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## **Bird flu fear has gripped the globe, as the disease spreads...**

Public Health officials fear that a pandemic will occur if a recent strain of the virus, which has killed one-half of the humans it has infected, mutates into a form that can be transmitted between people. The virus has only infected humans who came into contact with contaminated birds.

The strain (called H5N1) has killed 60 people in four Southeast Asian nations, and led to the culling of 140 million birds. The strain has been found in 10 Asian countries, and, carried by migrating wild birds, has recently spread to Russia, Romania, and Turkey.

There are 15 strains of the avian flu virus, but the most virulent around is the one known by its scientific code name H5N1. It has sickened and killed countless millions of birds on the Eurasian continent.

### **The Danger: A world-wide Pandemic? What will be the consequences?**

"In 1918, that virus killed about two-percent of all the people that it infected, leading to an estimated 20 to 40 million deaths. The current avian influenza strain circulating is killing 50 percent, not two percent, but 50 percent of the people that it has infected. If that virus gains the ability to easily transmit from human-to-human, it will be a disaster of unprecedented proportion."

A lack of medical defenses worsens the situation. A recent study from the U.S. government's Centers for Disease Control (CDC) shows that worldwide resistance to influenza drugs has increased by 12 percent in the last decade. H5N1 is resistant to one of the two major classes of flu drugs, amantadine, and scientists report signs in Asia it is learning to defy the other one, Tamiflu.

Moreover, no one knows if existing flu vaccines will work against H5N1, and a vaccine specific to it is only in the testing stage.

Some experts claim, Tamiflu will be all but useless if an outbreak occurs. Not because it doesn't work - it actually does have antiviral properties - but because you have to take a Tamiflu pill every day. Thus, if you have 100,000 pills you can really only treat 1,000 people for 100 days. Clearly you would need hundreds of millions of these pills if you were planning on treating the entire Singapore population in some kind of avian bird flu. Also, Tamiflu isn't necessarily effective against the H5N1 bird flu virus. It wasn't designed for that. It's been around for a long time as a basic antiviral drug

### **Symptoms: A Disease With No Mercy**

"Once a person is infected, its impact on the lungs is nasty, The symptoms will basically start like any flu symptoms, But instead of slowing down like a normal flu infection in a normal adult, it will go basically into the extreme of causing viral pneumonia and in some cases, death."

**There's no denying that avian flu is genuinely scary. As the latest end-of-days hypothetical, the virus has all the makings of a media blockbuster. It's strange and new and it can mutate quickly into unpredictable, ever-more-threatening forms.**

Thanks to migratory birds and global travelers, it has the potential to blanket the world quickly.

Worst of all, there is no known vaccine for the virus, which accompanies a horrifying list of symptoms including a high fever, serious respiratory complications, extreme body aches, multiple organ failure and often death in 72 hours or less.



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## Bird flu Defense

Many organizations are working on a comprehensive strategy for bird flu defense in anticipation of an outbreak. While there are not many options in place, the best defense is "**forward defense**" and then followed by containment and mitigation should an avian flu outbreak occurs.

### Forward Defense

#### Personal Hygiene and Health:

- Staff keeps fit and healthy, exercise to improve their immune system.
- Proper diet and no smoking or smoke exposures.
- Practice personal hygiene with good rest.
- Respiratory hygiene: cover the mouth and nose with a tissue when coughing or sneezing dispose dirty tissues promptly and carefully
- Avoid large crowds and non-essential travel
- Washing hands frequently with soap and water
- Avoid shaking hand and reduce personal contact during outbreak

#### Organization Policy and Practices:

- Monitor and track the health of their staff.
- Have a contact log tracing system on staff who have recently traveled and all incoming visitors. During outbreak, staffs who just return from an outbreak country should not report to work for a min period of 10 days.
- In event of Avian Flu outbreak in the premises, contact tracing system to back track all visitors 5 days before onset of symptoms.
- Stock up disposal masks (N95 equivalent or better), Tyvex suits; Gloves, masking tapes and eye goggle in advance.
- Have a crisis plan for the people in place in the event of a bird flu outbreak.
- In an event of an outbreak, have a walk and disinfect tray with disposal wipes at all entrance to the building to reduce surface cross contamination.
- Have anti bacterial hand wash stocked and available.
- **Create an Isolation Room:** In an event an outbreak occurs, visitors and staff who show sign of symptoms should be isolated immediately and send to hospital. Staffs who are attending them should be in tyvex suits and masks. Ventilation system for the room should also be an isolated, possible open all windows.

#### Building Hygiene:

- Have a contingency plan and a full strategy for your building, your processes, and people fully laid out and considering all of the visible and invisible parts of the building and operating systems.
- Do a complete building audit to determine sources and pathways of potential transmission in case of an event. A building health and infrastructure check-up.
- Appoint a bio decontamination company chartered to react in the event that a bird flu outbreak strikes the occupants of the building.
- Do not use strong disinfectants as they are the main reason why we are faced with so many micro organisms being resistant or mutated. Normal bleach (1 to 10 dilutions), 6% hydrogen peroxide, or dettol will be sufficient for reaction to an event and disinfection. (For now)
- Have buildings AHU & Air Con shut should the outbreak strike any human in the building. Upgrade your filtration to minimize any transport via the AHU during clean-up or at start-up once an event has occurred.
- Have a bonded non leaching antimicrobial treatment (AEGIS) in place to reduce all micro organism activity in the environments. This active defense on the environmental surfaces becomes an important barrier to spread and clearly shows the use of best available technologies for protection of the occupants.\*



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## A Defensive Antimicrobial Surface Treatment

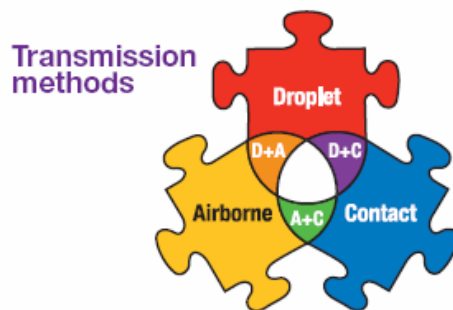
Having the Aegis Microbe Shield Treatment in your environments has many benefits:

- 1) It reduces all microorganism activity on treated surface especially in those out-of-sight out-of-mind places that are difficult to access or keep clean.
- 2) It is non leaching, thus does not allow for resistance or mutation of microbes.
- 3) Proven safe in hospital use for humans and your environments.
- 4) Durable so it works 24 hours, 365 days, 7 days a week.
- 5) Aegis Treatment is anti viral. The Aegis Microbe Shield Treated surfaces have been shown to control representative viruses known to be similar to the "bird flu" virus.
- 6) Can be easily applied, quality control checked, and maintained.
- 7) Provides valuable protection against microbial growth in the normal operating of the building protecting materials of construction, furnishings, and the operating system from the problems of odors, deterioration, and staining caused by unwanted microorganisms.
- 8) In an outbreak situation it provides for clean and microbe protected surfaces that allow for quicker and more effective restoration of the facility.

### Containment

All traveling should be reduced, where possible. We highly recommend that work place be vacated to reduce the risk of mass infections during any public health alert period.

### Mode of Transmission



### Summary

Taken together, anticipating a bird flu or other microbiological event in a building requires consideration of the occupants, the building materials, the furnishings, and the operating systems. Detection and then isolation and mitigation must be anticipated with planning and access to the right chemicals and by having the reaction and protection plans in place.

A forward defensive strategy must be in place with definition of the current state of your building, proper materials in stock for personal and building protection, proper training of all personnel, professional response team in place, and a building hygiene program fully



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# Guidelines on Bio Decontamination in an event of Bird Flu Outbreak

## Environmental Assessment

The affected premises area should be vacated immediately. Vacating people from spaces adjacent to the work area/floor is necessary. The presence of bio contaminants should be addressed immediately in an event of an outbreak.

All entry and access to the premises should be limited to the bio-decontaminating crew with proper safety suit, gear and full-face masks.

### Plan 1: Preventive measures or discovery of suspected cases.

1. Bio - Decontamination of premises using (HP) fogging system.
2. Wipe down all surface using EPA registered disinfectants
3. Treatment of Aegis bonded non leaching antimicrobial.

### Plan 2: Staff Infected with bird flu case confirmed

1. All Air Handling\* Units in the affected floor should be turnoff to prevent short-circuiting.
2. All entry and exit should be sealed with 0.20-mm plastic sheeting.
3. HEPA Air Scrubber is placed with UV capability to run continuously during bio decontamination process.
4. Placement of biological indicators for bio decontamination before and after verification
5. Air Blowers with plastic tubing to flush the present air out of the indoor environment to create Negative Pressure Isolation Rooms reducing short circuiting within floors/rooms thus keeping bio contaminants from reaching adjacent/surrounding areas.
6. Bio - fogging with biocide to ensure eradication of any air borne contaminate if any.
7. All surface wipe down using biocide and only disposable material is used to prevent cross contamination during bio-decontamination.
8. Industrial Ozone machine is place in the affected area.
9. All surface are treated with Aegis anti Microbial.

\* To bio - decon the entire AHU with Biocide and change all disposal filter treated with anti microbial. This recommended process will ensure that a premise is thoroughly decontaminated to its best possible resources available in Singapore.

### High Level Verification.

To ensure high efficacy and to verify the success of the bio decontamination, biological indicators are placed at the affected site before decontamination. After the completion of the bio decontamination, the environment is tested to confirm that they are no longer biologically viable.

The above system is infinitely scalable, is residual free and effective in the war against viral outbreak.

In an emergency, please call: 62419443 or 9321 9321 (24 hours) for an immediate assistance.



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## About Us

IAQ provides assessment and consultancy services in the fields of environmental diagnostics through testing, inspection, bio decontamination and the application of technology with the aim of achieving a safer indoor environmental quality.

Our vast experience, track record and expert resources in the multi discipline areas give you the advantage of a one stop centre. As the market leader in environmental source control and eradication, IAQ has gain an edge in providing solution where other companies have yet to venture.

**A fast, expert response  
makes the difference.**



**Simply put, we're ready.**

**Our partners:**



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