds in Guatemalan hospitals, resulting in a reduction of pediatric mortality. More recently, Atrium Health clinicians have focused on reducing pediatric infectious diseases in the country through clinical education and training (page 13). Clinicians from Guatemalan hospitals also travel to Atrium Health's Carolinas Medical Center in Charlotte, NC, for training and observational rotations. Medical teams from both countries have patient care discussions via teleconference technology.

Beyond pediatric care, we help educate primary care physicians and nurses in Guatemala about a range of topics, including heart valve disease and other cardiac diseases, and basic life support and respiratory and critical care assessments. Medical residents from Atrium Health also benefit from opportunities in Guatemala, where they learn how to practice medicine in healthcare settings with little or no technology and with diseases that are uncommon in the United States due to vaccinations.





Educational opportunities in Guatemalan medical facilities are met with great enthusiasm, with up to 300 participants often signing up for trainings. Clinical and public health education initiatives in Central America are widely sponsored by Edwards Lifesciences Foundation and Tarr Family Foundation.



Medical education has helped transform care delivered in neonatal and pediatric care units throughout Guatemala, including the ones in Escuintla (page 8).

# Public Health Education and Screenings

In an effort to equip hard-to-reach patients and families with knowledge and services they may need for short- and long-term health, IMO supports annual public health education and screening events in Belize and Guatemala. Clinical care teams from hospitals in North Carolina, Belize and Guatemala travel to remote towns to perform general health and preventive cardiac screenings, and related education. This year, screenings took place in Villa Nueva and Jutiapa,

IMO's Echocardiography (Echo) Network (map below) plays a great role in these education and screening events, many of which are held in public hospitals and clinics where echo stations are available. Echo stations allow residents deemed at risk for heart disease to undergo more comprehensive cardiac screenings immediately. **To date, hospitals and clinics that are part of the Echo Network have performed more than 32,200 screenings.** The Network will expand to four additional locations in Guatemala, beginning with El Progresso in 2019.

Guatemala, and in Punta Gorda, Belize.

Since 2015, more than 1,220 residents in Belize and Guatemala have been screened and/or treated for heart-related disease at these public health events.



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# Our Support to Medical Research



JOHN M. FEDOR, MD Chairman, Board of Medical and Technical Advisors for Heineman

IMO receives invaluable research support from our sister foundation, the Heineman Foundation for Research, Educational, Charitable and Scientific Purposes, Inc., from the Tarr Family Foundation, and from the James H. Heineman Endowment, to significantly support Atrium Health researchers. In addition to the work of Drs. Morris and Ghosh (detailed on page 13), some projects advancing research globally are shared below.

One of the most common genetically transmitted diseases in the United States is Marfan's syndrome. Most patients with this disease die of aortic rupture before age 40, unless operated upon. The operation itself is major with a relatively high mortality rate. New research is being led by one of the most recognized specialists in the management of aortic dissections, **Dr. Jeko Madjarov**, at Atrium Health's Sanger Heart & Vascular Institute. He studies aortic wall reinforcement, an intervention performed through a small incision and may soon be applied on patients with Marfan's syndrome.

**Dr. Claude T. Moorman,** chairman of the Department of Orthopedic Surgery at Atrium Health, has designed a research project to evaluate outcomes of musculo-skeletal procedures that involve regenerative medicine and cellular therapies, a novel way of treating injuries that uses human tissue (including stem cells) to repair damaged organs. This area of therapeutic intervention has tremendous potential in the future of medicine. The initial study will include satisfaction, costs and the incidence of adverse events related to various treatment modalities.

Cardiogenic shock, usually associated with coronary heart disease, is a therapeutic challenge to cardiologic practice. **Dr. John Cedarholm,** senior cardiologist at Sanger, aims to collect and evaluate data that would help draw appropriate conclusions and lead to improvement of existing therapeutic treatments. Specifically, his study aims to test whether early applications of intravascular heart pump during acute myocardial infarction associated with shock are beneficial.

The research of **Dr. Denise Fraga**, member of the Department of Emergency Medicine at Atrium Health, centers on point-of-care ultrasonography. Ultrasound allows clinicians to rapidly diagnose acute traumatic injuries and medical illnesses. Compared to CT scans and MRI, typically unavailable in underserved countries, this relatively inexpensive mobile technology provides clinicians with real-time information at the bedside to guide patient care. They can perform, interpret and act on a diagnostic test at one time, facilitating efficiencies that may improve patient outcomes.

# Researcher Spotlight



Lee Morris, MD, MSPH, DTM&H

Medical Director of Pediatric Antimicrobial Stewardship, Division of Pediatric Infectious Diseases, Department of Pediatrics, Atrium Health

Project: Combating Nosocomial and Drug Resistant Infections in Children in Guatemala

Antibiotic resistance is a growing concern worldwide, particularly in countries like Guatemala that need support developing antimicrobial stewardship programs to reduce infection rates. To help, Dr. Morris has partnered with public hospitals in Escuintla and San Benito to reduce pediatric antibiotic resistance in what may be the only antimicrobial stewardship project in Guatemala. The project includes education, needs assessments, and bacterial resistance rates analyses – these

components are designed to help medical residents and faculty learn core concepts of antimicrobial stewardship, and to help Dr. Morris assess the antibiotics and equipment hospitals most need and the effectiveness of current treatment protocols. "The larger goal is to help hospitals use medical resources and staff they already have to create tailored, sustainable stewardship programs," says Dr. Morris. "We need to do this preliminary work to make a national effort possible."



#### Nilanjan Ghosh, MD, PhD

Chief of the Lymphoma Division and Associate Medical Director for Clinical Trials, Levine Cancer Institute, Atrium Health

Project: Study of Peripheral Blood Immune Profiling as a Predictive Biomarker for Clinical Outcomes in Diffuse Large B Cell Lymphoma

Diffuse large B cell lymphoma is the most-commonly diagnosed and potentially curable type of Non-Hodgkin's lymphoma in the United States. However, about 40% of patients relapse. Some patients who relapse may have a normal PET-CT scan at the end of treatment. In 2017, Dr. Ghosh began a pilot project to better understand the role that immune biomarkers (identified through blood samples) play in predicting relapse among patients who seemingly respond well to standard

chemotherapy. "We're teasing out biomarker signatures in these high-risk patients to see if we can do something different in the future to upgrade their long-term remission," says Dr. Ghosh, whose pilot study is currently being prepared for publication.

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# **Advancing Classroom Education** with Computers



Since 2013, IMO has collaborated with the Sergio Paiz Andrade Foundation (FUNSEPA) to collect, donate and install refurbished desktops, laptops and tablets in rural Guatemalan public schools, and to train school teachers to incorporate the technology into classroom curricula.

**Donations:** To date, we have donated 20,000 computers in more than 1,500 rural public schools, reaching more than 500,000 students (total value \$9.2 million if purchased new). Microsoft Corporation, Kahn Academy, VALENTINA and NA'AT provide operating systems, programs and educational platforms for teachers and students.

**Education:** More than 90% of teachers in these schools report no prior teacher training or computer education. As part of this program, teachers undergo a five-week FUNSEPA training – approved by Guatemala's Ministry of Education - in basic computer maintenance, digital literacy, and education-oriented technology use. To date, 26,300 teachers have been trained.



#### **Meet Julio**

First grade, elementary school near Chimaltenango, Guatemala

"This year, they brought a computer lab to my school. My classmates and I were very curious to go and see what can be done with the computers, but we also had a little fear because we had never had computers. My teacher told us that the first thing we were going to do was use the mouse and the keyboard to do some math exercises in a program called KA-LITE. I was scared because I cannot always do the math exercises, but I liked it a lot because it is like a game, and it makes it easier for me to learn numbers and to add and subtract. Now that I have done many counting exercises, I can add! I feel very happy because my teacher is proud of me."

Thank You to our network of volunteers, participants and supporters! Our projects are made possible thanks to your dedicated efforts and resources to supporting our program.









For years, Chiquita Brands has provided transportation of large containers for our material donations. In 2018, Chiquita shipped 10 containers of computers and medical equipment and supplies, a \$2 million value if purchased new. Since 2013, it has transported more than 65 containers for IMO, often to remote areas throughout Central America.







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Atrium Health, previously Carolinas HealthCare System, one of the nation's leading and most innovative healthcare organizations, provides a full spectrum of healthcare and wellness programs throughout the Southeast region. Its diverse network of care locations includes academic medical centers, hospitals, freestanding emergency departments, physician practices, surgical and rehabilitation centers, home health agencies, nursing homes and behavioral health centers, as well as hospice and palliative care services. Atrium Health works to enhance the overall health and well-being of its communities through high-quality patient care, education and research programs, and numerous collaborative partnerships and initiatives.

AtriumHealth.org



Heineman Medical Outreach, Inc. (also known as The Heineman Foundation of Charlotte). Since its establishment in 1943, Heineman has pursued a variety of local and international research and humanitarian projects focused on providing medical assistance and education. Located on the campus of Carolinas Medical Center in Charlotte, NC, Heineman works closely with Atrium Health to provide medical training across all disciplines to medical care teams abroad and medical equipment and supplies to countries in need. Heineman is a 501(c)(3) organization, and contributions are tax deductible.

**Heineman.org** 

International Medical Outreach Program

Heineman.org | 704-374-0505

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