

# **INTERNATIONAL SOS**

## **PANDEMIC PREPAREDNESS**

### **Chapter 3**

#### **Antiviral Medications**

**SECTION 3.1 GUIDELINES**

**SECTION 3.2 M2 INHIBITORS (AMANTADINE, RIMANTADINE)**

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## SECTION 3.1 GUIDELINES

### 3.1.1 Background

Early in an influenza pandemic, before a specific vaccine is available, antiviral drugs are likely to be the only influenza-specific medical intervention available to reduce morbidity and mortality. The supply of antiviral drugs is expected to be limited and is not likely to meet demand.

Although antivirals are expected to be effective against pandemic influenza, this is not guaranteed. The success of an antiviral will not be established until the pandemic is underway. Antivirals are not “a panacea for protecting populations during a pandemic”. They “have an important, but limited role to play” (World Health Organization, consultation on priority public health interventions before and during an influenza pandemic, 2004).

There are two main ways in which antiviral drugs can be administered during an influenza epidemic:

- i) Early treatment of persons developing flu symptoms is likely to significantly reduce the severity of the illness.
- ii) Prophylaxis is when a person takes the medication before becoming infected to prevent infection.

**See Chapter 3.4.3 “Use of oseltamivir (Tamiflu®) – treatment vs. prophylaxis”**

### 3.1.2 Establishing priority groups

During a pandemic, it is likely that there will not be enough antiviral medications available to meet the expected huge demand (called “surge” demand.). If used wisely, these drugs have the potential to avert a pandemic, or at least delay spread of the virus. As such, use of antiviral drugs for maximum community benefit is appropriate.

The World Health Organization (WHO) recommends that priority groups for the use of antiviral drugs should be established. WHO has undertaken to provide advice on the optimal use of available drugs as a pandemic evolves.

Each corporation that decides to stockpile antiviral drugs will need to define their priority groups, and develop a plan on the best possible use of the drugs at different phases of the pandemic.

Factors to be considered when defining priority groups:

- When the goal is to maintain essential services: the persons considered “essential” will vary from corporation to corporation.
- When the goal is to reduce mortality and morbidity: who are the persons at high risk of death or severe complications?

### 3.1.2 M2 inhibitors (amantadine and rimantadine)

The M2 inhibitors amantadine and rimantadine are presently used to treat seasonal influenza. These drugs are only effective against influenza A; they do not work against influenza B. They are teratogenic, meaning they can cause birth defects, and they can have disturbing side effects that include psychotic episodes. They have a longer shelf life than neuraminidase inhibitors (about 20 years or more) and are cheaper.

***Avian influenza A/H5N1 is resistant to M2 inhibitors. A pandemic influenza virus that arises from this avian influenza is expected to also be resistant to these drugs.***

**See Chapter 3.2 M2 Inhibitors**

### 3.1.3 Neuraminidase inhibitors (oseltamivir and zanamivir)

Unlike the M2 inhibitors, the neuraminidase inhibitors are active against both influenza A and B, including influenza A/H5N1. Of these, oseltamivir (Tamiflu®) is the preferred drug for treating or preventing influenza A/H5N1 as it comes in tablet form. Zanamivir (Relenza®) is an inhaled medication.

See Chapter 3.3 Oseltamivir (Tamiflu®) and Chapter 3.4 Zanamivir (Relenza®)

### 3.1.4 Government stockpiling and policies relating to oseltamivir (Tamiflu®)

### 3.1.5 Corporate stockpiling of Oseltamivir (Tamiflu®)

## SECTION 3.2 M2 INHIBITORS (amantadine, rimantadine)

### 3.2.1 Background

### 3.2.2 How M2 inhibitors work

### 3.2.3 Use of M2 inhibitors

### 3.2.4 CDC Guide to dosage of M2 Inhibitors

### 3.2.5 Side effects of M2 Inhibitors

## SECTION 3.3 ZANAMIVIR (RELENZA®)

### 3.3.1 Background

### 3.3.2 How zanamivir (Relenza®) works

### 3.3.3 Use of zanamivir (Relenza®)

### 3.3.5 Side effects of zanamivir (Relenza®)

## SECTION 3.4 OSELTAMIVIR (TAMIFLU®)

### 3.4.1 Background

### 3.4.2 How oseltamivir (Tamiflu®) works

### 3.4.3 Use of oseltamivir (Tamiflu®) – treatment vs. prophylaxis

### 3.4.4 CDC Guide to Pediatric doses of Oseltamivir (Tamiflu®)

### **3.4.5 Side effects of oseltamivir (Tamiflu®)**

### **3.4.6 Resistance to oseltamivir (Tamiflu®)**

### **3.4.9 Shelf life of oseltamivir (Tamiflu®)**

### **3.4.9 Cost of oseltamivir (Tamiflu®)**

## **SECTION 3.5 CALCULATING STOCKS OF OSELTAMIVIR (TAMIFLU®)**

### **3.5.1 Background**

### **3.5.2 Which staff members should be planned for?**

### **3.5.3 Calculating the quantity of oseltamivir to stock**

## **SECTION 3.6**

## **PURCHASE, STOCKPILING & INVENTORY MANAGEMENT OF TAMIFLU®**

### **3.6.1 Background**

### **3.6.2 Purchase**

### **3.6.3 Storage and Expiry**

### **3.6.4 Central or Distributed Storage**