THE CSTE WASHINGTON REPORT

Marcia S. Mabee, MPH, PhD
Editor
11479 Waterview
Reston, Virginia 20190
mmabee@ix.netcom.com
703-709-3001

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EDITOR'S NOTE: "Pre-diabetes" -- a condition that raises a person's risk of developing type 2 diabetes, heart disease, and stroke -- is far more common in America than previously believed, according to a new HHS estimate released April 29. About 40 percent of U.S. adults ages 40 to 74 -- or 41 million people -- currently have the condition, which is marked by blood glucose levels that are higher than normal but not yet diabetic. Many people with pre-diabetes go on to develop type 2 diabetes within 10 years. The new estimate is based on a revised, more accurate definition of pre-diabetes made by an international expert committee of the American Diabetes Association (ADA) and published in Diabetes Care in November 2003. Under previous criteria, it had been estimated that some 20.1 million in this age group had pre-diabetes -- 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

LEGISLATIVE UPDATE – Bioterrorism -- On May 4th, Rep. Jim Turner (D-TX), Ranking Minority Member, House Select Committee on Homeland Security, introduced RAPID, Rapid Pathogen Identification to the Delivery of Cures Act (H.R. 4258). The bill is designed to promote technological advancements that will dramatically reduce the timeframe for the development of new medical countermeasures to treat or prevent disease caused by infectious disease agents or toxins that, through natural processes or intentional introduction, may pose a significant risk to public health now or in the future. The bill's introduction was accompanied by a report issued by Rep. Turner entitled, "Beyond Anthrax: Confronting the Future Biological Weapons Threat," in which he makes the following statement:

"It is in the area of protections for tomorrow's biological weapons threat that we are particularly weak. The primary proposal advanced to boost our protection capacities, Project Bioshield, willnot address this threat. Bioshield is targeted at addressing classical agents, not the laboratory-altered pathogens of the future. In addition, it relies on the current process of drug and vaccine development, which takes an average of 14 years before a new medicine is available. As a consequence, our protective biodefenses are essentially static and unmoving in the face of a threat that is highly variable and unpredictable. As illustrated by SARS, we lack effective countermeasures and a nimble way to develop and field them."

Obesity -- On May 10th, Sen. Peter Fitzgerald (R-IL) introduced, with Sen. Edward Kennedy (D-MA), the Healthy Lifestyles Act of 2004(S. 2399) which addresses the current epidemic of overweight and obesity. A central provision of the bill requires HHS to contract with the Institute of Medicine to develop federal dietary guidelines, which are currently issued by the U.S. Department of Agriculture (USDA) and updated jointly by USDA and HHS, as needed. The IOM dietary guidelines would then be used in all federal grant programs to encourage improved nutrition. A series of grants would be provided via CDC, Department of Education and Labor to encourage more physical activity and improved nutrition. CSTE supports another obesity bill -- the IMPACT bill (S. 1172), Improved Nutrition and Physical Activity Act -- which has passed the Senate and is awaiting Committee action in the House which has a similar bill (H.R. 716).

Environmental – On May 4th, Rep. Balwin (D-WI), with Rep. Burton (R-IN) and Lee (D-CA) introduced the Safe Communities and Safe Schools Mercury Reduction Act of 2004 (H.R. 4260). The bill calls for $75 million in annual funding for FY 2005-2008. Key provisions are as follows:

The Administrator of the Environmental Protection Agency (in this Act referred to as the `Administrator') shall establish a program for making renewable grants to governmental and nonprofit agencies and organizations, and to for-profit entities, for projects to--
(1) reduce harmful free-flowing elemental mercury and mercury-added products from the environment;
(2) safely dispose of or recycle harmful mercury;
(3) educate communities and citizens about the harmful effects of mercury;

(4) develop and carry out a plan, in accordance with guidance provided by the Administrator under section 5, on how to eliminate free flowing mercury and instruments containing mercury from the premises of K-12 public and private schools; or
(5) carry out a mercury thermometer exchange program.

NEW REPORT SAYS BETTER COORDINATION OF RESOURCES ALONG REGIONAL LINES IS ESSENTIAL TO BIOTERRORISM PREPAREDNESS--
Coordinating resources across local and state lines—also known as regionalization—may benefit some bioterrorism preparedness and response capabilities, but more research is needed to find the best ways of coordinating those resources, according to a new report released May 7 by the Agency for Healthcare Research and Quality.

The new report, *Regionalization of Bioterrorism Preparedness and Response*, identifies three key ways regionalization can make a difference in communities' response.
First, regionalization may help communities with surge capacity—health care system's ability to rapidly expand beyond normal services—to provide critical response services such as medical care, distribution and dispensing of preventive drugs, outbreak investigation, and emergency management.

Second, regionalization may be the best way for state and local governments to use scarce resources by joining with other communities to develop teams of trained response personnel and maintain supplies of response equipment.
Third, pre-existing agreements as well as written plans that specify roles, payment, and chain of command may help in coordinating the numerous response organizations likely to be involved.

"These findings confirm the importance of working together under extreme circumstances," said AHRQ Director Carolyn M. Clancy, M.D. "I'm pleased to report that AHRQ, along with its federal partners, has many studies underway looking at regional approaches to many of the areas identified by this new report."
The researchers also found that:

* Most federal, state, and local organizations likely to be part of a regional response were designed independently, or for purposes other than responding to bioterrorism, and efforts to coordinate them for bioterrorism preparedness have only just begun.
* Supply chain management concepts used in manufacturing are directly relevant to those parts of a bioterrorism response that require the purchasing, inventorying, distributing, and rapid dispensing of needed supplies.
* Pre-event hospital designation (such as limiting high-cost specialty care to specifically designated hospitals with increased experience in treating severely injured patients) and formalized protocols for pre-hospital and hospital trauma care (such as first responders knowing where and how to rapidly transport exposed patients) contribute to improved patient outcomes.

The report was prepared by a team of researchers led by Dena Bravata, M.D., at AHRQ's Evidence-based Practice Center at Stanford University-University of California, San

Francisco. In reviewing the available literature on this topic, the researchers found few evaluations of systems relevant to preparedness, and even fewer evaluations of the regionalization of systems relevant to bioterrorism preparedness. They recommend that future research focus on the costs and benefits of regionalization of surveillance, inventory management and distribution systems, and information management.

A summary of the report, *Regionalization of Bioterrorism Preparedness and Response*, can be found at www.ahrq.gov/clinic/epcsums/bioregsum.htm. For the full report, go to www.ahrq.gov/clinic/evrptfiles.htm#bioreg. Printed copies of the summary and full report are available by calling AHRQ's Publications Clearinghouse at 1-800-358-9295 or by sending an E-mail to ahrqpubs@ahrq.gov.

The report is one of more than 50 studies, workshops, conferences, and other activities funded under the Agency's bioterrorism research portfolio (www.ahrq.gov/browse/bioterbr.htm). AHRQ sponsors research that provides the evidence base for tools and resources needed in bioterrorism planning and response.

REVISED DEFINITION MEANS MILLIONS MORE HAVE PRE-DIABETES -- "Pre-diabetes" -- a condition that raises a person's risk of developing type 2 diabetes, heart disease, and stroke -- is far more common in America than previously believed, according to a new HHS estimate released April 29. About 40 percent of U.S. adults ages 40 to 74 -- or 41 million people -- currently have the condition, which is marked by blood glucose levels that are higher than normal but not yet diabetic. Many people with pre-diabetes go on to develop type 2 diabetes within 10 years.

The new estimate is based on a revised, more accurate definition of pre-diabetes made by an international expert committee of the American Diabetes Association (ADA) and published in Diabetes Care in November 2003. Under previous criteria, it had been estimated that some 20.1 million in this age group had pre-diabetes.

The new definition of pre-diabetes identifies more people who are likely to develop type 2 diabetes, highlighting the importance of preventing this disease. "By identifying people with pre-diabetes, we can encourage them to take preventive measures such as losing weight, becoming physically active and eating a healthy diet, to help keep diabetes and other serious health problems at bay," Secretary Thompson said.

Secretary Thompson announced the new estimate at HHS' 2nd annual Steps to a HealthierUS Summit in Baltimore, where he advocated his program of small, achievable lifestyle steps to achieve better health and avoid chronic disease. Type 2 diabetes is strongly associated with overweight and obesity.

"Research has clearly shown that losing 5 to 7 percent of body weight through diet and increased physical activity can prevent or delay pre-diabetes from progressing to type 2 diabetes," said Dr. Allen Spiegel, director of the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), part of the National Institutes of Health within HHS.

"Without intervention, one in three children born in the year 2000 will develop diabetes in their lifetime," said Dr. Frank Vinicor, director of the Centers for Disease Control and Prevention's diabetes division. "For some of us, the risk is even higher. If that child is Hispanic and female, she has a one in two chance of developing diabetes in her lifetime. We need to get the word out that type 2 diabetes can be prevented."
Pre-diabetes may be called impaired fasting glucose (IFG) or impaired glucose tolerance (IGT), depending on the test used to diagnose it. Some people have both IFG and IGT.

* IFG is a condition in which the blood sugar level is high (100 to 125 milligrams per deciliter or mg/dL) after an overnight fast but not high enough to be classified as diabetes. (The former definition of IFG was 110 mg/dl to 125 mg/dl.)

* IGT is a condition in which the blood sugar level is high (140 to 199 mg/dL) after a 2-hour oral glucose tolerance test, but is not high enough to be classified as diabetes. (The ADA expert committee did not change the definition of IGT.)

The new estimate of people with pre-diabetes is detailed in the latest National Diabetes Fact Sheet, released today by HHS' CDC and NIDDK. The estimates were calculated using data from the 1988-1994 National Health and Nutrition Examination Survey and projected to the 2000 U.S. population.

The National Diabetes Fact Sheet provides up-to-date information about diabetes, its prevalence, incidence, complications and costs to the nation. Overall, about 18.2 million Americans currently have diabetes, with about 1.3 million new cases being diagnosed each year. Most of these individuals - 90 percent to 95 percent - have type 2 diabetes, which is associated with older age, obesity, physical inactivity and ethnicity. The fact sheet is available at *www.cdc.gov/diabetes/pubs/factsheet.htm* or by calling 1-877-CDC-DIAB (232-3422).

E. COLI 0157 INCIDENCE POSTS SUBSTANTIAL DECLINE: OTHER FOODBORNE ILLNESSES CONTINUE DOWNWARD TREND -- Cases of *E. coli* O157:H7 infections -- one of the most severe foodborne diseases -- showed a dramatic decline last year, decreasing 36 percent compared to the previous year, according to foodborne surveillance data released April 29.

The data released by Centers for Disease Control and Prevention in collaboration with the Food and Drug Administration and the Department of Agricultural also showed that the incidence of three common foodborne diseases -- *Campylobacter, Salmonella and Yersinia* infections -- continued substantial declines seen in past eight years.

The overall incidence of *E. coli* O157:H7 infections has declined 42 percent since 1996, while *Campylobacter* infections have dropped 28 percent and *Salmonella* infections have decreased by 17 percent.

Cases of other less common bacterial and parasitic foodborne diseases have also decreased since surveillance began in 1996. Yersinia infections have decreased 49 percent, and *Cryptosporidium* infections have decreased 51 percent.

"These findings are good news for Americans and signify important progress toward meeting HHS' Healthy People 2010 objectives for reducing the incidence of disease caused by these bacterial infections," HHS Secretary Tommy G. Thompson said. "However, we must remain vigilant and continue our work to make America's food supply as safe as possible. Much work remains to be done, particularly in protecting our children from foodborne illness."

"The Department of Agriculture is committed to protecting public health through strong food safety systems," said Agriculture Secretary Ann M. Veneman. "The Department of Agriculture has implemented a series of policies designed to control E. coli O157:H7 and other pathogens. We will continue to implement science based system to enhance our systems further to help continue the positive trend in foodborne illnesses illustrated in the CDC report."

The data also found that the incidence of *Listeria*, which had been decreasing the previous four years, did not decline in 2003. The national *Listeria* Action Plan was launched in 2003 to increase prevention efforts in the food chain, and a method is being developed in order to rapidly identify contaminated food items in outbreaks. The incidence of *Salmonella* Enteritidis, a common *Salmonella* serotype, has not changed significantly since 1996, demonstrating that additional efforts are needed to control this pathogen.
Children continue to suffer from foodborne illness in greater numbers than other groups. CDC, FDA and USDA are currently conducting a case-control study of sporadic cases of Salmonella and *Campylobacter* to find the best opportunities for prevention in young children.

Several factors have contributed to the overall decline in foodborne illnesses. Enhanced surveillance and outbreak investigations have identified new control measures and focused attention on preventing foodborne diseases.

The Department of Agriculture's Food Safety & Inspection System implemented the Pathogen Reduction/Hazard Analysis Critical Control Point (HACCP) system in all 6,000 federally inspected meat, poultry and egg products plants over a three year period beginning in 1997. Since then, FSIS has strengthened HACCP enforcement through innovative inspector training and implemented rules to force plants to install new technologies and other methods proving they are effectively controlling dangerous pathogens like *E. coli* O157:H7, Listeria monocytogenes and Salmonella.
Other interventions include the FDA's regulation requiring the refrigeration and labeling of shell eggs to prevent *Salmonella Enteritidis* infections; HACCP regulation of fruit and vegetable juices as well as seafood; extensive food safety education, publication and outreach of good agricultural practices for fresh produce; and increased regulation of imported food.

Foodborne pathogens annually are responsible for an estimated 76 million illnesses in the United States. In 1996, CDC, USDA and FDA established the FoodNet surveillance system to quantify, monitor and track the incidence of laboratory-diagnosed cases of foodborne illnesses caused by *Campylobacter, Cryptosporidium, Cyclospora, E. coli O157, Listeria, Salmonella, Shigella, Yersinia, and Vibrio*. Since its inception, the FoodNet system has expanded to include nine sites and 41.5 million people, about 14 percent of the American population.
The full report, "Preliminary FoodNet Data on the Incidence of Infections with Pathogens Commonly Transmitted Through Food -- Selected Sites, United States, 2003" appears in this week's *Morbidity and Mortality Weekly Report* (April 30, 2004) and is available online at *www.cdc.gov/mmwr/*.

COMPUTERS COMBAT DISEASE: NEW MODELING GRANTS TARGET EPIDEMICS, BIOTERROR -- A new initiative harnesses our nation's computing skill to enhance our ability to respond to disease epidemics and bioterrorism. The initiative, called MIDAS, will develop powerful computer modeling techniques to analyze and respond to infectious disease outbreaks, whether they occur naturally, such as SARS, or are released intentionally in a bioterrorist attack. MIDAS (an acronym for Models of Infectious Disease Agent Study) is sponsored by the National Institute of General Medical Sciences (NIGMS), a part of the National Institutes of Health (NIH) that has a strong interest in bioinformatics and computational biology.

NIGMS recently awarded the first four grants in this new initiative, totaling more than $28 million over five years. Three of these grants will support the creation of mathematical models to study various aspects of infectious disease epidemics and community responses. These research grants together total $9.5 million over five years (averaging more than $640,000 per grant for the first year). A fourth award, totaling $18.8 million over five years ($3 million for the first year), funds researchers to develop a central database to organize information from the other three groups. It also supports the development of user-friendly computer modeling tools for the broader scientific community, policy makers and public health officials to use to simulate epidemics and response strategies.

"MIDAS will play a key role in the NIH biodefense plan," said Elias A. Zerhouni, M.D., NIH director. "The computer models created through this initiative will help us determine the best strategies to detect, control and prevent the spread of disease."

MIDAS will bring together interdisciplinary teams of scientists with expertise ranging from mathematics and computer science to epidemiology, genetics, and public health. The network of MIDAS scientists will be guided by a steering committee of investigators with broad expertise in modeling, infectious diseases and public health. This committee will establish policies for the network, set standards for data management, evaluate progress and provide a forum for the exchange of ideas within and beyond the MIDAS network.

"MIDAS is designed not only to help prepare us for infectious disease crises, but also to be an active part of the response," said Jeremy M. Berg, Ph.D., NIGMS director. "In the case of a national medical emergency, MIDAS scientists can redirect their work to help government officials quickly determine the best way to deal with the epidemic." "The modeling tools will also advance our ability to study complex systems with many interacting parts, which is essential to truly understand biological processes," he added. The awards have been made to:

* A collaboration of scientists at the Johns Hopkins Bloomberg School of Public Health (lead), the Brookings Institution, the National Aeronautics and Space Administration, the University of Maryland and Imperial College (London). This research group will create highly visual, user-friendly computational analyses of disease outbreaks. These models will use historic and modern data about epidemics and incorporate factors such as disease incubation period, transmission rate, weather patterns, peoples' individual susceptibility and social networks. The researchers will then introduce and evaluate the effectiveness of containment methods like vaccination, contact tracing and quarantine. They will initially focus on smallpox, dengue fever and West Nile virus, then will apply their model to study other infectious agents. (Donald Burke, M.D., principal investigator)

* A group of scientists at Los Alamos National Laboratory. This research group will explore the effects of social networks in hypothetical urban areas (population 1.5 million) on the spread and possible containment of multiple, interacting disease-causing organisms. The scientists will model how social contacts might change in response to an outbreak or to intervention strategies. They will modify the social networks and populations to simulate epidemics in a variety of hypothetical cities. (Stephen Eubank, Ph.D., principal investigator)

* A research team at Emory University. This research group will model a disease outbreak in hypothetical American communities (population sizes 2,000 to 48,000) to find the best method(s) of controlling the epidemic. The researchers will examine the effectiveness of policies including surveillance and containment, vaccination, medical treatment and the closing of key institutions. They will adapt their model for smallpox, SARS, pandemic influenza and other possible bioterrorism agents or naturally occurring diseases. They will also investigate how certain microorganisms cause disease within individual people and then spread through a population. (Ira Longini, Ph.D., principal investigator)

* An informatics group spearheaded by Research Triangle Institute International. This team includes members with diverse expertise from SAS Institute, Inc., IBM and Duke and Emory universities. The group will provide the scientific community, policy makers and medical personnel with a wide array of computational and analytic tools and data sources tailor-made to model emerging infectious diseases and public health responses. (Diane Wagener, Ph.D., principal investigator)

More information about MIDAS and other NIGMS-supported efforts to model infectious diseases is available at http://www.nigms.nih.gov/research/midas.html.