

MINISTRY OF HEALTH

Preparedness plan

**The Norwegian National Influenza
Pandemic Preparedness Plan**

Revised July 2003

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1 Introduction – summary

Influenza pandemics are major, world-wide epidemics of influenza which occur at varying intervals and which can have extensive, detrimental effects on health and on the economy. In our part of the world, pandemics of communicable diseases are regarded as one of the most probable causes of acute crises. That is the background for this Preparedness Plan.

If Norway were to be struck by an influenza pandemic today, it could at worst be as serious as the Spanish Flu and result in two million influenza patients in the course of six months and almost 30,000 deaths. At best, a new pandemic would be no more serious than a normal influenza season, such as the Russian Flu in 1977.

A new pandemic is more likely to have the character of the Asian Flu of 1957-59 or the Hong Kong Flu of 1968-70. The whole country will be affected and many community functions will come to a stop. The health services will be overloaded and the consequences for the national economy will be considerable. When the first wave of the pandemic reaches us, it is unlikely that a newly formulated influenza vaccine will be ready and available for everyone who wants it and drugs against influenza will only be able to relieve the effect of the illness to a small extent.

The 'bird flu incident' in Hong Kong in the autumn and Christmas of 1997, when six of the eighteen people afflicted died of the avian influenza virus, showed that the threat of a pandemic influenza can occur without warning.

An influenza pandemic requires a special plan, in view of the special challenges the national health service and authorities will be facing both when a pandemic threatens and when the population is attacked by the disease. The quick airborne spread of the disease cannot be prevented and the virus will attack all age groups and social strata regardless of personal life style or behaviour. It is not possible to stop a pandemic influenza virus by reinforcing border controls or quarantine measures. The World Health Organization (WHO) has set up an Influenza Pandemic Preparedness Plan and recommends individual countries to draw up their own contingency plans.

The first version of this Preparedness Plan was issued in January 2001 by the Ministry of Health and Social Affairs on the basis of a draft plan drawn up by the National Institute of Public Health and the Norwegian Board of Health along with a working group consisting of experts from the national health service. The draft was circulated for comment and the first version of the Plan was based on the draft and comments from the consultation round. The present version of the Preparedness Plan was revised in July 2003.

This Preparedness Plan aims (1) to reduce morbidity and mortality, (2) to cope with a large number of sick and dying patients, (3) to uphold essential services in a society with a very high rate of sick leave and (4) to supply ongoing, necessary information to the health services, the public authorities, the general public and the mass media.

Without a clear strategy for handling a disaster of this dimension, the measures are bound to be random and unsystematic. This Preparedness Plan paves the way for a speedy, coordinated reaction when it is probable that an influenza pandemic can develop. It discusses various possible scenarios and stages of an influenza pandemic and outlines the intervention measures that can be relevant both in the event of disaster on the scale of the Spanish Flu and in the event of less destructive pandemics like the Asian Flu in 1957-58 and the Hong Kong Flu in 1968-70. The roles of the different institutions in the central health administration and other parts of the national health service and of certain other services during the different phases of the development of the pandemic are described here. This Plan seeks to ensure the coordination of important decisions and information during a pandemic. The plan must be so flexible that it can be used for a worst case scenario and for a relatively mild pandemic. Many of the contingency measures proposed here and the recommendations for adaptation to local plans can also be used to advantage during the annual outbreaks of influenza and during any serious outbreaks of other communicable diseases.

This Preparedness Plan aims to use any existing emergency plans, networks and organizations, seeking to adapt the plans where necessary to the situation of an influenza pandemic. It presupposes a number of measures that are adapted to tasks the various organizations already have. However, the following special measures are worth mentioning:

- the appointment of a broad-based, national advisory committee on influenza pandemic planning
- the Ministry must – on the advice of the expert groups – set priorities for who are to be given first offer of vaccines and medicines that are expected to be in limited supply during a pandemic
- endeavours must be made to ensure deliveries of influenza vaccine during a pandemic.

The objective of the plan is presented in Chapter 2. Chapter 3 describes the main tasks of some important institutions and the legal basis for these tasks, along with the tasks of an advisory “Pandemic Committee”. Chapter 4 lists the tasks assigned to the different institutions and bodies during the various phases of a pandemic. Chapter 5 provides a more detailed description of possible strategies for prevention and treatment. It also includes a discussion of different vaccination strategies and of contingency stocks and the use of antiviral drugs. Chapter 6 explains how the plan relates to other relevant contingency plans and measures.

2 Objective

The objective of this Plan is to ensure that the necessary steps are taken in order to make it possible during a pandemic:

- to reduce morbidity and mortality
- to nurse and treat sick and dying patients at home and in hospital
- to uphold essential community services
- to give continuous, necessary information to the health services, public authorities, the general public and the mass media.

3 Important institutions: Main tasks and legal basis

The tasks of a number of institutions are dealt with in more detail in Chapter 4. A description is also given of any legislation or regulations on which these tasks are based.

The Ministry of Health

The Ministry of Health has the overall responsibility for the national health service. This includes control of communicable diseases and regulations governing organization, cooperation, tasks, distribution of costs and emergency preparedness for the control of communicable diseases, ref. Section 7-11 of the Communicable Diseases Control Act.

Under Section 7-12 of the Communicable Diseases Control Act, the King may, in the event of an outbreak of a communicable disease that is hazardous to public health, issue regulations to safeguard public health and enable measures to be taken to protect the population. If necessary the King may deviate from the legislation in force. An example of such a measure would be to extend the period employees may be off sick without a doctor's certificate, as stipulated in Section 8-24 of the National Insurance Act, in order to lighten the burden on physicians during a pandemic. Under Section 4-3 of the Communicable Diseases Control Act, the King may issue regulations regarding quarantine measures

The King may decide that the empowerment provisions in Act No. 56 of 23 June 2000 on health and social preparedness shall apply. These provisions authorize the Ministry to make full use of the resources in the national health service where necessary. This includes reaching decisions regarding the allocation of responsibilities, tasks and resources, reorganising activities, assigning personnel, and the requisition of property.

The Ministry of Health has the overall responsibility for the planning, implementation and central coordination of measures during an influenza pandemic and for contact with other ministries. The Ministry may delegate these tasks. The organization of this work is rooted in the Ministry's emergency plan.

It is the responsibility of the Ministry of Health to decide whether to establish contingency stocks of antiviral drugs.

Influenza is not defined in the regulations as a communicable disease that is hazardous to public health. Some of the provisions in the Communicable Diseases Control Act regarding communicable disease control only apply to communicable diseases that are hazardous to public health or in the event of a serious outbreak of such a disease. It may be necessary for the Ministry to include influenza and influenza-like diseases in these regulations pursuant to Section 1-3 of the Communicable Diseases Control Act

Under Section 3-1 of the Act, the Ministry of Health may issue regulations requiring the population to undergo examinations to prevent the occurrence of a communicable disease or to stop it spreading. Similar regulations may be issued for employees and for students and school pupils (Section 3-2).

Under Section 3-8 of the Act, the Ministry of Health may set up a national programme for vaccination against communicable diseases. This has been done in Regulations No. 450 of 3 April 2003 regarding municipal health promotion and disease prevention in child and youth clinic and school health services. Under the same Section, the Ministry of Health may issue regulations requiring vaccination and restricting the movements of unvaccinated persons, when this is essential in order to counteract a serious outbreak of a communicable disease that is hazardous to public health. With reference to Section 3-9 of the Communicable Diseases Control Act, the Ministry of Health may also issue regulations stipulating how the measures in Chapter 3 of the Act are to be implemented. The Ministry of Health has the final decision regarding prioritization of which groups are to be offered available influenza vaccine during a pandemic.

Under Section 4-2 of the Act, the Ministry of Health may issue regulations prohibiting employment or participation in education where this entails a serious risk of the transmission of a communicable disease that is hazardous to public health.

Under Section 4-7 of the Act, the Ministry of Health may issue regulations making provision for measures to combat hospital infections.

Under Section 4-10 of the Act, the Ministry may issue regulations prescribing further responsibilities for other authorities.

Under Section 5-4 of the Act, the Ministry may issue regulations setting standards for physical and professional conditions at hospitals and other institutions.

Under Section 6-2 of the Act, the Ministry may decide that prescribed services and measures shall be free of charge.

Under Section 7-11 of the Communicable Diseases Control Act, the Ministry may issue regulations containing provisions concerning cooperation, and specifying the responsibilities and tasks of the municipal and regional authorities and regional health enterprises pursuant to this Act, the Municipal Health Services Act and the Specialized Health Services Act in connection with communicable diseases.

National Pandemic Advisory Committee

The Ministry of Health appoints a national advisory committee on influenza pandemic planning, hereinafter called the Pandemic Committee, and appoints its members.

The Pandemic Committee shall serve as an advisory body for the Ministry with regard to preparations prior to and measures during and after outbreaks of pandemic influenza in Norway. The Pandemic Committee shall be consulted on any revisions of this Plan. If there is a threat of a pandemic, the Pandemic Committee shall give updated recommendations to the Ministry. During a pandemic, the Committee shall meet when the situation has changed to such a degree that it is necessary to provide updated recommendations. However, the Pandemic Committee is not an operational unit that is permanently convened during a pandemic. Many of the members will be busy dealing with the effects of influenza at their workplaces. It is also the purpose of the Pandemic Committee to establish good procedures for cooperation between the members who are the Ministry's advisors in the event of a pandemic.

The members of the Pandemic Committee shall not give information to the general public or the media, but shall give expert advice to the authorities whose task according to this Plan is to provide information for the general public and give statements to the media.

The Pandemic Committee has the following members:

The Pandemic Committee is chaired by the Director General of the Norwegian Directorate for Health and Social Affairs or his/her representative. The Committee also has two members from the Norwegian Directorate for Health and Social Affairs and one member each from the Norwegian Institute of Public Health, the Norwegian Board of Health, the Norwegian Medicines Agency, each of the five regional health authorities, the WHO National Influenza Centre in Norway represented by the Norwegian Institute of Public Health, the municipal health services and the Influenza Centre at the University of Bergen. These members include representatives from medical microbiological laboratories at regional level, infectious diseases departments and the universities. The Committee's secretariat is the Norwegian Institute of Public Health. The Ministry of Health shall be represented by an observer.

The members representing the Norwegian Directorate for Health and Social Affairs (two) and the Norwegian Institute of Public Health (one) will act as a working party for the Pandemic Committee. The working party will be headed by the chairperson of the Pandemic Committee or his/her deputy. The

representative for the WHO National Influenza Centre in Norway will be the permanent advisor to the working party.

The Pandemic Committee is free to seek the advice of other services and sectors, such as the Headquarters Defence Command Norway/the Armed Forces Joint Medical Service, the Directorate for Civil Protection and Emergency Planning (established on 1 September 2003), the county governors and the Norwegian Association of Local and Regional Authorities.

The broad composition of the Committee will ensure that the Ministry receive coordinated advice.

If a pandemic threatens, the Pandemic Committee will be able to hold wider consultations, with for example employer organisations and the Norwegian Press Association, the Norwegian Red Cross, Norwegian People's Aid, the Salvation Army, the Norwegian Women's Voluntary Defence Association, etc.

The Norwegian Directorate for Health and Social Affairs

The Directorate for Health and Social Affairs shall, by means of advice, guidance, information and decisions pursuant to the Communicable Diseases Control Act, help to meet the needs of the population for services and measures, ref. Section 7-10 of the Act. When necessary to ensure the satisfactory and effective implementation of measures under the provisions of the Act or when the activities for which the national health service is responsible pursuant to the Act are inadequate, unsuitable or unsatisfactory, the Directorate for Health and Social Affairs may decide that local authorities, county authorities or government institutions shall organize or carry out specific services or measures, cooperate in joint efforts or follow specific guidelines.

The Directorate shall ensure that the national health service has adequate access to the necessary medicines.

The Directorate will be a central advisor to the Ministry with regard to emergency preparedness for the control of communicable diseases, institutional preparedness, emergency personnel and emergency stores of materiel and medicines.

Unless determined otherwise by the Ministry, the Directorate shall provide the general public with information and give statements to the media on questions relating to the areas of responsibility described above. This also includes giving quality-secured information to the regional and municipal authorities in these areas, in order to enable these levels to give correct, direct information to the general public (ref. the agency's existing crisis information plan).

The King in Council of State, ref. Section 2-3, fourth paragraph, of the Communicable Diseases Control Act, issues regulations on the obligation to report and the obligation to give notification, including changes in the obligation to report cases of influenza and similar diseases. In the event of the outbreak of a communicable disease that is hazardous to public health, the Directorate may with immediate effect, ref. Section 2-3, sixth paragraph, of the Act, impose temporary obligations to report and notify which deviate from regulations issued pursuant to the fourth paragraph.

Pursuant to Section 3-7 of the Act, the Directorate may order a laboratory or an institution to carry out surveys when this is required for the control of a communicable disease.

Pursuant to Section 3-8 of the Act, the Directorate may require immediate vaccination in the event of a serious outbreak of a communicable disease, when this is necessary to prevent significant impairment of public health.

Pursuant to Section 4-1, second paragraph, of the Act, the Directorate may, in the event of a serious outbreak of a communicable disease and when it is vital to implement measures, reach quick decisions, for example to ban meetings, close down establishments and curtail communications.

In Section 4-6 of the Act, authority is delegated to the Directorate to approve regulations regarding burials and the transport of corpses, in the event of a serious outbreak of a communicable disease that is hazardous to public health.

Pursuant to Section 4-8 of the Act, the Directorate may, in the event of a serious outbreak of a communicable disease that is hazardous to public health, require every domestic mass medium to broadcast announcements.

The Directorate for Health and Social Affairs and the Norwegian Institute of Public Health have their own special areas of expertise and their own responsibilities, but both institutions have advisory powers. When an outbreak of pandemic influenza threatens, these two institutions will still be responsible for the tasks they have outside of such a crisis. Close cooperation will therefore be essential to ensure that clear, unambiguous advice is given to the health service and others.

The Directorate shall keep the preparedness plan for its own institution up to date. This plan must be rooted in the Ministry of Health's emergency plan.

The Norwegian Institute of Public Health

It is the responsibility of this Institute to monitor the epidemiological situation, both nationally and internationally, and to ensure that there are adequate supplies of vaccines and vaccination preparedness plans, ref. Section 7-9 in the Communicable Diseases Control Act. The Institute shall give assistance, advice, guidance and information to municipal, county and central government institutions, healthcare personnel and the general public on communicable diseases, control of communicable diseases and the measures selected to control communicable diseases. It shall also provide information through the media on the same subjects. It is essential that the boundaries between the Norwegian Institute of Public Health's and the other national institutions' responsibility to provide information are made as clear as possible and that they are complied with. As far as possible, the party responsible for a task will also be responsible for distributing information about it. The Institute shall provide expert assistance, for instance in connection with laboratory tests and preventive measures during an influenza pandemic, Section 7-9 of the Communicable Diseases Control Act.

During an influenza pandemic, the Institute will address its advice to central government agencies and to the Ministry, rather than to local health services.

One of the Norwegian Institute of Public Health's major tasks is to monitor and provide information about the national and international epidemiological situation. This includes contact with Norway's medical microbiological laboratories. It will keep close contact with WHO and WHO's National Influenza Centre in Norway as regards information about the international influenza situation. The Norwegian Institute of Public Health will coordinate all available information. It is also the responsibility of the Institute to ensure an adequate vaccine supply, including production, purchase and dispatch, and to give advice on measures to control influenza, including vaccination.

The Norwegian Institute of Public Health shall ensure access to new strains of influenza virus from WHO for vaccine production and production of diagnostic reagents. In cooperation with WHO's influenza centre, the Institute shall ensure access to reagents for special diagnosis from WHO, participate in the collection and characterisation of influenza virus strains and monitor immune status. The Institute shall also assist Norway's medical microbiological laboratories with regard to laboratory diagnosis of influenza virus infection.

The Norwegian Institute of Public Health shall keep the preparedness plan for its own institution, including its emergency information plan, up to date. This plan must be rooted in the Ministry of Health's emergency plan.

The Norwegian Board of Health and the Norwegian Board of Health in County

The Norwegian Board of Health shall have the overall responsibility for supervising municipal, county and central government activities to ensure that they conform with the Communicable Diseases Control Act and regulations or individual decisions pursuant to it, ref. Section 7-10a of the Act.

The Norwegian Boards of Health in County is the supervisory authority in the counties and report to the Norwegian Board of Health on supervisory matters. The Norwegian Boards of Health in County shall pay particular attention to communicable diseases that are hazardous to public health and keep the Norwegian Board of Health informed about the situation in their county, ref. Section 7-4 of the Communicable Diseases Control Act and the Act of 30 March 1984 No. 15 relating to the public supervision of health services (Supervision Act).

The Norwegian Board of Health in County is the central health authorities' representatives in the counties. The Norwegian Board of Health and the Norwegian Board of Health in County shall supervise the implementation of the measures in the plan as the relevant phases occur.

It is the responsibility of the Norwegian Board of Health to validate the existence of contingency plans at central, county and local government level to meet the special needs that arise during an influenza pandemic. The Norwegian Board of Health shall maintain the preparedness plan for its own institution and this plan shall be rooted in the Ministry of Health's emergency plan.

The Norwegian Medicines Agency

The Norwegian Medicines Agency shall ensure the correct use of efficacious and reliable medicines. The Agency shall be prepared, so that it can give general or special dispensation from marketing authorization for special vaccines and antiviral medicines without delay. The Agency shall arrange for the quality assurance of the products in question. It assesses quality, preclinical safety and efficacy, as well as clinical safety and efficacy, of relevant medicines and approves indications for use.

The Norwegian Medicines Agency shall maintain the preparedness plan, including the emergency information plan, for its own institution. This plan shall be rooted in the Ministry of Health's emergency plan.

National Influenza Centre (WHO)

The World Health Organization has built up more than a hundred national influenza centres all over the world. There has been one such centre in Norway since 2002. This is currently the responsibility of Dr. Olav Hungnes, Department of Virology, the Norwegian Institute of Public Health. An important part of the Center's work is the collection influenza strains as quickly as possible during an outbreak and as soon as possible dispatch strains to WHO Collaborating Centres and send weekly reports to WHO, Geneva, about the epidemiological situation in Norway.

The WHO National Influenza Centre has no formal place in the public health administration in Norway, but will be an important advisor in inter-pandemic periods and particularly during an influenza pandemic. The Centre will inform the health authorities about the international epidemiological situation and other important factors relating to influenza. It will probably be the first to receive information from WHO about new influenza viruses with pandemic potential. It draws up reports on the immune status of the Norwegian population in collaboration with the Norwegian Institute of Public Health.

County Governors

Pursuant to Section 7-4 of the Communicable Diseases Control Act, the county governor shall pay particular attention to communicable diseases that are hazardous to public health and keep the Norwegian Board of Health and the Directorate for Health and Social Affairs informed about the situation in their counties.

The county governors' coordinating responsibility in peacetime is governed by Guidelines for Regional Coordinating Responsibility in the Event of Emergencies and Disasters in Peacetime adopted by the King in Council of State on 12 December 1997. These Guidelines define the county governors' responsibility in relation to the publicly organised life-saving service, which is governed by Royal Decree of 4 July 1980, and the general responsibility of the police as laid down in Section 2 (4) and Section 27, third paragraph of the Police Act.

The county governors' responsibility for coordination in peacetime includes:

- supervising the municipal and regional authorities' and regional government bodies' emergency planning before an emergency occurs
- establishing reciprocal information between the county governor, chief of police, regional government administration, regional authorities and affected municipalities when an emergency has occurred
- summoning meetings of the county preparedness council to reach consensus on which measures should be implemented. If agreement cannot be reached, the county governor shall make an active contribution towards reaching a joint solution
- putting the matter before the Ministry of Justice when agreement is not reached on which measures should be implemented or when the legal basis is not clear
- assigning extra resources to the municipalities and answering queries from the municipalities, the regional health enterprises and the regional government administration.

The county governors are responsible for taking the initiative in clarifying who is to be responsible for handling crises in situations where the police or other services do not take action. If clarification is not achieved at county level, the county governors must contact the Ministry of Justice.

During an influenza pandemic, it may be necessary to establish the county governors' coordinating function, if the pandemic seriously disrupts important community functions beyond what is regarded as a normal burden in peacetime and where joint action is required by several responsible bodies in order to solve the crisis.

Regional health authorities

The role of the regional health authorities is linked with the specialist health services and will apply to persons who need to be admitted to a hospital or institution or who need the help of an outpatient clinic, ambulance service or acute medical communications centre run by the county authorities. This includes evaluation and treatment, ref. Section 7-3 of the Communicable Diseases Control Act.

Specialists in the field of infectious diseases and medical microbiology will play a particularly important role during a pandemic. This means in the first case treating a large number of patients and in the second case analysing a large number of microbiological samples from hospitals and from the primary health service, both as part of making diagnoses and in monitoring infectious diseases regionally and nationally. These specialists will also act as advisors for the specialist and municipal health services.

The regional health authorities shall have preparedness plans which ensure specialist treatment, including hospital treatment, of patients and furthermore ensure access to microbiological tests. The preparedness plans shall be coordinated with municipal, regional and government agencies' plans and be rooted in the Ministry of Health's emergency plan. See Chapter 6.1.2 for items for inclusion in such preparedness plans.

The regional health authorities must be able to provide information for the general public about the current situation in the specialist health service in their own regions. The Directorate for Health and Social Affairs is responsible for this information at national level.

Local authorities

The municipal health services shall provide adequate healthcare for everyone residing permanently or temporarily in their municipality, ref. Section 1-1 of the Municipal Health Services Act.

In the event of an influenza pandemic, the local authorities shall make sure that everyone residing in the municipality is guaranteed adequate preventive support – including vaccination, examination facilities, treatment and care, ref. Section 7-1 of the Communicable Diseases Control Act. The local authority or municipal medical officer in charge of communicable disease control shall, moreover, keep themselves informed about the epidemiological status of communicable diseases in the municipality, give advice and information to the general public and implement preventive measures, such as vaccination, ref. Sections 7-1 and 7-2 of the Act. Particularly with a view to carrying out their preventive responsibilities satisfactorily, the local authorities must provide their citizens with extensive information in this field, and there must be municipal plans for this.

Measures and services to prevent communicable diseases or to hinder their transmission shall be set out in a separate section in the plan for the municipality's health service, ref. Section 7-2 of the Communicable Diseases Control Act. The municipal plan for communicable diseases control shall contain preparedness plans which include measures for use in the event of an influenza pandemic, see Chapter 6.1.1 for items for inclusion in such a preparedness plan. The preparedness plans shall be coordinated with those of regional authorities, health regions and government agencies' plans and be rooted in the Ministry of Health's emergency plan.

The municipal health service shall offer the national programme for vaccination against communicable diseases affected groups in the population, ref. Section 3-8 of the Communicable Diseases Control Act. During a serious outbreak of a communicable disease that is hazardous to public health, the Ministry of Health or the Directorate for Health and Social Affairs may decide that unvaccinated persons will have to take special precautions as determined by the chief municipal medical officer.

When necessary to prevent communicable disease that is hazardous to public health, the municipal council may approve measures prohibiting meetings, closing enterprises and curtailing communication, ref. Section 4-1, first paragraph, of the Communicable Diseases Control Act.

With reference to Section 4-6 of the Act, the municipal council may adopt special precautions in connection with funerals, in the event of a serious outbreak of a communicable disease that is hazardous to public health.

The municipal council may require healthcare personnel in the municipal health service to undergo training in communicable disease control. In the event of a serious outbreak of a communicable disease that is hazardous to public health, this personnel may be required by the municipal council to undertake disease control tasks, ref. Section 4-9 of the Communicable Diseases Control Act.

The Norwegian Institute of Public Health appoints physicians to undertake summary reports of influenza-like diseases to MSIS (Norwegian Surveillance System for Communicable Diseases).

It is the responsibility of the municipal social and care service to prevent social problems, ref. Section 4-1 of the Social Services Act. This includes a number of services, such as practical assistance, respite measures, round-the-clock care services etc., ref. Section 4-2 of the Social Services Act. An influenza pandemic will have wide-reaching consequences for the nursing and care sector with its responsibility for elderly persons living at home, disabled persons and sick persons. Mortality, morbidity and prioritisation problems will increase. The pandemic will affect regular users of these services and it will also result in new users and will affect personnel.

Civil Defence

The Civil Defence has at its disposal large auxiliary forces which can be used to help, among other things, with mass vaccination, transport and care. According to Section 1-1, second paragraph, of the Civil Defence Act, the Government may determine that the Civil Defence can be used for tasks not caused by war. It is stipulated in Report No. 24 (1992-93) to the Storting "On the Future Civil Defence and Emergency Planning" that it should also be possible to use Civil Defence resources to an increasing degree in peacetime.

The Armed Forces

The Armed Forces can, in reply to specific requests from civilian authorities, provide resources for the use of civil society in emergencies in peacetime.

Non-governmental organizations (NGOs)

The NGOs have at their disposal substantial and important resources which should be made use of during an influenza pandemic, particularly in nursing and care tasks and mass vaccination. To ensure that these additional resources are used constructively and efficiently, the work must to some extent be organised in advance. Representatives of the largest NGOs are members of different preparedness committees which have plans for a variety of emergency situations. When planning for an influenza pandemic, the municipal authorities should contact the NGOs to ensure that their resources are included in the overall preparedness plan. Relevant organisations include the Norwegian Red Cross, Norwegian People's Aid, the Salvation Army and the Norwegian Women's Voluntary Defence Association.

4 Assignment of tasks during the different phases of the pandemic

Unless otherwise stated, the duties of the institutions continue into the subsequent phases. As a main principle, the following applies, ref. *Section 2-1 in Act on Health and Social Preparedness* (the principle of responsibility):

“Whosoever is responsible for a service is also responsible for the necessary emergency preparations and for their execution, including financing, during war and in any crisis and disaster in peacetime, unless otherwise determined in or pursuant to law. Similarly, whosoever is responsible for supervising an activity is also responsible for supervising the activity’s preparedness.”

The Norwegian Board of Health and the county health boards shall supervise the implementation of the measures in the plan as the relevant phases occur.

4.1 Phases of a pandemic

For planning purposes, it is practical to divide the development of an influenza pandemic into six phases:

Phase 0

- Level 0: Inter-pandemic phase
- Level 1: New subtype of virus found in humans
- Level 2: Infection confirmed in several humans
- Level 3: Human transmission confirmed

Phase 1 Outbreak confirmed in two countries outside Norway

Phase 2 Outbreak confirmed in Norway

Phase 3 End of the first pandemic wave in Norway

Phase 4 Second and later pandemic waves in Norway

Phase 5 Post-pandemic period (back to normal incidence of influenza)

4.2 Definitions of the various phases

Phase 0, Level 0 – Inter-pandemic phase

Normal influenza activity.

Phase 0, Level 1 – New subtype of virus found in humans

When the first report is received of the isolation of a new subtype of influenza virus from a human, without any clear indications of the spreading of this virus or of an outbreak.

Phase 0, Level 2 – Infection confirmed in several humans

When it has been confirmed that two or more people have been infected by a new subtype of virus with possible epidemic potential, but where the ability of the virus to spread between humans is not yet clear.

Phase 0, Level 3 – Human transmission confirmed

When it has been confirmed that a new subtype of virus is spreading between humans.

Phase 1 – Outbreaks confirmed in two countries outside Norway

When WHO has confirmed outbreaks of a new subtype of virus in at least one other country than the country where it was first detected and confirmed that the subtype is spreading.

Phase 2 – Outbreak confirmed in Norway

When the Norwegian Institute of Public Health has confirmed an outbreak of a new subtype of virus in Norway or a new type of virus that has caused an outbreak abroad is found in Norway.

Phase 3 – End of the first pandemic wave in Norway

When the Norwegian Institute of Public Health has confirmed that the spread of a new subtype of virus has stopped in Norway and pathogenic activity has returned to normal, but outbreaks are still occurring in other parts of the world.

Phase 4 – Second and later pandemic waves in Norway

When the Norwegian Institute of Public Health has confirmed a new outbreak or outbreaks of the new subtype of the virus in Norway.

Phase 5 – Post-pandemic period (return to normal incidence of influenza)

When the influenza activity returns to normal inter-pandemic levels and immunity is widespread among the population.

The transition from one phase to the next is not always absolutely clear. A possible pandemic can stop in an early phase and revert to Phase 0. It can also jump over a phase or level during Phase 0. In judging a transition to a higher level in Phase 0, consideration must also be given to how serious the confirmed cases are and – after an overall evaluation – how justified the suspicion is that the virus has pandemic potential.

If a potential pandemic stops at a level under Phase 0, the Norwegian Institute of Public Health will on the advice of WHO and in consultation with the Directorate for Health and Social Affairs decide when preparedness is to be reduced to Phase 0, level 0, again.

It is not possible to predict how long it will take for Phase 0 to progress to Phase 2. Earlier experience indicates that this can take from six to twelve months. Better influenza surveillance today indicates earlier warning, while more international travel may mean faster spreading. The speed of transmission is important, not least as regards the possibilities of producing vaccine.

4.3 Phase 0, Level 0 – Inter-pandemic phase

Normal influenza activity.

Between pandemics, the institutions will carry out all their normal duties. Special tasks with reference to an influenza pandemic will be:

The Ministry of Health shall:

- issue an updated national preparedness plan for pandemic influenza
- set up and continuously supplement a Pandemic Committee

The Pandemic Committee shall:

- at least once a year and no later than the end of May submit to the Ministry of Health a report drawn up by the Committee's working party on the need to alter the influenza pandemic plan with reference to events in the previous year.

The Norwegian Institute of Public Health:

- ensure the required vaccine preparedness (including special preparedness for pandemics).

4.4 Phase 0, Level 1 – New subtype of virus found in humans

Phase 0, Level 1 starts with the first report that a new subtype of influenza virus from a human has been isolated, without any clear indications of the spreading of this virus or of an outbreak. WHO will first and foremost inform its own Influenza Centres and the public health authorities in all countries.

The following measures are to be added to those given for the different institutions in Chapter 3 and in Phase 0, Level 0.

The Norwegian Directorate for Health and Social Affairs shall:

- review the Preparedness Plan to see whether it is up to date
- in collaboration with the Norwegian Institute of Public Health inform the members of the Pandemic Committee

The Norwegian Institute of Public Health shall:

- collect available information and – after consulting with the Norwegian Directorate for Health and Social Affairs – distribute the required information about the situation to the health services and general public
- review the Preparedness Plan to see whether it is up to date
- in collaboration with the Directorate for Health and Social Affairs inform the members of the Pandemic Committee

4.5 Phase 0, Level 2 – Infection confirmed in several humans

When it has been confirmed that two or more people have been infected by a new subtype of virus with possible epidemic potential, but where the ability of the virus to spread between humans is not yet clear.

The following measures are to be added to those given for earlier phases.

The Norwegian Directorate for Health and Social Affairs shall:

- consider contacting manufacturers and others about supplies of anti-infective drugs and other essential medicines
- consider contacting the Norwegian Medicines Agency to discuss the possibility of approval of new antiviral agents and if necessary other anti-infective drugs.

The Norwegian Institute of Public Health shall:

- contact the vaccine manufacturers with which it has contracts about their ability to supply vaccines, and also consider contacting other vaccine manufacturers if necessary
- consider contacting WHO (and possibly other suppliers) about deliveries of seed virus for possible domestic production of a new vaccine, ref. subsection 5.1.1
- consider contacting the Norwegian Medicines Agency to discuss the possibility of approval of new vaccines.

4.6 Phase 0, Level 3 – Human transmission confirmed

When it has been confirmed that a new subtype of virus is spreading between humans.

The following measures are to be added to those given for earlier phases.

The Pandemic Committee shall:

- meet to discuss the situation, review the Preparedness Plan and submit recommendations to the Ministry of Health on any alterations in the plan, including an updated health preparedness strategy and if necessary propose further analyses and preparatory measures.

The Norwegian Directorate for Health and Social Affairs shall:

- distribute the necessary information to the health services and the general public within its own sphere of responsibility in consultation with the Norwegian Institute of Public Health
- contact manufacturers and others about supplies of anti-infective drugs and other essential medicines and strive to build up necessary contingency stocks of these
- contact the Norwegian Medicines Agency to discuss the possibilities of approval of new anti-virals and if necessary other anti-infective drugs
- collect information about the health-related preparedness in Norway and request the different health service institutions to review and activate their own contingency plans, if they have not already done so.

The Norwegian Institute of Public Health shall:

- distribute the necessary information to the health services and the general public in its own sphere of responsibility in consultation with the Directorate for Health and Social Affairs
- implement the first phase of any domestic manufacture of a new vaccine, ref. 5.1.1
- consider initiating weekly reports of results of clinical and virological* surveillance of influenza, ref. Regulations of 20 June 2003 regarding the collection and handling of health information in the Norwegian Surveillance System for Communicable Diseases (MSIS) and the Norwegian Tuberculosis Register and regarding the notification of communicable diseases (Regulations on MSIS and the Tuberculosis Register), Section 2-1
- in collaboration with Norwegian medical microbiological laboratories increase the diagnostic preparedness for influenza virus infection* and other relevant infections in the event of a pandemic
- report clinical and epidemiological characteristics of the new influenza abroad*

* To be carried out in collaboration with the WHO Influenza Centre

The regional health authorities and the municipal authorities shall:

- review and if necessary update their own contingency plans, ref. Chapter 6, subsections 1.1 and 1.2.

4.7 Phase 1 – Outbreaks confirmed in two countries outside Norway

When WHO has confirmed outbreaks of a new subtype of virus in at least one other country than the country where it was first detected and confirmed that the subtype is spreading.

The following measures are to be added to those given for earlier phases.

The Ministry of Health shall:

- ensure that adequate and coordinated information is given to the health services and the general public about the development of the pandemic.
- ensure that adequate measures are initiated, including interim priorities for the use of vaccines (including pneumococcal vaccine) and antiviral agents.

- determine from provisional reports of morbidity and mortality whether influenza with the new subtype of virus is to be defined as a communicable disease that is hazardous to public health pursuant to Section 1-3 of the Communicable Diseases Control Act. A number of possible measures as stipulated in the Act require the disease to be defined as a communicable disease that is hazardous to public health and some measures are also conditional on there being a serious outbreak of such a disease.

The Pandemic Committee shall:

- meet if new information comes to hand which necessitates amendments to the Preparedness Plan.

The Norwegian Directorate for Health and Social Affairs:

- take further steps to ensure that the health services have access to medicines
- in collaboration with the County Governor's health section consider initiating measures to increase the treatment capacity in the municipal health services and hospitals, ref. Section 7-10, third paragraph, of the Communicable Diseases Control Act
- on the outbreak of a communicable disease that is hazardous to public health consider whether to impose a temporary reporting and notification obligation with immediate effect
- consider instructing laboratories to carry out surveys, ref. Section 3-7 of the Act
- prepare a decision or order pursuant to the Act if this is deemed necessary
- through the County Governor's health section point to the tasks and authority assigned to the municipal authorities

The Norwegian Institute of Public Health shall:

- if necessary start up domestic production of a vaccine against the new virus as soon as practically possible, see Chapter 5, subsection 1.1 below
- if necessary import more vaccine against the new virus
- consider clinical and epidemiological information with a view to future pressures on the health services and other parts of society
- initiate weekly reports of results of clinical and virological* surveillance of influenza

* to be carried out in collaboration with the WHO Influenza Centres

The Norwegian Medicines Agency:

- consider approval of new vaccines
- consider applications for marketing authorization or dispensation from marketing authorization for any new vaccines against influenza or pneumococci, antiviral drugs and other relevant anti-infective drugs
- analyse new medicines and if necessary undertake batch release of a vaccine manufactured in Norway

The regional health authorities and municipal authorities shall:

- make ready for the implementation of their contingency plans, ref. Chapter 6, subsections 1.1 and 1.2
- give priority to virological examinations of patients with influenza-like symptoms

4.8 Phase 2 – Outbreak confirmed in Norway

When the Norwegian Institute of Public Health has confirmed an outbreak of a new subtype of virus in Norway or a new type of virus that has caused an outbreak abroad is found in Norway.

The following measures are to be added to those given for earlier phases.

The Ministry of Health shall:

- keep informed and consider whether to initiate special emergency plans for the whole or part of the country or to exercise authority for requisitioning, assignment of personnel or other emergency measures
- make final decisions regarding priorities and use of available vaccines and antiviral drugs
- consider issuing regulations regarding mandatory vaccination of vulnerable groups, ref. Section 3-8, second paragraph, of the Communicable Diseases Control Act, provided that the influenza has been defined as a communicable disease hazardous to public health
- consider easing the work of medical practitioners by extending the period employees can be absent without a doctor's certificate beyond three days, i.e. make an exception from the general rule in Section 8-24 of the National Insurance Act. The King may pass such a resolution in the event of an outbreak of a communicable disease that is hazardous to public health, ref. Section 7-12 of the Communicable Diseases Control Act.
- ensure that a centre is set up to gather all relevant information with a view to the daily issue of an official bulletin about the situation
- make sure that accessible information centres are set up for the general public and the press
- consider issuing other regulations and directives in accordance with Chapter 4 and 5 of the Communicable Diseases Control Act as described in Chapter 3 of this Plan.

The Pandemic Committee shall:

- meet as required.

The Norwegian Directorate for Health and Social Affairs:

- in collaboration with the Norwegian Institute of Public Health keep the Ministry of Health informed, and submit any recommendations
- in collaboration with the Norwegian Institute of Public Health be responsible for the day-to-day handling of the pandemic
- establish a temporary reporting system for deaths due to influenza
- take steps through the County Governors' health sections to set up local accessible information centres for the general public and the press
- consider the necessity of prescribing immediate vaccination to ensure that public health is not impaired, ref. Section 3-8 of the Communicable Diseases Control Act
- consider reaching decisions in accordance with Chapters 4 and 5 of the Communicable Diseases Control Act, as described in Chapter 3 of this Plan
- instruct local authorities and county authorities to implement their contingency plans

The Norwegian Institute of Public Health shall:

- in collaboration with the Norwegian Directorate for Health and Social Affairs keep the Ministry of Health informed, and submit any recommendations

- in collaboration with the Norwegian Directorate for Health and Social Affairs be responsible for the day-to-day handling of the pandemic
- give advice on vaccination to ensure that priority groups are offered vaccination
- increase surveillance of the influenza virus*, particularly in connection with serious or fatal cases of the disease
- increase surveillance of the epidemiological situation, particularly with regard to other viruses/bacteria in connection with serious/fatal cases of the diseases
- give more assistance to virological diagnosis in collaboration with regional and county laboratories in medicinal microbiology, including surveys of resistance in the virus*
- give more assistance to bacteriological surveillance and diagnosis, particularly with a view to monitoring resistance to antibiotics.

* to be carried out in collaboration with the WHO Influenza Centres

The regional health authorities shall:

- ensure diagnosis, prevention, treatment and nursing in accordance with their own plans, see Chapter 6, subsection 1.2.

The municipal authorities shall:

- ensure prevention, treatment and nursing in accordance with their own plans, see Chapter 6, subsection 1.1
- consider reaching decisions in the Municipal Council pursuant to Chapters 4 and 5 of the Communicable Diseases Control Act, as described in Chapter 3 of this Plan, provided that influenza has been defined as a communicable disease that is hazardous to public health.

4.9 Phase 3 – End of the first pandemic wave in Norway

When the Norwegian Institute of Public Health has established that the spread of a new subtype of virus has stopped in Norway and pathogenic activity has returned to normal, but outbreaks are still occurring in other parts of the world.

The Ministry of Health shall:

- receive and evaluate preliminary reports on the pandemic from the Pandemic Committee, the Directorate for Health and Social Affairs and the Norwegian Institute of Public Health.

The Pandemic Committee shall:

- quickly compile experience gained from the first wave of the pandemic
- meet to evaluate the experience gained and submit recommendations on any new, amended measures
- discuss the situation, review the Preparedness Plan and submit recommendations to the Ministry on the need for further reports and preventive measures.

The Norwegian Directorate for Health and Social Affairs shall:

- draw up a preliminary report covering its own sphere of responsibility during the pandemic, the effects of the pandemic, and in particular evaluate experience that ought to lead to revision of its own contingency plans in order to prepare for the next wave of the pandemic.

The Norwegian Institute of Public Health shall:

- draw up a preliminary report covering its own sphere of responsibility during the pandemic, the effects of the pandemic, and in particular evaluate experience that ought to lead to revision of its own contingency plans in order to prepare for the next wave of the pandemic.

4.10 Phase 4 – Second and later pandemic waves in Norway

When the Norwegian Institute of Public Health has confirmed a new outbreak or outbreaks of the new subtype of the virus in Norway.

All agencies and institutes involved shall:

- initiate the relevant measures as stipulated for Phase 2 with the revisions introduced during Phase 3.

4.11 Phase 5 – Post-pandemic period (return to normal incidence of influenza)

When the influenza activity returns to normal inter-pandemic levels and immunity is widespread among the population.

The Ministry of Health shall:

- declare that the pandemic is over
- receive and evaluate final reports on the pandemic from the Pandemic Committee, the Norwegian Directorate for Health and Social Affairs and the Norwegian Institute of Public Health
- make sure that the relevant agencies and expert groups prepare for a transition to normal operation and evaluate and if necessary revise their contingency plans

The Pandemic Committee shall:

- issue a final report on experiences from the entire pandemic
- propose changes in the National Preparedness Plan

The Norwegian Directorate for Health and Social Affairs shall:

- draw up a final report covering its own sphere of responsibility during the pandemic, its effects and in particular evaluate experience that ought to lead to revision of its own contingency plans

The Norwegian Institute of Public Health shall:

- draw up a final report covering its own sphere of responsibility during the pandemic, its effects and in particular evaluate experience that ought to lead to revision of its own contingency plans

The Norwegian Medicines Agency shall:

- review and if necessary update its own contingency plans

The regional health authorities and municipal authorities shall:

- review and if necessary update their own contingency plans

5 Prevention, diagnosis and treatment

The most important means of preventing influenza are vaccination and prophylactic treatment with medicines against the influenza virus. Owing to the special circumstances of an influenza pandemic, the demand for a vaccine and for medicines is expected to far exceed the supply. Giving priority to vaccination and medication for special groups of the population is an important part of the work of preparing for a pandemic. Consideration must also be given to ways of limiting the transmission of the disease.

5.1 Vaccination

Vaccination with a correctly composed influenza vaccine can lessen the effect of the disease, particularly in the population groups with the greatest risk of becoming seriously ill and dying from influenza. During the inter-pandemic period, these risk groups are advised to take the vaccine each autumn prior to the influenza season. These recommendations are published in the MSIS Reports. The Norwegian Institute of Public Health's "Advice on Vaccination 1998" includes advice on the use of influenza vaccine.

During normal, non-pandemic conditions, the vaccine will provide protection against influenza after a week. The vaccine is stated to give younger people about eighty per cent protection and older people fifty to sixty per cent. This protection seems to be more effective against serious illness and death than against infection.

In the event of a pandemic, the whole population or parts of it will lack immunity against the virus in question. This may mean that protection can be provided later or require two doses of vaccine. Experience from the use of vaccine in an inter-pandemic phase cannot necessarily be transferred to the use of vaccine during a pandemic.

If a vaccine is in short supply, it will have to be distributed to priority groups. The general public will have to be informed why the vaccine is not generally available. If possible, vaccination should take place before the pandemic starts. If, for some reason or other, this is not possible (because of lack of vaccine), persons in the priority groups who have not already had influenza should be offered the vaccine first.

Today, the vaccines are produced by cultivating the virus in embryonated hens' eggs and then inactivating it. When new production methods are taken into use, this may entail the need for completely different preparedness strategies as regards vaccination.

5.1.1 Supplies of influenza vaccine in Norway in a pandemic situation

Production in Norway

Production of influenza vaccine by the old method can be started by the Norwegian Institute of Public Health at relatively short notice. This vaccine must be regarded as old-fashioned today and has not been approved by the medicines control authorities. There is reason to believe that approval of such a vaccine would be a time-consuming process.

Under its contract with Chiron Vaccines, the Norwegian Institute of Public Health can manufacture Chiron's split influenza vaccine on licence. This production method entails cultivating the virus in embryonated hens' eggs and then treating it with a detergent. Before production can be started, substantial investment will be required in the Norwegian Institute of Public Health's production premises and in establishing processes, and documentation will take several years. By that time, the majority of major vaccine-producing companies will have substituted cultivation in eggs with cultivation in cell cultures, making it far easier for them to start and upgrade production quickly than is the case with egg-based technology. The Norwegian Institute of Public Health has looked into the question of licensing cell culture based production technology, but this does not appear to be possible. In this situation, it does not seem very realistic to start production of influenza vaccine at the Institute.

Purchasing vaccine in a pandemic situation

The Norwegian Institute of Public Health makes annual purchases of influenza vaccine intended for the risk groups. The vaccine is purchased under two-year contracts based on tenders. These contracts contain a clause requiring the manufacturers in the event of a pandemic to deliver monovalent vaccine in double the number of doses stipulated in the contract. It is uncertain whether such a contract will be binding in a pandemic situation or whether it will be revoked by the authorities in the country of production. It is possible that this situation can be improved by high-level political agreements.

The manufacture of influenza vaccine is limited today by the supply of embryonated hens' eggs. It is probable that a number of manufacturers will start marketing influenza vaccine cultivated in cell cultures in the course of the next five years. This will increase their ability to step up production and increase the availability of vaccine in a pandemic situation.

The number of vaccine doses ordered by the municipal medical officers for the 'risk groups' in Norway are only enough for about one third of the people in these groups. In view of the way the contracts have to be worded, more use of the vaccine in normal years would increase the possibility of access to acceptable quantities of the vaccine during a pandemic. Greater use of the vaccine for the risk groups would thus be an important preventive measure in normal influenza years, as well as increasing the possibility of access in a pandemic situation.

When communicating with the municipal health services on the subject of vaccination against influenza, the Norwegian Institute of Public Health should emphasize the importance of reaching more members of the risk groups. The municipal health services must be encouraged to organize vaccination against influenza for the risk groups in a way which gives the target groups easier access to the vaccine. This should also be taken up at communicable diseases control conferences and in other forums where communicable diseases control is discussed, such as meetings organized by the county medical officer.

5.1.2 Different strategies for use of the vaccine

Available influenza vaccine must be used to achieve the objectives of the Influenza Pandemic Plan. The most important of these objectives is to reduce morbidity and mortality.

There are four possible strategies for vaccination. These strategies have been evolved in order to render visible the different options available. If the influenza vaccine becomes available during a pandemic, it is likely that not only one strategy but parts of several strategies will be chosen.

Strategy 1: Vaccinate no-one, no vaccine available

This situation will arise if it is not possible to obtain the vaccine either by import or by production in Norway.

Strategy 2: Vaccinate persons who look after important community functions

Vaccination of persons with important community responsibilities will partly help to reduce morbidity and mortality (indirectly) and partly help to avoid disruption of essential community functions. It may be necessary to vaccinate the following persons in order to uphold functions that safeguard life and health:

- healthcare personnel, in the first instance doctors, nurses and biomedical scientists who work in the municipal health service and in the admissions, medical, paediatric and medical microbiology departments in hospitals
- ambulance personnel
- personnel in vaccine and pharmaceutical production and supply (from factory to pharmacy)
- key personnel in national administration

- key personnel in power supply, water supply, public transport and telecommunications
- personnel in the fire service and police

It may also be relevant to offer vaccination to the following key personnel who carry out important services for the community and for commerce and industry:

- refuse disposal
- personnel in the municipal technical departments
- undertakers' personnel
- defence and civil defence personnel
- key personnel and security personnel in industry, including offshore operations

Strategy 3: Vaccinate groups with a greater risk of complications from influenza

The aim here is to give direct protection to persons who are known to be more prone to complications, including death, from influenza. These are largely the same groups as the ones who are advised to take the influenza vaccine prior to each season.

During an influenza pandemic, other groups may also prove to be particularly vulnerable to complications, such as small children and expectant mothers. Information from countries that are already affected and from immune status surveys can give an indication of which other groups should also be included in this strategy.

The recommended groups are currently:

- adults and children with serious respiratory diseases, particularly those whose lung capacity is impaired
- adults and children with chronic cardiovascular diseases, particularly those suffering from cardiac insufficiency
- adults and children with diseases or medication that impairs resistance to infection
- persons over 65 years of age
- residents in nursing homes and homes for the elderly

Strategy 4: Vaccinate everyone

If the supply of the vaccine is unlimited, the vaccine can – insofar as the public and private health services have the capacity – be offered to the whole population. The primary task of the National Health Service will still be to give first offer of the vaccine to the persons mentioned under Strategies 2 and 3.

In addition to these four main strategies there are two other strategies for vaccination. These strategies will partly overlap the groups mentioned under Strategy 2.

Strategy 5: Vaccinate persons who can transmit influenza to persons with a high risk of complications

Since the vaccine will not give complete protection to everyone in the risk groups who is vaccinated, the risk of infection in the risk groups can be further reduced by reducing the danger of exposure from nursing personnel and family (“flock protection” in old people’s homes and nursing homes will only be effective if vaccination coverage is very high among both the personnel and the residents). The aim of this strategy is thus to give indirect protection to the risk groups. The following groups will be vaccinated in accordance with this strategy:

- health personnel with patient contact in the municipal health service and specialist health service
- staff with resident contact in nursing homes and homes for the elderly
- district nurses and home helpers, including voluntary carers and other personnel summoned in an emergency.
- other persons living in the same household as persons mentioned under Strategy 3.

Strategy 6: Vaccinate persons who can transmit influenza to many other people

As a result of their activity or their work, some people can infect many other people with the virus. Theoretically, it should be possible to slow down the spread of infection, even reduce the scope of the pandemic, by vaccinating people who may be important transmitters of infection, such as:

- staff in schools and day-care institutions
- school and day-care pupils
- drivers and other persons with passenger contact in public transport
- counter staff in banks, post offices, public offices and shops

For the same reasons, priority could also be given to people in densely populated areas rather than in areas where the population is scattered.

5.1.3 Priorities and choice of vaccination strategy

Regardless of the quantity of available vaccine, a choice of vaccination strategy or combination of strategies will have to be made and priorities will have to be set within each strategy. A limited supply of vaccine will pose a number of medical and ethical problems. How does one choose between benefiting a small number of persons in a big way and benefiting a large number of persons in a small way? Is it best to give priority to increasing the remaining life expectancy of the young and middle-aged or to reducing mortality among elderly people with a short remaining life expectancy? Will it be correct to uphold community functions or to reduce mortality among the oldest citizens?

The scope of a pandemic can vary from a normal influenza season like the Russian Flu in 1977 to a disaster of the dimension of the Spanish Flu in 1918-20. If it looks as if the pandemic will have the scope of a normal influenza season, it will be possible to recommend available vaccine to the same risk groups who are advised each year to take the vaccine (Strategy 3). As the pandemic increases in scope as regards sickness or death, the point will finally be reached where it will be more important for the country as a whole to vaccinate key persons in order to be able to look after essential community functions (Strategy 2).

The expert medical communities will have to discuss the situation in hand and give expert advice. It is important to have the broad support of the medical communities for the chosen priorities, and thus lay the foundation for understanding among the general public for this prioritization. The choice of priorities will

depend to a large extent on the course the disease takes: in the first place age distribution, percentage with complications and lethality. The priorities can also be amended as knowledge about the pandemic becomes available. In the last instance, the choices of strategy and priorities are political and have to be made by the political authorities.

Table 5.1 Estimated number of persons for the different vaccination strategies

Target group	Number of persons
Healthcare personnel	105,000
Ambulance personnel	2,550
Manufacture and supply of medicines	9,000
Key personnel in national administration, e.g.	
- members of parliament	165
- government and staff	60
Fire, police, sewerage and sanitation personnel	
Undertakers' staff, Armed Forces personnel	
Civil Defence personnel	87,200
Persons suffering from serious respiratory diseases	250,000 *)
Persons suffering from chronic cardiovascular diseases	450,000 **)
Persons suffering from diseases or taking medicines that reduce resistance to infection	134,300 ***)
Persons over 65 years of age	688,000
Residents in nursing homes and homes for the elderly	42,900
Employees who have contact with residents in homes for the elderly	79,400
Teaching staff	71,900
Pupils	906,700
Bus services and goods transport	10,000

*) This figure includes persons suffering from asthma and hay fever. They are approximately equally distributed between children/young people and elderly people (Norwegian Heart and Lung Association, 1999).

***) This figure includes everyone with a heart condition, including 200,000 cardiac infarction, 100,000 angina pectoris and 80,000 cardiac insufficiency. Most of these cases are registered among the oldest citizens.

***) This figure includes everyone with some form of cancer. Of these, 15,400 persons have lived with the disease for less than a year, 39,700 for 1-4 years, 28,600 for 5-9 years and 45,900 for more than ten years (Cancer Registry of Norway 1999).

5.1.4 Organization of vaccination

The distribution of vaccine during a pandemic is organised centrally by the Norwegian Institute of Public Health to insure distribution according to the adopted criteria. The municipal health services are responsible for vaccination in their districts. Municipal plans for communicable diseases control should describe how vaccination is organized in a normal situation and at a higher level of preparedness. The answer may be to make use of hospitals' out-patient departments, etc. in order to vaccinate special

occupational groups or to vaccinate everyone if the vaccine becomes generally available. If the vaccine becomes available for younger age groups, vaccination in the schools can be evaluated.

5.2 Pneumococcal vaccine

Vaccination against pneumococcal disease is assumed to reduce the incidence of post-influenza pneumococcal pneumonia. The usual recommendations for the use of pneumococcal vaccine should be followed. Endeavours should be made during interpandemic periods to achieve the highest possible vaccination coverage in the risk groups (remembering that, unlike influenza, most people only need to be vaccinated once against pneumococcal disease). It is very unlikely that vaccine manufacturers will be able to meet a sudden increase in demand for pneumococcal vaccine in the event of an influenza pandemic. This should also be considered in connection with the signing of any international agreements, see Chapter 5, subsection 1.1.

5.3 Prevention with antiviral drugs

Vaccine is the most effective way of preventing influenza. However, if the vaccine is in limited supply or if vaccination takes place late in an epidemic outbreak or is contraindicated, antiviral drugs can be used as a supplement to prophylaxis and treatment.

Primary prophylaxis, i.e. preventive treatment of persons who have not been infected, entails the use of antiviral drugs throughout the risk period which can last for several months. In the case of secondary prophylaxis, that is of persons who have been exposed to infection, the drug can be administered prophylactically for 7 to 10 days. During a pandemic the distinction between primary and secondary prophylaxis will be wiped out because of repeated exposure to infection. All prophylaxis must therefore be regarded as primary during an ongoing outbreak.

The following groups will benefit particularly from prevention with antiviral drugs:

- high-risk persons with a risk of increased sickness (morbidity) and death from influenza when vaccinated after the outbreak of influenza in their environment. This applies in the case of:
 - a) serious cardiac or pulmonary disease, including cystic fibrosis
 - b) immunodeficiency, such as patients with AIDS, and serious malignant diseases, such as leukaemia, lymphoma, or patients who have undergone organ or bone marrow transplantation. Chemoprophylaxis can be used until the effect of the vaccine has been achieved, i.e. for 10 to 14 days. Antiviral drugs do not destroy the effect of the influenza vaccine.
- high-risk patients who cannot be vaccinated, such as persons with immunodeficiency who have little effect of influenza vaccine, e.g. HIV positive.
- high-risk persons where influenza vaccine is contraindicated, for example in the case of serious anaphylactic reactions to components in the vaccine. For vaccines cultivated in eggs, allergy to eggs is a relative contraindication. In the case of allergy to eggs, vaccination must be carried out in the presence of an allergy specialist. Cell-culture influenza vaccines will also be available in the future.
- persons who look after high-risk patients if they are not vaccinated in time
- risk groups in institutions, such as the elderly over the age of 65 in nursing homes and homes for the elderly if they have not been vaccinated in time, where it is important to control outbreaks of influenza involving increased morbidity and death

- unvaccinated, exposed family members of unvaccinated high-risk patients, especially if there are sick children in the family.

Neuraminidase inhibitors are the most relevant drugs. Oseltamivir (Tamiflu) and zanamivir (Relenza) are approved in Norway for the treatment of influenza A and B. Oseltamivir is approved for prophylaxis for adults and children over twelve years of age. Zanamivir is not approved or recommended for prophylaxis in Norway. However, studies of healthy adults indicate that the two neuraminidase inhibitors are equally effective in preventing febrile, laboratory-confirmed influenza. The effect of the influenza vaccine is not diminished by neuraminidase inhibitors. The development of resistant viruses has been demonstrated in vitro, but clinical studies have not shown any development of resistance during treatment.

There are two other drugs, amantadine and rimantadine, which some countries have been using in the prevention of influenza for a number of years. Neither of these drugs are approved in Norway, but they are available on application under dispensation from marketing authorization. These drugs are approved for prophylactic use against influenza A in special groups in the UK (amantadine) and the USA (rimantadine). Amantadine and rimantadine are effective against influenza A, but not against influenza B. They also have more side effects than neuraminidase inhibitors.

Assessment

The prophylactic effect of oseltamivir and zanamivir is comparable with amantadine/rimantadine. Neuraminidase inhibitors provide protection against influenza A and influenza B, amantadine/rimantadine only against influenza A. The side effects profile of neuraminidase inhibitors is more favourable and there seems to be far less risk of resistance developing than with amantadine/rimantadine. Clinical studies show that neuraminidase inhibitors are preferable as regards efficacy, risk of side effects and risk of developing resistance. Zanamivir is not approved in Norway and the choice should therefore fall on oseltamivir. There are two limiting factors as regards mass prophylaxis and preparedness strategy:

- production capacity is small in the context of a pandemic
- cost level is high

When indicated, medicinal prophylaxis should be given:

- to recently vaccinated persons until the vaccine induces optimally protective antibodies. This usually takes 10 to 14 days after the vaccine has been administered to individuals over the age of 36 months and 6 weeks after the first dose of vaccine has been given to infants under 36 months. If tests of the vaccine against the new virus during a pandemic indicate a longer period for development of protective antibodies, the treatment period must be adjusted accordingly.
- for 10 days to high-risk patients and their family members when vaccine cannot be administered and when they are vulnerable/exposed to influenza
- for 7 days to otherwise healthy persons after exposure to influenza
- throughout the risk period when protection is required

These are general guidelines for indication and use of antiviral drugs for prevention of influenza. During a pandemic, where a shortage of vaccine can be expected, there will probably be a great need for medicinal prophylaxis. This may mean that the supply of drugs will not meet the demand. It may therefore be necessary to set priorities for their use. The priority groups for medicinal prophylaxis are the same as for vaccine prophylaxis (Chapter 5, subsection 1.3 above). Consideration should also be given to the establishment of contingency stocks of antiviral drugs (Chapter 5, subsection 5 below).

5.4 Virological diagnosis

The other elements in the pandemic preparedness plan depend to a very great extent on a good overview of the pandemic situation. Virological diagnosis is needed to ensure a reliable influenza diagnosis. Since influenza-like symptoms can be caused by a number of different pathogens and not only by the influenza virus, well-established methods for diagnosing the influenza virus are an important part of pandemic preparedness.

Microbiological diagnosis of influenza during a pandemic will have to be based on available practice. It is therefore essential that the laboratories use methods which can quickly and efficiently identify the specific type of influenza (A or B) and that they have an efficient reporting system and good routines for reference tests. It is also desirable that approximately the same diagnostic facilities are available all over the country. Methods such as immunofluorescence (IF) and reverse transcriptase-PCR (RT-PCR) will meet the need for speedy detection. It is therefore important that the medicinal microbiological laboratories can apply one or both of these methods.

The possibility of finding the virus in respiratory secretions diminishes with time after the onset of symptoms. However, the antibodies that are produced as a result of the influenza infection will last for weeks and months and serological diagnosis is commonly used for retrospective detection of influenza and other infections. There are many places where serological influenza diagnosis is the most commonly used method. In many cases, this is the only way of establishing influenza as the cause of illness and the method can be an important complement to speedy detection of the virus itself. A nationally coordinated practice for virus detection and antibody diagnosis will provide the best information about the spreading of the virus in the population.

More thorough surveys require the cultivation of viruses and these can also be used to build up strains for vaccine production. Virus cultivation is carried out at a number of regional laboratories and at the National Institute of Public Health, which is responsible for influenza surveillance at national level.

The results of analyses and virus strains from the laboratories' diagnostic activities are sent as a regular routine to the WHO National Influenza Centre at the Norwegian Institute of Public Health, which sums up results and characterizes viruses in greater detail. Norway also has a nation-wide network of voluntary medical practices which send influenza samples to the Institute during the influenza season.

The Norwegian Institute of Public Health's virus surveillance, along with its surveillance of influenza-like diseases, is incorporated into international surveillance systems supervised by WHO and the EU. Regular reports are issued and virus strains are forwarded to international reference laboratories.

The demand for laboratory diagnosis will increase in the face of a pandemic or threat of a pandemic. It is important that the laboratories have the necessary resources, expertise and routines to ensure that they are prepared to meet such an increase in demand. It will not be possible to remedy significant deficiencies after a pandemic situation has arisen. An increase in the need and demand for other microbiological diagnosis – for example, related to bacterial complications – must also be expected in such a situation.

In the event of a threat of a pandemic, surveillance should be activated and stepped up in order to be able to establish as early as possible whether and when a pandemic virus occurs in the Norwegian population. Doctors in and outside healthcare institutions will take samples and the medical microbiological laboratories will have to carry out tests to diagnose influenza more than often than is normal. For the many thousands of patients who appear when the outbreak has occurred, there will probably not be sufficient capacity to make laboratory diagnoses, but even with restrictions in the use, there will be a great demand for influenza virus diagnosis. It is important that surveillance is maintained, making it possible to verify when the outbreak is on the wane. Since earlier pandemics have occurred in several waves, it will also be necessary to maintain surveillance for some months after outbreak activity appears to have diminished.

Further information regarding diagnosis and virological surveillance can be found on the Norwegian Institute of Public Health's web pages for influenza and pandemic preparedness.

5.5 Treatment with antiviral drugs

Antiviral drugs against influenza are usually more effective if administered prophylactically than if given as treatment after the disease has broken out. Since antiviral treatment has a limited effect, must be started early and can cause side effects and the development of resistance, treatment should be reserved for specific patient groups:

1. Patients suffering from a severe case of influenza or complications from influenza
2. Patients with influenza who run a greater risk of a severe course:
 - a) serious cardiac or pulmonary disease including cystic fibrosis
 - b) immune deficiency, such as patients with AIDS or a serious malignant disease such as leukaemia, lymphoma or patients who have had an organ or bone marrow transplant.

Some of these patients will not have the full effect of the vaccine and will therefore either be unvaccinated or inadequately protected. They should therefore be protected by pre or post-exposure prophylaxis (Chapter 5.3). This may also apply to patients for whom vaccine is contraindicated, for example because they are allergic. A shortage of drugs during a pandemic may mean that it will be necessary to reserve treatment for the most vulnerable groups among those mentioned above.

It is assumed that the need for treatment with antiviral drugs will increase in a pandemic situation, and neuraminidase inhibitors are the most relevant drugs today. Zanamivir (Relenza) and oseltamivir (Tamiflu) are approved in Norway for the treatment of influenza A and B. Zanamivir is approved for the treatment of adults and children over twelve years of age and oseltamivir for adults and children over twelve months. Studies have so far not established whether the drugs reduce the risk of serious complications or death. The safety and effect of oseltamivir for immune-suppressed patients has not been established either in the prevention or in the treatment of influenza. It is therefore not yet possible to determine the final place of these drugs in a preparedness strategy.

Both oseltamivir and zanamivir have been found to relieve influenza symptoms, shorten the duration of clinical symptoms by about 1.5 days (range 1 – 2.5 days) and reduce virus secretion of influenza A and influenza B in adults and children. If they are to be effective, treatment with these drugs must be initiated within 48 hours of the first appearance of symptoms.

Assessment

Neuraminidase inhibitors give protection against influenza A and B, while amantadine/rimantadine only give protection against influenza A. The effect of treatment with neuraminidase inhibitors zanamivir and oseltamivir against influenza is comparable with amantadine/rimantadine. The side effects profile of the neuraminidase inhibitors is more favourable and so far there seems to be less risk of resistance development, compared with amantadine/rimantadine. Clinical studies indicate that the neuraminidase inhibitors are preferable from the point of view of efficacy and risk of side effects and resistance development.

There does not seem to be any difference in the efficacy of zanamivir and oseltamivir. At least 75% of a peroral dose of oseltamivir reaches the systemic circulation and gives somewhat more side effects than zanamivir. Zanamivir is inhaled and is effective locally on the respiratory mucosa. Systemic bioavailability after inhalation is 10-20%. This gives low systemic concentrations and fewer side effects. However, zanamivir is a little more impractical to use. The choice of drug should therefore be assessed in each individual case. Oseltamivir is also approved for the treatment of children of 12 months and up, zanamivir for children over twelve years of age.

There are two limiting factors as regards mass prophylaxis and preparedness strategy:

- production capacity is small in the context of a pandemic
- cost level is high

These are general guidelines for indication and use of antiviral drugs for prevention of influenza. During a pandemic, where a shortage of vaccine is expected, there will probably be a great need for medicinal prophylaxis. This may mean that the supply of medicines will not meet the demand. It may therefore be necessary to set priorities for their use. The priority groups for medicinal prophylaxis are the same as for vaccine prophylaxis (Chapter 5, subsection 1.3 above). Consideration should also be given to the establishment of contingency stocks of antiviral drugs (Chapter 5, subsection 6 below).

5.6 Contingency stocks of antiviral drugs

During a pandemic when vaccine supplies are limited and strict priorities have been set for their use, antiviral drugs can be a supplement to other prophylaxis. Since we have little experience with extensive use of these drugs and since the drugs will probably be in very short supply, strategies must be drawn up for which groups are to be offered antiviral drugs and treatment.

5.6.1 Prevention

If groups of persons who look after vital community functions and groups of persons who are at risk of influenza-related complications are to be offered prophylactic antiviral drugs, we may be looking at a total figure of one million persons, depending on how strictly these groups are defined and how much vaccine is available.

Oseltamivir is approved for both prophylaxis and treatment; zanamivir is so far not approved for prophylaxis, but studies carried out with adults indicate that it can be effective, when administered, in preventing influenza A and B. It may be useful to compare the estimated cost of giving primary and secondary prophylaxis to, for example, 500,000 persons with the corresponding cost of amantadine.

The price of oseltamivir is approximately the same as the price of zanamivir.

Oseltamivir in doses of 1 capsule (75 mg) x 1 for 10 days costs NOK 248 without discount. If primary prophylaxis is to be given to 5,000 persons for 14 days (until the effect of the vaccine is optimal in adults), 5,000 x 14 doses = 70,000 doses will be needed. The price will then be NOK 1,736,000.

If it is also decided to give secondary prophylaxis to 20,000 persons for 10 days, the price will be NOK 4.96 million. Contingency stocks of primary and secondary prophylaxis for 25,000 persons will then cost a total of NOK 6.7 million.

Since antiviral drugs can be expected to be in short supply in a pandemic situation, both types of prophylaxis will probably have to be strictly limited. Primary prophylaxis is only regarded as relevant for a small number of persons, for example when vaccine cannot be administered. Secondary prophylaxis will have to be reserved for patients with life-threatening diseases and persons suffering from severe immunodeficiency.

If contingency stocks are to be established and also be available for primary and secondary prophylaxis for key personnel, the cost will be far higher. Prophylaxis for 500,000 persons will cost NOK 124 million at the current price level. This does not include annual maintenance costs due to the limited shelf life of the drug.

5.6.2 Treatment

Studies have so far not shown whether neuraminidase inhibitors can reduce the risk of severe complications or death and few studies have been carried out with immunodeficient patients. It is therefore not yet possible to determine the place of these drugs in a preparedness strategy.

The calculation basis for contingency stocks of oseltamivir for treatment is about the same as the calculation basis for prophylaxis, i.e. 25,000 patients, which equals 250,000 doses (75 mg x 2) for 5 days at a price of NOK 6.2 million.

5.6.3 Recommendation regarding stocks

The factors that must be taken into consideration as regards contingency stocks include production capacity under normal conditions and in emergency situations, shelf-life of the drugs and the cost of continuously replenishing contingency stocks. The shelf-life given for amantadin is 5 years and for rimantadine, oseltamivir and zanamivir 3 years.

The estimated production capacity world-wide for amantadine and rimantadine under current production conditions is only about 80 million doses per year. It may be difficult to step up production in emergency situations.

Another factor that must be considered in deciding the scope of any contingency stocks is the demand for medicinal treatment that may come from the general public and the health services in a pandemic situation. These expectations will probably depend to a large extent on decisions made by our neighbouring countries and in other European countries.

Oseltamivir is available in powder form in 10 kg. packages (bulk active). This is sufficient for 10,000 treatments. (One course of treatment for one person is 985 mg oseltamivir phosphate in 50 ml water. This gives 750 mg and 10 doses of 5 ml each.) Shelf-life is estimated by the manufacturer to be more than 10 years and the price is expected to be far lower. This makes it possible to build up larger contingency stocks, which can provide prophylaxis and treatment for a far larger number of people. The manufacturer should be contacted for further details regarding price and conditions, if oseltamivir is considered relevant for contingency stocks.

There is currently no documentation showing that neuraminidase inhibitors reduce the risk of severe complications or death, but studies are being carried out to illuminate this and results can be expected in the course of a few years. A decision on whether to establish contingency stocks can be postponed for a while pending these results.

5.7 How to reduce the speed at which the infection spreads

Generally speaking, it is very unlikely that the spread of influenza can be stopped, but it may be possible to some extent to reduce the speed at which it spreads by reducing unnecessary travel, particularly travel over long distances. However, there will be no point in closing borders, introducing compulsory quarantine of travellers, or the like. People who are sick should be advised to stay at home. Consideration can be given to restricting large social get-togethers, such as meetings, sports competitions, etc.

The risk of the infection spreading in hospitals can be reduced by isolating sick patients, and restricting admissions during the epidemic, particularly of patients with high-risk conditions. Routines, whereby patients with influenza are only admitted if they have complications, can be introduced and followed where possible (see Chapter 6, subsection 1.2). In hospitals, the guidelines for droplet infection will apply.

6 Other contingency plans and measures

6.1 How to cope with a large number of patients and a large increase in the number of deaths

6.1.1 First-line healthcare services

The municipal health services will have to organize all general practitioners and health visitors, so that they can mobilize, keep and increase their workforces in the best possible way. It may be necessary to recruit retired healthcare workers and students to increase capacity.

National measures may be necessary to reduce the pressure on the primary health service. If the work of issuing certificates takes a disproportionate share of a general practitioner's time, consideration should be given to increasing the period of absence allowed without a doctor's certificate from three days to, for example, ten to fourteen days. Such a decision must be made by the King, ref. Section 7-12 of the Communicable Diseases Control Act (see also Section 8-24 of the National Insurance Act).

There will be an increase in the need for services such as domestic help and nursing care at home, but illness must also be expected in these groups. The health and social affairs sector in each municipality will have to lay plans for how to deal with such a situation (by putting part-time employees on full-time duty, enlisting extra help, cooperating with institutional health services, etc.)

Retail pharmacists must anticipate a greater demand for antipyretics and analgesics, as well as other therapeutic agents such as antibiotics. Local arrangements must be made which link up with contingency plans for other disasters/accidents. An investigation must be made into how essential services can be kept going in spite of a high level of sick leave.

Items for inclusion in a sub-plan for the municipal health service

The municipal health services must draw up their own contingency plans for dealing with a situation that an influenza pandemic can create. An influenza pandemic differs from other emergency situations in that every part of society is affected. The responsibility for the plan lies with the municipal medical officer who is responsible for communicable diseases control. These contingency plans must be coordinated with central government agency plans and be rooted in the Ministry of Health's Preparedness Plan. They can be part of the local authorities' communicable diseases control plan and should contain the following elements:

- authority and management responsibility
- notice, summons and meeting place for extra personnel/division of work, changes in duty plans
- establishment of a unit for mass admissions/examination
- system for mass registration and reporting (MSIS)
- guidelines for vaccination and any prophylactic treatment of healthy persons, including own staff
- guidelines for treatment and hospitalization
- information to own staff and local population in collaboration with the county medical officers, the Norwegian Directorate for Health and Social Affairs and the Norwegian Institute of Public Health. Communication with the specialist healthcare services (medical emergency command centres in hospitals)
- psychosocial care of patients/next-of-kin
- transport and identification of casualties
- mass admission/freeing of places in nursing homes
- supply of medicines (antipyretics, antibiotics, prophylactics) and vaccines

The municipal medical officer / local authorities can requisition peacetime support from the nearest civil defence district (Ministry of Justice).

6.1.2 Specialist healthcare services

An influenza pandemic preparedness plan shall be included in the hospitals' emergency plans. In this way, internal medicine, infectious diseases and microbiological departments will be able to contribute to preparedness planning. Emergency management and responsibility, which has customarily been allocated to surgeons and anaesthetists, should in this case be given to specialists in internal medicine and infectious diseases. A plan for a clinical-chemical department and x-ray department will be found in the hospital's emergency plan. The hospitals' paediatric and pulmonary departments will be heavily involved. The difference between an influenza pandemic and other emergency situations is that all parts of the community will be affected. The hospitals' preparedness plans must be coordinated with government agency plans and be rooted in the Ministry of Health's emergency plans.

Items for inclusion in a sub-plan in the specialist healthcare service (hospitals)

The plan should include the following elements:

- authority and management responsibility. Declaration of state of emergency/disaster
- notice, summons and meeting place for extra personnel/division of work, changes in duty plans (internal medicine, infectious diseases and microbiology departments and other departments, such as anaesthetic, paediatric, pulmonary and x-ray departments)
- emergency admissions desk with capacity for registration and reporting (MSIS – reporting system for communicable diseases). Systems for monitoring influenza-like disease in patients and hospital staff
- provision of extra beds and isolation wards. Measures to limit the spread of infection in the hospital, both to and from patients and staff and from visitors
- guidelines for vaccination and any prophylactic treatment of healthy patients and hospital staff
- guidelines for diagnosis, treatment and hospitalization
- guidelines for diagnosis and treatment of complications
- information to own staff and the local population in collaboration with the county medical officers, the Norwegian Directorate for Health and Social Affairs and the Norwegian Institute of Public Health. Communication with the municipal health service (medical emergency command centres in hospitals). Staff training.
- psychosocial care of next-of-kin
- transport and identification of casualties
- supply of medicines (antipyretics, antibiotics, prophylactics), vaccines and necessary reagents/equipment/x-ray film (microbiology, clinical chemistry and x-ray departments)
- system for sending summarised notices about the diagnosis of influenza virus infections from medical microbiological laboratories.

6.2 Information

All public institutions (central and local government) that will be affected by a pandemic must already have their own contingency plans, which should also include an emergency information plan. As a general rule, these plans must be adhered to and the existing assignment of tasks between bodies also largely delimits their responsibility for information.

During an influenza pandemic, there will be an enormous need for information and the challenges regarding information will mainly be the same as in other crises. However, there are some features of a pandemic that distinguish it from other crises with regard to relevant measures. In the case of a pandemic, the whole population is the 'target group', and the whole population must therefore be the target group for information. Nonetheless, certain target groups will be especially vulnerable, such as the elderly, sick and health care personnel. A pandemic can affect the people whose job it is to deal with the emergency and emergency information just as seriously as the rest of the population. Moreover, 'mouth-to-mouth' information will not be very appropriate in view of the danger of infection, and there will be no question of

establishing information centres where people have to appear in person. This must be taken into consideration when implementing information measures.

It is possible to establish some general principles for information during a pandemic:

The information given must be as consistent as possible, regardless of the sender. This will be achieved through a close collaboration between the players involved and particularly between the Norwegian Institute of Public Health and the Directorate of Health and Social Affairs. The Ministry of Health may, in the last instance, decide in detail who is to be responsible for distributing the different types of information.

As much use as possible must be made of the institutions' normal organization of the information service, but plans should be made for how this is to be stepped up during a pandemic.

Each agency and each level of public administration is responsible for information activities within its special area and at its level. The lowest effective information level is an important principle during emergencies. Information is one of the means used by a service in its overall solving of problems in its own specialist area.

It is important that all the links in the information chain are perceived to be lawful and dependable. Inconsistent or differing information is very unfortunate in a crisis and must be avoided.

In today's media society, where the Internet functions as a very efficient channel of information in addition to the traditional media, it is important that the public authorities have a proactive attitude to information. During crises it is particularly important that authoritative information is disseminated and reaches the general public. Unauthorized sources must not be allowed to dominate the media's information services. This can best be achieved through an open, proactive attitude on the part of the authorities.

6.2.1 Government level

The Ministry of Health has the overall responsibility for Norway's health services, including communicable diseases control and information activities. The general principle that the 'owner' of the crisis is also responsible for handling information about it also applies during an influenza pandemic. However, the Ministry may if necessary take over the responsibility and handle information itself. During an emergency such as a pandemic, it is of the utmost importance that government agencies distribute coordinated and consistent information. The Ministry must make sure that this happens.

The Ministry will need up-to-date information about the influenza pandemic and its consequences for the country during all of the phases described in Chapter 4. The pandemic preparedness plan presumes close collaboration between the Norwegian Institute of Public Health and the Norwegian Directorate for Health and Social Affairs (see Chapter 3), in order amongst other things to ensure coordinated information and advice to the Ministry, health services and general public. The two agencies must have clarified the division of responsibility between them, so that there is no doubt as to who is responsible for the different information tasks during a pandemic.

Before WHO has confirmed that a new influenza pandemic has arisen (phase 0, preparedness levels 0-3), the main thrust of the information will be in areas where the Norwegian Institute of Public Health has a major responsibility. Most of the information will therefore come from the Norwegian Institute of Public Health. When WHO has confirmed a new influenza pandemic (phases 1-5), there will be more need for information in areas for which the Directorate for Health and Social Affairs has the main responsibility. Most of the information will then come from the Directorate.

The Directorate for Health and Social Affairs and the Norwegian Institute of Public Health both have their own preparedness plans for handling emergencies such as an influenza pandemic. As regards information, an important part of these plans will be the collection of available information, evaluation of this information and proposals for action which include distributing information to the health services and the general public.

Communication of information is vital at national, regional and local level. Regular information must be given to doctors via existing printed and electronic media (MSIS reports, fax, telephone, the Internet, radio, television, etc.). Health information must be communicated widely to the general public. The Directorate for Health and Social Affairs must have a plan for establishing its own Internet service where all government information about the influenza pandemic is made available, regardless of the sender. It should not be necessary to search for information about the situation in several government Internet services.

The five regional health authorities have their own professional information units which can be used to advantage in preparing for and during a pandemic.

6.2.2 Municipal level

Municipal preparedness plans must contain an information strategy. A great deal of information concerning the whole country will be supplied by the central authorities, either direct to the general public or through the municipal and central health services. It is important that the local authorities have a system for communicating information from the central authorities to the general public. This can be done, for example, via the local media, telephone network and the Internet. The municipal medical officers who are responsible for control of communicable diseases must be familiar with developments in their local health services and pass on the necessary local details to the general public. The County Governors' health sections must provide the necessary information about the situation in the specialist health service in their regions.

6.2.3 Informational content

Although it must be possible to adapt the information given as the need for information changes, the following areas must be covered as a minimum:

- the ongoing development of the epidemic abroad and in Norway
- the form in which disease manifests itself and its severity
- self-help: when to contact the doctor, how to treat oneself
- distribution of vaccines, antiviral drugs, antibiotics and other medicines
- the preparedness situation in the municipal health service, at hospitals and other important infrastructure.