



## Capsule

Ed Krisiunas

WNWN International, Burlington, Connecticut

What's new, what's hot, what's timely? If you don't have time to search the Internet for the latest developments that might impact your work environment, you just might find some of this information in this "Capsule" column. Please e-mail any comments or suggestions to ekrisiunas@aol.com or to Co-Editor Barbara Johnson at barbara\_johnson@verizon.net or Co-Editor Karen B. Byers at karen\_byers@dfci.harvard.edu.

### **Guidelines for Preventing the Transmission of *Mycobacterium tuberculosis* in Healthcare Settings, 2005**

In 1994, CDC published the *Guidelines for Preventing the Transmission of Mycobacterium tuberculosis in HealthCare Facilities*, 1994. (CDC, 1994). The guidelines were issued in response to five indicators:

1. A resurgence of tuberculosis (TB) disease that occurred in the United States in the mid-1980s and early 1990s
2. The documentation of several high-profile healthcare-associated (previously termed "nosocomial") outbreaks related to an increase in the prevalence of TB disease and human immunodeficiency virus (HIV) coinfection
3. Lapses in infection control practices
4. Delays in the diagnosis and treatment of persons with infectious TB disease
5. The appearance and transmission of multidrug-resistant (MDR) TB strains

The TB infection control measures recommended by CDC in 1994 were implemented widely in healthcare facilities in the United States. The result has been a decrease in the number of TB outbreaks in healthcare settings reported to CDC and a reduction in healthcare-associated transmission of *Mycobacterium tuberculosis* to patients and healthcare workers (HCWs).

This report updates TB control recommendations reflecting shifts in the epidemiology of TB, advances in scientific understanding, and changes in healthcare practice that have occurred in the United States during the preceding decade. The new guidelines have been expanded to address a broader concept because the definition of healthcare-associated settings is broader than the previously defined. The term "healthcare setting" includes

many types, such as inpatient settings, outpatient settings, TB clinics, settings in correctional facilities in which healthcare is delivered, settings in which home-based healthcare and emergency medical services are provided, and laboratories handling clinical specimens that might contain *M. tuberculosis*.

### **References**

Centers for Disease Control and Prevention. (1994). Guidelines for Preventing the Transmission of Mycobacterium tuberculosis in Health-Care Facilities, 1994. *Morbidity and Mortality Weekly Report*, 43(RR-13), 1-132.

Centers for Disease Control and Prevention. (2005). Guidelines for Preventing the Transmission of Mycobacterium tuberculosis in health care Settings. *Morbidity and Mortality Weekly Report*, 54(RR17), 1-141. Available at [www.cdc.gov/mmwr/preview/mmwrhtml/rr5417a1.htm](http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5417a1.htm)

### **Pandemic and Avian Flu Multiple Web Sites Available for Information**

With the continuing concern regarding pandemic and avian flu and the spread of the diseases to humans, numerous organizations are posting information regarding avian flu as well as pandemic flu. Web sites for several organizations are listed below. The Centers for Disease Control (CDC) continues to be an excellent source of information. This location has been mentioned in a previous communication. It should be checked regularly for updated information on the status of this disease. Other web sites included are the Institute for Bio-Security at the St. Louis University School of Public Health, the Center for Infectious Disease Research and Policy at the University of Minnesota, and the World Health Organization.

For Avian flu, see [www.cdc.gov/flu/avian/index.htm](http://www.cdc.gov/flu/avian/index.htm)

For Pandemic flu, see [www.cdc.gov/flu/pandemic/](http://www.cdc.gov/flu/pandemic/)

For the Institute for Bio-Security, see <http://bioterrorism.slu.edu/>

For the Center for Infectious Disease Research, see [www.cidrap.umn.edu/](http://www.cidrap.umn.edu/)

For WHO, see [www.who.int/en/](http://www.who.int/en/)

## **Avian Flu and Human Pandemic Flu Summary Report—Meeting Held in Geneva, Switzerland 7-9 November, 2005**

The World Health Organization (WHO), the Food and Agriculture Organization (FAO), the World Organization for Animal Health (OIE), and the World Bank jointly convened a meeting on avian influenza and human pandemic influenza on November 7-9, 2005. The meeting, which was attended by more than 600 experts from over 100 countries, marked the largest gathering held to date to assess the multiple threats arising from outbreaks of highly pathogenic H5N1 avian influenza

virus, that have been ongoing in parts of the world since mid-2003. The meeting summary report is found on the following site.

### **Reference**

World Health Organization, Food and Agriculture Organization, World Bank, & World Organization for Animal Health. (2005). Avian Flu and Human Pandemic Flu Summary Report—Meeting Held in Geneva, Switzerland 7-9 November, 2005. Available at [www.who.int/mediacentre/events/2005/avian\\_influenza/summary\\_report\\_Nov\\_2005\\_meeting.pdf](http://www.who.int/mediacentre/events/2005/avian_influenza/summary_report_Nov_2005_meeting.pdf)

## **Ask the Experts**

John H. Keene

Biohaztec Associates, Midlothian, Virginia

Do you have a biosafety question and you're not sure who to ask? Send your questions to the "Ask the Experts" column and I'll get them answered for you. Drawing from my own experience or that of other experts in the field, we'll try to compile a thorough and comprehensive answer to your question. Please e-mail your questions to [jkeene@biohaztec.com](mailto:jkeene@biohaztec.com) or to Co-Editor Barbara Johnson at [barbara\\_johnson@verizon.net](mailto:barbara_johnson@verizon.net) or Co-Editor Karen B. Byers at [karen\\_byers@dfci.harvard.edu](mailto:karen_byers@dfci.harvard.edu).

### **Should Decontamination of Biocontainment Laboratories Be Validated?**

In the case of spills of biohazardous materials outside of the biosafety cabinet in a containment laboratory, aerosols of infectious agents are produced that can, theoretically, reach many areas of the laboratory. The spread and deposition of the hazardous material depends on many factors (size of spill, type of release, ventilation, etc.). Therefore, the decontamination process should be capable of reaching all areas of the facility that might become contaminated with aerosolized infectious materials during a laboratory incident.

Decontamination requires contact of the decontaminating agent with the infectious material for a specific time, under a proscribed set of environmental conditions (temperature, humidity, etc.). Historically, any decontamination process relies on the ability of the system to provide the standard concentration of disinfectant to the affected space for the proscribed period of time, under standard environmental conditions. Such a requirement

involves appropriate sealing of the space to prevent accidental release of the decontaminating agent and to insure appropriate concentration, as well as a standardized methodology for generation and distribution of the decontaminating agent until the decontamination process is complete.

A number of new materials, including Vapor Phase Hydrogen Peroxide (VHP) and Chlorine Dioxide (ClO<sub>2</sub>), and processes using these materials are being considered for the decontamination of biocontainment laboratories in the case of a biohazardous spill because their toxicity is potentially lower than formaldehyde. Currently, the standard for biological decontamination of biocontainment spaces is the use of paraformaldehyde to generate formaldehyde gas. Although there are obvious potential problems with the use of paraformaldehyde, not the least of which is its toxicity, it has been, and can be, used safely by personnel who are experienced in space decontamination. However, it should be noted that disinfectants in general, including VHP and ClO<sub>2</sub>, are all potentially toxic to varying extents and must be considered as hazardous chemicals (Aggazzoti, 2004; Monarca, 2005).

Any system for decontamination of a biocontainment laboratory should be validated in a standard configuration for the particular laboratory in question. Such validation allows for easy application of the disinfectant by facility personnel and ensures repetitive efficacy of the process. The paraformaldehyde process, unlike some of the newer processes, has been well documented and its efficacy has been validated.

For newer decontamination systems, prior to occupancy of each facility it is suggested that: