

Slowly but Surely, Schools For Health Professions Teach About Climate Change

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Contributor to *Health Progress*

In their first year as students at the Emory University School of Medicine, Ben Rabin and Emaline Laney noticed something blatantly missing from their curricula: any information on the consequences of climate change.

They knew environmental elements could affect patients' mental and physical health, yet they weren't getting any training in that area. "The impacts of climate change permeate every organ system," says Laney. "Despite this, there was no mention of climate change in our medical education."

Yet, instead of just continuing with the status quo, "we decided to change that," she says.

The duo connected with Dr. Rebecca Philipsborn, an assistant professor of pediatrics and pediatrician who had published literature about the health effects of climate change, to launch a lunchtime panel discussion about climate and health. Buoyed by the success of that event, they tackled a more ambitious idea: develop a climate-related curriculum that would be taught to every Emory medical student.

Under the mentorship of Philipsborn, Rabin and Laney outlined topics and learning points on climate change and health that intersected with existing content. "It took a tremendous amount of work," says Philipsborn.

They submitted and presented their proposal to several committees, and in October 2019 — just over one year from when they began medi-

cal school — got the green light from the medical school's executive curriculum committee. Beginning in 2020, every incoming medical student started learning the new material.

THE CALL FOR CLIMATE EDUCATION

Emory is one of many schools responding to the call to teach future health care professionals about the consequences of climate change. Some offer courses and certificates, others are weaving relevant case studies into existing material, and still others are welcoming environmental experts as guest lecturers.

Educational institutions are being encouraged — and prodded — to make these changes by a wide range of influential sources, from students to environmentalists to Pope Francis.

The updates come as areas across the globe experience devastating heat waves, droughts, storms and floods. While doubters remain, the evidence mounts that people worldwide are negatively affected by climate change. Early in the summer of 2021, a record-breaking heat wave across the U.S. Pacific Northwest and western Canada caused hundreds of deaths. The temperatures spiked so high that medical professionals





said severe burns could occur by just stepping barefoot on asphalt.

The World Health Organization has warned that a changing climate could account for an additional 250,000 deaths each year between 2030 and 2050 due to malnutrition, malaria, diarrhea and heat stress alone. And the U.S. Environmental Protection Agency says climate changes can lead to a host of ailments, from increased allergies due to a prolonged pollen season to a greater potential for Lyme disease from the expansion of hospitable tick habitats.

Today’s medical students “will be caring for individuals whose health will be impacted — directly or indirectly — by climate change,” says Ann Marie Sailsman, a doctor of nursing practice and clinical assistant professor at Seton Hall University’s College of Nursing. “As health educators, we must prepare them to handle these challenges.”

CHALLENGES TO CHANGE

While schools increasingly embrace climate-change curricula, the overall adoption remains low. For the 2015-2016 academic year, just 4% of medical schools said they had climate change or global warming-related content, according to the Association of American Medical Colleges’ analysis of curriculum submitted by participating schools. For the 2017-2018 year, that grew to 9%, and for the 2019-2020 year, it hit 17%.

School representatives cite a range of reasons for delaying and disregarding implementation of this material. Among the reasons reported in a survey by the Global Consortium on Climate and Health Education at Columbia University’s Mailman School of Public Health: lack of available staff time, lack of funding, competing institutional priorities and/or politics, lack of space in the core curriculum and a lack of teaching materials and staff expertise.

“A challenge we find is where to put it in the curriculum because (medical students) are already so busy trying to learn the basics,” says Patrick Swanson, PhD, professor in the Department of Medical Microbiology and Immunology at Creighton University School of Medicine. As chair of the medical school’s Planetary Health and Sustainability Committee, he works with fellow faculty to add more materials related to climate change to the school’s teachings.

“Most of the people who teach in professional schools aren’t well versed in environmental science and climate change,” he says. “They’re not experts in that area, and there’s not an easily identifiable way to deliver that content.”

Another issue, say faculty members, is that educational institutions are extremely focused on preparing students to pass their licensing exams. If the material isn’t on an exam, they say, there isn’t a strong incentive for the school to focus on that subject matter.

“Until we get climate change questions in the licensure exam, that is going to be a barrier to implementation,” says Ruth McDermott-Levy, PhD, who is a professor, nurse and co-director of the Mid-Atlantic Center for Children’s Health and the Environment at Villanova University’s M. Louise Fitzpatrick College of Nursing.

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For instance, she says, “if there were test questions on the NCLEX [nursing] examination related to climate change, schools of nursing would be highly motivated to include that content in their curricula.”

RESOURCES ABOUND

McDermott-Levy says that adding climate change material doesn’t have to be a heavy lift. A plethora of public material is available, such as the Global Consortium on Climate and Health Education’s site, which has syllabi and program plans, slides and videos and government sources such as GlobalChange.gov.

The Alliance of Nurses for Healthy Environments (ANHE), of which McDermott-Levy is a member, has a 12-page outline titled “Strategies for Incorporating Climate Change into Nursing Curricula.” ANHE is “trying to work with faculty across the United States to show them how easy it is to put this into courses,” she says. For example, a pediatrics lecture could include information on potential heat issues from playing outside or the risk of disease from tick bites.

CASE STUDY

To teach students about the ways that the environment can affect patients' health, schools give them case studies to outline the complexity of cases they may see, the ways health issues may intersect and encourage discussion on how to best treat the patients. This condensed case study is courtesy of *Better Together* — Health Sciences of the University of Minnesota.

The instructor provides an overview of planetary health issues, then asks students to individually read through this case scenario, before they move into small group breakout rooms to discuss the questions in a workbook with student peers.

Ana is a 53-year-old woman who fled her native country of El Salvador in 2000 after a devastating hurricane shut down the coffee plantation where she worked. She first went to Mexico with several extended family members, and then they moved to the U.S. in 2015. She misses her community in El Salvador, but she has worked hard to build a new home in America.

Ana lives with five other members of her extended family in a small, un-air-conditioned manufactured home in the rural town of Cold Spring, Minnesota. The adults in her home are employed in low-wage jobs, such as cleaning, farm labor and nursing aides in long-term care facilities. Ana is an undocumented worker on an assembly line in a poultry processing plant. She works 10-hour shifts, and the work is very physically demanding. She stopped going to school at age 12 and has limited English-language proficiency. She needs to keep her job in order to meet her expenses and to send money to family members in El Salvador. She fears being detained or arrested, so she has not applied for economic or medical assistance, but she occasionally utilizes a local free migrant health clinic.

There never seems to be enough food in her home, and fresh produce

is too expensive. Ana is eating a lot of processed foods and is now overweight. She has noticed her chronic asthma has gotten worse over the past three years. Over the same time, there have been record rainfalls and prolonged soil moisture near her home and high particulates in the air from Western forest fires.

When COVID-19 began to impact her town in March 2020, Ana worried about her health and the health of her family members and co-workers. She and her extended family members also feared losing their jobs if they stayed home from work. Ana and most of her family members were classified as “essential workers” as the pandemic took hold in their area, and they risked getting sick while at work. Their employers were slow to provide them with proper protective gear and Ana, along with nearly 200 of her co-workers, tested positive for the coronavirus in April 2020. She suffered relatively mild symptoms from the virus, and except for some persistent fatigue, she has recovered.

Ana's physical and mental health are being impacted greatly, and she is also enduring intense personal and economic pressures. She is struggling to manage her health issues, and she feels a great deal of uncertainty and fear relating to the global pandemic. She no longer sleeps well, either. Her insomnia is especially troublesome when there is heavy rainfall, probably because it reminds her of the traumatic hurricane she experienced back in El Salvador. The doctor at the migrant health clinic has said that her asthma, anxiety, stress, low nutritional, high-caloric food intake and intermittent insomnia are all contributing factors to her new diagnosis of high blood pressure. Ana is overwhelmed when she tries to think about how she can possibly manage this along with everything else, and she knows she cannot afford the medication that her doctor has suggested.

SMALL GROUP DISCUSSION

1. Individually, list changes in the environment and health of the planet that have contributed to Ana's health issues. Then, take turns sharing your lists.
2. Discuss these questions as a group:

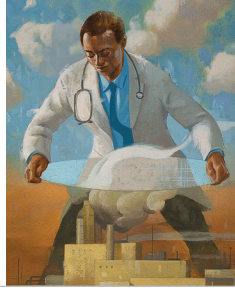
Should planetary health be a responsibility of health professional students, practicing health professionals and the organizations they work for? If yes, why? If no, why not?

What specific measures can be taken by health professionals and health care organizations in our daily work to improve planetary health?

Consider the uni-professional vs. interprofessional collaborative responses to this case study, including what responses would be appropriate for Ana's situation. How is collaboration going to be important in addressing the needs of individual patients? For addressing the larger issues of planetary health and global pandemics?

Worsening planetary health adversely affects the health of some populations and groups more than others. Some people believe the declining health of our planet is a justice and equity issue. Which populations and/or groups suffer the most as planetary health declines?

How can cultivating a shared understanding and shared sense of responsibility about these larger issues of planetary health and global pandemics contribute to improved population health and improved patient experiences, while also reducing the cost of health care?



Swanson says Creighton uses information from the readily accessible *Academic Medicine* article “Climate Change and the Practice of Medicine: Essentials for Resident Education” as a guide for integrating relevant material. The school is working to integrate the material “horizontally” across existing classes. For instance, he says, a lecture on the respiratory system can touch upon how air pollution can affect humans. “It’s not too much of a stretch to bring in this connectivity,” he says.

Seton Hall’s Sailsman uses publicly available resources as well. For the last three years, she has woven climate change-related topics into her community health and population health lectures. She also incorporated similar material into a Climate Change and Health module that will be part of a new online course, Determinants of Population Health Nursing Perspectives, slated to be offered this spring.

In the new course, students will be asked to take an online quiz to test their global warming knowledge, read climate change-related textbook chapters and articles and watch TED talks, such as teenage climate activist Greta Thunberg’s “The disarming case to act right now on climate change.”

Sailsman says she encourages candid climate-related conversations among students. “We always have a spirited discussion, and so much learning comes out of that,” she says.

MANY SOURCES OF MOTIVATION

Medical schools have plenty of motivation to embrace climate change curricula.

In recent years, medical associations have become bigger proponents of incorporating this material. In 2019, the American Medical Association adopted a resolution that supported “educating the medical community on the potential adverse public health effects of global climate change and incorporating the health implications of climate change into the spectrum of medical education.”

And in spring 2021, the American Association of Colleges of Nursing updated its core competencies for professional nursing education, known as “The Essentials,” to include a new expectation that nursing program graduates will understand “the impact of climate change on environmental and population health.”

Some schools, such as Penn State, look to the United Nation’s Sustainable Development Goals

for guidance, while other schools go to an even higher power. Swanson says the inspiration for Creighton’s increased focus on climate change was Pope Francis’ 2015 encyclical *Laudato Si’*, in which the pope appealed for better safekeeping of the planet and emphasized the need to care for “our common home.”

STUDENTS FOSTERING CHANGE

Another reason why schools are making change: vocal and proactive students, such as Emory’s Rabin and Laney, are demanding this content.

Students are a “driving force for incorporating climate change into our curricula,” says Swanson.

Organizations like Medical Students for a Sustainable Future (MS4SF) are gaining members and momentum. This network of more than 400 medical students from 105 medical schools, aims

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—PATRICK SWANSON

to address the climate crisis through advocacy, curriculum reform, sustainable health care and other initiatives. Swanson says he uses the organization’s Climate and Health Curriculum Reform Guide as a reference.

At Loyola University Chicago Stritch School of Medicine, members of the Group for Environmental Medicine and Sustainability (GEMS) are working to update their curriculum. Students created a plan for an elective that would address “the many possible intersections of the medical field and climate change,” says medical student and GEMS board member Emma Stewart. The proposal was submitted to the assistant dean of educational affairs with hopes that the course will be in effect by spring 2022, says Stewart.

At the same time, students are increasing their scrutiny of schools. The Planetary Health Report Card, founded in 2019 by medical students at the University of California San Francisco, invites medical students to grade their schools in five main areas: planetary health curriculum, interdisciplinary research in health and the environment, university support for student planetary health initiatives, community outreach centered on environmental health impacts and sustainability. The

results are then published in an extensive report.

FOCUS ON PLANETARY HEALTH

Despite support from major medical associations and increased pressure from students, individual educators remain ultimately responsible to take action, says Teddie M. Potter, PhD, a nurse and clinical professor who serves as director of planetary health at the University of Minnesota School of Nursing. She also is the faculty lead in incorporating climate change into the school's curricula.

"It's going to fall on faculty to say, 'Wait a second. Our deepest commitment is to prepare effective health professionals for the future to protect the public,'" she says.

She and other faculty at schools for health professions stress that education needs to go beyond just teaching students how climate change can affect a patient's health and encompass the broader topic of planetary health. Students need to learn about the carbon footprints of hospitals, how medical supply delivery can be disrupted by extreme weather, how the disposal of medications affects our environment and much more.

"If we are not dealing with this huge cause of human disease burden — disruption of the planet — we're not adequately preparing our students for the future," says Potter. "This is a critical issue. ... If the earth were a patient, (it) would be in the intensive care unit in multi-system failure."

LAURA PETRECCA is a writer and editor who has covered a wide range of health, business and breaking news topics — from climate change to corporate mergers. She is the former business section editor and New York City bureau chief for *USA Today*. Her writing has appeared in *Real Simple*, *Men's Health* and *AARP*, among other publications.

EDUCATIONAL RESOURCES

There's a wide range of helpful resources for schools exploring the notion of incorporating climate change into their curricula — as well as those who want to expand upon existing programs. They include:

Global Consortium on Climate and Health

Education: Launched in 2017 by faculty at Columbia University Mailman School of Public Health, this international forum is dedicated to helping health professionals prevent, mitigate and respond to the effects of climate change.

Medical Students for a Sustainable Future:

This network of more than 400 medical students aims to tackle climate change-related health and social justice issues through advocacy, curriculum reform, sustainable healthcare and other initiatives.

Alliance of Nurses for Healthy Environments:

The mission of this group of nurses and nursing organizations is to promote "healthy people and healthy environments by educating and leading the nursing profession, advancing research, incorporating evidence-based practice and influencing policy."

Health Care Without Harm: This nonprofit wants to transform the health care industry worldwide by improving sustainability efforts and reducing environmental harm. Health Care Without Harm also advocates for environmental health and justice.

Planetary Health Alliance: This global coalition of more than 200 members — including universities, research institutes, non-governmental organizations and government groups — aims to better understand and address the effects of environmental change on the population while also supporting Earth's overall health.

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