# CLEAN AIR IN THE OR

## *The Potentially Overlooked Infection Prevention Imperative*

*Air quality is often taken for granted in the delivery of patient care, but it is an important infection prevention measure to reduce the risk of microbial transmission to patients during surgery. At NUVO, a leading manufacturer of surgical lighting, its mission is to illuminate the need for the cleanest air possible in the OR. Air purification technologies that use germicidal ultraviolet (UVC) wavelengths to kill airborne pathogens are increasingly regarded as essential to improving air quality. In this interview, Brett Messina, Vice President of Sales and Marketing, speaks about the invisible threat of airborne pathogens and how NUVO offers product solutions to strengthen infection prevention protocols so that everyone—patients and healthcare providers alike—can breathe better.*

**Q: Tell us about your company.**

NUVO manufactures innovative surgical lighting products. Together with our parent company, Medical Illumination, we offer a wide array of healthcare lighting, including everything from small lights in examination rooms to large lights in cardiovascular hybrid ORs. Our primary focus is the research, development, and production of ceiling-mounted equipment in the perioperative setting. This allows us to design, certify, and bring high-quality surgical lighting products to market quickly. NUVO is fortunate to have a management team with decades of expertise in designing, engineering, and making state-of-the-art surgical lights.

**Q: Has clean air in the OR always been a focus?**

It's been a longtime focus of mine. Before joining NUVO, I was an OR business manager, which is when I became aware of the threat of contaminated air. Pathogens travel on people and air currents and land on surfaces, surviving for days, weeks, even months and sometimes upward of 200 days. These pathogens can then be picked up by staff and transferred to patients. Manual cleaning of OR surfaces is not enough to prevent the occurrence of surgical site infections (SSIs). No matter how well a hospital or outpatient surgery center keeps surfaces clean, there will always be the additional risk of SSIs caused by pathogens in the air. That's why I believe infection prevention efforts should start with the air, because improvement in the microbiological quality of air in the OR and surrounding areas is going to help reduce the settling of microbial burden on the surfaces.

**Q: Which of your company's products are you most excited about?**

Our VidaShield UV24. This product is a ceiling-mounted, UVC air purification system that improves air quality wherever it is installed (see Product Profile on page 17). I'm very passionate about this product, as is the entire team, because infection prevention is among the highest priorities in healthcare today. What our customers like about VidaShield UV24, and what makes me so excited about it, is that it enhances infection prevention protocols with no outside influence required to continuously destroy airborne pathogens from treated air.

BRETT MESSINA,
VICE PRESIDENT OF SALES
AND MARKETING, NUVO

**Q: NUVO is known for its sophisticated surgical lighting products. Why was acquisition of the VidaShield UV24 technology important?**

NUVO is dedicated to providing the best available medical equipment for the OR suite, and we are always seeking to improve our product line. By listening to our customers' needs and adding the VidaShield UV24 to our offerings, we are now able to deliver a technology that helps with infection control while also enhancing the benefits of other products we currently provide.

**Q: Tell us what sets this product apart from the competition.**

The VidaShield UV24 is a patented product, and there's really nothing else like it on the marketplace right now. This product safely operates continuously in occupied spaces using UVC wavelengths that are most effective against pathogens. Other products using those wavelengths require the room to be unoccupied, and products using longer wavelengths are not nearly as effective at inactivating pathogens because they require much longer exposure times. In the hierarchy of controls, the VidaShield UV24 is a solution that makes life easier for everyone. As an engineering control, the system doesn't require human intervention to operate—and it's an easy retrofit for standard 2' by 4' ceiling lights. Basically, this product provides clean air and better lighting with no hassle and minimal maintenance.

**Q: What is your perspective on the connection between air quality and the incidence of SSIs?**

Research shows there is a link between aerosolized bacteria and SSIs. Without OR air contamination standards, it can be challenging for healthcare providers to know what level of air quality to strive for. We consider contaminated air "the invisible threat" because of the nature of air itself. Healthcare providers can't see it, so often it goes ignored. But contaminated air is a serious threat to patient safety.

> Every facility has protocols to remove pathogens from surfaces. The same should be said about the air.

**Q: How often do customers come to you not knowing about the importance of clean air?**

All the time. Healthcare providers often don't realize more can be done to improve air quality. When we first engage with customers, many feel that they're doing enough just by treating the surfaces or by meeting current recommendations for temperature, positive pressure, air changes per hour, and humidity. Sometimes they assume that the facility's HVAC system eliminates pathogens out of the air—when, in fact, HVAC systems cycle on and off throughout the day, leaving unfiltered air circulating within the room when the system is off and, therefore, not effectively handling pathogens introduced within the room or brought into the room from the corridor. Although most customers don't realize they have a potential issue, once we explain how VidaShield UV24 performs, they immediately get it and understand the benefits, especially to patient safety. If we're talking with an infection preventionist, OR director, or facility manager who may not be the ultimate decision maker, we end up being put in touch with the right team of people at the facility because individuals in healthcare understand they have a responsibility to look out for what's best for the patient.

**Q: How do you help customers optimize air quality in the OR setting?**

We help customers by first educating everyone in the OR about the benefits of the VidaShield UV24 product, and then by determining the most effective placement throughout the OR and surrounding areas for installation to maximize use of the product. These units can be installed almost anywhere, but we like to begin installation in staff lounges, which often have some of the poorest air quality in the entire perioperative area, and then in the hallways leading into the ORs. Installing the product right outside OR doorways is an excellent place to start cleaning the air. The postanesthesia care unit, decontamination room, sterile processing areas, and staff locker rooms are all effective locations as well. Air from all of these areas moves into the hallways as people enter and exit, and that contaminated air can migrate into the OR as the doors open and close.

PRODUCT PROFILE

**VidaShield UV24**

The VidaShield UV24 is an active air purification system that uses UVC to reduce bacteria and fungi from the air. It is proven to reduce the infectious aerosols that can travel throughout the OR suites. Its innovative design combines an ultraviolet germicidal irradiation (UVGI) chamber and air circulating fans with an overhead ceiling light. The germicidal wavelength of UVC produces short-wavelength light that damages the nucleus of cells of microorganisms, killing them or making them unable to reproduce. As a completely self-contained unit, no UV escapes at all.

**www.vidashield.com**

Reduces fungi and bacteria.

Reduces settling of viable microorganisms and particulates on surfaces.

Treats a volume of air equivalent to an 8′ x 10′ x 10′ room four times per hour.

Installs overhead and saves valuable floor space.

Operates 24/7 without any needed interaction from staff.

Improves indoor air quality in the OR and surrounding areas.

### Q: What are your customers most surprised to learn about the benefits of air purification systems?

Most of our customers are really surprised by how fresh the air smells after installing the VidaShield UV24 system. The smells in and around ORs are pretty distinct and can be pungent at times. After installation of the system, customers often notice right away that the odors have diminished. Clean air means fresh-smelling air. Healthcare personnel at hospitals have also reported to us that incidents of allergies have dropped since utilizing the VidaShield UV24 units. Longer-term benefits shared with us have included a reduction in the spread of illnesses to and among team members.

### Q: When is the right time to invest in air purification technology and protocols?

Now is the time to treat the air in the OR with a continuous UVC system proven to reduce the bioburden. If a facility is not treating the air that's in the OR and surrounding areas, and if a plan is not in place to eliminate airborne pathogens, then it's something that needs to be looked at as part of the overall infection control process. Every facility has protocols to remove pathogens from surfaces. The same should be said about the air. Vulnerable, high-risk patients, in particular, deserve to breathe the cleanest air possible—air that has been treated to destroy airborne microorganisms that can cause SSIs.

## REFERENCES

Ethington T, Newsome S, Waugh J, Lee LD. Cleaning the air with ultraviolet germicidal irradiation lessened contact infections in a long-term acute care hospital. *Am J Infect Control*. 2018;46(5):482-486.

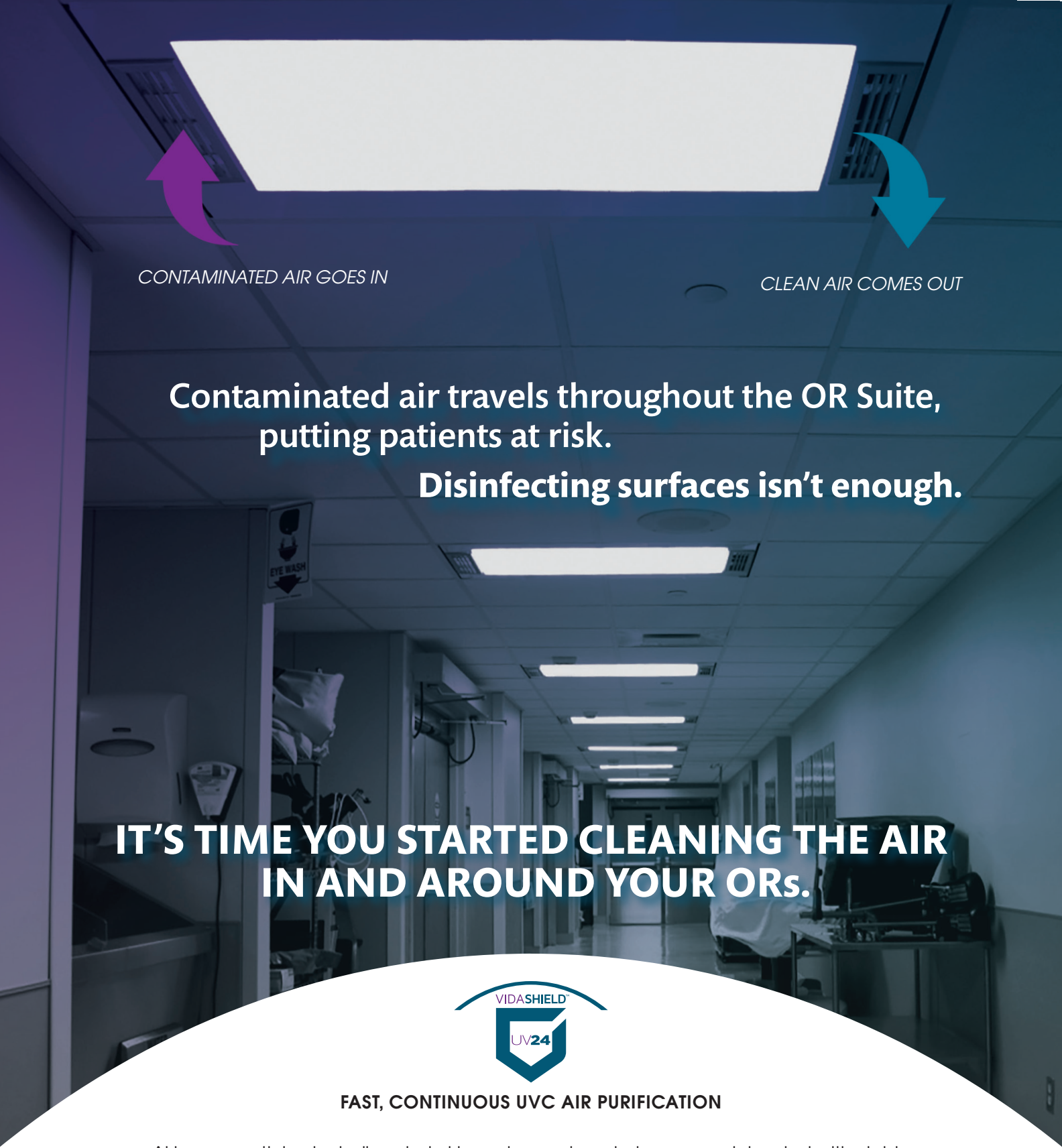
Kane DW, Finley C, Brown D. UV-C light and infection rate in a long-term care ventilator unit. *Can J Infect Control*. 2018;33(1):44-48.

Lee LD. Does your air measure up? *Healthcare Facilities Today*. September 22, 2016. https://vidashield.com/files/does-your-air-measure-up-infection-control.pdf.

Otter JA, French GL. Survival of nosocomial bacteria and spores on surfaces and inactivation by hydrogen peroxide vapor. *J Clin Microbiol*. 2009;47(1):205-207.

## EDITOR'S NOTE

OR Manager's *Industry Spotlight* series features both established and rising company leaders and asks them questions about their service and product offerings, how they enhance perioperative performance, their competitive differentiator, and what inspires them.




## Contaminated air travels throughout the OR Suite, putting patients at risk.

## Disinfecting surfaces isn't enough.

# IT'S TIME YOU STARTED CLEANING THE AIR IN AND AROUND YOUR ORs.

VIDASHIELD™ UV24

**FAST, CONTINUOUS UVC AIR PURIFICATION**

Airborne particles, including dust, skin scales, and respiratory aerosols loaded with viable microorganisms, are produced by patients and members of the surgical team and released into OR air where they can settle onto surgical instruments and into incisions.

In peer-reviewed studies, the VidaShield UV24 is proven effective at removing infectious aerosols from treated air and reducing the settling of particulates on surfaces.

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