



How should you be ventilating restaurants during the pandemic?

OPERATIONS

Worried about airborne transmission of COVID-19? Here's what restaurants should be doing to sanitize indoor air in the dining room

Experts and a San Francisco operator discuss the next level of safety protocols restaurants face to curb the spread of COVID-19

Nancy Luna | Oct 30, 2020

Since the pandemic hit in March, restaurants have been focusing on curbing the spread of the deadly coronavirus by expanding sanitation of high-touch surfaces,

adding barriers between tables, creating more outdoor seating, wearing masks and implementing strict distancing protocols.

But now the industry faces one more safety challenge recommended by health officials: cleaning indoor air.

“We’re turning the air over several times per hour in the room,” said Marc Zimmerman, chef-owner of GOZU in San Francisco.

Prior to reopening his fine-dining concept in October, Zimmerman installed a UV irradiation sanitizing system in the dining room. The hospital-grade system safely sanitizes ceiling air in the intimate 45-seat restaurant.

The chef is among several restaurant owners who are now taking a harder look at how to “scrub” air by using pathogen-killing UV-C light or upgrading ventilation systems. The move comes as health authorities, both public and private, learn more about how COVID-19 is spread.

Airborne transmission

Officials with the Centers for Disease Control and Prevention say COVID-19 is primarily spread through respiratory droplets when near another person.

However, the federal health agency recently updated its guidance to warn about transmission in “poorly ventilated and enclosed spaces.”

“Such environments and activities may contribute to the buildup of virus-carrying particles,” the CDC stated in an Oct. 5 memo titled, “How COVID is Spread.”

A few weeks later the National Restaurant Association and ServSafe updated their COVID-19 guidance, adding a section on best practices for ventilation.

In late September when New York City finally allowed restaurants to reopen for indoor dining, the city told restaurants to examine their ventilation systems — even recommending a minimum standard for filters.

Cleaning the air with UV light

Gozu is located on the bottom floor of a San Francisco high rise. Customers come to experience the kappo-style tasting menu served in an intimate setting featuring open-fire cooking.

Even with social distancing protocols in place, Zimmerman said he and his partner wanted to make sure they were doing everything possible to upgrade their ventilation system as they learned more about how the virus spreads.

He learned everything on the fly.

“As a chef, we’re definitely not pandemic experts,” he said.



Gozu installed a hospital-grade system that safely sanitizes ceiling air in the intimate 45-seat restaurant.

As such, he got a lot of pitches from suppliers trying to sell him expensive products that didn't directly address curbing the spread of the virus.

“I talked to people that were selling body scanners for \$40,000 — like on the brink of just stealing bio-tech information,” he said. “Checking everyone's heart rate when you come in. Checking everybody's perspiration level. It really felt completely invasive.”

He and his partner finally settled on UV Guardian, a product that uses UV-C light to eliminate both airborne and contact-surface pathogens. UV-C has the most energy of the three types of UV light and is known to destroy other types of coronaviruses, according to the National Academy of Sciences.

“It's a really cool piece [of technology] and we got it for less than \$40,000,” Zimmerman said.

Scrubbing the air the old fashioned way

Experts say UV light is one way to sanitize indoor air, but the main way to curb the spread of the novel coronavirus is through proper ventilation. That's why the CDC, state and local health officials have consistently recommended outdoor dining over indoor dining during the pandemic.

But operating outdoors for most restaurants across the U.S. is becoming increasingly more difficult as temperatures drop. With more people eating indoors, the CDC and National Restaurant Association have recently added new guidance for restaurants when it comes to indoor air circulation.

The CDC says COVID-19 can sometimes be spread by airborne transmissions when small droplets and particles linger in the air for minutes to hours. The NRA and CDC suggest restaurants have certified experts check ventilation systems to ensure they function properly.

The CDC also recommends increasing the “circulation of outdoor air as much as possible” by opening windows.

While it's not energy efficient, some building and health experts also recommend businesses open dampers to flood indoor spaces with fresh outdoor air as a way to dilute indoor contaminants.



Dr. Mark Ereth, chief medical officer at SecureAire LLC

But the CDC and the NRA lack specificity when it comes to how to maintain HVAC systems or relative humidity.

Experts say there's no magic solution, only a series of steps restaurants can take to curb the spread of the virus.

“This is an exceedingly complex problem with no simple solutions. I think that's the most important thing that people have to understand,” said Dr. Mark Ereth, chief medical officer at SecureAire LLC, which develops novel air purification technology.

Ereth and other experts interviewed by Nation's Restaurant News said there's a few things restaurant owners can do to ensure clean air is circulating through the dining room.

Check your filters

In 1987, The American Society of Heating, Refrigerating and Air-Conditioning Engineers, known as ASHRAE, created the MERV system or Minimum Efficiency Reporting Values. The measurement scale (1-16) is designed to report the effectiveness of air filters.

Smaller particles are captured through filters with a higher MERV rating.

A typical business, including a restaurant, might have a MERV-8 filtration system, which captures larger particles.

“Those filters don't do anything really for COVID,” said Patrick O’Neill, North American president at mCloud Technologies, which works with retailers and restaurants to ensure their indoor air quality meets or exceeds commercial building standards established by ASHRAE.

As ventilation becomes another top-of-mind COVID safety protocol, government agencies are asking restaurants to closely examine their HVAC systems.



Patrick O’Neill, North American president at mCloud Technologies

New York City and Los Angeles County, for example, have listed ventilation guidelines for restaurants with indoor dining. Both recommend restaurants install higher MERV-rated filters. (Note: As of press time, Los Angeles area restaurants have not been allowed to reopen for indoor dining.)

New York City, which just allowed dine-in with capacity restrictions in late September, said restaurants should use MERV-13 or higher filters or use an industry equivalent.

“MERV-13 looks like it's covered with a cotton cloth,” said O’Neill, who got his doctorate measuring how air flows within buildings. “It’s like an accordion inside so you've got a lot of surface area that the air has to flow through. That's really the threshold that most people consider effective for removing a meaningful amount of virus load from the air.”

Relative humidity

Experts said keeping relative humidity between 40% to 60% should also curtail the spread of COVID. Ereth and O'Neill said pathogens live longer in very dry or very wet environments so keeping relative humidity in this sweet spot is good for restaurants.

UVC light

UV-C devices like the one Zimmerman uses can also be effective.

“Right now, what’s en vogue is [adding] a light bank that just directs the [UV-C] light across the upper part of the room,” O'Neill said. “You don't see it, but anything that goes up there gets killed right as the air is recirculating, so it's kind of an elegant approach.”

With some HVAC systems unable to accept MERV-13 or higher filters, some restaurants are using UV-C devices in ducts. That can be the “preferred approach for forced air HVAC systems, which are the most common types found in restaurants,” O'Neill said. And, it’s safe for customers and staff, he added, because they are not exposed.

But O'Neill and government officials stress that restaurants should consult with certified air and heating professionals before installing any type of UV-C device.

Ultimately, when it comes to ventilation systems, treat your restaurant the same way you've been told to treat yourself: Follow safety protocols and don't let your guard down.

“Make sure that everything is dialed in, that your HVAC system is working, and you're bringing in enough outdoor air,” O'Neill said. “I think that's going to become much more of a common [practice among] most restaurants.”

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