For decades, families in Dong Mai, Vietnam, recycled used car batteries in their backyards and kitchens without any environmental controls. In Sovetskoe, Kyrgyzstan, homes, playgrounds, and schools were constructed with red sand that contained high levels of lead still present in the soil years after a Soviet-era metal processing factory was closed. In Madre de Dios, Peru, where livelihoods depend upon small-scale gold mining, dangerously high levels of mercury, a potent neurotoxin that is used to separate gold from other materials, have been found in the bodies of 78 percent of residents.

Indeed, rising levels of ambient air pollution, chemical pollution, and soil pollution are extracting a deadly toll on the lives of people around the world, in particular, the very young and very old, and those in low- and middle-income countries. The cost of pollution led to an estimated 9 million premature deaths in 2015—16 percent of all deaths worldwide. This number represents three times more deaths than from AIDS, tuberculosis, and malaria combined, and 15 times more than from all wars and other forms of violence.

These first-ever findings appear in the October 2017 issue of The Lancet in a study led by Philip J. Landrigan, MD, MSc, Dean for Global Health, Professor of Environmental Medicine, Public Health, and Global Health Policy, Mount Sinai.

Ruth Tatuleka, a 2-year-old from Uganda, was recently given the gift of hearing, thanks to a team of physicians and staff at the Mount Sinai Health System.

Ruth is from Kyabirwa, a village of 1,000 people, and has been deaf since birth. Her family knew that if she were ever to hear, the only solution was a cochlear implant—a small electronic device that stimulates the cochlear nerve, which carries auditory information to the brain. While commonplace in the United States, cochlear implant surgery is rare in the developing world. The family tried to raise funds to take Ruth to India—the closest country that could possibly perform the procedure—but they were unsuccessful. Meanwhile, time was running out, since a child’s first three years are crucial in learning spoken language.
A Robust Call to Action in Stemming Global Pollution (continued from page 1)

At the event to launch *The Lancet* report, Dennis S. Charney, MD, left, reminded the audience of Mount Sinai’s decades-old role in promoting environmental health; Richard Fuller, center, co-author of the report; and Pamela Das, MD, the report’s editor.

and Pediatrics, Icahn School of Medicine at Mount Sinai; and Richard Fuller, Founder and President of the nongovernmental organization Pure Earth, and Secretariat of the Global Alliance on Health and Pollution. Dr. Landrigan and Mr. Fuller worked with Pamela Das, MD, Senior Executive Editor of *The Lancet*, in an exhaustive effort to document the data.

“We want to turn this report into action,” said Dr. Landrigan, who spoke on Monday, October 23, at a special event on the Icahn School of Medicine at Mount Sinai campus that officially launched the study. The goal of the report, he said, was to raise global awareness of pollution and mobilize politicians to tackle it by providing them with comprehensive figures on its impact on human health and economics.

“Though the warnings are sobering, the optimistic message is that pollution can be addressed,” said Dr. Das. The culmination of a two-year project that involved more than 14 international health agencies, the report is the first to document the global effects of environmental pollutants on human health and the worldwide economic costs of pollution-related disease and death. It also is the first study that brings together data on all forms of pollution, including air, water, soil, heavy metals, chemicals, and occupational pollutants. Pollution is defined as any material that people release into the environment that harms human health, and does not include naturally occurring chemicals, cigarette smoke, drug abuse, or similar lifestyle factors.

“We hope our findings will really elevate pollution within the political health agenda and inspire and encourage all levels of society to make pollution a priority,” said Dr. Das.

Speaking to the audience, Dennis S. Charney, MD, Anne and Joel Ehrenkranz Dean, Icahn School of Medicine at Mount Sinai, and President for Academic Affairs, Mount Sinai Health System, said, “Mount Sinai will continue to investigate the role of the environment on health and disease and work with elected officials and others to impact changes that will improve the lives of our citizens and others around the world.”

Pollution’s significant effect on the brains of developing fetuses and infants is particularly dire in the low-income and middle-income countries that have largely neglected the issue. Though they are diverse, middle-income countries—ranging from Kenya in the lower range to China in the upper range—comprise 5 billion of the world’s 7 billion people, and 75 percent of the world’s poor, according to the World Bank.

“A child with brain damage caused by pollution is never going to live the full potential of his life. It can’t be fixed but it can be prevented, and the next child can be protected,” Dr. Landrigan said.

Decades ago, Dr. Landrigan’s pioneering work led the U.S. government to remove lead from gasoline and paint, resulting in a more than 90 percent reduction in the incidence of childhood lead poisoning over the past 25 years.

According to *The Lancet* report, the removal of lead from gasoline has returned an estimated $200 billion to the U.S. economy each year since 1980. To date, there has been an aggregate benefit of more than $6 trillion through the increased cognitive function and enhanced economic productivity of generations of children exposed since birth to only low amounts of lead. A decrease in IQ of one percentage point lowers lifetime earnings by as much as 2.4 percent, according to the study. Lower IQs also increase the cost to society by adding to the use of social welfare services and making incarceration more likely.

For every dollar invested in air pollution control since 1970, *The Lancet* reports that $30 has been returned to the U.S. economy, an aggregate benefit of $1.5 trillion on an investment of $65 billion.

As a person’s exposure to pollution increases, his or her risk for noncommunicable diseases, including ischaemic heart disease, stroke, chronic obstructive pulmonary disease, and lung cancer, also increase. But the slow progression of these diseases over time is one reason why pollution has not garnered the same level of attention as say, the Zika

---

**Percentage of disability-adjusted life-years attributable to air pollution (household air pollution plus ambient air pollution) by disease and country income group**

<table>
<thead>
<tr>
<th>Disease</th>
<th>High income</th>
<th>Upper-middle income</th>
<th>Lower-middle income</th>
<th>Lower income</th>
<th>Global</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower respiratory infections</td>
<td>12%</td>
<td>34%</td>
<td>57%</td>
<td>64%</td>
<td>53%</td>
</tr>
<tr>
<td>Tracheal, bronchial, and lung cancer</td>
<td>8%</td>
<td>30%</td>
<td>38%</td>
<td>48%</td>
<td>24%</td>
</tr>
<tr>
<td>Ischaemic heart disease</td>
<td>13%</td>
<td>24%</td>
<td>35%</td>
<td>43%</td>
<td>28%</td>
</tr>
<tr>
<td>Ischaemic stroke</td>
<td>9%</td>
<td>20%</td>
<td>28%</td>
<td>36%</td>
<td>37%</td>
</tr>
<tr>
<td>Haemorrhagic stroke</td>
<td>11%</td>
<td>24%</td>
<td>31%</td>
<td>22%</td>
<td>27%</td>
</tr>
<tr>
<td>Chronic obstructive pulmonary disease</td>
<td>16%</td>
<td>4%</td>
<td>52%</td>
<td>5%</td>
<td>44%</td>
</tr>
<tr>
<td>Cataracts</td>
<td>1%</td>
<td>14%</td>
<td>25%</td>
<td>35%</td>
<td>19%</td>
</tr>
</tbody>
</table>

Fortunately for Ruth, a slender lifeline connected her village to New York City: Ruth’s uncle, Charles Kalumuna, MD, volunteers his services at The Allan Stone Community Health Clinic in the village, where a new surgical facility is under construction with donations being raised by Michael L. Marin, MD, the Dr. Julius H. Jacobson II Chair in Vascular Surgery, Icahn School of Medicine at Mount Sinai, and Surgeon-in-Chief, Mount Sinai Health System.

Dr. Kalumuna reached out to Dr. Marin, who then contacted colleagues at Mount Sinai about Ruth’s case. By August, the little girl was at The Mount Sinai Hospital, undergoing surgery by Maura K. Cosetti, MD, Assistant Professor of Otolaryngology, Icahn School of Medicine at Mount Sinai, and Director of the Cochlear Implant Program at the Ear Institute of the New York Eye and Ear Infirmary at Mount Sinai. “Because hearing is closely tied to language development, our goal is to give children access to sound as early as possible,” Dr. Cosetti says. “We are thrilled to help Ruth and her family in this meaningful way.”

On Monday, September 11, the implant was activated, allowing Ruth to hear the sound of her parents’ voices for the first time—a milestone she met with a quizzical expression. The device was checked and programmed by Jillian Levine-Madoff, AuD, Cochlear Implant Audiologist at the Ear Institute. She established what the family had been hoping for: Ruth now has access to sound. The little girl then began speech therapy sessions, led by Jessica Van Manen, MA, Hearing Habilitation and Speech/Language Pathologist at the Ear Institute, which were a critical part of her recovery since she had previously communicated mainly through gestures.

Ruth and her family are now back in their village, where they continue to work on her hearing and speech skills. “Ruth was granted a chance to reach her full potential, thanks to the amazing team at The Mount Sinai Hospital,” Dr. Kalumuna says. “She is a lot more active and happy now, and definitely enjoys hearing sounds!”

Dr. Marin says, “Seeing an outcome such as Ruth’s inspires me to push forward with changing the standard of how the Western world provides aid and surgical care to areas like Kyabirwa, where safe, accessible surgeries are so crucially needed.”
More than 500 doctors, nurses, and other medical professionals recently attended the 2nd International Prostate Cancer Symposium and Inaugural World Congress of Urologic Oncology at The Mount Sinai Hospital. The three-day event in September was hosted by the Milton and Carroll Petrie Department of Urology at the Icahn School of Medicine at Mount Sinai and held in collaboration with the Society of Urologic Robotic Surgeons and the Endourological Society.

Participants included more than 80 of the world’s leading experts in prostate, kidney, and bladder cancers. There were more than 100 presentations on improving patient outcomes, the genomic complexity of prostate and kidney cancers, novel biomarkers, and updates on the latest treatment techniques, including focal therapy and fusion biopsy. The symposium also recognized the 75th Anniversary of the Department of Urology at the Icahn School of Medicine at Mount Sinai.

“We were gratified by the number of leaders in our field who chose to attend,” says Ash Tewari, MBBS, MCh, the Kyung Hyun Kim, MD, Chair in Urology, Mount Sinai Health System, and the Director of the symposium. “We believe this symposium underscored the value of collaborating with colleagues from different countries and specialties in order to improve care for patients. We have already started planning for next year’s symposium.”

Among this year’s highlights were live robotic prostate and kidney surgeries performed in 3-D and in real time by Dr. Tewari and symposium co-director Ketan Badani, MD, Vice Chair of Urology, Director of Robotic Surgery, and Director of the Comprehensive Kidney Cancer Program, Mount Sinai Health System. Mount Sinai’s Department of Urology runs one of the busiest robotic surgical programs in the United States for prostate, kidney, and bladder cancers.

“These live surgery and video presentations are invaluable teaching opportunities,” says Dr. Badani. “Wearing the special glasses and with the cinematic projection, attendees can experience the same high-resolution, three-dimensional view that we have while performing robotic surgery.”

Says Dennis S. Charney, MD, Anne and Joel Ehrenkranz Dean, Icahn School of Medicine at Mount Sinai, and President for Academic Affairs, Mount Sinai Health System: “The depth and breadth of programs—from live 3-D surgeries to point-counterpoint debates conducted by leaders in the field of urology—reflect impressive planning and organization on the part of Dr. Tewari and his team. Events such as these help advance the reputation of the Icahn School of Medicine at Mount Sinai.”

We believe this symposium underscored the value of collaborating with colleagues from different countries and specialties in order to improve care for patients.”

— Ash Tewari, MBBS, MCh

Leaders from The Tisch Cancer Institute at the Icahn School of Medicine at Mount Sinai and the Lillian and Henry M. Stratton-Hans Popper Department of Pathology and Laboratory Medicine at the Mount Sinai Health System served as associate directors of the symposium. They included: Nina Bhardwaj, MD, PhD, Professor of Medicine (Hematology and Medical Oncology); Carlos Cordon-Cardo, MD, PhD, the Irene Heinz Given and John LaPorte Given Professor and Chair of the Department of Pathology at the Mount Sinai Health System; and William Oh, MD, Chief of the Division of Hematology and Medical Oncology, Professor of Medicine, and Urology, the Ezra M. Greenspan, MD Professor in Clinical Cancer Therapeutics, and Associate Director for Clinical Research, The Tisch Cancer Institute.

“This comprehensive event made me realize how much is already known and how much more needs to be done to advance patient care,” says Ramon E. Parsons, MD, PhD, Director of The Tisch Cancer Institute, and the Ward-Coleman Chair in Cancer Research and Professor of Oncological Sciences.
Book Drive for Hurricane Sites

After watching repeated news reports about devastating hurricanes this summer, Gali Halevi, PhD, MLS, Chief Director, Mount Sinai Health System Libraries, felt compelled to help in some way. So in September, she began collaborating with Robin O’Hanlon, MIS, Assistant Library Director for The Gustave L. and Janet W. Levy Library, to organize a book drive for elementary school libraries damaged by hurricanes.

In just two weeks, hundreds of books were donated at four drop-offs throughout the Health System. The drive was scheduled to run for one month, but it was suspended early because it was such a success there was not enough room to store the books. Three schools in Texas will benefit, and the organizers are also seeking to send books to Florida, the U.S. Virgin Islands, and Puerto Rico. “Currently there is limited infrastructure in Puerto Rico,” Ms. O’Hanlon says. “Our hope is that once the rebuilding begins, we will be able to connect with other libraries and nonprofit organizations.”

Celebrating Physician Assistants

In honor of Physician Assistant (PA) Appreciation Week—and the 50th anniversary of the PA profession—five celebratory events were held at The Mount Sinai Hospital, Mount Sinai Queens, and Mount Sinai Beth Israel. During the events, held from Friday, October 6, to Thursday, October 12, hard-working PAs were applauded by the hospitals’ leadership and treated to breakfast, lunch, or midday dessert. Physician assistants undergo rigorous medical education to earn certification, and are able to diagnose and treat illnesses and prescribe medication. The Mount Sinai Health System’s more than 650 PAs—across 16 specialties—are also instrumental in providing high-quality care to diverse communities. “It is absolutely true, we cannot function without you,” said Dahlia Rizk, DO, Chief, Division of Hospital Medicine, and President of the Medical Board, Mount Sinai Beth Israel, during a luncheon on October 10, at the Dazian Rotunda. “You are an integral part of the medical team.”

“Run for Research” Helps Support Brain Aneurysm Foundation

As part of Brain Aneurysm Awareness Month, the Department of Neurosurgery partnered with TeamCindy, a fundraising arm of the Brain Aneurysm Foundation, to host the Fourth Annual “Run for Research,” held recently at Riverside Park. Approximately 100 Mount Sinai faculty and staff, and patients and their families—raising nearly $15,000—were among the 300 participants. “It is amazing to see how this event has grown to become such an important and impactful part of the fight against this devastating disease,” says J Mocco, MD, MS, Director of the Cerebrovascular Center at the Mount Sinai Health System, who led the Mount Sinai team.
27th Annual New York Regional Conference on Issues in Medical Ethics: Ethical Issues in Transgender Medical Care

This conference addresses the ethical challenges that arise in providing medical care and surgery for transgender individuals. Medical professionals, patients, and patient advocates will describe the medical needs of these patients and the distinctive ethical issues that they present. To learn more, contact Karen Smalls at 212-241-3757 or karen.smalls@mssm.edu.

Sponsored by The John Conley Foundation for Ethics and Philosophy in Medicine, and supported by the Bioethics Program and the Department of Medical Education at the Icahn School of Medicine at Mount Sinai.

Friday, November 17
9 am – 5 pm
Goldwurm Auditorium

Occupational Medicine Seminar Series
Mellisa A. Pensa, MD, MPH, Instructor, Department of Medicine, Yale School of Medicine, presents “The Role and Responsibilities of the Occupational Medicine Physician in the Context of Climate Change.”

Friday, November 10
8 – 9 am
Annenberg, Fifth Floor, 5-09

Grand Rounds / Neurosurgery
Saadi Ghatan, MD, Chair, Neurosurgery, Mount Sinai West, and Mount Sinai St. Luke’s, and Director, Pediatric Neurosurgery, Mount Sinai Health System, presents “Minimally Invasive Approaches in Epilepsy Surgery.”

Wednesday, November 15
8 – 8:45 am
Annenberg, Fifth Floor Seminar Room

Learning About Lung Health
Join the Mount Sinai Lung Screening team for a “Lungs for Life” event throughout November, Lung Cancer Awareness Month. Stop by Guggenheim Atrium on the following Tuesdays—November 7, 21, 28—and Wednesday, November 29, to learn about lung health and the importance of lung screenings for smokers. On November 28, participants will also be able to walk through a large inflated model of a pair of lungs. To learn more about the lung screening program, visit www.mountsinai.org/lungscreening.

Tuesdays, November 7, 21, and 28
Wednesday, November 29
8 am - 3 pm
Guggenheim Atrium

Announcement
Clinical Research Education Program Information Sessions
The Icahn School of Medicine at Mount Sinai’s Clinical Research Education Program is currently accepting applications for the PhD, MS, and Certificate programs for Spring 2018. Those interested can attend interactive online information sessions to learn more about the program, curriculum, and admission criteria. The sessions will also help participants learn how an advanced degree in Clinical Research will prepare them for leadership roles in translational science and medicine, and how to better compete for academic and professional opportunities. For more information or to speak to a program representative, call 212-824-7014 or email clred@mssm.edu.

Wednesdays, November 15 and 29, noon

Mount Sinai Transformation Update
For the most recent updates on Mount Sinai’s downtown transformation, please go to:
http://www.mountsinai.org/locations/downtown

The Mount Sinai Health System complies with applicable Federal civil rights laws and does not discriminate, exclude, or treat people differently on the basis of race, color, national origin, age, religion, disability, sex, sexual orientation, gender identity, or gender expression.