



years (because they have an elevated prevalence of certain chronic medical conditions), people who live with or care for others at high risk (health care workers and other caregivers), women who are pregnant or expecting to become pregnant during the flu season, and infants and children between the ages of 6 months and 2 years.

The pediatric recommendation is new for this year, the consequence of a reported 143 influenza deaths of children and adolescents last season. The number of pediatric deaths raised some concern because it was thought that only 92 children, on average, die of flu-related causes each year.

However, last season was the first time pediatric deaths were specifically measured. Such measurements will continue giving the CDC a better understanding of influenza death rates in pediatric patients, Bridges said. □

Avian Influenza: An Emerging Problem?

While the US Centers for Disease Control and Prevention is fairly confident it has a handle on this year's flu season, it is keeping a wary eye on avian flu activities in Asia. Avian flu is worrisome because it can cross into the human population, and the infection has proven to have a high mortality rate.

Earlier this year, an outbreak of influenza A (H5N1) occurred in Asia, with 100 million birds dying of the disease or being culled to contain its spread. Between January and March, there were 34 individuals in Thailand and Vietnam with confirmed cases of H5N1 influenza, with 23 dying. The outbreak subsided, but in June it reemerged in China, Indonesia, Thailand, and Vietnam. The first human cases from this renewed outbreak were reported August 12, with 3 individuals in Vietnam dying; a Thai man died on September 8.

Adding to the concern are reports from China of pigs becoming infected with avian flu. Because avian viruses rarely infect individuals, any jump to humans, through either birds or pigs, is a major concern because there is little or no immune protection against it. In addition, because pigs are susceptible to both avian and human influenza, health officials are worried that the pigs will serve as a "mixing vessel" where the two viruses can exchange genetic material and create a new influenza strain that infects humans more readily and acquires the ability to spread from person to person—setting the stage for a pandemic.

The World Health Organization and the US Centers for Disease Control and Prevention are monitoring the situation. —M.M.

Government Drafts Flu Preparedness Plan Concerns About Serious Pandemic Spur Effort

Tracy Hampton, PhD

WITH THE THREAT OF A POTENTIALLY serious influenza pandemic on their minds, federal health officials have sketched a plan to deal with a serious outbreak, even one as serious as the 1918 pandemic that claimed millions of lives.

The Pandemic Influenza Response and Preparedness Plan, released by the US Department of Health and Human Services, stresses the need for improved measures to safeguard the public. Of particular note, steps need to be taken in the areas of surveillance, vaccine development and production, antiviral stockpiling, research, and public health preparedness.

The motivation for creating the draft was to help people "understand what a pandemic could be like and what the implications might be both medically

and socially for the United States and for the world," said Bruce Gellen, MD, director of the National Vaccine Program Office, in Washington, DC.

Health officials realize that a serious influenza pandemic would present some daunting challenges, such as deciding who should be given priority to receive limited antiviral drug supplies and which response plans should be implemented under different circumstances.

The plan, years in the making, provides guidance for state and local health departments and private health care organizations. But none of it is set in stone—officials are inviting the public to provide feedback until the end of October.

"The reason for putting [the draft] out in this format is to try to get as much input as possible," said Julie Gerberding, MD, MPH, director of the Centers

for Disease Control and Prevention, in Atlanta. "We have some tough decisions to make," she added.

The blueprint can be found at <http://www.hhs.gov/nvpo/pandemicplan>.

SHORT ON SPECIFICS

Although many details have not been worked out, input from physicians and other health officials should make the plan more solid, said Arnold Monto, MD, of the University of Michigan, in Ann Arbor. "We can add to it, increase the detail, have more appendices," he said.

Monto stressed that such additions will be necessary to ensure the plan's effectiveness. "In my view it is relatively short on specifics. I think we're going to need more detailed protocols," he said.

But Monto is not surprised about the lack of detail in the draft. "When you



The influenza pandemic of 1918 killed 20 million to 40 million people worldwide.

get into a situation of pandemic planning, it's the intersection between health and politics," he said. "And what you see in a very political situation, as we have today, is the tendency to reduce things to generalities."

Even so, Monto conceded that much of what needs to be done in the event of an influenza pandemic is not foreseeable. "We not only have no idea when the pandemic is going to occur, we have no idea about the scope or the epidemiology of it," he said. In some ways, responding to a flu pandemic could be more difficult than responding to a bioterrorist threat, he said, "because there you may be able to be more specific in terms of what needs to be done and what *can* be done."

TAKING STOCK

But some specifics *are* outlined in the draft. There are clear strategies for surveillance, vaccine production, and antiviral drug development and availability, said Gellen.

Monto views stockpiling antiviral drugs as a particular priority. Even if a vaccine exists, at first strike, a vaccine will likely not be ready for distribution. If a vaccine does not exist, it will take a good 6 to 8 months before one is produced. Antiviral drugs could thus play an important role in filling that time gap.

Lessons from the past guided some of the specifics of the plan. For ex-

ample, it was learned that federal agencies should ensure that all states are able to respond to a pandemic and implement mass vaccination programs, that adverse event surveillance systems should be in place, and that periodic reevaluation of the plan should be conducted during a pandemic, as unexpected events may occur.

Although it may not be clear how best to respond at the earliest signs of an outbreak, officials will need to quickly identify priority groups that should receive the most aggressive therapy. These could include health care workers and people in certain age groups or with specific medical conditions.

Gerberding said she hopes the draft encourages input on this issue. "How will we ration the countermeasures that we have available if we're faced with a large pandemic? That's an issue that we need to have a healthy debate about," she said.

Flu countermeasures will continue to improve as scientists move ahead with antiviral and vaccine research, Gerberding said. "The stockpile investments have been greatly accelerated and we're also working with manufacturers to increase the capability for emergency vaccine production," she said. However, despite these efforts, "it's just a pipeline that isn't going to open up as fast as we would like, simply because there are so many critical steps involved in that process," she said.

COORDINATING EFFORTS

Establishing public safety measures is also a key part of the plan. Coordination with state and local officials "is a critical part of this," said Gellen. "The response to a pandemic is going to occur at the local level," he said. An annex to the draft provides guidance for state and local health departments.

Jim Bentley, PhD, senior vice president for Strategic Policy Planning at the American Hospital Association, headquartered in Lexington, Ky, said that due to the recent bioterrorist scares and SARS outbreak, many health care facilities have already put measures recommended by the plan in place.

"The plan provides a document for hospitals to go back, take a look at their disaster or emergency plan, and [ask] have we covered everything in our plan if the problem should be pandemic flu," said Bentley. "If you've done a really thorough job thinking through infectious bioterrorism and/or SARS, there's probably not a lot new here."

But Bentley said he will take the plan to the American Hospital Association's committee on health professions, made up of administrators, nurses, and physicians, and ask for feedback.

Although the plan is meant to provide meaningful information, the clearest message from those who drafted it is that it will be a changing "ever-green" document.

Gellen pointed to significant events that occurred during the past several years that have had an impact on planning. "We've learned a lot about avian influenza and the ability of viruses to jump directly from birds to people; there have been new drugs; there are new vaccine technologies; we had SARS; we had bioterrorism; we had emerging infectious diseases," he said.

The plan will be adjusted to reflect knowledge gained as new challenges emerge. "As things change, as experience comes about, we will then appropriately modify what the plan will be," said Gellen. □