

Swine Influenza Virus

Kenelec Scientific Delivers in Time of Need

May 2009

On April 29th, 2009, the World Health Organization, (WHO), raised the Swine Origin Influenza Virus (SOIV, H1N1) outbreak to a level 5. Level five is characterized by human-to-human spread of the virus into at least two countries in one WHO region indicating that a pandemic may be next. Countries are preparing for the potential socioeconomic impacts of a SOIV, H1N1 Influenza pandemic.

As a recognized supplier of quantitative respirator fit testing, isolation room pressure controls and filter testing equipment, Kenelec Scientific is playing a key role in supporting healthcare organizations in Australia and New Zealand. Kenelec is making every responsible effort to keep customers aware of current best practices that are being adopted or recommended by authorities such as government, regulatory and industry organizations

“Respiratory Protection: All healthcare personnel who enter the rooms of patients in isolation for swine influenza should wear a fit-tested disposable N95 respirator or equivalent (e.g., powered air purifying respirator)*. Respiratory protection should be donned upon room entry.¹”

Respiratory protection for hospital staff is one of the most critical issues. Surgical masks were at one time considered sufficient, but new evidence² from CDC/NIOSH clearly shows that they do almost nothing to protect the individual wearer. N95 respirators have emerged as the preferred and required method of respiratory protection for most hospital staff. When respirators are required, so is respirator training and fit testing as part of an overall written respiratory protection program³.

The European Centre of Disease Prevention and Control (ECDC) have issued a similar recommendation.

There are several methods of respirator fit-testing: quantitative and qualitative. The most accurate method is quantitative fit-testing. The TSI PortaCount® Pro+ Respirator Fit Tester is the only quantitative fit tester, capable of fit testing all respirators, including N95's. It performs fit test measurements under conditions approximating actual use and is compliant with all respiratory protection standards, regulations and guidelines including:

- OSHA 29 CFR 1910.134
- OSHA/CDC/WHO Pandemic/Terrorism Preparedness Guidelines
- Joint Commission (LD.1.30)
- CDC Tuberculosis Guidelines
- ANSI Z88.10
- CSA Z94.4 (Canada)
- EN529:2005 (Europe)
- HSE 282/28 (United Kingdom)
- BGR 190 (Germany)
- AS/NZS 1715 (Australia/New Zealand)

A respiratory protection program that includes quantitative fit-testing is the key to giving healthcare staff a higher level of confidence in their respirators making them more likely to report to work in a pandemic.

Of equal importance is hospital isolation room pressure, the CDC states that “Procedures that are likely to generate aerosols (e.g., bronchoscopy, elective intubation, suctioning, administering nebulized medications), should be done in a location with negative pressure air handling whenever feasible. An airborne infection isolation room (AIIR) with negative pressure air handling with 6 to 12 air changes per hour can be used. Air can be exhausted directly outside or be recirculated after filtration by a high efficiency particulate air (HEPA) filter. Facilities should monitor and document the proper negative-pressure function of AIIRs, including those in operating rooms, intensive care units, emergency departments, and procedure rooms.¹”

TSI’s PresSura Isolation Room Monitors are the industry standard for monitoring isolation rooms in hospitals and other health care facilities. It accurately and continuously monitors negative isolation pressure, providing alarms if pressure is lost, and outputs to assist hospitals in monitoring and documenting proper room control.

In addition, TSI continues to support the development of new filter media and quality control standards of commercial respirator manufactures across the globe with TSI’s Automated Filter Tester Models 8127 and 8130.

As a national leader in measurement technology for almost 40 years, Kenelec Scientific provides sales, service and calibration services for precision instruments used for respirator fit testing, exposure monitoring, contamination control, indoor air quality, ventilation testing, aerosol research instruments, and other key parameters in the environment. Kenelec Scientific serves the needs of industry, governments, research institutions and academia

References:

1- Interim Guidance for Infection Control for Care of Patients with Confirmed or Suspected Swine Influenza A (H1N1) Virus Infection in a Healthcare Setting.
http://www.cdc.gov/swineflu/guidelines_infection_control.htm

2- Lawrence RB, Duling MG, Calvert CA, Coffey CC. (2006). Comparison of Performance of Three Different Types of Respiratory Protection Devices, *J Occup Environ Hyg.* 3: 465-474 (Sep. 2006).

3- Commission to Investigate the Introduction and Spread of SARS in Ontario (2006). The SARS Commission Final Report – Spring of Fear – Vol. 3, p.1047 (Dec. 2006).
<http://www.sarscommission.ca/>