

THE CSTE WASHINGTON REPORT

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EDITOR'S NOTE:. A new study by the Centers for Disease Control and Prevention concluded that a global flu pandemic would not result from simple genetic mutations to the A(H5N1) subtype of the avian influenza virus. Despite this finding, researchers warned the virus could still convert into a strain transmissible from person to person. Currently, avian flu has only sporadically resulted in bird-to-human transmission, although there is some evidence that the H5N1 viruses are becoming more capable of causing disease in several species of mammals. The concern that the H5N1 "bird flu" virus could blend with a human flu strain and mutate into a virulent version capable of sparking a pandemic prompted the CDC researchers to study the effects of such a hybrid strain. They exchanged some of the genes from A(H5N1) with a highly contagious strain of human influenza and injected it into ferrets. The result was neither efficient transmission among the animals nor an illness as severe as the original bird flu strain. Despite these results, scientists warned that only a few hybrids were tested of the many that can potentially be created – additional details are provided in this *Washington Report*.

The *CSTE Washington Report* is provided as an information resource for members of the Council of State and Territorial Epidemiologists on federal legislation and regulation affecting public health and epidemiology in the U.S. Legislation cited in the report can be accessed via <http://www.thomas.loc.gov> Regulations cited can be accessed via <http://www.gpo.gov>

HEALTH GROUPS PRESS FOR ADDITIONAL FUNDING – Health and education groups were convened earlier this month by senior Senate appropriations staff to discuss strategy for winning the support of key Senators for providing \$2 billion more for the Senate FY 2007 Labor-HHS-Education Appropriations bill. Earlier in the year, during the budget process, these groups worked together to win adoption of the Specter-Harkin amendment to add \$7 billion for health and education programs over the President's FY 2007 budget request. The amendment won on a spectacular 73-27 vote. However, the budget process then broke down and the amendment was never wrapped into final legislation. The Senate Appropriations Committee, in an acknowledgement of the Specter-Harkin amendment did add \$5 billion over the President's budget request to the Labor-HHS-Education Appropriations bill. That amount essentially level-funds most programs from FY 2006, a year in which many health programs were cut back from the FY 2005 level. Adding another \$2 billion would bring funding levels for many programs back to the FY 2005 level. Health groups are working to engage their grassroots members over the traditional August Congressional recess to contact the Senators that voted in favor of the Specter-Harkin amendment. Efforts will need to continue until November as neither the Senate nor the House Labor-HHS-Education Appropriations bill is expected to be taken up on the floor until after the elections during a lame duck session of the 109th Congress.

BUDGET UPDATE – Public health groups are circulating a budget process sign on letter that will be sent to the entire Congress in September when Members return from their August vacations. Legislative efforts to provide the President with significantly enhanced line item veto authority and to create independent, appointed Sunset Commissions to retire federal programs have been gaining ground in the weeks leading up to the August recess. Budget reform measures can significantly impact public health programs, particularly those the President has targeted for elimination which number in the dozens. The letter objects to the current proposals as weakening the authority of Congress and jeopardizing many health programs. The budget reform measures, as well as legislation reauthorizing the 2002 Public Health Security and Bioterrorism Response Act, and the Ryan White CARE Act are likely to see action in September when Congress returns. As noted above, FY 2007 Appropriations bills, however, are unlikely to progress until after the November elections when a lame duck session of the 109th Congress will convene.

LEGISLATIVE UPDATE – The following bill of interest was introduced in the Senate on August 2nd by Senator Kay Bailey Hutchison (R-TX): "Meningitis Immunization Awareness Act" (S. 3791). The bill requires the HHS Secretary, working in consultation with CDC, to develop and make available to entities such as child care centers, schools and colleges, boarding schools, summer camps, etc., information concerning bacterial meningitis and the availability and effectiveness of vaccinations for individuals two years of age or older. The bill has been referred to the Senate HELP Committee and has no corresponding House bill currently.

ANTHRAX IN CHILDREN DIFFICULT TO DETECT AND TREAT, NEW REPORT FINDS -- Difficulties in diagnosing anthrax may lead to dangerous delays in caring for children infected with this often-deadly disease, according to a new report from HHS' Agency for Healthcare Research and Quality (AHRQ). Treating pediatric anthrax is also a special challenge because most currently recommended therapies have not been widely used to treat children with the disease. The anthrax report was requested and funded by HHS' Health Resources and Services Administration.

Since anthrax exposure occurs rarely in the United States and most of the recent cases have been naturally occurring, clinicians may not have first-hand knowledge about the disease and might have difficulty diagnosing it. In addition, symptoms of pediatric anthrax can be easily confused with those of more common illnesses; for example, inhalational anthrax has symptoms similar to influenza. Also, there is little evidence about the effectiveness in children of interventions currently recommended for adults.

"This report provides important information for dealing with exposure of children to anthrax," said AHRQ Director Carolyn M. Clancy, M.D. "It analyzes what is currently known about how this terrible disease affects children and identifies research needed to make us more effective in protecting our children from anthrax."

The researchers found very little published evidence about the efficacy of treating children who have anthrax with newer antibiotics such as ciprofloxacin. They also found no reports of using anthrax vaccine for children. The report calls for more current research on the effectiveness in children of non-antibiotic therapies that have been used with considerable success in the past, such as anthrax antiserum and drainage of fluid from the lung cavity.

Anthrax typically is contracted by direct contact with a bacterium found in infected farm animals and usually is not transmissible from one person to another. The three principal types of anthrax are cutaneous (contracted through cuts in the skin), gastrointestinal (ingested from infected meat), and inhalational (breathed in through the lungs). The most widely reported recent cases of anthrax in the United States followed the introduction of bacterial spores into the U.S. mail system in 2001, which resulted in five deaths among 22 cases.

For the new AHRQ report, investigators analyzed 62 pediatric cases obtained through an extensive review of the scientific literature. Because case reports of pediatric anthrax are relatively rare, investigators examined cases from as early as 1900 in an effort to maximize the available evidence. More than 50 percent involved children between the ages of 14 and 18; data on younger children, especially those under age 2, were more limited. There were only two cases of inhalational anthrax, the most deadly form of the disease.

The AHRQ report, [*Pediatric Anthrax: Implications for Bioterrorism Preparedness*](#) was prepared by AHRQ's Evidence-based Practice Center at Stanford University and the University of California, San Francisco.

Print copies are available by calling the AHRQ Publications Clearinghouse at 800-358-9295 or by sending an e-mail to ahrqpubs@ahrq.hhs.gov. Related studies by the EPC include "Systematic Review: A Century of Inhalational Anthrax Cases from 1900 to 2005," which appeared in the February 21, 2006, issue of *Annals of Internal Medicine* and "Anthrax: A Systematic Review of Atypical Presentations," which appears in the August 2006 issue of the *Annals of Emergency Medicine*.

GENETIC MUTATIONS OF BIRD FLU WOULD NOT EASILY RESULT IN PANDEMIC -- A new study by the Centers for Disease Control and Prevention concluded that a global flu pandemic would not result from simple genetic mutations to the A(H5N1) subtype of the avian influenza virus. Despite this finding, researchers warned the virus could still convert into a strain transmissible from person to person.

Currently, avian flu has only sporadically resulted in bird-to-human transmission, although there is some evidence that the H5N1 viruses are becoming more capable of causing disease in several species of mammals. The concern that the H5N1 "bird flu" virus could blend with a human flu strain and mutate into a virulent version capable of sparking a pandemic prompted the CDC researchers to study the effects of such a hybrid strain. They exchanged some of the genes from A(H5N1) with a highly contagious strain of human influenza and injected it into ferrets. The result was neither efficient transmission among the animals nor an illness as severe as the original bird flu strain. Despite these results, scientists warned that only a few hybrids were tested of the many that can potentially be created.

Several Institute of Medicine reports address the threat of pandemic influenza. Both *Microbial Threats to Health: The Threat of Pandemic Influenza* and *The Threat of Pandemic Influenza: Are We Ready? Workshop Summary* discuss ways the United States and the global community can be better prepared to anticipate and mitigate an influenza pandemic. In addition, the workshop report considers the steps that individuals and societies might need to take to optimally prepare for the next disease pandemic. The published proceedings from a symposium on pandemic influenza research outline gaps in research and priorities for advancing research on pandemic influenza.

- * *Microbial Threats to Health: The Threat of Pandemic Influenza* (2005)
- * *The Threat of Pandemic Influenza: Are We Ready? Workshop Summary* (2005)
- * John R. La Montagne Memorial Symposium on Pandemic Influenza Research: Meeting Proceedings (2005)

WOMEN MAKE LEADERSHIP GAINS IN MEDICAL RESEARCH - A new study published in the *New England Journal of Medicine* found that more women are taking leadership roles in medical research. The study analyzed the number of women listed as lead or senior authors on papers published in the top U.S. medical journals.

According to the study, women listed as the lead author on medical research papers rose from 6 percent in 1970 to 29 percent in 2004. Likewise, women listed as senior authors

also increased, from 4 percent in 1970 to 19 percent in 2004. The number of women invited to write editorials rose significantly as well. For instance, in 2004 the *Journal of the American Medical Association* reported a 19 percent increase since 1980 when no women were invited to write editorials. Similarly, the *New England Journal of Medicine* reported that only 1.5 percent of its editorials were authored by women in 1970, but this proportion rose to 20 percent in 2000.

Several National Academies reports look at women's participation in science and engineering. *To Recruit and Advance: Women Students and Faculty in U.S. Science and Engineering* identifies useful strategies for aiding recruitment, retention, and promotion of female students and faculty in science and engineering. *Opportunities to Address Clinical Research Workforce Diversity Needs for 2010* discusses ways to recruit and retain more women and minorities into the clinical research workforce. *From Scarcity to Visibility: Gender Differences in the Careers of Doctoral Scientists and Engineers* examines the differences in career outcomes between men and women in science and engineering careers over the course of the 1970s to 1990s.

- * To Recruit and Advance: Women Students and Faculty in U.S. Science and Engineering (2006)

- * Opportunities to Address Clinical Research Workforce Diversity Needs for 2010 (2006)

- * From Scarcity to Visibility: Gender Differences in the Careers of Doctoral Scientists and Engineers (2001)

GENES, BEHAVIOR, AND THE SOCIAL ENVIRONMENT: MOVING BEYOND THE NATURE/NURTURE DEBATE -- Over the past century, we have made great strides in reducing rates of disease and enhancing people's general health. Public health measures such as sanitation, improved hygiene, and vaccines; reduced hazards in the workplace; new drugs and clinical procedures; and, more recently, a growing understanding of the human genome have each played a role in extending the duration and raising the quality of human life.

But research conducted over the past few decades shows us that this progress, much of which was based on investigating one causative factor at a time--often, through a single discipline or by a narrow range of practitioners--can only go so far.

Recent knowledge, including much of what has so far been gleaned from the sequencing of the human genome, is pushing scientists to look beyond single agents of health and disease. By breaking out of their disciplinary "silos" and embracing a broader systems view, based on the understanding that health outcomes are the result of multiple determinants--social, behavioral, and genetic--that work in concert through complex interactions, the best health outcomes from research may be yet to come.

Genes, Behavior, and the Social Environment examines a number of well-described gene-environment interactions, reviews the state of the science in researching such

interactions, and recommends priorities not only on research itself but also on its workforce, resource, and infrastructural needs.

The report also identifies gaps in knowledge and barriers that hamper the integration of social, behavioral, and genetic research, concluding that a number of far-reaching changes, specifically in the development of transdisciplinary research, are required if significant strides are to be made in the future. Transdisciplinary research offers a mechanism to achieve a far greater understanding of how interactions among social, behavioral, and genetic factors affect health and illness.