

NURSING FORUM

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UNIVERSITY OF MARYLAND
SCHOOL OF NURSING

Connecting
the Dots

*Nurses understand the
links between our bodies
and the environment*





UNIVERSITY of MARYLAND
SCHOOL OF NURSING

C O N ● **NURSES SEE THE LINKS**
N E C T ● **BETWEEN OUR BODIES**
I N G ● **AND OUR ENVIRONMENT –**
T H E ● **AND TAKE ACTION FOR**
D O T S ● **POSITIVE CHANGE**

When Sarah Bucic, MSN, RN, saw workers sandblasting paint off a water tower near her house in 2016, she asked one of the people working on the project if the paint contained lead. He confirmed that it did – and remarked that it was the first time anyone had ever posed the question to him.

According to the U.S. Environmental Protection Agency (EPA), lead can affect almost every organ in the body. It has been found to be so dangerous that it has been banned in gasoline and indoor paint, but in Bucic’s home state of Delaware, as in the rest of the country, no laws prevented lead contamination outdoors.

BY LIBBY ZAY

ILLUSTRATIONS BY FEDERICO GASTALDI

“AS THE NATION’S MOST TRUSTED PROFESSIONALS, NURSES CAN LEAD THE CHARGE TO SIGNIFICANTLY IMPROVE SOCIETY’S RESPONSE TO CLIMATE CHANGE AND FOSTER THE STRATEGIES NEEDED FOR A HEALTHY FUTURE FOR EVERYONE.”

ROBYN GILDEN

Bucic may not have thought to raise the question if it weren't for the Applied Toxicology course she took while earning an Environmental Health Certificate at UMSON in 2012. She recalls learning about all the surprising places where lead can be found, including the paint on roads and fire hydrants, crystal glassware, and even antique or imported furniture, jewelry, and toys.

After finding paint chips in her yard, Bucic worried for her family and community's safety. She used the Freedom of Information Act to uncover a similar incident in which lead chips, dust, and grit were spread in a residential yard in Delaware after a water tower was sandblasted. She also found news stories detailing how the sandblasting of a lead-paint-covered bridge spanning the Chesapeake and Delaware Canal in St. Georges, Delaware, during the early 2000s had created a public health risk for the surrounding community. Yet in the nearly two decades since that incident, no community notification or oversight requirements were enacted to ensure safety measures to protect the health of Delaware residents.

Thus began Bucic's two-year grassroots campaign, alongside other volunteers, to gather information and speak to legislators, many of whom "were surprised that lead paint was still an issue," she says.

"It may sound like this wouldn't impact a lot of people, but we mapped out how many of these water towers were in the state, and there were more than 150. Some were within 40 feet of houses," Bucic says, noting that she lives near schools in the area.

Once they had presented their evidence to lawmakers, Bucic says, "Everyone, regardless of party affiliation, was concerned." The passing of Delaware House Bill 456 in 2018 made it the first state to ban lead paint on outdoor structures, including water towers, bridges, roads, playground equipment, and fire hydrants.

Bucic asserts that nurses are uniquely positioned not only to see these types of connections between our bodies and the world around us but also to advocate for the health of patients, communities, and the planet. "People really listen to nurses," she said. "We're a credible, trusted source."

A 2020 Gallup poll supports her claim: Americans have rated nurses as the No. 1 most ethical and honest profession for 19 years in a row. And with more than 3.8 million nurses nationwide, the profession is in a unique position to use its collective voice for environmental stewardship.

CHANGE STARTS WITH EDUCATION

"Nurses tend to want to fix things," remarked Robyn Gilden, PhD '10, MS '03, RN, assistant professor, who earned a post-master's Environmental Health Certificate at UMSON in 2003 and now serves as the certificate program's director. She says that advancing environmental health literacy among students is a proven way to improve public health outcomes.

Incorporating environmental health concepts into nursing education became a hot topic 25 years ago when the Institute of Medicine (now the National Academy of Medicine) published *Nursing, Health, and the Environment*, a report that concluded our environment plays a critical role in human health and that nurses are best suited to raise awareness, educate the public, and address health issues related to the environment. This landmark report prompted UMSON to expand its environmental health curriculum by adding undergraduate courses and founding the first environmental health nursing graduate certificate program in the nation, which evolved into the current 12-credit, post-bachelor's Environmental Health Certificate that celebrated its 10th anniversary last year.

"From the start, our goal was to ensure that every UMSON student had an opportunity to receive formal environmental health education if desired," wrote Gilden and co-authors Katie McElroy, PhD '16, MS '10, BSN '98, RN, assistant professor, and Barbara Sattler, DrPH, RN, FAAN, former professor, in "Environmental Health Nursing Education: One School's Journey," a retrospective on environmental health nursing education at UMSON that was published in *Public Health Nursing* in September.

In 2015, Jane M. Kirschling, PhD, RN, FAAN, the Bill and Joanne Conway Dean, signed the White House's Health Educators Climate Commitment, and UMSON joined more than 100 other health profession schools in doing so. Gilden was appointed as UMSON's representative in upholding that commitment, leading the School in joining the Global Consortium on Climate and Health Education based at the Columbia University Mailman School of Public Health and becoming chair of UMSON's Climate Change Workgroup. "Part of the workgroup's mission is to implement changes to the curriculum to better prepare the next generation of nurse educators, clinicians, and researchers to address the climate crisis," she says.

In February 2020, UMSON became one of the first four schools of nursing nationwide to accept the Nurses Climate Challenge, a national campaign led by Health

Care Without Harm (HCWH) and the Alliance of Nurses for Healthy Environments (ANHE). The initiative's goal is to engage nursing students, nurses, and nurse educators in informing 50,000 health professionals and students about the health impacts of climate change by 2022.

"Now, more than ever, a focus on climate change is imperative, and nurses are in a unique position as holistic care providers to lead the efforts," says Gilden, who serves as the School's lead on the climate challenge. "With increasing severity of storms and wildfires, the hottest May on record worldwide in 2020, and emerging links between COVID-19 and climate change, there is much work for health care providers to do. As the nation's most trusted professionals, nurses can lead the charge to significantly improve society's response to climate change and foster the strategies needed for a healthy future for everyone."

To participate in the climate challenge, UMSON has committed to meeting certain goals and implementing certain educational initiatives, such as creating an undergraduate Climate Change elective, incorporating climate change education as part of at least four courses, and offering guest lectures on climate change in a variety of entry-into-nursing classes.

No matter the course of study, climate change and environmental health concepts are integrated into all levels of nursing education at UMSON. An environmental health course is a requirement for Master of Science in Nursing (MSN) Community/Public Health Nursing students, and a range of courses on environmental health topics are popular choices for RN-to-Bachelor of Science in Nursing, RN-to-MSN, and Doctor of Nursing Practice students, who tend to have more credits available for electives. Gilden says she frequently sees these students turn into passionate advocates for change, especially since they are often in positions to incorporate new knowledge immediately into their nursing practice.

BUILDING HEALTHIER HOSPITALS

One such graduate is Charlotte Wallace, MS '15, BSN '99, RN, who has worked at Luminis Health Anne Arundel Medical Center since 2002. When the hospital was planning a new seven-story patient tower in 2007, she started asking questions about sustainability.

The global health care industry has an enormous ecological footprint and is one of the largest contributors to climate change. Data from a September 2019 report by Arup and HCWH claims that if the health sector were a country, it would be the fifth-largest emitter on the planet.

"I wanted to challenge and inspire the hospital to build smartly and show other hospitals how it's done," Wallace recalls. The hospital was considering LEED certification,



UMSON'S GREEN TEAM

UMSON students, faculty, and staff take part in GreenSON, our official "green team" that identifies and promotes conservation-minded initiatives. Thanks to their efforts:

RECYCLING

41 recycling stations have been introduced throughout the School, and trash cans have been removed from employee desks.

INK/PAPER

84% of desktop printers have been removed in lieu of departmental multifunction copiers, reducing our ink toner cartridge use by 93%, and student printing has been almost eliminated entirely.

WATER

A water bottle filling station was installed in the first floor of the building, and all water dispensers in break rooms were converted to filter water from in-house plumbing rather than using water jugs.

BIKE RIDING

The group also hosts Joe's Bike Shop annually, giving free tune-ups to those who use pedal power to get to UMSON; a free bike pump and repair station is also available in the UMSON courtyard.

a globally recognized symbol of sustainability achievement bestowed by the U.S. Green Building Council, and leaders called upon Wallace to discuss whether the extra costs were worth the return on investment.

“We all choose where we work,” she says she told them. “If you’re job seeking and it comes down to two hospitals, you’re going to choose the one that you are morally aligned with.”

Before long, a new role was carved out for Wallace: sustainability coordinator. She works as a community health nurse while overseeing the hospital’s sustainability efforts, which have included introducing a farmer’s market, implementing recycling programs, and designing an award-winning integrated pest management program.

Many of Wallace’s efforts involve tracing supply chains back to their sources to find sustainable solutions, such as implementing reusable sharps containers, eliminating the use of disposable pillows, and transitioning to microfiber mops, which use less chemicals and water. According to Arup and HCWH, the lion’s share of health care industry emissions – 71% – are primarily derived from the supply chain through the production, transport, and disposal of goods and services, such as pharmaceuticals and other chemicals, food and agricultural products, medical devices, hospital equipment, and instruments.

Though she is one of only two nurses in Maryland to hold such a position at a hospital – the other is Justin Graves, MS ’14, MBA, RN, CRMP, director of materials management, logistics, and sustainability at the University of Maryland Medical Center – she believes that having a nurse helm such a role is “extremely valuable.”

“Nurses are trained in science and communication,” she says. “We’re trained to assess people’s needs and meet those needs in a language they understand. We have a unique gift to help connect the dots.”

Of course, protecting the health of hospital workers is also important. During a typical workday, nurses may inhale, ingest, or absorb a range of toxins.

In a 2007 survey conducted by the Environmental Working Group and HCWH in collaboration with the American Nurses Association and UMSON, nurses reported elevated rates of cancer, asthma, and miscarriage linked to their exposures at work.

Wallace encourages nurses to become sustainability champions and to ask questions about the practices and products being used in their units. For example, many hospitals use a popular baby wash that has a potential chemical concern, she says. This can be troublesome for both the nurses handling the product, but also, “by using the product, hospitals are basically promoting it to families,” she explains.

ADVOCATING FOR ENVIRONMENTAL HEALTH

With a background in midwifery, Katie Huffling, MS ’06, RN, CNM, FAAN, has long been interested in the effects of chemical exposures, particularly their impacts on fetal growth and lifelong health. “We’re exposed to chemicals every day, and there is more and more science pointing to a link between fetal exposures and chronic diseases like asthma, obesity, and diabetes,” she says.

While working at what is now the University of Maryland Prince George’s Hospital Center, Huffling developed a pre-natal environment assessment questionnaire. “The tool addressed all of the things women have control over in their lives and homes,” Huffling says. For example, patients are asked about pesticide, cleaner, and air freshener use in the home and then are given suggestions for reducing risks.

“The public has a sense that if chemicals are being used in products, the manufacturers have had to test their safety – but they don’t,” explains Huffling, who has been building a case to pass legislation to strengthen chemical policies and ensure products are safe before they are put on the market.

Working on legislation is now part of her everyday job as the executive director of ANHE, a national coalition that works with nurses and national nursing organizations to address the relationship between human health and the environment. In May 2020, Huffling was also appointed to the EPA Children’s Health Protection Advisory Committee for a three-year term, during which she will advise the agency on regulations, research, and communications.

Huffling’s interest in environmental health was piqued while attending a guest lecture by Sattler in one of her



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KATIE HUFFLING

Community/Public Health Nursing specialty classes at UMSO. When Sattler asked who regularly bought organic foods, Huffling looked around the room to see that she was the only person with her hand raised. She spoke with Sattler after class, and before long, she had become her research assistant.

For one of her research projects, Huffling went door to door to talk with residents in a community north of Baltimore that had widespread groundwater contamination due to numerous industrial sites located there, including a fireworks and munitions production facility used during World War II. “At the time, the area was full of unusable, overgrown lots,” Huffling explains. Her efforts speaking with the community about their health issues laid the groundwork for an area-wide cleanup and the introduction of a wildlife preserve.

The experience ended up being the perfect precursor to her work at ANHE, where she assists nurses nationwide on fund-raising and outreach for similar projects. One big win came after Jessica Castner, PhD, RN-BC, FAEN, FAAN, a nurse practitioner and assistant professor at the University of Buffalo School of Nursing, noticed a pattern of illnesses in emergency room patients who lived near a plant that produces coke, a coal product used as fuel to make steel. Castner and her students surveyed area residents to determine if they were having any health issues or noticing pollution.

“It helped bolster the community’s concerns and got the government interested,” Huffling explained. Eventually, the EPA ordered the plant to pay \$12 million in civil penalties, facility improvements, and environmental projects to benefit the community – the largest fine of its kind to date.

Huffling asserts that the most important public health issue we are facing today is climate change. The Centers for Disease Control and Prevention predicts that as the climate continues to change, our physical, biological, and ecological systems will be disrupted, causing existing health threats to intensify and new health threats to emerge. These disruptions could include increased respiratory and cardiovascular disease, injuries and premature deaths related to extreme weather events, changes in the prevalence and geographical distribution of food- and water-borne illnesses, and threats to mental health, among many others.

Despite the challenges humanity faces, Huffling remains optimistic. She says that addressing climate change presents a huge opportunity for nurses.

“Seeing how many nurses are engaged in this work and how it keeps growing is really inspiring,” Huffling says. She recommends that nurses take time to talk to their colleagues about climate change, whether that be introducing it as a regular agenda item at staff meetings or talking with the chief nursing officer or other leaders about what the organization is doing to address sustainability.

Huffling adds that climate change has become unfortunately politicized and suggests that nurses facing this challenge focus on making a connection between our bodies and our planet.

“People care when something impacts them or their loved ones,” she says, pointing to polling research that shows the most effective talking points related to climate change are those that make a connection to health. She says that opportunities for nurses to share environmental health information with patients are everywhere – you just have to start the conversation. For example, a nurse speaking with a patient about their asthma can use the encounter not only to ask about possible triggers at home, such as mold, dust, or household cleaners, but to also make a link to “code red” air quality days, which are becoming more frequent as the climate warms, she says.

“We as nurses, with our holistic approach to health, recognize that everything is connected,” Huffling says. “The health of the planet directly impacts the health of people, and we can have an amazing positive impact on health globally and on the health of future generations.” ♣

SIMPLE WAYS TO COMBAT CLIMATE CHANGE

The nurses we talked to for this story offered some suggestions you can use in your daily life.

AT HOME

Switch to 100% wind power. In Maryland and elsewhere, you choose where your energy comes from. Simply inquire with your power company.

Eat less meat. A predominantly plant-based diet can reduce the risk of type-2 diabetes, heart disease, and certain types of cancer, all while lowering greenhouse gas emissions.

AT WORK

Share information. Prepare and share patient education documents about the common health effects of climate change.

Turn off your camera during virtual meetings. This can decrease the carbon dioxide emissions caused by data transmission by 96%, according to Science Daily.

IN YOUR COMMUNITY

Use your voice. Share information on social media, write letters to government officials, and join climate events.

Lead the way. Collaborate with local leaders, businesses, and elected officials to make climate change a priority.