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TAKING CARE: Programs like Linfield's MSN in leadership in healthcare ecosystems teach green nursing practices to help improve sustainability in the medical field.

Green nursing

New initiatives and educational programs balance sustainability with safety, even in a pandemic

By: Kristie (Patterson) Rickerd '97

Many things about a trip to the doctor's office are routine. Patients fill out sheets of insurance and intake paperwork and are guided into rooms to sit on top of paper-covered exam tables. Nurses and doctors put on latex gloves and use single-use tips and covers to examine ears, noses and throats. Taking samples involves single-use containers, needles, swabs and more. Trips during the COVID-19 pandemic have included additional layers of masks, gowns and face shields. Healthcare practitioners use all these sanitary measures and more to safely diagnose and treat illnesses.

Some in the healthcare world, though, are starting to ask whether practices that were created to protect and heal are hurting more than they are helping. What started as a way to reduce blood-borne pathogens and keep patients and medical professionals safe has resulted in decades of waste, energy consumption and toxicity generated by the healthcare system. And it's something nurses and other medical personnel are increasingly trying to combat.

The history of 'green nursing'

"Green nursing" isn't a new concept. In the 1970s and '80s, people in healthcare started paying significant attention to the toxic medical waste generated by hospitals; however, new efforts toward more sustainable practices were sidelined with the AIDS crisis and fears generated by the unanswered questions around transmission.

"At the beginning of my career, I was at a small, rural hospital in Georgia. We were using lots of sustainable practices at the time," recalls Kim Dupree Jones, dean of the Linfield University-Good Samaritan School of Nursing. "All of our operating room equipment was essentially washed in a dishwasher and put in an autoclave and then used on the next patient. There were protocols of what to do if there was a speck of blood still on the autoclave ... There was a time when all the IV bottles were glass, and all the needles were re-sharpened and used again."

Jones remembers that hospitals cleaned and reused much of what medical personnel use on a regular basis, including cloth towels and hospital gowns. But the HIV epidemic that started in the early

1980s changed all of that. Nurses and doctors became more cautious with an increased awareness of highly transmissible diseases. Jones recalls the death of Arthur Ashe, a prominent tennis player who died from AIDS-related complications, in 1993. Ashe maintained the belief that he had contracted HIV during a post-surgery blood transfusion a decade earlier. While the cause was more likely to be contaminated blood and not the syringe or other tools, this very public incident and growing fears around the spread of AIDS caused the medical field to make the shift to single-use materials.

"Practices changed, and in order to be safe, it went to everything being disposable," Jones said.

The shift to disposable materials was intended to keep things as sterile as possible for each patient and reduce infections, which it did. But, Jones notes, it ultimately has "created mountains and mountains of medical waste."

Single-use products cause long-term problems

Eventually, the move to single-use equipment and the increase in medical waste prompted more awareness of the healthcare industry's lack of eco-friendly practices and even downright toxic activities. This growing problem became impossible to ignore in the late 1980s when used syringes and other medical waste started washing ashore along the East Coast.

It wasn't long before the U.S. Environmental Protection Agency (EPA) started looking into the healthcare industry. In 1995, the EPA found that healthcare waste was responsible for 10% of mercury air emissions and cited medical waste incinerators as a leading producer of airborne carcinogenic dioxins.

"Healthcare uses around 17% of the total energy used in the United States, which is a huge amount, and they produce about 12% of all the waste," said Gary Laustsen, professor and program coordinator for Linfield's Master of Science in Nursing (MSN). "Hospitals produce more waste and use more electricity partly because they operate 24/7."

The nonprofit organization Practice Greenhealth notes that hospitals generate more than 29 pounds of waste per bed per day. This results in more than 5 million tons of waste annually. That total does not include medical waste created from non-hospital medical settings.

In more recent years, the concern over the impact of environmentally-harmful medical practices took on an additional focus: how this was disproportionately affecting lower socio-economic communities. Everything from a person's inability to protect themselves from more extreme weather (due to climate change) to living in areas closer to highways, where they are more likely to inhale fumes from the large diesel trucks (which companies, including hospitals, use to transport materials and goods) has a more intense effect on those who have fewer options as to where they live or access to green space.

"Until recently, the focus has been on individual patient care versus population care where people think, 'I don't have to worry about how the community might be affected because I'm trying to save this individual's life,'" Laustsen said.

In "The Future of Nursing 2020-2030," the National Academy of Sciences notes that nurses will play a key role in improving health equity because "their education and experience are grounded in caring for the whole person and whole family in a community context."

An environmental approach to nursing

The healthcare industry has made some strides toward more sustainable practices. Specifically, there has been dual focus on reducing facilities' environmental impact and addressing the public health threats due to climate change. Some major initiatives in developing greener practices in healthcare include:

- Developing the technology to more effectively offer telehealth services to reach patients more conveniently and economically, as well as to reduce car pollution.
- Working with the EPA on the safe production, storage and disposal of hazardous waste pharmaceuticals.
- Adopting safer practices around the use of disinfectants to avoid harming workers and patients. The Centers for Disease Control and Prevention (CDC) has issued guidelines for employers to ensure that people and the environment are protected against potentially hazardous disinfectants and cleaners.
- Encouraging efforts around conserving water resources and reducing wastewater pollution.

But much like the impact of the AIDS epidemic in the 1980s, the all-consuming response to the highly transmissible COVID-19 virus has produced mixed results with regard to environmental progress. On the positive side, measures taken at the height of



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the pandemic to limit people's movement and contact with one another resulted in steep 7–8% decline in energy use, according to a May 2021 study completed by the Organisation for Economic Co-operation and Development, an economic forum of 38 member countries.

On the negative side, the caution around COVID-19 has created some setback in practices around issues like single-use equipment. But there are still many on the frontlines, often led by the efforts of nurse leaders, who are keeping sustainability in healthcare in focus, including Laustsen.

Nurses leading sustainability initiatives

Laustsen has spent the majority of his academic and professional life thinking about a more sustainable way to deliver healthcare. In addition to being an RN and family nurse practitioner, he also has a graduate degree in environmental biology and worked in environmental education for 12 years.

He entered nursing with a perspective of an environmentalist.

"As soon as I entered into healthcare, I said we're not really doing very well [when considering the] impacts on the environment," he said. "I continued to recognize that problem when I was a nurse, and then, when I decided to get my Ph.D., I wanted to marry my environmental background and my nursing background."

His arrival at Linfield in 2020 was auspicious timing as the university was planning to launch an MSN. Laustsen's background and expertise helped give the new program a distinctive focus: leadership in healthcare ecosystems. Linfield's MSN explores the relationship between sustainability, public policy, social justice and technology in healthcare and how these areas impact one another and the delivery of care.

"At Linfield, I have learned how much waste is created by the healthcare industry, nursing schools included, and wanted to put my learning into action," Sandra Lupton '10, '23 said.

So, when she heard the School of Nursing might dispose of older, waterproof mattresses used at the Portland campus, Lupton set her mind to keeping them out of a landfill.

"The mattresses are perfectly usable, clean and waterproof and have only been slept on by manikins," she said.

Thanks to Lupton, 19 old mattresses will be used throughout the City of Portland at the newly-created Safe Rest Villages, a collection of shelters — not tents — that provide a place for

New pathways into nursing

By Chase Estep

Anyone paying attention to the headlines in recent years knows that the United States is facing a shortage of nurses. The U.S. Bureau of Labor Statistics projects nursing will be one of the occupations with the most significant job growth through the 2020s.

To help fill these positions and prepare the next generation of nurses, Linfield has created another pathway for those interested in beginning nursing careers. The Master's Entry into Professional Nursing (MEPN) program, announced in November, allows students that already have a bachelor's degree in a non-nursing field to fast-track the process of getting their Master of Science in Nursing.

Previously, students with a bachelor's degree in a non-nursing field would have to earn a Bachelor of Science in Nursing entering the field. Linfield's MEPN program — the first of its kind in Oregon — allows a student to earn their master's degree and enter the workforce in just 18 months, without needing to go back for a BSN.

The MEPN curriculum focuses on complex care and systems-level thinking, so graduates will be prepared to transition into management and leadership positions within the healthcare system.

The first MEPN cohort starts classes in January 2023.



Portlanders living outdoors to sleep, access basic and necessary hygiene services, and connect with case management and behavioral health services.

"Everyone is so grateful to have received these," said Michelle Ladd from the City of Portland. "They will be put to good use."

For Lupton, it is one small thing that, combined with other efforts, could add up to make a big difference.

"Nursing schools are part of the whole healthcare ecosystem," she said. "Each player in the whole healthcare ecosystem must play a part in reducing, recycling and reusing as much as possible."