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INTRODUCTION

# Europe preparing to face an influenza pandemic

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Pandemic influenza has caused several spectacular disasters in the past and the 1918–1919 episode remains famous because, at the end of a terrible world conflict, it killed, in two seasons, more young men than the war itself. It was only after another pandemic, in 1968–1969, that some of the mechanisms of variation of influenza viruses were partially elucidated. Today, we have a number of keys for understanding how this clever virus is able to elude immunological defenses and to persist in human populations through animal reservoirs, intercontinental travel and the art of disguise.

Although all experts agree on one point – that it will happen at some undetermined point in the future – it is unfortunately impossible to forecast when and where a new variant will arise and trigger a pandemic process. It is therefore interesting to ask: how shall we react to this danger and shall we properly use the tools we now possess to control the return of a deadly form of influenza?

During a recent meeting on influenza in Courchevel in 1992, there were indications that a few countries had already given some thought to this problem and had drawn up recommendations to be followed by public and private organizations. In other countries, however, no policy had even been considered. Therefore, the organizers of the '7e Rencontres Européennes sur la Grippe et sa Prévention' in Berlin, 23–24 September 1993, decided to select this topic, calling on experts from different European and non-European countries for consultations and discussions. The meeting was divided into three scientific sessions to discuss

1. diagnosis of a pandemic situation,
2. epidemiological and clinical problems during pandemics, and
3. social and regulatory aspects of management of a pandemic.

The full texts of the communications at these sessions are presented in this issue of the European Journal of Epidemiology.

The first steps of planning are the detection and identification of a true pandemic situation: appearance of a new virus, significantly different from current strains, possessing a dangerous pathogenic potential. These are virologic and epidemiologic problems. The origin of pandemics is not yet clearly understood, but the role of animal reservoirs in which viruses mix and exchange genetic determinants seems a highly probable hypothesis. International networks are essential to follow the detection of mutants and the course of the disease's progression, and to evaluate the risk of rapid extension. An essential step is the recognition of the new virus and of its epidemiologic capacity.

Many new questions then arise – evaluating the danger, monitoring the advance of the outbreak and deciding emergency measures. At the conference, several contributions regarding modeling and short-term provisions were presented from different countries, and it appears possible, using data collected during the previous years and preceding weeks, to make a number of predictions. However, all parameters for these evaluations are not precisely known and they are certainly difficult to measure in mathematical terms: the individual pathogenic potential of a new strain cannot be measured with precision and the immune status of the population is also an important factor. More information must be collected and formulated for better efficiency.

Different types of control measures against a spreading epidemic are possible, but, at this point, a convenient influenza vaccine is generally considered the most efficient mode of protection for human populations, along with antivirals. Past experience, however, shows that a number of difficulties can be encountered. These are the necessary points of reflection, discussion and decision.

Evaluations of the delays of vaccine production should take into account the exceptional nature of the situation. It seems that the most difficult aspect could be trying to obtain exceptional regulations from the authorities for licensing and releasing the first batches of the new vaccine without delay. It is interesting to observe, however, that manufacturers do not think it would be impossible to produce large amounts of vaccines in a relatively short period of time.

Planning proposals already prepared in several countries such as the UK and Canada were presented

and discussed. The main problems were the techniques necessary to accelerate the production of large quantities of vaccine within a short period of time under specially adapted regulations, the modes of distribution – national or international – of the first vaccine batches, and communication strategies, i.e. informing the public without leading to panic or indifference. All these steps are particularly difficult to organize at a time of shortage and emergency. Time will be an essential factor during such a situation, since the rate of progression of the pandemic could be another unknown factor.

Finally, the Conference recommended that public health institutions call their attention to this problem, so that appropriate measures can be prepared before the danger arises. These recommendations are presented in the Annex to the scientific communications.

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