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Best Practices for Distribution of Antivirals for Pandemic Influenza: Public Health Impact and Research Recommendations

Good morning. My name is Cynthia Reilly and I am the Director of the Practice Development Division at the American Society of Health-System Pharmacists (ASHP). ASHP represents pharmacists who practice in hospitals and health systems. The Society's more than 35,000 members include pharmacists and pharmacy technicians who practice in a variety of health-system settings including inpatient, outpatient, home care, and long-term care. I appreciate the opportunity to present the views of ASHP on the evaluation and distribution of antiviral MedKits, including the types of studies needed to assess best practices for distributing kits, the role of home stockpiling, and interfaces of home readiness with public health entities in pandemic influenza preparedness efforts.

ASHP commends the efforts of the Centers for Disease Control and Prevention (CDC) Division of Strategic National Stockpile to study approaches that either alone, or in combination, would ensure timely and effective distribution of antiviral medications. Our comments today will focus on whether home distribution of antivirals is appropriate based on an assessment of an earlier study of home stockpiling of antibiotics, considerations unique to antiviral medications, and our perspective on distribution methods for which studies are planned or underway.

Home Stockpiling and Antiviral Product Availability

The proposed household stockpiling of pharmaceuticals requires that several assumptions be true, including that these drug products are easy to maintain and use, that they are affordable, and that this method of distribution is acceptable from a public health and medical perspective. However, as I will demonstrate, these and other assumptions do not hold true for home stockpiling of antivirals.

Perceived increases in the availability of antiviral supplies due to enhanced production in the spring of 2006 have heightened interest in home stockpiling. The stockpile supply has slowly increased, and it now nears the federal goal of 81 million antiviral courses—the estimated supply

necessary if 25% of the population were to seek treatment. However, this supply goal does not explicitly include the number of doses needed for prophylaxis or treatment courses during the extended time of at least six months that is projected for the development of a strain-specific vaccine. Characteristics of the influenza strain will affect which individuals need treatment or prophylaxis (for example, based on geographic location or patient age) and the dosage and length of therapy needed to ensure effectiveness. These factors may alter the current estimate of stockpile needs. A full assessment of these considerations will likely demonstrate that we do not have an abundance of antiviral supplies.

Home stockpiling is not advised in the absence of sufficient courses for the priority groups that have been identified to receive antiviral treatment and prophylaxis (e.g., patients admitted to the hospital, healthcare workers, emergency services personnel, and highest-risk outpatients).

Home Stockpiling and Patient Adherence and Access

Home stockpiling of antiviral MedKits has also been proposed based on the positive findings of a recent CDC study of an antibiotic MedKit. That study demonstrated that "participants appropriately followed instructions regarding storage and reserving the emergency MedKit for use until directed." However, these results may not be generalizable to antiviral MedKits because it may be more difficult to give explicit instructions to the public on when to initiate antivirals due to the gradual and regional spread of the pandemic and the generalized symptoms of influenza that hinder quick diagnosis. Due to public fear, misinformation, or miscommunication, patients may use their MedKit antiviral supplies for prophylaxis under circumstances when treatment is a priority for controlling the pandemic. This would exhaust antiviral supplies prematurely and inappropriately.

In their MedKit study summary, CDC recommends additional areas of study, such as labeling comprehension and simulation studies. ASHP agrees that the areas identified in that report warrant further study for antibiotic and antiviral MedKits. While the extent of inappropriate use was limited in the earlier study, it is important to note that this study occurred under ideal circumstances in which carefully selected consumers received detailed instructions. With wider distribution, it is unlikely that all prescribers will maintain the high level of counseling provided in the pilot study.

ASHP recommends that CDC pursue a cohort study that provides variable counseling to each group as a method to better assess the extent of adherence to instructions that is likely to occur during actual use. The ability of different types of patients to appropriately understand and follow MedKit instructions should also be studied, especially among segments of the population with limited health literacy. Finally, the proposed study should assess time intervals that extend beyond the two, four, and eight months evaluated in the initial study.

Adherence to recommended product storage should also be assessed. It is well known that extremes in heat, cold and moisture can render many medications ineffective. Without proper storage, antiviral medications would not only be ineffective, but they would also promote a sense of security that could result in behavior leading to increased spread of the disease the medication is intended to prevent or treat.

To ensure equitable access, barriers such as ability to pay and geographical variation in healthcare access should also be considered and addressed.

Home Stockpiling and the Development of Resistance

Home MedKits have been recommended as a mechanism to ensure timely access during a pandemic outbreak—circumstances when patients may be unable to gain timely access to their physician. While timely access is critical, I've just described how many patients may take the medications inappropriately. This concern is significant because widespread inappropriate use of antivirals will lead to resistance. In early 2008, the World Health Organization reported study results demonstrating that resistance to oseltamivir in some United States and Canadian isolates had increased from previously reported ranges of zero to 0.5 percent to 5 to 6 percent. While these estimates represent resistance in seasonal influenza isolates, the data raise significant concerns about the use of existing antivirals in a pandemic outbreak, and inappropriate use will heighten those concerns.

Nonprescription availability of antiviral medications has also been proposed. ASHP policy opposes nonprescription status for any medication for which the development of resistance is a concern, and the Society is opposed to nonprescription availability of MedKits or their components via community pharmacies and other retail settings. However, ASHP would support availability of these drug products without a prescription through mechanisms overseen by public health officials who would determine when and where the products are needed (e.g., community-based caches, first-responder distribution).

Alternative Mechanisms for Distributing Antiviral Medications

Other methods of distributing antivirals to the public in a timely manner have been proposed and tested, such as just-in-time packages tested through the Cities Readiness Initiative (Koh et al. 2008) where the U.S. Postal Service delivered packages to homes. ASHP was pleased to learn of the CDC's October 2, 2008 announcement about the launch of a second phase of the MedKit Evaluation Study to assess distribution of anthrax treatments via the United States Postal Service. This strategy has several advantages, including centralization of the stockpile to maintain control over where supplies are dispersed, and the ability to transfer limited supplies to affected areas. The Society looks forward to evaluating the outcomes of that study and other components of the Emergency MedKit Evaluation Study that will assess classic points of dispensing, pre-deployed community caches, and first-responder distribution.

Conclusion

ASHP strongly supports and encourages individual preparedness planning and recognizes the importance of an all-hazards approach to home readiness. However, the Society does not support the use of antiviral MedKits for home stockpiling at this time. Our opposition is based on concerns about limited supply and antiviral resistance resulting from improper use, and this stance is consistent with at least nine state departments of health that have also advised against the use of home antiviral stockpiles. ASHP believes that personal responsibility for readiness should not include pre-acquisition of antiviral drug product. Efforts should instead focus on consumer knowledge of public health entities that will provide these treatments when needed. In

the future, home stockpiling of antiviral medications may warrant additional consideration if antiviral medication supplies improve, additional characteristics of virus strains are known and therefore better predicted, and more and better treatment options are available. ASHP is interested in working with the Food and Drug Administration, the CDC, and others to study alternative approaches to distribute, dispense, and use antivirals, including best practices for educating the public about their critical role in these efforts.