

CHAPTER

A flu pandemic: the world's worst nightmare

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“UNTIL NOW, PLAGUES were something from our past, from a time before antibiotics and vaccines. As medical and nursing staff fell ill, vital patient care services collapsed. Hospitals began sealing entrances and controlling access. Patients were not allowed visitors; along with quarantined staff who were trapped inside. Elective surgery was postponed, a staffing nightmare for hospitals in a health system that was already reeling from staff shortages.”¹

This is not the script for a blockbuster disaster movie, it is the testimony of a senior Canadian doctor during the SARS outbreak. Tackling communicable disease is very much like a battle where the ground troops — health care workers, epidemiologists, nurses and doctors — are exposed and can die. However, we were lucky with SARS: it was characterised by a low basic reproductive rate and a long incubation period.

Influenza, on the other hand, is the infectious disease which could cause a global health emergency with the potential of economic collapse and public unrest. Pandemics are a fact in human history. In the last century, there were three major flu pandemics. Most famously, the Spanish flu of 1918-19 killed up to 40 million people, more than the devastating First World War. The South East Asia flu pandemic of 1957 resulted in an estimated two million dead and 1968 saw the emergence of ‘Hong Kong Flu’ with a death toll of one million.

Natural catastrophes create panic, destroy communities and cost billions. A full-scale pandemic could be even worse because it would last several months. Health systems may collapse under pressure, governments will be forced to introduce quarantine, and the fabric of society could be torn apart.

The world is now closer to a flu pandemic than it has been at any time since 1968. The key prerequisite for a pandemic is a novel virus of animal origin which jumps the species barrier and is able to replicate in the human body and be easily transmitted from human to human. The current avian flu virus, H5N1, fails just the final test.

All European Union (EU) countries state that they have a plan, although in March 2005, only four have actually been tested.² Globally, many countries have no policies on vaccination and antiviral usage, severe shortages of antivirals, no hospital contingency plans, no information and communication strategies, and no plans to handle the legal and ethical implications of anti-pandemic measures. National and international agreements on vaccine licensing procedures, production and distribution to countries without domestic vaccine production are not in place.

However, under pressure from and with the support of the World Health Organization (WHO), many countries have started the planning process. So, what could be the European Union role

in international cooperation and supporting pandemic preparedness at national level?

Pre-pandemic surveillance and early warning

Permanent and rigorous surveillance is needed. Early detection and warning systems are the next crucial elements because they allow fast identification of potential outbreaks in order to contain cases and prevent escalation. The SARS crisis demonstrated that EU surveillance systems were able to handle a daily monitoring process which tracked 33 suspected individual cases and the people potentially exposed to the virus. However, a much higher level of cross-border coordination would be needed to tackle larger scale contagious disease.

The European Commission set up a Network for Communicable Disease in 1999 to coordinate national surveillance and integrate an Early Warning and Response System that shares alerts with all public health authorities. This virtual network widely used telephone conferences during the SARS crisis to exchange information, and it enabled coordinated communication at EU level.

More specifically, the European Influenza Surveillance Scheme³ is a key tool: it provides virological and clinical data on seasonal influenza activity. In addition, a Community Network of National Reference Laboratories was created within this network. These two instruments would help detect and analyse an outbreak.

The European Centre for Disease Prevention and Control (ECDC), due to start work in May 2005, might take a leading role on pandemic influenza preparedness. The ECDC’s mandate will be surveillance, scientific and practical advice, and training for member states.

Limiting the spread of a flu pandemic

Should early containment fail, governments would face great public and political pressure to introduce drastic, costly and disruptive measures such as travel restrictions, screening measures at borders, isolation or quarantine. These issues need to be tackled regionally. All countries in the region need to apply similar health screening and restriction measures, particularly because states that have signed the Schengen agreement on free movement of people will be unable to close their borders.

An important element in pandemic response is an effective communication strategy for the public. Standardised guidelines on communication measures at EU level and coordination on key messages have a clear added value. Consistent, accurate and appropriate information will be essential to reduce panic, to enable people to take steps to protect themselves, and to optimise the public health response. In the event of a pandemic, the media will be looking for stories to feed the public appetite for news. Data from the EU that is accessible, authoritative and scien-

tifically based will help to balance contradictory, inflammatory or dangerous information.

But the plans on how to implement a coordinated EU response are at a very preliminary stage. The first European Commission working paper on Community Influenza Preparedness and Response Planning was only issued in March 2004. There is still no clear blueprint for action by the EU institutions and national governments.

Lessons to be learnt from disaster response frameworks

Europe, like many other regions in the world, regularly experiences devastating natural disasters like floods, forest fires, or major accidents such as factory explosions, train crashes or chemical spills. In these situations, countries need to be able to call upon fast emergency assistance from neighbouring administrations. The first EU-level agreement to enhance civil protection cooperation was reached by government ministers in 1985. Since then, the Commission and Member States have established a complete framework including prevention, intervention and reconstruction measures. Regular simulations are undertaken to test the robustness of emergency interventions. Results include protocols on disaster medicine, training programmes, coordination teams, and a common emergency communication system and Europe-wide telephone number.

The high level political commitment and extensive preparatory work invested in civil protection at EU level contrasts radically with the poor state of flu planning. There are lessons that can be drawn from two decades of European joint cooperation for disasters: many of the steps set out in the WHO pandemic planning documents are the same as elements in a disaster response process.

Insufficient medicines — what price European solidarity?

Vaccines will be the most important instrument to reduce mortality and morbidity. But they cannot be produced before a novel pandemic strain actually emerges and the optimistic scenario shows that it will take at least six months to develop a vaccine. In addition, the majority of flu vaccines are egg-driven and there are only five such manufacturing facilities in Europe (out of nine worldwide). This raises the important question: how will the scarce vaccines be allocated? Equally across all countries according to need? Or to the first guaranteed orders? Or to the highest bidders? Countries that are home to vaccine manufacturing will probably commandeer scarce supplies for their own populations. Even if governments decide to override vaccine patents, they will have difficulty finding mass-manufacturing capacity.

One alternative method with potential is 'reversed genetics,' but the technology raises issues of intellectual property rights and in Europe, it is considered as genetic modification. The EU and national governments are already in talks with the vaccine and pharmaceutical industries on these issues.

Because of the delays in developing and manufacturing an appropriate vaccine, the first line of defence will be provided by antivirals. Although their efficacy and therapeutic benefits still need to be proven, stockpiling antivirals is the solution selected by the majority of better-resourced countries. Small or poorer countries have raised the concern that antiviral manufacturers consider their market size and financial capacity too limited to be worth signing contracts for provision of products. In addition, it is likely that the entire population won't receive antivirals, even if the production capacities are significantly expanded. Hence, it is crucial to define key services and the workers that provide those



Photo: WHO

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services, as well as identifying which groups would be most vulnerable and need prioritisation.

Urgent action needed

Although the exact timing, infectious potential and spread of the next flu pandemic is not predictable, adequate planning can greatly mitigate the impact. The danger is real and the need for urgent action now, before the crisis occurs, should be clear. The EU has an important role to play in supporting national planning processes and establishing international cooperation. The inter-pandemic period is a crucial window of opportunity for preparation. The EU needs to dramatically scale up its efforts on pandemic planning. There are precedents from the civil protection field that can be the foundation for European cooperation. Public health organisations and civil society will need to be part of the response to a flu pandemic, and should be involved in the planning operation. In a pandemic, all relevant actors in the public health response will need to know their roles and responsibilities, accountability and reporting systems. This is derived from political decisions. It is national governments that set priorities for health care planning and strategy. Until there is sufficient prioritisation for flu pandemic preparedness in member states, the EU's ability to provide international coordination and support will be severely limited.

CHAPTER

Influenza pandemic preparedness tools

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AN INFLUENZA PANDEMIC occurs when a new influenza virus subtype appears against which the human population has no immunity. This may result in several, simultaneous waves of epidemics worldwide, with high numbers of morbidity and mortality. Combined with the increase in global transport and communications, the growth of urbanisation and high population density, this means that epidemics due to a new influenza virus would likely spread around the world very quickly.

However, many worst-case scenarios can be avoided through a systematic public health approach that addresses five categories:

- Planning and coordination
- Situation monitoring and assessment
- Prevention and containment
- Health system response, organisation and management of health services during influenza pandemics
- Communication and information services for the public.

The objective of pandemic planning is to enable countries to be better prepared to recognise and manage an influenza pandemic. Planning may help to reduce transmission of the pandemic virus, to decrease cases, hospitalisations and deaths, to reduce the impact on essential services, and to reduce the economic and social impact of an influenza pandemic. Ultimately, countries must also implement measures including immunisation with the appropriate influenza vaccine.

Several countries have gained experience in pandemic planning and response through dealing with the threat or reality of severe acute respiratory syndrome (SARS) and the recent epidemics in poultry of avian influenza (H5N1), with transmission to people in close contact with the diseased animals. Lessons learned during these outbreaks have been used when preparing the WHO tools, with SARS representing the first emerging infectious disease in this millennium and avian influenza representing a possible threat of the occurrence of a novel human influenza virus of global significance. Experience with these outbreaks has proven the usefulness of systematic pandemic preparedness planning, evaluation and periodic updating of existing plans.

Influenza Pandemic Preparedness Plan

The WHO has developed an *Influenza Pandemic Preparedness Plan*,¹ which defines the responsibilities of the WHO and national authorities in case of an influenza pandemic. The Influenza Pandemic Preparedness Plan was prepared to assist medical and

public health leaders to better respond to future threats of pandemic influenza. It outlines the separate but complementary roles and responsibilities for the WHO and for national authorities when an influenza pandemic appears possible or actually occurs, and defines the different phases of pandemic risks on a scale from zero (no new influenza virus detected in humans) to six (increased and sustained transmission of a new influenza subtype).

Specific descriptions are given of the actions to be taken by the WHO as it assesses the risk posed by reported new subtypes of influenza, in advance of any epidemic spread. The responsibility for management of the risk from pandemic influenza, should it actually occur, rests primarily with national authorities. The WHO strongly recommends that all countries establish multi-disciplinary national pandemic planning committees, responsible for developing strategies appropriate for their countries in advance of the next pandemic.

Influenza pandemic preparedness checklist

The checklist, prepared by the WHO for the benefit of its member states worldwide, reflects international expert opinion on the subject of influenza pandemic preparedness planning. The aim of this tool is primarily to provide an outline of the essential minimum areas of preparedness (essential elements that should be considered by all countries, regardless of their resources) as well as aspects of preparedness that are considered desirable.

The main components of a national pandemic preparedness plan include:

- Preparing and planning for an emergency like a pandemic flu episode
- Detection, reporting and investigation of influenza cases or outbreaks
- Case investigation and treatment
- Preventing the spread of disease in the community
- Maintaining essential services, including healthcare and other essential processes that keep society functioning (power, transport, telecommunication, etc.)
- Research and evaluation
- Implementation, testing and revision of the plan.

Finally, it is important that all countries develop a preparedness plan, which may be more complex in large, highly decentralised nations since influenza viruses, like other infectious diseases, do not stop at borders.