10 November 2009

This supplement has been prepared to present scientific and technical news items that may be of more interest to technical personnel at RDT&E activities and the labs, or the medics rather than the broader readership of the basic CB Daily. Due to the nature of the material, the articles, if available online, are usually only available through subscription services thus making specific links generally unavailable. Thus, usually only the bibliographic citation is available for use by an activity's technical library.

Should you wish to be removed from this Pandemic Influenza Edition address group, just send an email to one of the people listed at the bottom of this message. This will not affect your continued receipt of the CB Daily.

Chem-Bio News – Pandemic Influenza Edition #86

1. H1N1 VIRUS CAN BE KILLED BY ACIDIC OZONE WATER: *"Scientists have found that acidic ozone water can deactivate H1N1 viruses very effectively, offering a promising disinfectant for the millions of people trying to avoid the disease."*

2. MANY, LACKING PAID SICK DAYS, AID A PANDEMIC: *"Public health experts worried about the spread of the H1N1 flu are raising concerns that workers who deal with the public, like waiters and child care employees, are jeopardizing others by reporting to work sick because they do not get paid for days they miss for illness."*

3. HOUSE BILL WOULD ASSURE WORKERS PAID SICK DAYS: *"In an effort to rein in the spread of the H1N1 flu, Representative George Miller, the chairman of the House Education and Labor Committee, introduced legislation on Tuesday that would guarantee five paid sick days for workers sent home by their employers with a contagious illness."*

4. REANALYSIS CHANGES FINDINGS IN RESPIRATORY PROTECTION STUDY: *"A reanalysis prompted by reviewers has changed the conclusions of a study comparing N-95 respirators with surgical masks, raising questions about earlier findings that the N-95 devices were clearly more effective in protecting healthcare workers from respiratory illness."*

5. OPTIMIZING TACTICS FOR USE OF THE U.S. ANTIVIRAL STRATEGIC NATIONAL STOCKPILE FOR PANDEMIC (H1N1) INFLUENZA, 2009: *"Here, we use mathematical models to determine the optimal geo-temporal tactics for distributing the U.S. strategic national stockpile of antivirals for treatment of infected cases during the early stages of a pandemic, prior to the wide availability of vaccines."*

6. CAN CHEAP DRUGS HELP SAVE H1N1 PATIENTS? STUDIES AIM TO FIND OUT: *"Can cheap and readily available treatments like steroids and cholesterol-lowering statin drugs help save the sickest of H1N1 patients? New efforts by researchers in Canada, the United States and France could help answer this pressing question."*

7. CDC HEALTH ALERT NETWORK (HAN) INFO SERVICE MESSAGE: KEY ISSUES FOR CLINICIANS CONCERNING ANTIVIRAL TREATMENTS FOR 2009 H1N1: *"It is critical to remember that it is not too late to treat, even if symptoms began more than 48 hours ago."*

CB Daily Report

Chem-Bio News

H1N1 VIRUS CAN BE KILLED BY ACIDIC OZONE WATER
Physorg.com
November 09, 2009

"Scientists have found that acidic ozone water can deactivate H1N1 viruses very effectively, offering a

promising disinfectant for the millions of people trying to avoid the disease. Acidic ozone water (AOW) is made from regular tap water mixed with a small amount of acid such as hydrochloric acid, along with an ozonized gas that can be produced in the lab. After deactivating the virus, the substance eventually decays into plain water, leaving no residue or harmful materials in the environment.

Scientists Han Uhm of Ajou University in Korea, along with Kwang Lee and Baik Seong of Yonsei University in Korea, have published the results of their study on the H1N1 disinfectant in a recent issue of Applied Physics Letters. Besides being environmentally benign, AOW also has the advantage that it may cost significantly less to prepare compared with chemical disinfectants."

The full article can be found at: http://www.physorg.com/news176991361.html
Return to Top

MANY, LACKING PAID SICK DAYS, AID A PANDEMIC
NY Times
November 03, 2009

Public health experts worried about the spread of the H1N1 flu are raising concerns that workers who deal with the public, like waiters and child care employees, are jeopardizing others by reporting to work sick because they do not get paid for days they miss for illness.

Tens of millions of people, or about 40 percent of all private-sector workers, do not receive paid sick days, and as a result many of them cannot afford to stay home when they are ill. Even some companies that provide paid sick days have policies that make it difficult to call in sick, like giving demerits each time someone misses a day."

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"He warned that this might spread disease, and that these financially squeezed workers might send their flu-stricken children to school, infecting others."

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"Sometimes you talk about legislation in the abstract, but this is making people begin to understand the problem, said Rosa DeLauro, Democrat of Connecticut and lead sponsor in the House of a bill, with more than 100 co-sponsors, that would require employers with 15 or more workers to provide seven paid sick days a year."

The full article can be found at: http://www.nytimes.com/2009/11/03/business/03sick.html?pagewanted=print
Return to Top

HOUSE BILL WOULD ASSURE WORKERS PAID SICK DAYS
New York Times
November 04, 2009

"In an effort to rein in the spread of the H1N1 flu, Representative George Miller, the chairman of the House Education and Labor Committee, introduced legislation on Tuesday that would guarantee five paid sick days for workers sent home by their employers with a contagious illness.

Mr. Miller, Democrat of California, voiced concern that more than 40 million workers did not have paid sick days and that many workers coming into contact with public — like restaurant or school cafeteria employees — would go to work with H1N1 and spread the virus if they could not afford to stay home."

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"Under Mr. Miller's, proposal, which he called "emergency temporary" legislation, workers would be guaranteed the five paid days if their employers sent them home or advised them to stay home or go home.

Under the bill, called the Emergency Influenza Containment Act, workers deciding to stay home on their own, asserting that they are sick, would not be guaranteed paid sick days.

The Centers for Disease Control estimates that a sick employee reporting to work would infect 1 in 10 co-workers."

The full article can be found at: http://www.hstoday.us/content/view/10935/192/
Return to Top

REANALYSIS CHANGES FINDINGS IN RESPIRATORY PROTECTION STUDY
By Robert Roos
CIDRAP News (Center for Infectious Disease Research & Policy – University of Minnesota)
November 06, 2009

"A reanalysis prompted by reviewers has changed the conclusions of a study comparing N-95 respirators with surgical masks, raising questions about earlier findings that the N-95 devices were clearly more effective in protecting healthcare workers from respiratory illness.

Raina MacIntyre and colleagues first presented their findings at a medical conference in mid-September, reporting that N-95s, compared with no respiratory protection, reduced the risk of confirmed influenza in hospital workers by 75%, whereas surgical masks had no protective effect. The findings were hailed by some experts as a landmark in a field where few clinical studies have been done.

But at the Infectious Diseases Society of America (IDSA) annual meeting last week, MacIntyre's team presented a new analysis of their data, made at the request of peer reviewers. The reanalysis excluded the control group of unprotected workers. The result was that workers who wore N-95s still appeared to be better off than those with surgical masks, but the differences were no longer statistically significant.

Some press reports and critics of the study—which has not yet been published in a journal—characterized the reanalysis as a retraction of the earlier report. Critics also suggest that the study influenced the recent recommendation by the Institute of Medicine (IOM) that healthcare workers should wear N-95s when caring for H1N1 patients. MacIntyre was a member of the committee that wrote the IOM report, issued in September.

But MacIntyre says the reanalysis was not a retraction. She asserts that the study results still indicate a real difference in levels of protection, but the changes requested by the peer reviewers left the study "underpowered" to show significance. Further, she says the IOM panel considered only published studies in making its recommendations.

The new development adds another chapter to the controversy over whether healthcare workers should, as recommended by the Centers for Disease Control and Prevention (CDC), wear N-95s when caring directly for H1N1 influenza patients. The devices are designed to filter out at least 95% of tiny airborne particles."

The full article can be found at:
http://www.cidrap.umn.edu/cidrap/content/influenza/swineflu/news/nov0509respirator.htm
Return to Top

OPTIMIZING TACTICS FOR USE OF THE U.S. ANTIVIRAL STRATEGIC NATIONAL STOCKPILE FOR PANDEMIC (H1N1) INFLUENZA, 2009
By Nedialko Dimitrov, Sebastian Goll, Babak Pourbohloul, and Nathaniel Hupert
PloS Currents – Influenza
November 09, 2009

"Public health agencies across the globe are working to mitigate the impact of the 2009 pandemic caused by swine-origin influenza A (H1N1) virus. Prior to the large-scale distribution of an effective vaccine, the primary modes of control have included careful surveillance, social distancing and hygiene measures, strategic school closures, other community measures, and the prudent use of antiviral medications to prevent infection (prophylaxis) or reduce the severity and duration of symptoms (treatment). Here, we use mathematical models to determine the optimal geo-temporal tactics for distributing the U.S. strategic national stockpile of antivirals for treatment of infected cases during the early stages of a pandemic, prior to the wide availability of vaccines.

We present a versatile optimization method for efficiently searching large sets of public health intervention strategies, and apply it to evaluating tactics for distributing antiviral medications from the U.S. Strategic National Stockpile (SNS). We implemented the algorithm on a network model of H1N1 transmission within and among U.S. cities to project the epidemiological impacts of antiviral stockpile distribution schedules and priorities. The resulting optimized strategies critically depend on the rates of antiviral uptake and wastage (through misallocation or loss). And while a surprisingly simple pro rata distribution schedule is competitive with the optimized strategies across a wide range of uptake and wastage, other equally simple policies perform poorly.

Even as vaccination campaigns get underway worldwide, antiviral medications continue to play a critical in reducing H1N1-associated morbidity and mortality. If efforts are made to increase the fraction of cases treated promptly with antivirals above current levels, our model suggests that optimal use of the antiviral component of the Strategic National Stockpile may appreciably slow the transmission of H1N1 during fall 2009, thereby improving the impact of targeted vaccination. A more aggressive optimized antiviral strategy of this type may prove critical to mitigating future flu pandemics, but may increase the risk of antiviral resistance."

The full article can be found at: http://knol.google.com/k/nedialko-dimitrov/optimizing-tactics-for-use-of-the-u-s/1fmwg44mx7795/1?collectionId=28qm4w0q65e4w.1&position=1
Return to Top

CAN CHEAP DRUGS HELP SAVE H1N1 PATIENTS? STUDIES AIM TO FIND OUT
By Helen Branswell
The Canadian Press on Google News
November 08, 2009

"Can cheap and readily available treatments like steroids and cholesterol-lowering statin drugs help save the sickest of H1N1 patients? New efforts by researchers in Canada, the United States and France could help answer this pressing question.

Randomized controlled studies looking at whether corticosteroids, statins or a combination of the two could contribute to improved survival rates in gravely ill pandemic flu patients are being organized in the three countries by linked networks of intensive care specialists, according to Dr. John Marshall, chair of the Canadian Critical Care Trials Group."

The full article can be found at:
http://www.google.com/hostednews/canadianpress/article/ALeqM5imVcokY71HIrvzdMKO0oUbKZjbNQ
Return to Top

CDC HEALTH ALERT NETWORK (HAN) INFO SERVICE MESSAGE: KEY ISSUES FOR CLINICIANS CONCERNING ANTIVIRAL TREATMENTS FOR 2009 H1N1

US Centers for Disease Control and Prevention
November 06, 2009

"It is critical to remember that it is not too late to treat, even if symptoms began more than 48 hours ago. Although antiviral treatment is most effective when begun within 48 hours of influenza illness onset, studies have shown that hospitalized patients still benefit when treatment with oseltamivir is started more than 48 hours after illness onset. Outpatients, particularly those with risk factors for severe illness who are not improving, might also benefit from treatment initiated more than 48 hours after illness onset.

Recommendations for Clinicians:
Many 2009 H1N1 patients can benefit from antiviral treatment, and all hospitalized patients with suspected or confirmed 2009 H1N1 should receive antiviral treatment with a neuraminidase inhibitor – either oseltamivir or zanamivir – as early as possible after illness onset. Moderately ill patients, especially those with risk factors for severe illness, and those who appear to be getting worse, can also benefit from treatment with neuraminidase inhibitors. A full listing of risk factors for severe influenza is available at: http://www.cdc.gov/h1n1flu/highrisk.htm.

Although antiviral medications are recommended for treatment of 2009 H1N1 in patients with risk factors for severe disease, some people without risk factors may also benefit from antivirals. To date, 40% of children and 20% of adults hospitalized with complications of 2009 H1N1 did not have risk factors. Clinical judgment is always an essential part of treatment decisions.

When treatment of persons with suspected 2009 H1N1 influenza is indicated, it should be started empirically. If a decision is made to test for influenza, treatment should not be delayed while waiting for laboratory confirmation. The earlier antiviral treatment is given, the more effective it is for the patient. Also, rapid influenza tests often can give false negative results. If you suspect flu and feel antiviral treatment is warranted, treat even if the results of a rapid test are negative. Obtaining more accurate testing results can take more than one day, so treatment should not be delayed while waiting for these test results. For more information on influenza testing, please see: http://www.cdc.gov/h1n1flu/guidance/diagnostic_tests.htm.

Although commercially produced pediatric oseltamivir suspension is in short supply, there are ample supplies of children's oseltamivir capsules, which can be mixed with syrup at home. In addition, pharmacies can compound adult oseltamivir capsules into a suspension for treatment of ill infants and children. Additional information on compounding can be found at: http://www.cdc.gov/H1N1flu/pharmacist/.

For More Information
Updated Interim Recommendations for the Use of Antiviral Medications in the Treatment and Prevention of Influenza for the 2009-2010 Season: http://www.cdc.gov/H1N1flu/recommendations.htm

Questions & Answers:
Antiviral Drugs, 2009-2010 Flu Season: http://www.cdc.gov/h1n1flu/antiviral.htm

Influenza Diagnostic Testing: http://www.cdc.gov/h1n1flu/diagnostic_testing_clinicians_qa.htm

Updated Interim Recommendations for Obstetric Health Care Providers Related to Use of Antiviral Medications in the Treatment and Prevention of Influenza for the 2009-2010 Season: http://www.cdc.gov/H1N1flu/pregnancy/antiviral_messages.htm

Antiviral Drugs: Summary of Side Effects: http://www.cdc.gov/flu/protect/antiviral/sideeffects.htm

General information for the public on antiviral drugs is available in "2009 H1N1 and Seasonal Flu: What You Should Know About Flu Antiviral Drugs" at http://www.cdc.gov/H1N1flu/antivirals/geninfo.htm.

Downloadable brochures and informational flyers, including one on antiviral drugs, are available at http://www.cdc.gov/h1n1flu/flyers.htm.

For the FDA page on antiviral influenza drugs:
http://www.fda.gov/Drugs/DrugSafety/InformationbyDrugClass/ucm100228.htm

For additional information, you can also call CDC's toll-free hotline, 800-CDC-INFO (800-232-4636) TTY: (888) 232-6348, which is available 24 hours a day, every day."

The full article can be found at: http://www.cdc.gov/H1N1flu/HAN/110609.htm
Return to Top

END of CB Daily Report.

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