

# Preparing for the next influenza pandemic

Ph.J. van Dalen, C. Wijdenes\*

Ministry of Health, Welfare and Sport, PG Department, PO Box 20350, 2500 EJ The Hague, the Netherlands, \*corresponding author

## ABSTRACT

The Dutch Ministry of Health, Welfare and Sport is determined to be as well prepared as possible for an influenza pandemic, if one should occur. Various measures based on the use of vaccines, antiviral agents and guidelines are being implemented or prepared. The aim is to maintain social and economic infrastructure as much as possible during a pandemic outbreak of influenza. In this context, the ministry is drawing on advice provided by the Health Council in two separate reports.<sup>1,2</sup>

## KEYWORDS

Antiviral medicines, avian influenza, flu vaccines, influenza pandemic

## INTRODUCTION

An influenza pandemic is a global epidemic caused by a new strain of the influenza virus, against which people have yet to acquire resistance. Such pandemics are very unpredictable, but they do occur with a degree of regularity. On the basis of expert advice, the ministry is working on the assumption that there is a real possibility of another influenza pandemic at some time in the not-too-distance future. In order to be as well prepared as possible, the ministry is currently working on a number of preparatory initiatives, in line with the Health Council's advice.

## VACCINES

As the Health Council rightly points out, vaccination affords the best protection against influenza. One can assume that there will not yet be a vaccine against the virus strain involved.<sup>3</sup> Generally speaking, it takes at least six months to develop a vaccine and manufacture it on a large scale. The Dutch government is currently negotiating with a manufacturer to ensure that a vaccine against any future pandemic influenza strain is available in the Netherlands as soon as possible following its development. The government sees it as its responsibility to provide the highest possible protection at the onset of a pandemic. At this point, the availability of antiviral agents becomes vital.

## ANTIVIRAL AGENTS

Treatment with antiviral agents such as oseltamivir and zanamivir reduces the duration of the illness in otherwise healthy patients by one to two days. Such treatment is also associated with a lower risk of pneumonia and reduced reliance on antibiotics. Antiviral agents can additionally be used on a prophylactic basis.

Where the use of antiviral agents for pandemic response is concerned, it is important to distinguish between the treatment of the first cases detected when a pandemic reaches the country and wider use in the context of a manifest pandemic. At the start of a pandemic, one may expect to have a small number of isolated patients who are quickly tracked down by the municipal health services. Under such circumstances, the Council advises the

preventive treatment of family members, people living in the same household and other close contacts of the patient. By adopting this strategy, it is hoped that the pandemic can be prevented from spreading so quickly or even nipped in the bud. If in practice it proves possible to identify the first cases in the Netherlands caused by a pandemic virus strain, perhaps because they involve people who have just returned from a region where the pandemic is already established, we will implement the Council's advice and make antiviral agents available to people who may have been infected but have not (yet) developed symptoms of the illness.

If efforts to contain the pandemic are unsuccessful, or if the arrival of the pandemic from abroad involves a large number of simultaneous cases, the government's guidelines on responding to a manifest pandemic will come into operation. Under such circumstances, preventive treatment will be abandoned and, as recommended by the Health Council, the emphasis will switch to making antiviral agents available to anyone in the country showing symptoms of the illness. Implementation of this policy will depend on us having a much larger stock of antiviral agents at our disposal than at present. The modest current stock (sufficient for 225,000 courses of treatment) therefore needs to be built up to the point where roughly five million people can be treated.

## TREATING INFLUENZA

The accepted wisdom in the Netherlands is that influenza is something one does not treat; it is better to simply wait for the body to deal with it. Many people will therefore find it difficult to understand the logic of holding a large stock of antiviral agents for treatment of the illness. Nevertheless, there are sound reasons for adopting such a policy from the Ministry of Health's point of view. Namely, the treatment of influenza during a pandemic is intended not so much to benefit the individual patient, as to be advantageous to the health of the wider community. As indicated above, the plan is to administer antiviral agents on a preventive basis when a pandemic first reaches the country, with a view to stopping the pandemic

from spreading so quickly, or even nipping it in the bud. However, it also makes good sense to use antiviral agents to treat patients during a manifest pandemic. Such treatment has a beneficial impact on the subsequent course of the illness, as the patient builds up immunity against the new virus strain. If a patient who has acquired immunity is subsequently reinfected by the virus, he or she will not become ill or will become less seriously ill. Treatment with antiviral drugs also makes patients less contagious which will probably lead to a lower morbidity. Another reason for treatment is that influenza victims who are given antiviral agents recover one to two days sooner than they would otherwise have done. This may not sound like a great benefit, but if one assumes that a substantial part of the population is ill at any one time, the overall impact is huge.

## CONCLUSION

The object of using antiviral agents when an influenza pandemic first reaches the country or when the arrival of a pandemic is regarded as imminent is to contain the spread of the illness.<sup>4</sup> The success of such a policy will to a large extent depend on the implementation and logistics. Accordingly, the ministry intends to draw up a distribution plan in consultation with the interested parties. The aim is to incorporate this plan into the guidelines before the end of 2005.

## REFERENCES

1. Health Council of the Netherlands. Antiviral agents in an influenza pandemic. The Hague: Health Council of the Netherlands, 2004/05E.
2. Health Council of the Netherlands. Use of antiviral agents and other measures in an influenza pandemic. The Hague: Health Council of the Netherlands, 2005/05E.
3. Cooper NJ, Sutton AJ, Abrams KR, Wailoo A, Turner D, Nicholson KG. Effectiveness of neuraminidase inhibitors in treatment and prevention of influenza A en B: systematic review and meta-analyses of randomised controlled trials. *BMJ* 2003;326:1223-4.
4. Groeneveld K, van der Noordaa J. Use of antiviral agents and other measures in an influenza pandemic. *Neth J Med* 2005;63(9):339-43.