SPECIAL REPORT

FLU SEASON SPECIAL REPORT

How Cleaner Air = Healthier Workers, Students, and Patients






AERAMAX PROFESSIONAL

EXECUTIVE SUMMARY

Dear Executive,

As a safety professional, I am constantly looking for ways to improve the well-being of our company's employees. I'd like to make you aware of an issue that should be top of mind for all who manage people and/or facilities: the airborne spread of the influenza virus.

Influenza is a persistent and potentially dangerous virus that spreads quickly through rooms and exacts a costly toll on businesses and their workers, as well as students and the elderly.

For Safety, Human Resource and Facility executives who pride themselves on preserving a clean and healthy environment, flu season can be a nightmare as illnesses mount and the costs of absenteeism climb. That's why we've gathered **information from expert sources** to build awareness about how the flu virus spreads and ways to contain it.

The traditional flu-prevention practices are known to just about everyone, from senior executives to elementary school students:

- Encourage vaccinations
- Ask sick workers/students to stay home
- Sanitize surfaces
- Keep hands clean

But there's something missing from that checklist:

Clean the air.

Consider these **4 Facts:**

1. Flu is costly and can be extremely detrimental
2. Traditional prevention methods aren't enough
3. Airborne exposure is the most common way to catch flu
4. Small virus particles can travel throughout rooms

Please read on to hear from experts in the medical and air purification fields. This will surely help anyone who manages a facility to understand the full impact of an unhealthy building environment. You'll also learn ways in which you can make a huge difference in the health of a building's occupants through **one turnkey solution** we've developed to combat the flu's airborne spread.

Sincerely,

Anna L. De León

Anna L. De León
Corporate Environmental, Safety & Security Manager

FACT

1

FLU IS COSTLY AND CAN BE EXTREMELY DETRIMENTAL

The flu is a viral infection that attacks the respiratory system. Its complications can be deadly, especially for young children, the elderly, pregnant women and people with chronic illnesses, according to the Mayo Clinic.[1]

Up to 20 percent of U.S. residents are infected during flu season, which starts in the fall and peaks in January and February, according to the Centers for Disease Control (CDC).[2] When the season hits, it wreaks havoc on businesses, schools and other places that have shared spaces.

These powerful statistics speak for themselves:

- Influenza is responsible for as much as $6.2 billion in indirect costs, mainly from lost productivity. Each year, among adults age 18 to 64 years, 17 million workdays are lost to flu-related illness.[3]
- An average of 36,000 deaths and more than 200,000 hospitalizations are connected with flu each year.[4]
- For adults 18 years old and older, the overall national economic burden of flu-attributable illness is $83.3 billion. Direct medical costs for influenza in adults totaled $8.7 billion, including $4.5 billion for adult hospitalizations resulting from flu-related illness.[5]
- Despite all of the flu prevention efforts, flu cases have not declined in 12 years.[6]
- Respiratory issues are the #1 reason people visit a doctor's office.[7]

1 Source: http://www.mayoclinic.org/diseases-conditions/flu/basics/definition/con-20035101
2 Source: http://www.cdc.gov/flu/about/qa/disease.htm
3 Source: http://www.cdc.gov/workplacehealthpromotion/evaluation/topics/immunization.html
4 Source: http://www.cdc.gov/workplacehealthpromotion/evaluation/topics/immunization.html
5 Source: http://www.cdc.gov/workplacehealthpromotion/evaluation/topics/immunization.html
6 Source: Centers for Disease Control, FluView2014
7 Source: http://www.cdc.gov/nchs/fastats/physician-visits.htm

DID YOU KNOW?

UP TO 20%

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17 MILLION

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The overall national economic burden

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FACT

2

TRADITIONAL PREVENTION METHODS AREN'T ENOUGH

The flu vaccine is a popular yet imperfect way to prevent the spread of the virus. Its effectiveness is limited because flu viruses change every year and mutate throughout the season.

The vaccine had only 19 percent effectiveness during the 2014-15 flu season, according to the CDC. USA Today reported that it was one of the lowest rates in the past 10 years.[8]

Keeping infected people away from work or school can prevent the spread of the virus, but it's often too late.

"Once people have a combination of symptoms such as fever, headache, chills and sweats, they've already started 'shedding' the virus to others," said Dr. William Lindsley from the National Institute for Occupational Safety and Health (NIOSH), who has conducted numerous studies on airborne flu virus. In fact, people are most contagious at the moment when their symptoms start to kick in.[9]

People are contagious even before they have symptoms.

DID YOU KNOW?

During the 2014-15 flu season, the flu vaccine was only

19%
EFFECTIVE.

8 Source: "Flu shot only 19% effective this winter" USA Today. June 4, 2015. Downloaded from http://www.usatoday.com/story/news/2015/06/04/flu-shot-effective/28465601/

9 Source: Interview with Dr. William Lindsley, June 2015

HAND WASHING AND SURFACE SANITIZATION HAVE LIMITED EFFECTIVENESS

Hand washing and surface sanitization are common recommendations to prevent the spread of germs in shared spaces, but they, too, are limited.

"Washing hands really is wonderful for preventing many diseases, such as the common cold, but it's not very helpful to prevent influenza," Arthur Reingold, Professor of Epidemiology at the University of California-Berkeley, told CNN.

He added, "Everyone's eager to promote hand washing, and certainly it won't do any harm, but to rely on hand washing as a way to prevent influenza is a serious mistake."[1]

Surface cleaning also has its critics.

> *"I've looked at the data, and there just isn't good evidence that environmental surfaces have a significant role in the transmission of the virus. Instead, the flu seems to depend more on direct transmission from an infected person."*
>
> *Trish M. Perl, MD,*
> *Asst. Prof. of Medicine,*
> *Johns Hopkins Medical School*
>
> Source: http://www.mayoclinic.org/diseases-conditions/flu/basics/definition/con-20035101

1 Source: "Some doubt hand washing stops H1N1" CNN.com. Downloaded from http://www.cnn.com/2009/HEALTH/09/24/hand.washing.helpful/index.html?iref=24hours

FACT

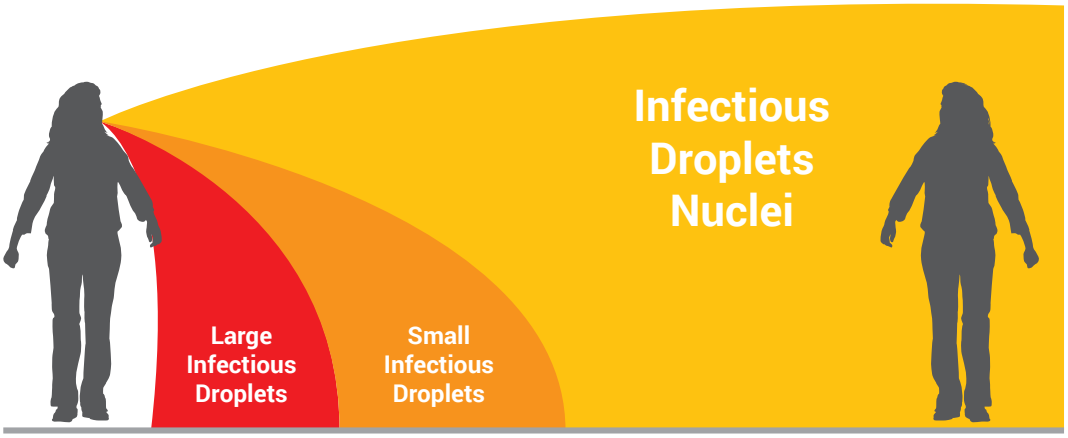
3

AIRBORNE EXPOSURE IS THE MOST COMMON WAY TO CATCH THE FLU

Most people catch the flu virus through airborne exposure, usually through droplets made when infected people cough, sneeze or talk, according to the CDC.[10]

One cough or sneeze can expel thousands of living microscopic germs into the surrounding area. Aerosol scientists and occupational health and safety professionals have found that there is a close-range infection threat through the large droplets produced by sneezes and coughs, as well as a longer-range danger because of smaller airborne particles.

Air Impurities Can Travel Great Distances



Virus Transmissioin in Indoor Air — Steven Welty, CAFS, IE, LEED AP

> *"You're much more exposed if you're close to an infected person than farther away, but just because you're farther away it doesn't mean you're safe."*
>
> *Dr. William Lindsley, Natl. Inst. for Occupational Safety and Health*
>
> Source: Interview with Dr. William Lindsley, June 2015

10 Source: http://www.cdc.gov/flu/about/disease/spread.htm

FACT

4

SMALL VIRUS PARTICLES CAN TRAVEL THROUGHOUT ROOMS

The spread of small particles of the flu virus is similar to the spraying of an aerosol can. If you spray the aerosol nearby, "you can almost immediately smell or taste it. You rarely spray it toward yourself but you almost immediately smell it. That's the small particle vapors that get generated as we inhale," said Dr. Lisa Brosseau, a national expert on respiratory protection and infectious disease transmission and a professor at the University of Illinois-Chicago. "There's nothing different about the aerosol generated by the aerosol can and the aerosol from a cough or sneeze—we can breathe in those small particles."[11]

Studies in the last 10 years by Brosseau and others back up that example.

"We've done a couple studies that have been able to demonstrate that flu patients spread infectious viruses when they cough," Lindsley said. "We have shown that people do cough out viable amounts of influenza virus when they're sick. The sicker they are, the more they cough out."[12]

If an infected person coughs, scientists can detect an amount of viable influenza virus between 0.3 microns and 0.8 microns. They can stay airborne a long time—they take about a half-hour to fall a meter, which means they'll stay and swirl around the air for a while.[13]

These small particles are more dangerous because they are more likely to go deep into the lung. The deeper they are in the lung, the more likely a person will become infected.[14]

The danger of small particles of the flu virus is most acute in shared spaces, where infected people can spread germs to a group of people, such as in a school, workplace, assisted living center or restroom.

Capturing and eliminating the airborne flu virus in shared spaces is made possible through frequent air exchanges and the targeted use of High-Efficiency Particulate Air (HEPA) filters.

"Literature clearly shows the more changes in air per hour, the lower the particle concentration is in the room, the better the air quality," Brosseau said.[15]

11 Source: Interview with Dr. Lisa Brosseau, June 2015
12 Source: Interview with Dr. William Lindsley, June 2015
13 Source: Interview with Dr. William Lindsley, June 2015
14 Source: Interview with Dr. William Lindsley, June 2015
15 Source: Interview with Dr. Lisa Brosseau, June 2015

ONE TURNKEY SOLUTION




Managers cannot rely on HVAC systems to eliminate the airborne flu virus. They are primarily designed for temperature control—not germ removal. And spraying an aerosol isn't going to ensure a high percentage of cleaner air either. A targeted, room-specific air purification solution with a HEPA filter is the most effective way for facility managers to attain germ-free indoor air while addressing a wide variety of IAQ issues.

HEPA filters capture at least 99.9 percent of airborne particles that are as small as 0.3 microns. Placing an air purifier with a HEPA filter in an area where kids, workers, or elderly adults congregate is an effective way to capture airborne viruses.

The only commercial-grade air purification solution that's been proven in an independent test to capture and eliminate the flu virus is the AeraMax® Professional. An independent laboratory study found that AeraMax Professional air purifiers remove 99.9 percent of the airborne influenza virus within only 35 minutes of operation.

DID YOU KNOW?

HEPA filters capture at least

of airborne particles as small as 0.3 microns.

When a sick person coughs or sneezes, this device immediately begins removing infectious particles from the air, even those as small as 0.3 microns. When combined with other flu-prevention methods, facility managers can effectively provide a comprehensive approach to preventing the spread of common illnesses.[16]

Shared spaces in corporate offices, medical waiting rooms, senior living facilities and classrooms all become epicenters for the spread of influenza after just one occupant gets sick. The AeraMax Professional is designed to catch and eliminate the flu in those areas and address many other indoor air quality issues.

16 Source: http://aeramaxpro.com/wp-content/uploads/2015/05/AMPro-Flu-Flyer.pdf

THE AERAMAX PROFESSIONAL OFFERS:

Four-stage filtration

99.9 percent removal of airborne contaminants, including: Dust, Allergens, and Influenza Virus in common areas up to 1,400 sq. ft.

Carbon filters for odor and VOC removal

Using patented EnviroSmart™ technology, the AeraMax Professional detects a room's conditions and automatically adjusts performance, as cleaning is needed, to **efficiently optimize air quality while minimizing energy consumption.**

This auto-detection technology not only allows the AeraMax Professional to run efficiently and economically, but also to operate in a manner that complements the needs of the occupants in any indoor environment. AeraMax Professional is a turnkey solution for facility managers looking to provide a clean, safe and healthy environment.

EnviroSmart™

AeraMax Professional III

AeraMax Professional IV

For more information,
visit **www.aeramaxpro.com**

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