



Highlights of [GAO-08-92](#), a report to congressional requesters

Why GAO Did This Study

Pandemic influenza poses a threat to public health at a time when the United Nations' World Health Organization (WHO) has said that infectious diseases are spreading faster than at any time in history. The last major influenza pandemic occurred from 1918 to 1919. Estimates of deaths worldwide if a similar pandemic were to occur have ranged between 30 million and 384 million people. Individual countries and international organizations have developed and begun to implement a strategy for forestalling (that is, containing, delaying, or minimizing the impact of) the onset of a pandemic. Antivirals and vaccines may help forestall a pandemic.

GAO was asked to examine (1) constraints upon the use of antivirals and vaccines to forestall a pandemic and (2) efforts under way to overcome these constraints. GAO reviewed documents and consulted with officials of the Departments of State and Health and Human Services (HHS), international organizations, and pharmaceutical manufacturers.

WHO commented that the report was comprehensive and useful. HHS stressed that vaccines and antivirals must be viewed in a larger context. State and HHS commented that the term "forestall" is ambiguous and misleading. However, GAO has used the word in a way that is consistent with WHO's use of the term.

To view the full product, including the scope and methodology, click on [GAO-08-92](#). For more information, contact Marcia Crosse at (202) 512-7114 or crossm@gao.gov, or David Gootnick at (202) 512-3149 or gootnickd@gao.gov.

INFLUENZA PANDEMIC

Efforts Under Way to Address Constraints on Using Antivirals and Vaccines to Forestall a Pandemic

What GAO Found

The use of antivirals and vaccines, two elements of the international strategy to forestall a pandemic, could be constrained by their uncertain effectiveness and limited availability. To use antivirals effectively, health authorities must be able to detect a pandemic influenza strain quickly through surveillance and diagnostic efforts and use this information to administer antivirals. The effectiveness of antivirals could be limited if they are used more than 48 hours after the onset of symptoms or by the emergence of strains resistant to antivirals. Unlike antivirals, vaccines are formulated to target a specific influenza strain in advance of infection. The effectiveness of vaccines in forestalling a pandemic could be limited because such a targeted pandemic vaccine cannot be developed until that strain has been identified. Due to the time required to identify the virus and develop and manufacture a pandemic vaccine—20 to 23 weeks according to HHS—such vaccines are likely to play little or no role in efforts to forestall a pandemic in its initial phases. The availability of antivirals and vaccines in a pandemic could be inadequate due to limited production, distribution, and administration capacity. WHO has stated that it is unlikely that sufficient quantities of antivirals will be available in any country at the onset of a pandemic. The distribution and administration capacity for antivirals and vaccines is limited in some countries by poor or nonexistent delivery plans and networks, a lack of facilities for administering the drugs, and small numbers of personnel trained to administer them.

The United States, its international partners, and the pharmaceutical industry are investing substantial resources to address constraints on the availability and effectiveness of antivirals and vaccines. Efforts are under way to improve influenza surveillance, including diagnostic capabilities, so that outbreaks can be quickly detected. Increased demand and government support has led manufacturers to increase research into more effective antivirals and vaccines. Manufacturers are developing new antivirals to combat influenza. New methods for developing vaccines are being studied in order to reduce the amount of vaccine that is needed and to increase the number of strains against which it is effective. Pre-pandemic vaccines, which are formulated to target influenza strains that have the potential to cause a pandemic, are being developed. However, these vaccines may or may not be effective against the pandemic strain that ultimately emerges. To overcome limitations on the availability of antivirals and vaccines, manufacturers are working to increase production at existing facilities and build new facilities. To address constraints on the distribution and administration of antivirals, stockpiles are being established to allow faster delivery of antivirals to countries experiencing outbreaks. WHO is also working to establish stockpiles of pre-pandemic vaccines. Additionally, other efforts also face limitations. For example, increasing production capacity of vaccines and antivirals will take several years as new facilities are built and necessary materials acquired.