

**Plan of measures for the case of an influenza pandemic
caused by a new strain of the influenza virus**

Pandemic Plan of the CR

October 2006

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Introduction

By definition, a pandemic is an extraordinary international event whose occurrence cannot be excluded but that need not occur, in relation to the properties of the new influenza strain. The Pandemic Plan of the Czech Republic is a document laying down procedures and a basic system of reactions of the Czech Republic to an influenza pandemic caused by a new strain of the influenza virus. The reason for preparing the plan is obvious – the expected impacts of a pandemic on the functioning of the social and economic systems of all the countries of the world and the substantial health impacts. Approximately 5 to 10% of the population are affected by seasonal epidemics of normal influenza. However, the last influenza pandemic affected a far greater number of inhabitants than an epidemic of seasonal influenza and up to 50% of the population were infected. Three major pandemics occurred in the twentieth century: the Spanish flu in 1918-1920 (this was the largest and caused 20 – 40 million deaths, perhaps as many as 50 million worldwide), the Asian flu in 1957-1958 and the Hong Kong flu in 1968-1969.

At the present time, the spreading of bird flu subtype H5N1 constitutes the greatest potential danger. The geographic dimensions of new occurrences and also the danger of permanent endemic regions of bird flu in China, Vietnam and Indonesia (Annex No. 1) caused the World Health Organization (WHO) to review the Global Influenza Preparedness Plan (GPP) of 1999. This was based on analysis of the newly emerging epidemiological situation of the H5N1 influenza virus and the conclusions of three international working meetings – the Joint WHO-EC Workshop on Influenza Pandemic Preparedness Planning (Luxemburg 2005, Copenhagen 2005, Uppsala 2006) and WHO consultation on WHO-recommended national and international measures before and during an influenza pandemic (Geneva 2004). On this basis, WHO issued a series of recommendations for global measures that should come into force before and during a threatened pandemic (WHO/CDC/CSR/GIP/2005.5) – Annex No. 2. The GPP is a guideline rather than a substitute for the PP's of the individual countries. Emphasis is placed on close cooperation with the veterinary service. Consequently, the Ministry of Agriculture is also concerned with the aspect of an influenza epidemic and avian influenza strains. On the basis of its experience, it has issued an “Operational Manual for Avian Influenza” (see Annex No. 3), which is a similar plan of veterinary measures for the spreading of bird flu amongst animals. The GPP assumes participation of important sectors in addition to the health sector and also assumes participation by the governments of the relevant countries.

The pandemic plan (PP) is based on the current recommendations of WHO and the European Union (EU) for national pandemic plans and simultaneously takes into account aspects of the Communications of the Commission of the EU Council, of the European Parliament, of the European Economic and Social Committee and the Regional Committees on “influenza pandemic preparedness and response planning in the European Community” and on “strengthening coordination on generic preparedness planning for public health emergencies at the EU level”, COM (2005) 605 and COM (2005) 607. These recommendations also entail the preparation of corresponding plans by the individual central administrative authorities and regional administrative authorities encompassing the portion of responsibility of the territorial administrative unit in relation to the central plan. Simultaneously, the right of each country is respected to adopt, on their own responsibility, measures through which they will best confront a pandemic in the framework of the national legal environment. Simultaneously, no country is capable of facing the consequences of a pandemic alone. International cooperation is essential if its impact is to be reduced. The

existence of free movement of persons and goods within the territory of the EU makes additional coordination measures at the union level essential (see Annex No. 4).

This document amends the existing National Pandemic Plan of the CR, adopted in Government Resolution No. 1107 of November 10, 2004, through specific definition of the tasks, competences and responsibilities of the individual key institutions and organizations in the framework of the CR, with emphasis on the central level of management, and simultaneously summarizes the necessary minimum expenditures (see Annex No. 5). Local measures will be implemented on the basis of the Regional Pandemic Plans (RPP) and simultaneously will be consulted with the Commission for dealing with the occurrence of serious communicable diseases in the CR. As it cannot be excluded that a pandemic situation would be evaluated as an emergency situation according to the Czech legislation, the PP is in accordance with the legal regulations and implementing methodical instructions for preparing crisis plans elaborated in the substantive competence of the Ministry of Health as a framework operational plan for dealing with emergencies – “Epidemics – mass infection of persons”, where MH is the coordinator of managing a potential influenza pandemic with necessary participation by all the central administrative authorities (CAA) within the scope of their competence and responsibility for preserving the functioning of the basic areas of the critical infrastructure of the state. For this purpose, CAA prepare their own operational plans, which must contain information in a scope corresponding to the requirements for maintaining the basic functioning of the sector during a pandemic situation.

The PP is a basic document for central management of a pandemic situation in the Czech Republic. Pandemic plans prepared at all levels form the annex part of the emergency plan pursuant to Section 15 (3) (d) of Government Resolution No. 462/2000 Coll. However, the aspect of preparedness for a pandemic cannot lie within the responsibility of a single ministry but must be the responsibility of society as a whole. All the ministries, including their critical infrastructure, must be incorporated into the process of planning strategies to manage a potential influenza pandemic; this includes both production and nonproduction systems, whose lack of functionality could have a serious impact on security, the economy and preservation of the essential range of basic functions of the state in emergencies. The basic functions of the state are defined in terms of the rights and obligations of the bodies of the state administration and local government, procedures and their implementation in the framework of the laws, through which the state maintains control over the functioning of society according to constitutional principles during emergencies and that provide for the basic needs of the population during emergencies.

The ministries and the other the central administrative authorities prepare operational plans, which must contain information in a scope corresponding to the requirements for maintaining the basic functioning of the sector during a pandemic situation. The basic structure of the plan will consist of a substantive part (anti-epidemic measures, prevention, selection and the number of persons with professional risks) and an operational part (communication contacts, provision for the functioning of internet servers, means of reporting and notification, activities in the individual phases of a pandemic, implementation of announced measures, establishment of operational centres), according to the methodology in Annex No. 6.

In general, the reaction of the state to a pandemic is divided into individual phases. This begins with measures that must be taken before the onset of a pandemic and then specifies the necessary steps to be taken during the main wave of the pandemic and also includes subsequent measures intended for recovery of all of society and the economy. Measures established from phase 1 continue in subsequent phases. The primary target of these preparations is reduction of loss of human lives in connection with the pandemic,

minimization of the impact on the health of the entire population and reduction of potential losses in all sectors of the national economy. Substantial reduction in health impacts will be achieved through two key methods of medicinal intervention: vaccination and proper application of antiviral drugs. Both must be performed in the most effective manner, in accordance with international agreements on standard procedures and principles of application.

As an pandemic strain of the influenza virus will be very different from the strain of seasonal influenza which is normally present in the population, it will be necessary to produce a pandemic vaccine against the new subtype of influenza virus. However, this will become possible only after it is identified. Preparatory work has already been begun on the production of a prototype pandemic vaccine; nonetheless, it is necessary to be aware that a period of up to several months (at least 2-3 months) can expire between the discovery of the pandemic strain of the influenza virus and the production of the first doses of vaccine. This means that a vaccine need not be available for the first wave of the pandemic. The PP also takes this possibility into account. In the meantime, antiviral drugs will be employed so as to maximize the effect of their action. At the present time, the Ministry of Health is creating sufficient stocks of antiviral drugs and is planning a strategy for their optimal use.

Further pharmacological measures, such as consistent washing of the hands, voluntary isolation of infected people, effective provision for contacts, limited travel by mass transportation and limitation of mass gatherings of people can assist in gaining the necessary time in the initial phases of an emerging pandemic until a pandemic vaccine is available.

Communication with the population will be a decisive moment in responding to a pandemic. People will require clear, precise information and recommendations on measures that they can take themselves. They will also require ensuring that the existing situation is under control. The Ministry of Health will cooperate with the Ministry of Foreign Affairs in monitoring, evaluating and providing information on conditions abroad.

1. Epidemiological Background

“Most experts agree that it is not a question of whether another serious influenza pandemic will occur, but when it will occur ...”.

1.1. SEASONAL INFLUENZA

1.1.1. Characteristics of the disease

Influenza is an communicable disease caused by the influenza virus. This is one of the must communicable diseases affecting human beings. Influenza is a disease with serious health and economic consequences.

1.1.1.1. Definition of a case of infection by influenza

Clinical characteristics

A clinical picture corresponding to influenza, e.g. sudden onset of the disease, cough, fever above 38 °C, muscle pain and/or headache.

Laboratory criteria for diagnosis

- proof of the influenza antigen or RNA specific for the influenza virus,
- isolation of the influenza virus,
- proof of a specific antibody response in the serum to influenza A or B.

Classification of the case:

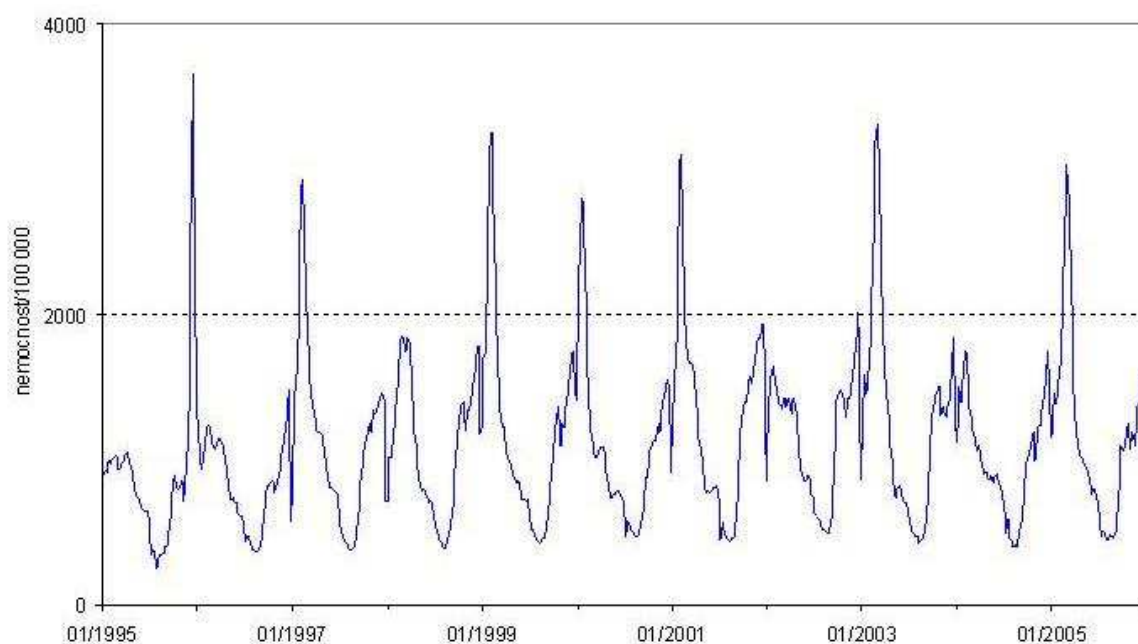
Possible	Cannot be employed
Probable:	Clinically corresponding case in an epidemiological context
Confirmed:	Clinically corresponding case that is confirmed in the laboratory.

1.1.2. Epidemiological situation

Influenza occurs throughout the world and causes the occurrence of epidemics of varying extent from minor local epidemics in schools and children's collectives to epidemics of a national extent. Each year, more than 2 million cases of influenza and similar diseases are recorded in the Czech Republic and epidemics occur that affect almost the entire country.

The beginning of influenza surveillance dates back to 1954, when the Czechoslovak Republic was one of the first countries to begin to cooperate in a global influenza program coordinated by WHO. Over the years, a National Reference Laboratory (NRL) for Influenza and an NRL for Non-Influenza Respiratory Viruses have been established in Prague.

Surveillance of influenza and similar diseases is performed throughout the year. Influenza has a seasonal character in the climatic zone in which the Czech Republic lies. The season of the cold months from the 40th calendar week of the current year to the 18th calendar week of the following year is usually designated as the influenza season in the northern hemisphere. On the basis of long-term monitoring, the first, usually slight increase in occurrence of the disease is expected in December. It is usually interrupted by the Christmas vacations; the number of cases gradually increases during January, usually peaks at the end of January and, at the beginning of February, culminates in an epidemic that gradually affects the whole territory of the Czech Republic. In the last few decades, between 1.5 and 3.5 million people have suffered from influenza and influenza-like illnesses each year (see Graph No. 1).



Number of cases

Graph No. 1: Weekly number of cases of influenza and other acute respiratory diseases in the CR, 1995 - 2005

1.2. PANDEMIC INFLUENZA

From the point of view of the life of society, a pandemic is a serious global event. It is characterized by very rapid spreading of the disease to all the parts of the world and more than 25% of the entire population is infected. It is connected with high morbidity levels, excessive mortality and disturbance of the social and economic system.

Pandemics characterized by a sudden increase in the number of cases and in mortality and rapid spreading of the disease to all the parts of the world were reliably documented as far back as the 16th century. Since then, at least three pandemics occurred in each century, regularly each 10 to 50 years. They started suddenly, without warning, spread very rapidly in the population and caused substantial damage. They couldn't be stopped, rapidly culminated and subsequently disappeared almost as suddenly as they began. Pandemics had a tendency to occur in several waves – the disease appeared again in a second and sometimes in a third wave, where the course of the disease was frequently worse than in the first wave in the pandemics recorded to date.

Three major influenza pandemics were recorded in the 20th century. These were the Spanish flu in 1918, the Asian flu in 1957 and the Hong Kong flu in 1968.

1.2.1. Spanish influenza 1918 - 1920

The influenza pandemic that affected the world in 1918 to 1920 was caused by influenza virus A (H1N1). The pandemic caused high mortality levels and loss of life. The disease usually had a very rapid onset and culminated in failure of the respiratory system,

causing the death of the patient. It has been estimated that the influenza virus caused the deaths of between 20 and 40 million people in 1918 – 1920 (N.B. it is estimated that 8.2 million people died in the First World War). The first cases of the disease were recorded in March 1918 in Europe and the infection was transported to the U.S.A. and then to Asia and Africa by ship transport. The first wave of the pandemic, which occurred in the spring and summer of 1918, was characterized by high infectiousness of the disease, but relatively low mortality. Thus, high mortality, as a warning signal that would point to the importance of the disease, was missing. In August, when the second wave began, no country was prepared for the pandemic. The second wave of the diseases, which began in August simultaneously in France, Sierra Leone and the U.S.A., was characterized by ten-fold higher mortality. A similar course of a communicable disease had not been recorded previously, nor was it recorded at a later date. The mortality rate as a result of influenza had mostly been highest amongst “very young” and “very old” people. The Spanish flu is interesting in that it primarily affected healthy people of productive age in the 15 to 35-year age group and 99% of all deaths were in the age group to 65 years of age.

An important fact related to influenza pandemics is also the occurrence of vital complications connected with influenza. It is assumed that a great many deaths were caused by secondary infections, causing pneumonia, but that a great many deaths were also caused by primary infection of the lungs by the influenza virus. This affected the lung tissue, causing the death of the patient within a period of 48 hours or less.

Serious consequences, following from the Spanish flu, were caused, not only by the disease itself, but also by mistakes of health-care institutions. Antibiotic therapy, which could have prevented a great many deaths as a consequence of secondary infections, had not yet been discovered and the production of vaccines was not possible because no virus was detected. However, serious mistakes can be attributed to the public-health institutions, which were not capable of thoroughly implementing general preventative principles.

1.2.2. Asian influenza 1957 - 1958

The influenza pandemic that affected the world in 1957 to 1958 was caused by influenza virus A (H2N2). It had a “weaker” effect than the virus of 1918 – 1920 and the world was “better” prepared. The new virus was identified in Singapore in 1957. The vaccination substance that was prepared for epidemics of seasonal influenza was immediately shown to be the most effective means of prevention and was capable of reducing the incidence of seasonal influenza by two thirds or more. Antibiotics were also available and were used to treat influenza complications, especially bacterial pneumonia. A Global Influenza Surveillance Network was also available at the time of the Asian influenza pandemic and a virological monitoring system and a rapid warning system had been functional for 10 years. In May, WHO received a report of an extensive influenza epidemic in Hong Kong and Singapore. Partial information on an epidemic in one province of China was already available in February. As time passed, the influenza virus was identified in further laboratories and WHO informed the world of a pandemic. Samples of the isolated virus were immediately distributed and drug factories began to produce vaccines without delay.

The pandemic sometimes began with an illness similar to normal seasonal influenza and, at other times, differed substantially from seasonal influenza. Compared to the pandemic in 1918 – 1919, the initial wave of the pandemic was characterized by a large number of cases, very explosive break-out, but much lower mortality.

The morbidity rate exhibited some characteristics identical with seasonal influenza. The greatest number of deaths were recorded amongst children and older people. During the first wave of the pandemic, most cases were concentrated amongst children of school age.

The second wave of the pandemic occurred in most countries one to three months after the first wave and caused a large number of cases and an increase in mortality. The pandemic, which mostly affected children of school age in the first wave, tended rather to affect older people in the second wave, explaining the reasons for the higher mortality rate. The overall mortality on a global scale is estimated at perhaps as many as 20 million people.

1.2.3. Hong Kong influenza 1968 - 1969

The influenza pandemic in 1968 to 1969 was caused by influenza virus A (H3N2). The influenza pandemic that affected the world in 1968 – 1969 was again somewhat weaker than the influenza pandemic in 1957 – 1958, but brought with it a number of unpleasant epidemiological surprises. A new type of influenza virus appeared in Hong Kong in July 1968. In many countries, the disease was less serious with a low mortality level and slower spreading. The reason why the pandemic various was less pathological lay in the fact that there was a genetic similarity between the virus that caused the Asian flu and that responsible for the Hong Kong flu and part of the population had already acquired immunity against the virus that caused the Asian flu. The number of deaths is estimated at 1 million.

1.2.4. IMPACTS OF AN INFLUENZA PANDEMIC

The impacts of an influenza pandemic for society are unavoidable; however, effective planning and reaction to a pandemic can contribute to reduction of its extent and impact. All plans must be based on a comprehensive national and local communication strategy, supplementing and supporting mechanisms to provide timely, precise and unambiguous consulting and information. Planning for the case of a pandemic is a complicated matter, as little information is available on the probable consequences: data are uncertain and there is a lack common denominators. On the basis of information from previous pandemics, consultation with professionals and theoretical modelling, most national preparedness plans are based on the following assumptions:

Morbidity level: This is the fraction of the population in whom the clinical stage of the influenza develops during the pandemic. It is expected that, during the 9th to 15th week from the beginning of the pandemic, approximately **30%** of the population of the CR would come down with the flu, i.e. more than 3 million persons. The morbidity level and the seriousness of the disease will probably differ in the individual age groups. It is expected that the disease will take a more serious course and that the mortality rate will be higher than for normal “seasonal” influenza because the entire population will not be immune to the new influenza virus.

Mortality from influenza: This is the ratio of persons dying from the influenza to the total number of persons infected. Most national plans base their expectations on an estimate taking into account experience in the 1957-58 pandemic. On this basis, it is assumed that **0.37%** of patients will die from influenza during the period of the pandemic, i.e. almost 12 000 people in the CR.

Visits at physicians: It is expected that **50%** of those infected will seek out professional medical care, especially from their general practitioner.

Number of persons hospitalized: It is expected that **1%** of those infected will be hospitalized for acute respiratory and related difficulties, i.e. approximately 30 000 persons.

Level of intensive care: It is expected that **15%** of patients hospitalized as a consequence of influenza-like illnesses will require intensive care and that **50%** of these will require mechanical ventilators.

Absence from work: For the purpose of planning, it should be assumed that, during three months from the beginning of a pandemic, a total of **30%** of the work force will not be present at work for a period of five to eight working days. The influenza will spread faster in schools and other closed communities, so that it might be necessary to close schools. This, together with interruption of transportation and the necessity for employees to provide care for their family members and other persons, will further increase absence from work.

1.2.4.1. PANDEMIC – ESTIMATE OF ECONOMIC IMPACTS

Estimates of the economic impacts of a pandemic are performed on the basis of

- a mathematical model of spreading of the influenza,
- the actual branch structure of employment (source: Czech Statistical Office).

From the standpoint of employment in the individual branches of the national economy, it is necessary to differentiate various levels of infectiousness (50%, 45%, 40%, 35%) and, simultaneously, also various levels of importance from the standpoint of functioning of the economy and security of the state. For these parameters, of the order of **40% of employees in the most endangered group** (physicians in the front line, urban transport), 27% in the endangered group important for functioning of the economy and security of the state (physicians, employees in transport, trade, public administration and defence), 12% of employees in the less endangered group (other production branches of the national economy – including strategically important ones, but with a lower concentration of persons, e.g. energy production) and 4% of employees in the least endangered group (other public services, financial mediation, agriculture, forestry) would come down with the illness within the first **10 days**. This corresponds to morbidity of about 10% of employed persons within the first **10 days**. Taking into account the lowest level of infectiousness for the rest of the population, about 7% of the population would fall ill within the first 10 days.

From a macro-economic point of view, it is estimated that a pandemic, which could be expected to last about 90 days, would lead to a reduction in the performance of the economy (measured in terms of the annual gross domestic product) by 1.5 to 2.0%.

A pandemic without effective treatment would lead to a reduction in the annual GDP as a consequence of illness by at least 2.5 – 3.0%.

Neither of these estimates takes into account the consequent damage to health or mortality, which would lead to a long-term reduction in economic activity. This would understandably be more significant in the absence of effective treatment.

1.2.4.2. ESTIMATE OF THE BURDEN ON HEALTH CARE AS A CONSEQUENCE OF AN INFLUENZA PANDEMIC

The FluAid 2.0 testing software, created by the Centres for Disease Control and Prevention in Atlanta, USA (<http://www.cdc.gov/>), including predefined variables, was used in the processing.

A. Basic information for the calculation

Czech Republic – numbers of inhabitants according to age groups

0 -18 years	19 -64 years	65+ years	Total
2 020 218	6 774 470	1 456 391	10 251 079

Percent of high-risk inhabitants according to age groups

0 -18 years	19 -64 years	65+ years	Weighted average
6. 4%	14. 4%	40. 0%	16. 4%

Impact of an influenza pandemic

Increase in mortality (per 1000 inhabitants) according to age and risk level

High-risk population	Minimum	Average (most probable)	Maximum
0 -18 years	0. 126	0. 22	7. 65
19 -64 years	0. 1	2. 91	5. 72
65+ years	2. 76	4. 195	5. 63

Other population	Minimum	Average (most probable)	Maximum
0 -18 years	0. 014	0. 024	0. 125
19 -64 years	0. 025	0. 037	0. 09
65+ years	0. 28	0. 42	0. 54

Increase in number of persons hospitalized (per 1000 inhabitants) according to age and risk level

High-risk population	Minimum	Average (most probable)	Maximum
0 -18 years	2. 1	2. 9	9
19 -64 years	0. 83	2. 99	5. 14
65+ years	4	8. 5	13

Other population	Minimum	Average (most probable)	Maximum
0 -18 years	0. 2	0. 5	2. 9

19 -64 years	0. 18	1. 465	2. 75
65+ years	1. 5	2. 25	3

Increase in number of out-patient visits to physicians (per 1000 inhabitants) according to age and risk level

High-risk population	Minimum	Average (most probable)	Maximum
0 -18 years	289	346	403
19 -64 years	70	109. 5	149
65+ years	79	104. 5	130

Other population	Minimum	Average (most probable)	Maximum
0 -18 years	165	197. 5	230
19 -64 years	40	62. 5	85
65+ years	45	59. 5	74

Gross attack rate – the percentage of the total population that becomes ill due to influenza

Lower estimate	Higher estimate
25%	35%

B. Outputs according to the level of the variables entered

Population structure

	0 -18 years	19 -64 years	65+ years	Total
Other population	1 890 925	5 798 947	873 835	8 563 707
High-risk population	129 293	975 523	582 556	1 687 372
Total	2 020 218	6 774 470	1 456 391	10 251 079

Estimate of the increase in the number of deaths (absolute numbers)

	Gross attack rate 25%	Gross attack rate 35%
0 -18 years: most probable	53	74
min.	31	43
max.	729	1 021
19 -64 years: most probable	3 533	4 946
min.	505	707
max.	6 632	9 285
65+ years: most probable	3 980	5 572
min.	3 859	5 403
max.	4 936	6 911
Total: most probable	7 566	10 592

min.	4 395	6 153
max.	12 297	17 217

Estimate of the increase in the number of persons hospitalized (absolute numbers)

	Gross attack rate 25%	Gross attack rate 35%
0 -18 years: most probable	943	1 320
min.	464	650
max.	3 957	5 539
19 -64 years: most probable	20 869	29 217
min.	3 861	5 406
max.	22 784	31 898
65+ years: most probable	10 612	14 856
min.	7 585	10 620
max.	13 414	18 780
Total: most probable	32 424	45 393
min.	11 910	16 676
max.	40 155	56 217

Estimate of the increase in the number of outpatient visits to physicians (absolute numbers)

	Gross attack rate 25%	Gross attack rate 35%
0 -18 years: most probable	298 709	418 193
min.	249 549	349 368
max.	347 870	487 018
19 -64 years: most probable	871 180	1 219 652
min.	625 509	875 713
max.	1 329 715	1 861 602
65+ years: most probable	188 421	263 789
min.	177 801	248 921
max.	292 492	409 489
Total: most probable	1 358 310	1 901 634
min.	1 052 859	1 474 002
max.	1 970 077	2 758 109

2. Survey of WHO and EU Pandemic Plans and Requirements on the PPs of the EU Member States

At the present time, the spreading of bird flu subtype H5N1 constitutes the greatest potential danger. The geographic dimensions of new occurrences and also the danger of permanent endemic regions of bird flu in China, Vietnam and Indonesia caused WHO to review the Global Influenza Preparedness Plan (GPP) of 1999. This was based on analysis of the newly emerging epidemiological situation of the H5N1 influenza virus and the conclusions of three international working meetings – the Joint WHO-EC Workshop on Influenza Pandemic Preparedness Planning (Luxemburg 2005, Copenhagen 2005, Uppsala 2006) and WHO consultation on WHO-recommended national and international measures before and during an influenza pandemic (Geneva 2004).

On this basis, WHO issued a series of recommendations for global measures that should come into force before and during a threatened pandemic (WHO/CDC/CSR/GIP/2005.5).

The GPP should be a guideline rather than a substitute for the PP's of the individual countries. Emphasis is placed on the necessity for close cooperation between the veterinary service and important sectors outside of health care and it is also expected that the Governments of the individual countries will cooperate. The Pandemic Plan of the CR is based on the WHO plan and accepts division of pandemic activities into 6 phases (see Annex No. 2). As the CR has been a member of the EU since 2004, and the EU has its own PP, the Czech PP also takes into consideration the EU recommendations, e.g. subdivision of phase 6 into 4 preparedness levels (see subparagraph 6.5).

The EU Plan takes into account the WHO Plan, with the exception of conditions specific for the EU (phases 3-6). Key measures prepared for the period prior to and during an influenza pandemic are expressed as phases and levels of risk development, which differ in relation to the specific competence and activities of WHO and the EU. For this reason, the EU presented its own plan, which is identical in the activities for the inter-pandemic period, but differs in the period of announcing pandemic preparedness (phases 3 and 4) and, practically from phase 4, the PP of the individual countries can come into effect. The pandemic period in the EU (from phase 6) must be seen from the standpoint of the measures as specific also within the EU, i.e. individually in the individual countries.

The submitted plans of the two institutions newly define the phase of the health risk to the population during the emergence of a new subtype of influenza of avian origin: they modify the numbering of the phases, the gradual development of the situation and the corresponding responses (Annex No. 2).

The plans are divided into the “Interpandemic period” (phases 0 – 2), “Pandemic preparedness” (phases 3 – 5), the “Pandemic period” (Phase 6) and the “Postpandemic period”. Phases 3 – 5 are of fundamental importance, when rapidly coordinated local and global response can stop or reduce the spreading of new varieties. Emphasis is placed on systematic implementation of the surveillance program, on which the success of the planned measures to a great degree depends, and on close cooperation between veterinary and health-care institutions.

WHO will announce pandemic preparedness. The level of danger to the EU can, however, arrive sooner or later, because the individual Member States will most probably pass

through different phases (phases 4 – 5) according to the period and extent of the affection. This is expressed in the 4th level of phase 6 of the EU plan.

In February 2006, the working group of the European centre for Disease Prevention and Control in Stockholm issued a recommendation for the Member States of the Union to renumber and adapt the WHO global PP so that confusion does not arise in announcing the individual phases of a pandemic. This also permits provision of accurate information within the CR and the Member States and institutions designated by the EU (EISS, ECDC) and WHO and transfer of undistorted information through the media.

In the area of civil aviation, the CR, as a Party to the Agreement on International Civil Aviation, concluded in Chicago on December 7, 1944, will also proceed in accordance with the recommendations of the International Civil Aviation Organization (ICAO). The ICAO recommendations are given in Annex No. 4.

The new (amended) plans should:

1. redefine the increasing health (veterinary) risk associated with the emergence and spreading of a new subtype of influenza virus (at the moment, the H5N1 virus) and its spreading in industrial and especially domestic breeding, associated with potential infection of people;
2. monitor and evaluate the current situation, increasing epidemiological-virological surveillance, maintaining contact with physicians in the front line, rapid provision of information to EISS, ECDC and WHO, important intersectoral institutions and the media;
3. define the reaction of the health-care system to the current situation – measures for provision of health care, acquainting the medical community with the PP program, provision of information on how to proceed in emergencies, provision through volunteers and organizations, especially the Czech Red Cross, provision of social services for persons with health risks during a pandemic, provision of health care between regions and countries.

Implementation of tasks following from the PP requires substantial support from the Government of the CR and all the central administrative authorities (hereinafter CAA) and is dependent on substantial activity of the State Veterinary Administration of the CR and also takes into account regional aspects.

3. Objectives and Principles of the Pandemic Plan of the CR

The main objective of the plan for the occurrence of an influenza pandemic is to reduce its health, social and economic impacts. The basic priorities are based on the recommendations and principles laid down by the European centre for Disease Prevention and Control (ECDC – www.ecdc.eu.int) and the World Health Organization (WHO – www.who.int). The following measures are adopted to achieve these objectives:

- improvement of the national rapid warning system for early detection of a potential disease caused by a pandemic strain,
- protection of the population against the occurrence of a new pandemic virus to the greatest possible degree,
- rapid identification of the virus of bird flu in poultry and birds or other animals,
- rapid detection of the occurrence of a new subtype of influenza virus in the population,
- minimization of spreading of a new virus and prevention of the occurrence of a pandemic,
- regular evaluation of the epidemiological situation, analysis of occurrence, adoption of immediate anti-epidemic measures,
- limitation of morbidity and mortality in spreading of a pandemic strain of the influenza virus,
- provision for treatment of patients and treatment of complications,
- provision for burying the dead,
- provision for immediate informing of medical personnel through MZ and the public through the media,
- control of compliance with recommended measures,
- reduction of the impact of an influenza pandemic on everyday life, work and planning further consequences,
- minimizing economic losses.

Principles of basic measures:

- Reduction of the impact on human health by reducing morbidity and mortality. These principles must be applied where a medical effect can be achieved. A procedure according to set priorities will be followed.
- Protection and treatment of the population through targeted measures concerned to retard the spreading of a pandemic, even at the cost of prolonging the duration of the pandemic.
- Cooperation between the Government, the commission, the public health protection authorities, medical organizations, the state veterinary administration and the public at all levels.

4. Basic Elements Surveillance, Clinical and Epidemiological Data and Preconditions for an Effective Procedure

Basic requirements for achieving the objectives of the PP include a surveillance program, rapid, reliable laboratory diagnosis and functioning exchange of information, permitting effective reaction to a potential threat and timely, previously prepared preventative measures. In the initial stages of occurrence of any bird flu subtype in animals, the State Veterinary Service of the CR is fully responsible for timely intervention and control of any spreading.

Success is highly dependent on good cooperation with general practitioners throughout the CR in reporting morbidity and providing clinical material. The following definitions for global influenza surveillance follow from the WHO recommendations.

4.1. The WHO definition of influenza

Human influenza is a viral disease that is characterized by sudden onset of a fever above 38 °C, cough and sore throat in the absence of any other demonstrated diagnosis, meeting laboratory virological and serological criteria.

4.2. Definition of new variants of the influenza virus according to WHO

This is an influenza virus of type A with completely new antigen properties caused by the replacement of one or both main surface antigens (i.e. hemagglutinin and/or neuraminidase) or the return of a subtype that has already circulated once in the population and then disappeared and has not acted as a human pathogen for a long period of time.

4.3. Symptoms of illness caused by avian influenza subtypes

A discussion is ongoing in WHO and the EU in expert groups. All the suggestions are based on a description of the disease and experience in Asian countries. Changes that can occur on a change in the subtype of the virus or unexpected complications will be reported through the Ministry of Health of the CR.

H5N1 – the acute phase of the disease, right at the beginning, is basically identical with the symptoms of seasonal influenza: high fever > 38 °C, cough, and infections by this subtype are characterized by rapid deterioration in condition – respiratory difficulties appear, causing the patient to seek medical assistance and potentially hospitalization. An X-ray pulmonary finding is usually already demonstrated in this phase. Newly admitted patients are usually found to have various stages of development of pneumonia and its progression. In isolated cases, serious gastroenteritis occurs, with symptoms of affecting of the CNS and then ARI symptoms. The patient mentions contact with infected or dead poultry or a wild bird or consumption of uncooked meat and raw body organs and blood two to four days before the first symptoms. Because of the different eating habits of various minorities, it is necessary to emphasize careful epidemiological anamnesis, including eating habits. The mortality from H5N1 infection is $\pm 50\%$; treatment by neuraminidase inhibitors is effective in the acute phase (within two days of the beginning of the symptoms of the disease).

H9N2 and H10N7 – illness caused by these subtypes of bird flu does not have a dramatic course and leads to rapid recovery.

H7N7 – in infection of human beings by the H7N7 (H7N2, H7N3) virus, the main symptom is conjunctivitis, with or without ARI symptoms, and subsequent recovery. In the epidemic in the Netherlands in 2002, only one fatal case was recorded in liquidation of affected breeding in a person not protected by preventative neuraminidase inhibitors and protective personal means of protection.

4.4. Monitoring the influenza morbidity rate – the surveillance program

In the CR, the surveillance program for human influenza is performed at a national level through the National Reference Laboratory (NRL) for Influenza and the NRL for Non-Influenza Respiratory Viruses in the National Institute of Public Health (NHPI), National Reference Centre for Analysis of Epidemiological Data (NRC AED), epidemiological departments of the Regional Hygiene Stations (RHS) and their territorial workplaces and other virological laboratories in the regions (see Surveillance in Annex No. 8). Information on the epidemiological situation in acute respiratory infections (ARI), including influenza, in the CR is sent to the WHO global system (FluNet) and to the European Influenza Surveillance Scheme (EISS). The data is sent by the NRI for Influenza, which provides for maintenance of these international contacts. Since the creation of ECDC in 2004, two-way communication has been established between the MH CR, NRC AED and the official representatives of the CR in this organization. Information on the occurrence of ARI/ILI is provided to the public health protection authorities at all levels, cooperating with virological laboratories, the media and the public (web sites of the MH CR, WHO and RHS).

Addresses of virological laboratories cooperating with NIPH in surveillance of ARI

The Health Institute in Prague
Virology Department
Bulovka Hospital
180 81 Prague 8

Motol FH
Virology Department
V Úvalu 84
150 18 Prague 5

VIDIA-DIAGNOSTIKA, s.r.o.
Černý Most Polyclinic
Generála Janouška 902
198 00 Prague 14

LABOMA
Microbiology Laboratory
U Tří lvů 10
370 01 České Budějovice

České Budějovic Hospital
Virology Department
B. Němcové 54
370 01 České Budějovice

Faculty Hospital
Microbiology – Virology Dept.
Dr. E. Beneše 13
305 99 Plzeň

DIAGNOSTIKA, s.r.o.
Novosedlické nám. 1
400 03 Ústí nad Labem

Masaryk Hospital
Microbiology Department
Sociální péče 3316/12 A
401 13 Ústí nad Labem

Faculty Hospital
Virology lab. OKM
500 05 Hradec Králové

Liberec Hospital
OKM-Virology
Masarykova 18
460 63 Liberec

Havlíčkův Brod Hospital
Microbiology Department
580 22 Havlíčkův Brod

BIO-PLUS, s.r.o.
Lazaretní 6
615 00 Brno

Mikrochem
Nezvalova 2
772 00 Olomouc

Institute of Microbiology
FN u sv. Anny
Pekařská 53
656 91 Brno

The Health Institute in Ostrava
Virology Department
Partyzánské nám. 7
728 92 Ostrava

Uherské Hradiště Hospital
Virology
Purkyňova 365
686 68 Uherské Hradiště

Cooperation has also been established between the NRL for Influenza in the NIPH and the National Reference Laboratory for Newcastle Disease and Avian Influenza (NRL – NDAI) at the State Veterinary Institute (SVI) in Prague, and information communication has been established with the Institute for Communicable Diseases and Epizootology of the Faculty of Veterinary Medicine, Veterinary and Pharmaceutical University in Brno. Both institutions participate in the program of influenza surveillance in animals, especially horses, pigs and birds and an agreement has been reached on close cooperation in case of the threat of a pandemic. NRL – NDAI maintains a contact with the Office Nationales des Epizooties (OIE) and the Reference Laboratory for Avian Influenza, Weybridge, UK, which is currently authorized by WHO to identify avian strains currently occurring in the world.

The CR also has the PANDEMIE Information System (abbreviated IS PANDEMIE), which is intended to monitor the spreading of acute respiratory or other diseases in situations of danger to the state of pandemic spreading of a new virus. The system concentrates on the collection of daily reports from the individual territorial workplaces of the Regional Hygiene Stations, collecting these data in the central information system and tabular and graphical presentation of the data obtained, promoting rapid and flexible decision-making at the time of dealing with a pandemic.

The system was created as an internet system and is safeguarded by access for approved users. The Ministry of Health is the administrator of the system and the Coordination Centre for the Sectoral Health Information Systems (CCNIPHS) is the technical administrator.

The basic data collected by this information system includes information on morbidity and mortality, free beds in hospitals, issuing of drugs and vaccines in pharmacies, or the number of people off work in health care or education and the number of closed educational, medical and other important institutions.

The system has maximum variability in the scope of obtaining data and can be modified to meet the requirements of a particular epidemiological situation. (The IS PANDEMIE Manual is given in Annex No. 9.)

4.5. International Organizations – Communication and Provision of Information Related to Implementation of the PP

1. World Health Organization (WHO), Communicable Diseases Surveillance and Response (CDSR) (Geneva)
2. WHO Regional Office for Europe (Copenhagen)
3. WHO Collaborating Centres for Influenza (London, Atlanta)
4. European Commission (Commission of the European communities – EC) (Brussels, Luxemburg)
5. European Centre for Disease Prevention and Control (ECDC) (Stockholm)
6. European Medicines Agency (EMA) London
7. National Institute for Biological Standardization and Control, (NIBSC) (Potters Bar)
8. European Influenza Surveillance Scheme (EISS) (Utrecht)

The pandemic influenza strain will probably appear outside of the territory of the CR. It is quite possible that the country of origin will be one of the countries of south-east Asia. Before the CR is affected by the pandemic, it will be highly dependent on information collected both from the country of origin of the pandemic and also from other affected countries.

The European Commission cofinances the European Influenza Surveillance Scheme (EISS), in which the Czech Republic also actively participates, and which monitors clinical and laboratory reports from all the EU Member States. Information is available on the EISS web site. The recently established European Centre for Disease Prevention and Control (ECDC), located in Stockholm, has stated that one of the priorities of this centre is to improve surveillance of influenza and the warning system in the framework of Europe, including strengthening the network of laboratories.

International surveillance of influenza viruses in birds and other animal reservoirs is also at a high level. International cooperation also exists at a European and global level - bird flu is subject to reporting at a national level and must also be reported to the European Commission. The World Organisation for Animal Health (OIE) and the Food and Agriculture Organization (FAO) act as coordinators.

The system of communication with foreign organizations is proceeding and improving with the development of electronic communications, e.g. FluNet, EISS and the Early Warning and Response System (EWRS). The “Pandemie” web site also facilitates communications; this is part of the pandemic plan and constitutes its information system. On the basis of agreements with the regional administrators, the Ministry of Health of the CR provides for testing of this system at least once a year, in order to test and ensure the preparedness of this application, including the related regional pandemic plans.

4.6. Provision of Health Care

4.6.1. Out-patient health-care facilities

In out-patient health-care facilities, it will be necessary in case of an influenza pandemic to especially:

- a) strengthen the medical emergency service
- b) set aside waiting rooms or surgery hours for patients with influenza diseases,
- c) limit the activities of paediatric consulting centres and possibly also other consulting centres.

4.6.2. In-patient health-care facilities

In in-patient health-care facilities, it will be necessary in case of an influenza pandemic to especially:

- a) isolate persons suffering from influenza from other patients,
- b) limit the acceptance of new patients,
- c) create a sufficient reserve of beds – reprofiling (especially for emergency services),
- d) limit planned surgical operations,
- e) prohibit visits,
- f) exclude sick personnel,
- g) provide for barrier nursing technology.

4.6.3. Integrated rescue system

Provides for distribution of antiviral drugs, vaccines and transfer of patients through its components.

4.6.4. When setting aside beds, it is especially important to maintain the following principles:

- a) set aside areas in which contact of persons hospitalized because of influenza with persons hospitalized for other reasons is prevented,
- b) medical personnel caring for patients hospitalized because of influenza should not come into contact with patients hospitalized for other reasons,
- c) strict compliance with barrier therapeutical technology shall be ensured for the auxiliary therapeutical units,
- d) a sufficient amount of drugs must be provided to treat influenza and its complications,
- e) beds for treatment of urgent, life-threatening diseases of non-influenza origin should not be reprofiled.

4.6.5. Pharmacies

In pharmacies, it will be necessary in case of an influenza pandemic to especially:

- a) strengthen pharmacy emergency services,
- b) ensure adequate drugs for treating influenza and its complications.

4.6.6. Social service facilities and educational facilities

4.6.6.1. It is especially necessary in school and preschool facilities:

- a) to make the filter for acceptance of children into the facility stricter,
- b) to provide for timely isolation of sick individuals,
- c) to suspend teaching at schools.

4.6.6.2. It is especially necessary in social care facilities:

- a) to isolate persons suffering from influenza from other inhabitants of the facility,
- b) to limit the acceptance of new inhabitants,
- c) to prohibit visits,
- d) to exclude sick personnel.

4.7. Personal Means of Protection (PMP) Used by Persons at Risk of Infection and Disinfection Agents

The use of these means will be dependent on the character of the work performed at the focal point of the infection and the level of health risk. Recommendations to use PMP will be regularly updated according to the recommendations of the European Centre for Disease Prevention and Control.

- a) protection of the respiratory tract - protection against viruses and bacteria is provided by normally sold filtration half-masks (usually called respirators) denoted by efficiency class FFP3/FFP2. The filtration efficiency of the material of these half-masks against viruses and bacteria is usually greater than 99.9%. The overall efficiency (including leaks in the seals) is more than 99.5%
 - a higher level of protection is provided by a full-face mask with a combined filter, denoted as class P3. The overall efficiency of this combination is better than 99.95%. A similar level of protection (in many cases even higher) is provided by hoods supplemented by a filter-ventilation unit (battery energy source, operating time 4 hours or more), fitted with P3 class filters.
- b) eye protection: fully sealed glasses (suitable also for optical glasses),
- c) protective footwear or roll-on protection for footwear ,
- d) disinfectants – suitable for all kinds of disinfection used in medical facilities, in virucidal concentrations with recommended times, such as:
 - sodium hypochlorite 1%, used on materials contaminated with blood and body fluids. This must be used in well-ventilated areas and must not be mixed with strong acids as chlorine vapours can be released,
 - 70% alcohol or a mixture of alcohols, whose use is recommended for metal surfaces and for disinfecting the hands. This must be used in well-ventilated areas and with maximum care because of its flammability,
 - peroxocompounds,
 - iodine preparations.

4.8. Contact Persons Who Will Provide Information during an Influenza Pandemic in the CR:

The chairman of the Commission

The Senior Hygiene Officer of the CR or his statutory representative from the Section of Protection and Promotion of the Public Health of the MH CR - 224 972 431

The press agent of the MH CR – 224 972 2166, 224 972 171

The representative of NRL for Influenza or representative of NRC AED, NIPH Prague – 267 082 400.

5. Commission for Dealing with the Occurrence of Serious Communicable Diseases in the CR

The Commission for dealing with the occurrence of serious communicable diseases in the CR (hereinafter the “Epidemiology Commission”) constitutes a newly established body of the Government of the CR; its statute and composition are given in Annex No. 10 of the PP. Its main tasks include:

- a) to inform the Government of the course and consequences of the occurrence of serious communicable diseases, including the occurrence of influenza caused by a new variant of the influenza virus in case of the occurrence of an influenza pandemic,
- b) to coordinate and control the activities of the regional epidemiology commissions and the epidemiology commission of the Capital City of Prague for dealing with the occurrence of serious communicable diseases (see the Statute in Annex No. 11), including the occurrence of influenza caused by a new variant of the influenza virus in case of the occurrence of an influenza pandemic,
- c) to evaluate the development of an epidemiological situation,
- d) to make decisions in the scope laid down by the legal regulations on adopting of the relevant anti-epidemic measures with national competence,
- e) in the framework of its activities, to submit reports to the Government on the development of the epidemiological situation and propose necessary measures in the area of protection of the public health and to ensure the capacity for action of the sectors, including their critical infrastructures.

At the level of the regions, the regional administrators establish regional epidemiology commissions to deal with the occurrence of serious communicable diseases, including the occurrence of influenza caused by a new variant of the influenza virus in case of an influenza pandemic.

6. Definition/Description of a Pandemic Situation

Definition of a pandemic situation

This is the extensive occurrence of an illness that substantially exceeds the normally expected values of incidence of this illness at the given place and time, in the territory of several countries or even continents.

Reporting procedure

- A. The beginning and end of a pandemic are reported to the World Health Organization (WHO)
- B. The Senior Hygiene Officer of the CR announces the beginning of the first wave of a pandemic in the CR on the basis of information obtained from the NRL for Influenza and NRC AED. The Senior Hygiene Officer of the CR also announces the end of a pandemic / of the first wave of a pandemic in the territory of the CR (and announces the beginning of the second wave of the pandemic, as appropriate).
- C. Information on morbidity, complications and mortality during a pandemic in this country will be obtained through the system of the “Health register for an influenza pandemic” (See Annex No. 9) – Variant of regular reporting of ARI and ILI”, which has been prepared for this situation.
- D. Any changes in the clinical picture of the influenza and/or mortality or changes in the virus during the pandemic will be published by the MZCR, including establishment of the relevant measures.
- E. In the initial stages of the occurrence of a potentially pandemic influenza strain in birds or other animals, the SVS CR will intervene and direct the relevant measures.

6.1. Phases of an Influenza Pandemic

The World Health Organization has defined the phases of an influenza pandemic, which enables us to better describe the individual steps necessary to manage a pandemic. The further algorithm of implemented actions will depend on the specific location of the occurrence of human infections (CR, EU or other countries). Definition of the individual phases and the transitions between them permits provision through this PP for practical implementation of Act No. 258/2000 Coll., on protection of the public health, or Act No. 240/2000 Coll., on crisis management.

6.1.1. International phase

The PP encompasses the phases formulated by WHO in April 2006, describing the progress of an influenza pandemic until international spreading. This global classification is based on knowledge of the global pandemic situation and is used by most countries in their pandemic planning.

6.1.1.1. Interpandemic period

Phase 1

No new influenza virus subtypes have been detected in humans. An influenza virus subtype that has caused human infection may be present in animals. The risk of human infection or diseases is considered to be low.

Phase 2

No new influenza virus subtypes have been detected in humans. However, a circulating animal influenza virus subtype poses a substantial risk¹ of human contagion.

6.1.1.2. Pandemic alert period

Phase 3

The first human infections with a new influenza subtype but no human-to-human transmission. Only in rare instances is transmission from human-to-human in very close contact possible.

Phase 4

Small clusters of infected persons with limited human-to-human transmission but spread is highly localized, suggesting that the virus is not well adapted to humans.

Phase 5

Human-to-human spread is still localized, but large clusters of people are infected, suggesting that the virus is becoming increasingly better adapted to humans. The ability of the virus to spread is still not fully comparable with normal seasonal influenza.

6.1.1.3. Pandemic period

Phase 6

Pandemic phase: increased and sustained human-to-human transmission in the general population.

Experience in the past has shown that the second and possibly the following waves of a pandemic caused by a new virus subtype can develop 3 – 9 months after the first wave and can have more serious consequences.

The seriousness of the impacts and the degree of preparedness (especially early and adequate production of pandemic vaccines) are decisive for any announcement of a state of emergency.

6.1.1.4. Post-pandemic period

Return to the inter-pandemic period.

¹ The distinction between phase 1 and phase 2 is based on the risk of human infection or diseases resulting from circulating strains in animals. The distinction is based on various factors and their relative importance (e.g. pathogenicity in humans and animals, occurrence in domesticated animals or wildlife, geographic spread, etc.).

6.2. Transitions Between the Individual Phases

The transitions between the individual phases may be fast and their boundaries may not be sharp. The interval between phases 5 and 6 is of fundamental importance and will be decisive for timely production of a pandemic vaccine and its potential use during the first wave of the pandemic.

6.3. Consequences for the CR

Here, it will be decisive whether the pandemic influenza virus affects the Czech Republic. This plan includes the variant that an influenza pandemic could start in the CR.

6.4. Mechanism of Announcing a Pandemic

The World Health Organization announces the individual phases immediately after confirming their basic indicators. Prior to announcing phases 5 and 6, WHO consults the situation with international experts and the Member States.

It is not probable that pandemic activity in phase 6 according to WHO will be uniform in all the countries of the world and thus the level of pandemic activity can differ in the individual countries.

The Senior Hygiene Officer of the CR announces the beginning of the first pandemic wave in the CR on the basis of information obtained from the NRL for Influenza and NRC AED. The Senior Hygiene Officer of the CR also announces the end of a pandemic / of the first wave of a pandemic in the territory of the CR (and announces the beginning of the second wave of the pandemic, as appropriate).

6.5. Level of Preparedness in the EU in the Framework of Pandemic Phase 6

First preparedness level – no confirmed cases of infection of humans by a pandemic virus in any of the EU Member States

Second preparedness level – isolated confirmed cases of infection of humans by a pandemic virus in any of the EU Member States

Third preparedness level – confirmed spread of infection by a pandemic virus in any of the EU Member States – consider declaring a state of danger or a state of emergency in the most affected regions

Fourth preparedness level – extensive spread in the EU Member States – consider a proposal for declaring a state of danger or state of emergency if these were not announced at the previous level.

Declaring crisis states: in relation to a pandemic, a state of danger or state of emergency can be declared according to Act No. 240/2000 Coll. and Constitutional Act No. 110/1998 Coll.

a) state of danger

- if it is not possible to prevent the threat by the normal activities of the administrative authorities and components of the IRS
- declared by a regional administrator (mayor)
- for a maximum of 30 days
- may be prolonged with the consent of the Government

b) state of emergency

- in case of natural catastrophes, environmental or industrial accidents, accidents or other danger that endangers the lives, health or property values or internal order and security to a major extent
- declared by the Government
- for a maximum of 30 days
- prolonged with the consent of the House of Representatives of the Parliament of the CR

The criteria for the declaration of a crisis state because of a pandemic do not consist simply in the morbidity level, but also in a number of other indicators, such as mortality, percentage of complications, rate of spread, etc. As follows from the definition of an influenza pandemic, this is not a local matter.

7. Implementation of the Pandemic Plan of the CR in the Individual Phases of an Epidemiological Situation

(Phases and levels of development of pandemic characteristics and actions)

Phase 1

No new influenza virus subtypes have been detected in humans. An influenza virus subtype that has caused human infection may be present in animals. The risk of human infection or diseases is considered to be low.

The fundamental objective of measures implemented in each phase is to retard the spread of new variants of the influenza virus. The activities mentioned in the individual phases of the PP are always an integral part of the activities in the subsequent phase.

Priorities and objectives:

- To strengthen the process of preparation for a pandemic at a global, national and regional level.
- Reduce the potential for transmission of a new influenza virus from animals to humans.
- Strengthen surveillance of influenza in humans and animals.
- Strengthen the rapid warning system.
- Coordinate and support preparation for a pandemic in all the strategic sectors.

Activities:

A. Epidemiological activities:

- Performed by NIPH, RHS and NRC AED.
- Weekly collection and analysis of data on morbidity (ARI, ILI) and complications.
- Issuing weekly reports.
- The MH cooperates with the State Veterinary Administration of the CR.
- Increased vaccination for seasonal influenza in high-risk groups of the population.

B. Virological activities are performed by the NRL for Influenza and NRL for Non-influenza Respiratory Viruses in cooperation with other virology laboratories.

- Clinical material is examined by classical, rapid and express diagnosis.
- Resistance to antiviral drugs is tested.
- Communication is maintained with FluNet and WISS and the information obtained is evaluated.
- Communication is maintained with the virology laboratories of the medical institutions of the regions and other cooperating virology laboratories and important information is provided to and obtained from them.
- They participate in control of anti-influenza vaccines.
- The NRL for Influenza cooperates with the NRL for Newcastle Disease and Avian Influenza of the SVI in Prague.
- They perform selected and targeted serological surveys of influenza (common and new subtypes of virus in the entire age spectrum).
- They submit weekly information on the etiology of ARI to the Senior Hygiene Officer of the CR and to the RHS, including territorial workplaces and the MFA and also for international systems, and information on unusual findings is provided immediately.

These activities are described in detail in the methodical instructions set forth in Annex No. 8 and No. 12.

Phase 2

No new influenza virus subtypes have been detected in humans. However, a circulating animal influenza virus subtype can pose a substantial risk of human disease.

Priorities and objectives:

- Minimize the risk of transmission of the virus to humans – rapidly detect and report possible cases of transmission.
- Reduce the risk of transmission of the virus from animals to humans through close cooperation between the veterinary administration and the public health care system.
- Improve and promote surveillance of the influenza virus in animals.
- Improve the system of control over natural reservoirs of infection.

Activities:

- The Minister of Health directs verification of the up-to-date nature of the PP and the regional pandemic plans.
- The MH informs the health departments of the regional authorities and the secretaries of the safety councils of the regions of the necessity of verifying and, as required, up-dating of the pandemic plans of the regions.
- The MH informs the health-care institutions and media of the current situation.
- The MH cooperates closely with the State Veterinary Administration of the CR in active surveillance.
- Through the Epidemiology Commission (through the Vice-Chair of the Epidemiology Commission) the MH establishes working contacts with further sectors (MA, MT, MF, MI, MD, MFA and others).
- The normal surveillance (epidemiological and virological) regime is continued in the ARI/ILI program.
- Reports from FluNet and EISS/ECDC continue to be monitored.
- Activities commenced in the previous phases are continued.

Phase 3

The first cases of human infections with a new influenza subtype but no human-to-human transmission. Only in rare instances possible transmission from human-to-human in very close contact.

Priorities and objectives:

- Rapidly characterize a new virus subtype, provide for early detection of cases and prevention of further spread.
- Provide for rapid characterization, detection and notification of a new subtype of influenza virus.
- Support international cooperation concerned with determining the characteristics of the new virus subtype.
- Provide for rapid reaction of the competent forces at the focal point(s) of the infection.

Activities:

- The normal surveillance regime continues in the ARI/ILI program.
- Detailed examination is made of suspected cases if these appear in the territory of the CR.
- The NRL for Influenza monitors and, as required, performs diagnosis of illness caused by a new virus variant, including express diagnosis, and provides for determination of the subtype, including serological tests of paired serums.
- The MH determines actual reports and, according to the situation, informs medical institutions and the media.
- The MH prepares and elaborates a detailed methodology for the affected segments of health-care providers, especially for primary care, both state and private, related particularly to taking of samples of biological materials, provision of information, treatment, etc.
- The MH provides for and supplements the strategic stocks of registered antiviral drugs.
- The MH refines the regime of preventative administration of antiviral drugs (in an attempt to reduce the development of resistance) according to the recommendations of WHO and ECDC.
- The MH verifies the state of stocks of basic antibiotics, antipyretic drugs and other preparations employed to treat influenza and its complications.
- The MH verifies the state of preparation and the potential availability of pandemic vaccines.
- The MH plans cooperation with voluntary organizations in the provision of assistance in case of a crisis situation (Czech Red Cross, etc.).
- The MH cooperates closely with the State Veterinary Administration of the CR in active surveillance.
- The MH and NIPH evaluate the results of reporting and other epidemiological data in the CR, Europe and the rest of the world and, as required, informs the relevant central administrative authorities through the sectoral members of the Epidemiology Commission.
- The epidemiology territorial workplaces of the RHS provide for taking samples to isolate the virus in case of ARI in all age categories and without regard to the epidemiological situation in the CR.
- The individual sectors provide for verification (up-dating) of their plans for the case of an influenza pandemic.
- Education of the professional public with emphasis on performance of epidemiological anamnesis for patients with respiratory diseases, through professional societies, institutes of post-graduate education, etc.

- Because of the possible parallel occurrence of seasonal and simultaneously a new pandemic strain of influenza, it is necessary, in accordance with WHO recommendations, to provide for a high level of vaccination for seasonal influenza pursuant to Decree No. 439/2000 Coll., on vaccination against communicable diseases, as amended, and pursuant to Decree No. 368/2006 Coll., on payments for drugs and foodstuffs for special medicinal purposes, as amended.
- The MH provides for access to IS Pandemie for the individual sectors so that they have an overview of the current epidemiological situation.
- Activities commenced in the previous phases are continued.

Phase 4

Small clusters of infected persons with limited human-to-human transmission but spread is highly localized, suggesting that the virus is not well adapted to humans.

Priorities and objectives:

Maximally restrict the spread of the virus outside of the original focal point so that it is possible to implement the greatest possible number of anti-epidemic measures and time is gained for development of a vaccine.

Activities:

- Continuing intensification of the surveillance program in all its components (epidemiological, virological and veterinary).
- Increased attention is paid to:
 - a sudden increase in ARI diseases at an unusual season of the year
 - mass occurrences of ARI
 - ARI diseases with unusually serious course
 - respiratory diseases imported from abroad
 - increased purchasing of antipyretic drugs in pharmacies and increased visits to first-aid medical services
- The NRL for Influenza and NRL for Non-influenza Respiratory Viruses provide for diagnosis of AEI and the potential for determining new variants; as required, provide the necessary number of diagnostic materials for its own use from abroad and recommends commercially available diagnostic materials for workplaces in the field.
- Virological examination of ARI and mortality with suspect pathological-anatomical findings is continued in the NRL for Influenza and NRL for Non-Influenza Respiratory Viruses.
- The NRL for Influenza continues to monitor and evaluate the daily reports from FluNet and EISS and informs the Epidemiology Commission.
- The MH controls stocks of already provided antiviral drugs, specifies possible doses of vaccines and up-dates the means of distribution.
- EU events are held under the control of mutual provision of information on the actual state of occurrence of new variants.
- Regular communication continues with WHO, ECDC and the EU Member States.
- The MH requests the MFA for provision of information and for pre-agreed assistance to the employees of embassies and consulates in affected areas throughout the period of the occurrence of new variants in the world. In general, it is not expected that Czech citizens in affected areas would be repatriated to the CR; nonetheless, individual return to the CR will not be prevented. Any other measures will be adopted and performed in accordance with the International Health Regulations (IHR 2005) and according to ECDC recommendations.
- The MH will verify the preparedness of beds for cases of necessary hospitalization in cooperation with the health departments of the regional authorities.
- The MH will inform the public through the mass media of the situation and also of measures adopted to prevent further spreading of the infection.
- The SVA of the CR will regularly inform the MH in detail of the situation in the veterinary sector.
- The directors of the RHS will verify the capability to be put into action of the RPP.

- Where possible, vaccination is commenced for medical workers and other professionally endangered and important groups of society by a monovaccine according to the operational plans of the sectors.
- Activities commenced in the previous phases are continued.

Phase 5

Human-to-human spread is still localized, but large clusters of people are infected, suggesting that the virus is becoming increasingly better adapted to humans. The ability of the virus to spread is still not fully comparable with normal seasonal influenza.

Priorities and objectives:

- Attempt as far as possible to prevent spread of the virus and to prevent a pandemic, in an attempt to gain the maximum time for implementation of anti-epidemic measures.
- Adopt measures to prevent introduction of the diseases into the CR; in case of introduction, contain the focal point, prevent spread and thus prevent the development of a pandemic.

Activities:

- Consider the possibility of declaring a state of danger in the affected regions.
- Continue to reinforce and control the surveillance program in all the units, epidemiological, virological and veterinary, at a national and regional level.
- The MH verifies cooperation with voluntary organizations in the provision of assistance in the case of need (Czech Red Cross, etc.).
- The MH requests regular provision of information on the occurrence of ARI/ILI in the sectors of the Ministry of the Interior and the Ministry of Defence.
- The MH CR informs the public of the situation through the mass media.
- EU events are held under the control of mutual provision of information on the actual state of the occurrence of new variants. Regular communication with WHO, ECDC and the EU Member States, especially the surrounding countries.
- Activities commenced in the previous phases are continued.

Throughout phases 3-5, increased activities continue of physicians in the first line, epidemiologists and microbiological laboratories for early isolation and identification of a new subtype of virus according to the Methodical Instructions set forth in Annexes No. 8 and No. 12. Activities intended for phase 4 or phase 5 or directly phase 6 will be based on the results of surveillance.

Phase 6

Pandemic phase: increased and sustained human-to-human transmission in the general population.

Priorities and objectives:

Reduce the impacts of the pandemic as much as possible.

Priorities and objectives:

- Minimize morbidity and mortality.
- Maintain adequate functioning of all the strategic sectors essential for providing for the functioning of the Czech Republic in accordance with their operational plans.
- Maintain the activities of all the units responsible for monitoring and control of a pandemic in the CR.
- Minimize the impacts of a pandemic on public life in the CR.
- Monitor the development of a pandemic in the territory of the CR.
- Constant communication with the public, health education and consistent non-pharmacological intervention.
- Reduce the impacts of the pandemic as much as possible.

Activities:

Level one according to the EU – no confirmed cases of infection of humans by a pandemic virus in any of the EU Member States

- Cooperation with the SVA of the CR continues.
- During seasonal influenza and at the time of danger from a pandemic variant of the influenza virus, increased activity of epidemiologists and virologists continues:
 - in electronic reporting of morbidity, mortality and complications
 - in reporting virologically confirmed cases of influenza
 - the individual territorial workplaces of the RHS introduce reporting from medical first-aid services and medical emergency services
- Epidemiologists or physicians in the first line provide for taking of samples of biological material from human cases suspect of infection by a new variant of the influenza virus for virological examination.
- Virological laboratories send suspect clinical material and isolated strains for identification to NRL for Influenza; NRL for Influenza sends the subsequently identified isolated samples for confirmation to the cooperating WHO centre in London.
- NRL for Influenza submits information on findings of isolated normal and different strains to WHO and EISS and, together with MH CR and NRC AED, monitors new information on the epidemiological situation in Europe and informs the MH.
- The MH requests regular provision of detailed information on the occurrence of ARI/ILI in the sectors of the Ministry of the Interior and the Ministry of Defence.
- The MH provides regular information to the media.
- Communication and coordination of necessary measures with the surrounding countries.

- In cooperation with the responsible institutions, the EU Commission specifies any measures required against introduction of infection from the EU countries.
- Activities commenced in the previous phases are continued.

Level two according to the EU – isolated confirmed cases of infection of humans by a pandemic virus in any of the EU Member States

- The MH and health departments of the regional authorities stipulate further measures in the first cases of affection in the CR.
- Intensification of the collection of clinical material.
- Activities commenced in the previous phases are continued.
- Where available, commence vaccination of medical personnel with the pandemic vaccine.

Level three according to the EU – confirmed spread of infection of a pandemic virus in any of the EU Member States

- On the basis of evaluation of information from the regional epidemiology commissions, the individual regional administrators consider the declaration of a state of danger.
- On the basis of information from the Epidemiology Commission, the Government of the CR considers the possibility of declaring a state of emergency.
- Up-dating of the regime of ex-post administration of antiviral drugs on the basis of ECDC recommendations.
- Provide for the preparedness of voluntary organizations in the provision of assistance in the case of a crisis situation (Czech Red Cross, etc.).
- The Epidemiology Commission meets according to the current situation and stipulates further procedure.
- Activities commenced in the previous phases are continued.

Level four according to the EU – extensive spread in the EU Member States

- In more serious cases affecting the CR or the neighbouring countries, a state of emergency is declared throughout the territory of the CR.
- Surveillance continues with daily reporting of the morbidity and complications, and the number and location of demonstrated infection by a new variant of the influenza virus to the PANDEMIE web site (see Annex No. 9).
- NRL for Influenza identifies isolated strains and determines the sensitivity or resistance to the antiviral drugs employed.
- Associations of drug importers provide the Epidemiology Commission with information on stocks of antiviral drugs, antibiotics, antipyretic drugs and other preparations employed to treat influenza and its complications and on their use.
- The MH will consider a regulation for the regime of provision of medical care by general practitioners and paediatricians (reduced surgery hours, visits at home).
- Civic associations and other NGO's, within their competence, will participate in providing for care for disabled persons (e.g. purchasing of drugs, foodstuffs, etc. and their delivery to households).

- All the anti-epidemic measures are performed in accordance with Act No. 258/2000 Coll., on protection of the public health and on amendment to some related laws, as amended.
- In case of availability of a pandemic vaccine, commence vaccination of the inhabitants of the CR according to Annex No. 12.
- Activities commenced in the previous phases are continued.

8. The Period between the First and any Subsequent Wave of the Pandemic and the Post-Pandemic Period

Activities:

- Ending the crisis state, transition to the standard regime of the life of society with some limitations (visits to hospitals, etc.).
- Surveillance continues, preliminary evaluation of morbidity, complications, mortality and virological findings
- The MH will request that the CSO provide information on mortality from a particular diagnosis.
- The Commission will evaluate the elapsed period and prepare a report in which it will evaluate the pandemic preparedness, including all the measures adopted. It will provide the report to the Government of the CR and will inform the public of it through the media.
- Vaccination with the pandemic vaccine will continue.
- NRL for Influenza will recommend diagnostic materials for the new variant of the influenza virus, which will be provided to virology laboratories for routine diagnosis.

If the epidemiological situation of the pandemics of 1957 and 1968 is repeated, the second wave can be expected 5 – 8 months after the first and it can be expected that it will place greater demands on the rapid introduction of effective anti-epidemic measures. After the virus has circulated in the population for several months, it must be expected that it could have changed into a highly pathogenic, virulent agent with continuing susceptibility of the endangered population. Consequently, it can be expected that the infection will have a very serious course, with frequent complications and increased mortality.

Necessary measures:

- Continue in detailed reporting of morbidity, complications and mortality throughout the period between the first and second wave of the pandemic.
- Actively seek out, virologically confirm and rapidly characterize the influenza etiology of ARI isolation agents and serum conversion; include the new variant in serology.
- The anti-epidemic measures should remain in effect in affected collectives in an attempt to reduce spread internally and externally.
- Establish strategies for further vaccination.
- Report deaths and, for an unusual course of the disease, employ a post mortem to confirm influenza etiology.

Termination of a pandemic

- WHO and the EU will confirm the termination of a pandemic if the epidemiological situation is stabilized.
- The surveillance program in the CR will continue according to the epidemiological situation.

- The Epidemiology Commission will meet and evaluate the situation and stipulate the future direction of activities.

Post-pandemic period in the CR

Objectives:

- Analysis of the impacts of the pandemic on the public health
- Analyze the impacts of the pandemic on the functioning of the state and its components.
- Recovery of the economy and public life.

Activities:

- Return to the regime of the inter-pandemic period.
- NRL for Influenza and NRC AED will analyze the results of the surveillance program for the period of the first and any subsequent waves of the pandemic.
- The Epidemiology Commission will evaluate the organizational provision for the progress of the pandemic according to the regions and according to the individual sectors.
- In cooperation with the MH CR, the Epidemiology Commission will analyze the Pandemic Plan of the CR and organization of preventative measures.
- The Epidemiology Commission will evaluate the elapsed period and prepare a report in which it will evaluate the pandemic preparedness and the anti-epidemic measures adopted. It will provide the report to the MH CR and the Government of the CR and will inform the public it through the media.
- It will evaluate the benefit of cooperation of national and international organizations.

9. Strategic Sectors, the Scope of Their Competence and Tasks of Other Institutions

9.1. Activities of the Central Administrative Authorities and Other institutions at the Time of an Influenza Pandemic (Phase 6 of the PP)

9.1.1. THE GOVERNMENT OF THE CZECH REPUBLIC

Coordination, management and control of implementation of measures to eliminate the consequences in case of an influenza pandemic and provision for the functioning of the national economy.

9.1.2. MINISTRY OF HEALTH

9.1.2.1. SECTION OF PROTECTION AND PROMOTION OF PUBLIC HEALTH

Performance of the state administration in protection of health pursuant to the relevant legislation. The MH performs tasks in protection of the public health, with the exception of implementing tasks of protection of the population, which lies within the competence of the Ministry of the Interior. It prepares basic documents and proposed measures for the Epidemiology Commission. The Ministry of Health shall:

- provide for organization of the work of the Epidemiology Commission,
- in cooperation with the Administration of the State Material Reserves and the Ministry of the Interior, provide for doses of vaccine against influenza, antiviral drugs and personal means of protection,
- direct regular monitoring of infection by influenza, including all acute respiratory infections,
- establish priorities in vaccination against a pandemic influenza virus and administration of antiviral drugs (see Annex No. 13),
- direct increasing of medical and pharmacy services,
- in cooperation with the higher territorial units, issue measures in the competence of general practitioners in the first line,
- designate high-risk groups of employees of the sector and provide for their vaccination against an influenza pandemic and/or the administration of antiviral drugs.

9.1.2.2. REGIONAL HYGIENE STATIONS

- surveillance, monitoring development of the epidemiological situation in the regions,
- control of the providers of health care,
- cooperation with the crisis management bodies at the regional level,
- cooperation with the health-care departments of the regional authorities,

- informing the regional administrator of measures that should be adopted in the given situation (see the Statute of a regional epidemiology commission – Annex No. 11),
- public health intervention,
- imposing of extraordinary measures pursuant to Act No. 258/2000 Coll., on protection of public health and on amendment to some related laws, as amended.

9.1.2.3. PROVIDERS OF HEALTH CARE IN THE CZECH REPUBLIC

The providers of health care will be responsible for:

- introduction of two-shift operations in out-patient medical facilities,
- preparation of bed capacity for patients (reduction of the scope of provision of health care to only urgent medicine)
- dealing with a lack of beds for patients in cooperation with the local state administrative bodies and local government (utilization of the bed capacity of the region – student residences, spa facilities, hotels, pensions, etc.),
- in connection with an influenza pandemic, persons with serious clinical course and complications of influenza will be hospitalized, which will require provision of intensive and resuscitation care. These patients cannot be hospitalized in temporarily established bed facilities.
- temporary bed capacities will be used for patients whose state of health does not require specialized health care.
- during a pandemic, medical care in temporary bed facilities will be provided on the basis of operative transfer of professional medical personnel in the region.

9.1.3. MINISTRY OF FOREIGN AFFAIRS

In connection with a pandemic and its impact on the citizens of the CR, the Ministry of Foreign Affairs will be responsible for:

- coordination of measures performed by cooperating ministries and other administrative bodies abroad,
- informing citizens of the CR of means of state assistance,
- assistance provided to state citizens of the CR abroad in protecting their lives and health,
- provision of assistance in protecting citizens of the EU countries who request the embassies or consulates of the CR for assistance abroad,
- assistance abroad, provided to the victims and the survivors of victims from amongst CR citizens abroad,
- provision of immediate assistance for emergency survival of CR citizens and their family members and citizens of the EU states abroad,
- informing the public in the CR of the situation of CR citizens in an affected foreign country,
- designation of high-risk groups of employees of the sector and provision for their vaccination against influenza pandemic and/or the administration of antiviral drugs.

9.1.4. MINISTRY OF INTERIOR

Provides for requirements for internal security of the state according to the needs of the Epidemiology Commission and according to the progression of an influenza pandemic in the CR, especially in:

- cooperation in organizing emergency supplying of the population,
- modification of the regime at border-crossing points,
- prevention of looting or other forms of aggressive criminality,
- prevention of illegal trade in foodstuffs, etc.,
- designation of high-risk groups of employees of the sector and provision for their vaccination against influenza pandemic and/or the administration of antiviral drugs.

9.1.4.1. SENIOR HYGIENE OFFICER OF THE MINISTRY OF THE INTERIOR

The crisis staff of the MI cooperates with the Epidemiology Commission. The Senior Hygiene Officer of the MI further performs in the sector of the interior:

- public health intervention,
- surveillance, monitoring development of the epidemiological situation,
- control of the providers of health care,
- cooperation with the crisis management bodies,
- provision for their vaccination against an influenza pandemic and/or provision of antiviral drugs.

9.1.4.2. PROVIDERS OF HEALTH CARE IN THE COMPETENCE OF THE MINISTRY OF THE INTERIOR

Will perform identical tasks as the providers of health care located outside of the sector of the interior, especially for the Police of the CR.

9.1.4.3. POLICE OF THE CZECH REPUBLIC

In case of announcement of an influenza pandemic, the Police of the CR will especially provide for:

- maintenance of public order and safety of the population,
- cooperation in emergency supplying of the population,
- protection of important objects.

9.1.4.4. THE FIRE RESCUE SERVICE OF THE CZECH REPUBLIC

In case of announcement of an influenza pandemic, the Fire Rescue Service will participate particularly in providing for distribution of antiviral drugs and vaccines against influenza.

9.1.5. MINISTRY OF DEFENCE

The Ministry of Defence has set aside forces and funds for maintenance of order and internal security during an influenza pandemic, on the basis of the requirements of the Epidemiology Commission in cooperation with the Police of the CR. It also provides for protection of the health of the members of the armed forces at direct risk from the disease. It designates high-risk groups of employees of the defence sector and provides for their vaccination against influenza and/or for the administration of antiviral drugs.

The crisis staff of the Ministry of Defence provides for implementation of tasks imposed by the Epidemiology Commission in the defence sector.

9.1.5.1. PROVIDERS OF HEALTH CARE IN THE COMPETENCE OF THE MINISTRY OF DEFENCE

Will perform identical tasks as the providers of health care located outside of the sector of defence, especially for the members of the armed forces.

9.1.6. MINISTRY OF TRANSPORT

- Will designate high-risk groups of employees in the sector who must be administered vaccine against influenza and/or antiviral drugs.
- The crisis staff of the Ministry of Transport provides for implementation of tasks imposed by the Epidemiology Commission.
- It cooperates with the MH in preparing and maintaining plans for reaction in international transport to events that could constitute a danger to public health of international importance.

9.1.6.1. MEASURES IN THE AREA OF INTERNATIONAL TRANSPORT

In case of the occurrence of a pandemic with danger to the public health of international importance, measures in international transport, related to persons, luggage, freight, containers, means of transport, for the purpose of preventing or reducing the spread of a disease on an international scale and unnecessary disturbance of international operations, will be employed in accordance with the international regulations and recommendations issued by WHO and international organizations in the area of transport.

9.1.7. MINISTRY OF INFORMATICS

In case of the need to close small post offices, preparation of a proposal for delivery of consignments to municipalities, cities or regions where it will not be possible to provide postal services.

Designates high-risk groups of employees in the sector and provides for their vaccination against pandemic influenza and/or the administration of antiviral drugs.

9.1.8. MINISTRY OF AGRICULTURE

The crisis staff of the Ministry of Agriculture provides for the implementation of tasks imposed by the Epidemiology Commission in the agriculture sector.

- Issues measures to strengthen cooperation of the regional veterinary administrations with the regional hygiene stations and their territorial workplaces,
- Designates high-risk groups of employees in the sector who must be administered vaccine against influenza and/or antiviral drugs.

9.1.8.1. STATE VETERINARY ADMINISTRATION

Processes information for the Epidemiology Commission and directs the activities of the NRL for Influenza in the State Veterinary Institute in Prague and further stipulates measures to manage the epizootological situation. Prepares and provides for a continuous system of immediate reporting of suspicion of a focal point of avian influenza and sends a report to the Ministry of Health.

9.1.8.2. REGIONAL VETERINARY ADMINISTRATION

Implements tasks laid down by the Veterinary Act and its implementing decrees and cooperates with the other units.

9.1.9. MINISTRY OF EDUCATION, YOUTH AND SPORTS

- On the basis of developments in the epidemiological situation, adopts measures to stop the educational process and prepare the capacities of school residences and accommodation facilities for use for location and treatment of patients. The structural and technical condition of these buildings must correspond to the purpose of use. It designates high-risk groups of employees of the sector and provides for their vaccination against pandemic influenza and/or for the administration of antiviral drugs.

9.1.9.1. SCHOOLS AND OTHER FACILITIES IN THE COMPETENCE OF THE MINISTRY OF EDUCATION, YOUTH AND SPORTS

- On the basis of instructions from the MEYS, stop the educational process and prepare substitute teaching programs,
- In case of a pandemic, permit the employment of students in years 5 and 6 in the general medicine study program for assistance in the surgeries of general practitioners,
- In case of a pandemic, permits the employment of students in the general medicine study program, from year 3, inclusive, in nursing.

9.1.10. MINISTRY OF FINANCE

In accordance with a Government Resolution, the Ministry of Finance will provide for the requirements of the Epidemiology Commission in relation to the state budget for payment of the costs incurred to eliminate the risk of an influenza pandemic in the CR in the framework of the budgetary rules.

Designates high-risk groups of employees of the sector and provides for their vaccination against pandemic influenza and/or for the administration of antiviral drugs.

9.1.11. MINISTRY OF LABOR AND SOCIAL AFFAIRS

The crisis staff will participate actively in coordination of measures in social service facilities in the competence of the sector. It designates high-risk groups of employees of the sector and provides for their vaccination against pandemic influenza and/or for the administration of antiviral drugs.

9.1.11.1. SOCIAL SERVICE FACILITIES IN THE COMPETENCE OF THE MINISTRY OF LABOUR AND SOCIAL AFFAIRS

The Ministry of Labour and Social Affairs provides for cooperation with contract physicians in care for patients located in social service facilities who cannot be placed in home care.

9.1.12. MINISTRY OF JUSTICE

The crisis staff of the Ministry of Justice provides for implementation of tasks imposed by the Epidemiology Commission in the justice sector. In connection with internal security of the state and according to the epidemiological situation amongst accused persons, persons punished by imprisonment, and the members and civilian employees of the Prison Service of the Czech Republic, it modifies the regime of performance of custody by accused persons, persons punished by imprisonment or by the performance of services, and the work of the members and civilian employees of the Prison Service of the Czech Republic. It provides for cooperation with the Police of the CR, public health intervention, surveillance monitoring of the development of the epidemiological situation, and prophylaxis and health care for persons to whom this is provided, within the competence of the Ministry of Justice. In case of declaration of a state of emergency, it adjusts the regime of administration of justice in the given territory. It further designates high-risk groups of employees of the sector and provides for their vaccination against pandemic influenza and/or for the administration of antiviral drugs.

9.1.12.1. PROVIDERS OF HEALTH CARE IN THE COMPETENCE OF THE MINISTRY OF JUSTICE

Will perform tasks as providers of health care outside of the justice sector.

9.1.13. ADMINISTRATION OF THE STATE MATERIAL RESERVES

In accordance with the relevant Government Resolution, will provide for the purchase of antiviral drugs, vaccines against an influenza pandemic and medical aids and distribution of antiviral drugs and medical aids according to the requirements of the Epidemiology Commission.

9.1.14. CZECH RED CROSS

The Red Cross will prepare volunteers for assistance in providing health care in hospitals and in bed facilities where patients will be hospitalized. It will contribute to participate in psychological support for the population.

9.1.15. VOLUNTEER FIREFIGHTERS

Cooperate in the preparation of substitute bed capacities outside of medical facilities; as required, provide for auxiliary work (assistance for the Fire and Rescue Services, Police of the CR, etc.).

9.1.16. REGIONS AND CAPITAL CITY OF PRAGUE

- Perform tasks connected with providing for security and safety in the territories of the regions, requirements on substitute spaces for hospitalization of patients and burying the dead.
- Establish regional epidemiology commissions and the epidemiology commission of the Capital City of Prague
- In cooperation with the regional epidemiology commissions, maintain information communication with the Epidemiology Commission; in case of an influenza pandemic, coordinate availability in supplying vital products, including the use of extraordinary regulation measures.

9.1.17. REGIONAL EPIDEMIOLOGY COMMISSIONS, CRISIS STAFFS OF THE REGION AND OF THE MUNICIPAL AUTHORITY OF THE CAPITAL CITY OF PRAGUE

On the basis of proposals by the public health authorities, recommend, to the regional administrators and the mayor of Capital City of Prague and according to evaluation of the epidemiological situation, that further relevant measures be adopted, consisting in:

Area of education:

- a change in the regime of operation of crèches
- the possibility of cancelling school attendance
- a change in the regime of operation of school youth centres
- a change in the regime of kindergartens
- a change in the regime of school kitchens
- the possibility of cancelling teaching at secondary schools and universities
- a change in the regime of the activities of school residences and cafeterias

Area of health and social affairs:

- a change in the regime of the operation of the individual departments of hospitals
- freeing beds in departments of internal medicine
- freeing beds in departments of intensive medicine
- prohibition of visits to hospitals, long-term patient facilities and social care institutes
- prohibition of the work of sick medical workers and nursing personnel
- working obligations in the regime of Act No. 240/2000 Coll., the Crisis Act, under declaration of a state of emergency
 - for general practitioner for children and adolescents
 - for general practitioners for adults
 - for employees of medical facilities
 - for the employees of pensioners' homes, social care institutes and similar facilities
 - for the employees of pharmacies, including emergency service

- the obligation of all professionally qualified medical workers to apply pandemic vaccine; the Senior Hygiene Officer of the CR will stipulate the conditions, organizational provision and means of application.

Area of transport

- designation of high-risk groups of employees in public mass transport in the competence of the regions who must be administered vaccine against influenza and/or antiviral drugs,
- medical measures in the operation of public mass transport,
- regulation measures in transport in declaration of a crisis state.

9.2. Activities for the 2006 – 2008 period

- The Ministry of Health, Ministry of the Interior and Administration of the State Material Reserves will prepare the logistics of distribution of anti-viral drugs and pandemic vaccines if required.
- In the prepared amendment to Act No. 258/2000 Coll., on protection of the public health, as amended, and Act No. 240/2000 Coll., the Crisis act, as amended, the Ministry of Health and Ministry of the Interior will incorporate a provision providing for legislative interconnection between these Acts and will further incorporate into these Acts the establishment of a Commission for dealing with the occurrence of serious communicable diseases.
- The Ministry of Health will prepare documents for the manner of communication with the public and media in the period of danger of the occurrence and progress of a pandemic, so that only objective information is provided.
- The Ministry of Health will incorporate, into the prepared amendment to Act No. 258/2000 Coll., the obligation of health insurance companies to communicate to the MH, by April 30, the available data related to control of vaccination against seasonal influenza and other provisions to provide for implementation of the PP under the conditions in the CR.
- The Ministry of Health will prepare a methodology for preparing the plans of the sectors and regional pandemic plans for the case of an influenza pandemic.
- The Ministry of Health will provide for the publication of the Pandemic Plan of the CR and publication of the Statutes of the Commission for dealing with serious communicable diseases in the CR and the Regional Commissions and the Commission of the Capital City of Prague for dealing with the occurrence of serious communicable diseases in the Journal of the Government.
- The Ministry of Health and the Ministry of Education, Youth and Sports will prepare a procedure that, in the case of a pandemic, will enable the employment of students in the fifth and sixth years studying in the general medicine study program to assist in the surgeries of general practitioners and also the employment of students studying the general medicine study program from the third year, incl., in nursing.
- The Ministry of Health, Ministry of the Interior and Ministry for Regional Development will prepare a procedure to deal with the situation in the area of funeral services in case of a pandemic.

- During the period of declaration of pandemic phase 6 according to the World Health Organization, the Ministry of the Interior and the Ministry of Defence will provide the Minister of Health with regular information on the occurrence of respiratory infections (ARI/ ILI) in their sectors.
- In case of the occurrence of a pandemic, in cooperation with the Administration of the State Material Reserves, the Ministry of Health will submit to the Government of the CR a proposal for dealing with the pandemic under the conditions in the CR, including financial provision, and will request release of the necessary funds for purchase of pandemic vaccines.
- In cooperation with the Ministry of Health, the Administration of the State Material Reserves will secure, at the manufacturers or vaccines against influenza, production capacity for a pandemic vaccine for 60% of the population of the CR and will submit to the Government a proposal for financial coverage of the related expenditures.
- All the ministries and other central administrative bodies will prepare plans for the case of an influenza pandemic as part of crisis plans, also including the necessary number of persons of selected entities of the critical infrastructure in their competence to provide for the necessary activities in preparation for a pandemic and on its occurrence.
- The Regional Administrators of all the regions and the Mayor of the Capital City of Prague will establish epidemiology commissions as special bodies of the regions and Capital City of Prague, whose recommendations will form the basis for establishing measures in case of an influenza pandemic.

9.3. Tasks of the Municipal Authorities

In case of an influenza pandemic, on the basis of the recommendations of the public health authorities, the municipal authorities will issue a prohibition of mass events in the territory of the municipality and ensure the provision of health information for their citizens.

10. Communications

10.1. INTERNATIONAL COMMUNICATIONS

By definition, a pandemic is an international event. Consequently, the Czech Republic must act in accordance with international developments and intentions. Similarly, the Czech Republic has international obligations in relation to international organizations, especially towards WHO and EU, to report cases of morbidity, epidemics and adopted measures. The Czech Republic will contribute by sending data, knowledge and professional skills to support coordination and a coherent international reaction. Exchange of information between the Member States will be performed through the European Network for epidemiology surveillance and control of communicable diseases and its Early Warning and Response System – EWRS.

10.1.1. World Health Organization

Through its Global Influenza Program, the World Health Organization coordinates international response for the case of a threat or occurrence of an influenza pandemic, with special emphasis on

- coordination of international surveillance,
- national influenza reference centres in 83 countries, including the Czech Republic, provide the results of their surveillance to one of the 4 WHO cooperating centres (Atlanta, London, Melbourne and Tokyo),
- consulting and recommendations related to pandemic planning, in particular strategy for intervention in the area of public health,
- provision of field experts for assistance to member states on request (including provision of teams capable of reacting in the field),
- coordination of international investigations and reactions,
- provision of international information and consulting to professional workers, the media and public.

WHO Regional Office, Copenhagen, Denmark
MUDr. Bernardus Ganter
WHO Regional Advisor for Communicable Disease
Surveillance and Response
tel.: +45 3917 1398
e-mail: BGA@euro.WHO.int

10.1.2. European Union

The European Commission

- promotes exchange of information between the Member States through the European Network for epidemiology surveillance and control of communicable diseases and its Early Warning and Response System – EWRS.

- coordinates the reactions of Member States through the European Network and other mechanisms,
- specifies the priorities of the European Science Foundation.

It is expected that, in case of a pandemic, the procedure of the Member States will be coordinated by the European Centre for Disease Prevention and Control (ECDC) in Stockholm

European Centre for Disease Prevention and Control
Stockholm, Sweden
A telephone line has been established for the case of the occurrence of an extraordinary situation (24 hours, 7 days a week):
tel. +46 841 047 878

10.2. NATIONAL COMMUNICATION

This occurs in the framework of surveillance according to Annex No. 8 and, in case of an influenza pandemic, according to Annex No. 9.

Contacts:

Ministry of Health

Palackého náměstí 4
128 01 Prague 2
tel.: 2 2497 1111
fax: 2 2497 2111
e-mail: mzcr@mzcr.cz; posta@mzcr.cz

National Institute of Public Health

Šrobárova 48
100 42 Prague 10
tel.: 267 081 111
fax.: 272 744 354
e.mail: zdravust@szu.cz

State Veterinary Administration of the CR

Slezská 7
120 00 Prague 2
tel.: 227 010 142, 227 010 143, 227 010 144
fax: 227 010 191, 227 010 195
e-mail: red@svscr.cz, j.vitasek@svscr.cz

Contacts to Regional Hygiene Stations, including their territorial workplaces

HS / branch	telephone	fax	mobile phone	e-mail
HS Capital City of Prague Rytířská 12, 110 01 Prague 1	224 212 039 296 336 700	224 212 335	602 222 288	sekretariat@hygp Praha.cz red@iol.cz
- Central branch Dukelských hrdinů 11, Prague 7	233 376 047	233 374 091	728 062 057	sekretariat-centrum@hygp Praha.cz
- North branch Měšická 646, Prague 9	286 884 268 286 883 001	286 884 450	728 070 678	sekretariat-sever@hygp Praha.cz
- South branch Němčická 8/1112, Prague 4	261 260 537	261 261 681	607 658 318	sekretariat-jih@hygp Praha.cz
- East branch	272 653 212	272 655 282	728 182 680	sekretariat-vychod@hygp Praha.cz

Jasmínová 2905/37, Prague 10	272 651 454			
- West branch Štefánikova 17, Prague 5	257 000 820 257 321 206	257 325 561	605 969861	sekretariat-zapad@hygpraha.cz
- Northwest branch Nechanského 1/590, Prague 6	235 365 828	235 361 115	728 062 185	sekretariat-severozapad@hygpraha.cz

RHS / territorial workplace (t.w.)	telephone	fax	mobile phone	e-mail
RHS Central Bohemia Region Dittrichova 17, 128 01 Prague 2	224 923 846 234 118 111	224 916 561	736 521 300	info@khsstc.cz
w.p. Benešov 256 55 Černoletská 2053	317 784 029 317 784 000	317 784 024	736 521 330	info@khsstc-bn.cz
w.p. Beroun 266 44 Politických vězňů 455	311 612 486 311 623 755 311 621 196	311 623 541	736 521 344	info@khsstc-be.cz
w.p. Kladno 272 01 gen. Klapálka 1583	312 292 010 312 292 011	312 292 019	736 521 352	info@khsstc-kl.cz
w.p. Kolín 280 01 U nemocnice 3	321 751 011	321 726 110	736 521 360	info@khsstc-ko.cz
w.p. Kutná Hora 284 01 U Lorce 40	327 580 264 327 580 251	327 512 098	736 521 370	info@khsstc-kh.cz
w.p. Mělník 276 01 Pražská 391	315 622 441	315 622 444	736 521 325	info@khsstc-me.cz
w.p. Mladá Boleslav 293 34 Staroměstské nám. 150	326 321 175	326 321 175	736 521 380	info@khsstc-mb.cz
w.p. Nymburk 288 02 Palackého 1567	325 512 740 325 512 665	325 512 666	736 521 390	info@khsstc-nb.cz
External workplace for Prague west 156 80 Žitavského 497, Prague 5	257 922 429 257 922 480	257 922 480	736 521 420	infozbraslav@khsstc.cz
w.p. Příbram 261 80 U nemocnice 85	318 622 055	318 630 967	736 521 400	info@khsstc-pb.cz
w.p. Rakovník 269 29 Dukelských hrdinů 200	313 512 403 313 512 747	313 512 403	736 521 410	info@khsstc-ra.cz

RHS Southern Bohemia Region České Budějovice 370 71 Na Sadech 25	387 712 911 387 712 111	387 712 349 387 712 158	736 514 300	khsccb@khsccb.cz
w.p. Český Krumlov 381 01 Havraní 594	387 712 720	380 712 724	736 514 318	ck@khsccb.cz
w.p. Jindřichův Hradec	387 712 510	387 712 541	736 514 321	jh@khsccb.cz

Bezručova 857/II	377 01				
w.p. Písek K. Čapka 2459	397 01	387 712 601	387 712 602	736 514 366	pi@khscb.cz
w.p. Prachatice Nemocniční 204	383 01	387 712 900	387 712 907	736 514 319	pt@khscb.cz
w.p. Strakonice Žižkova 505	386 01	387 712 828	387 712 830	736 514 315	st@khscb.cz
w.p. Tábor Palackého 350	390 01	387 712 410 387 712 411	387 712 400	736 514 334	ta@khscb.cz

RHS Plzeň Region					
Plzeň Skrétova 15	302 22	377 327 885	377 323 894	602 164 617	sekretariat@khsplzen.cz
w.p. Klatovy Plzeňská 165/II	339 01	376 370 613	376 370 612	606 614 527	anna.kubatova@khsplzen.cz
w.p. Domazlice Školní 111	344 22	379 723 417	379 723 421	723 441 301	up.domazlice@khsplzen.cz mailto:podatelna@domazlice.cz
w.p. Rokycany Svazu bojovníků za svobodu 68	337 11	371 722 051	371 722 051	724 180 806	hana.rouskova@khsplzen.cz
w.p. Tachov Pobřežní ul. 140	347 01	374 732 526	374 732 525	606 665 014	jana.belohlavkova@khsplzen.cz mailto:belohlavkova@ohstc.cz

RHS Karlovy Vary Region					
Karlovy Vary Závodní 94	360 21	355 328 311 355 328 320	355 328 330	602 490 499	sekretariat@khskv.cz
w.p. Cheb Hradební 16	350 01	355 328 411 355 328 420	355 328 430	605 480 232	jaroslava.hrabakova@khskv.cz
w.p. Sokolov Chelčického 1938	356 66	355 328 220 355 328 211	355 328 230	602 576 842	jindra.benesova@khskv.cz

RHS Ústí Region					
Ústí nad Labem Moskevská 15	400 01	475 211 975 477 755 110	475 209 278 477 755 112	602 141 774	sekretar@khsusti.cz
w.p. Děčín Březinova 3	406 83	477 755 210	477 755 212	606 737 480	sekretariat.dc@khsusti.cz
w.p. Chomutov Kochova 1185	430 12	477 755 310	477 755 312	606 655 314	sekretariat.cv@khsusti.cz
w.p. Litoměřice Mírové náměstí 35	412 46	477 755 510	477 755 512	602 456 406	sekretariat.lt@khsusti.cz
w.p. Louny Poděbradova 749	440 38	477 755 610	477 755 612	724 143 840	sekretariat.ln@khsusti.cz

w.p. Most J.E. Purkyně 270/5	434 64	477 755 410	477 755 412	723 801 385	sekretariat.mo@ohsmost.cz
w.p. Teplice Wolkerova 3 a 4	415 65	477 755 710	477 755 712	606 655 324	sekretariat.tp@khsusti.cz

RHS Liberec Region Liberec 31 Husova 64	460	485 253 133 485 253 132 485 253 111	485 105 864	724 189 019	sekretariat@khslibc.cz reditel@khslibc.cz
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w.p. Česká Lípa Purkyňova 1849	470 42	487 820 002 487 820 001	487 820 037	602 106 994	sekretariat.cl@khslibc.cz
w.p. Semily Ke Stadionu 204	513 01	481 351 189 481 623 661	481 625 465	737 813 621	sekretariat.se@khslibc.cz

RHS Hradec Králové Region Hradec Králové 01 Habrmanova 19	501	495 058 527 495 058 111	495 058 502	603 260 418	khshk@khshk.cz podatelna@khshk.cz
w.p. Hradec Králové 01 Habrmanova 19	501	495 058 500 495 058 111	495 058 502	603 243 751	katarina.polakova@khshk.cz
w.p. Jičín 15 Revoluční 1076	506	493 585 810	493 585 818	731 628 603	libuse.juvova@jc.khshk.cz
w.p. Náchod 01 Českoskalická 254	547	491 407 823	491 423 074	731 628 614	michal.houstek@na.khshk.cz
w.p. Rychnov nad Kněžnou Strojnická 148, 01	516	494 339 048	494 535 353	731 628 617	ivana.ticha@rk.khshk.cz
w.p. Trutnov 17 Úpická 117	541	499 829 557	499 840 028	736 677 467	hana.strnadova@tu.khshk.cz

KHS Pardubice Region Pardubice 530 02 Klášterní 54	466 531 930	466 531 950	602 233 939	sekretariat@khspsc.cz
w.p. Chrudim 537 32 Čáslavská 1146	469 688 632	469 688 635	603 227 688	jaroslav.riha@khspsc.cz
w.p. Svitavy 568 02 Milady Horákové 10	461 533 402	461 530 577	604 243 031	bohupil.havel@khspsc.cz
Ústí nad Orlicí 562 01 Smetanova 1390	465 525 419	465 525 389	602 976 666	marta.pavlova@khspsc.cz

RHS Vysočina Region Jihlava 587 25 Vrchlického 57	567 574 791 567 574 738	567 305 352	603 264 849 724 332 648	khsvysocina@khsjih.cz
w.p. Havlíčkův Brod Rozkošská 2331 580 01	569 400 013	569 400 019 569 400 010	607 965 942	ladislav.koblizek@hb.khsjih.cz
w.p. Pelhřimov Pražská 1739 393 01	565 324 523	565 324 523	724 332 647	eva.kimmerova@pe.khsjih.cz
w.p. Třebíč Bráfova 31 674 01	568 858 312	568 842 830	604 200 756	dagmar.celnarova@tr.khsjih.cz
w.p. Žďár nad Sázavou Tyršova 3 591 01	566 650 841	566 650 888	724 187 006	renee.masova@zr.khsjih.cz

RHS Southern Moravia Region Brno 602 00 Jeřábková 4	545 211 221	545 243 264	724 178 633	sekretariat@khsbrno.cz
w.p. Brno 602 00 Jeřábková 4	545 113 047	545 243 264	602 786 246	reditel@khsbrno.cz
w.p. Blansko 678 29 Mlýnská 2	516 413 832	516 417 023	606 755 516	gabriela.cernohousova@khsbrno.cz
w.p. Břeclav 690 85 Sovadinova 12	519 371 678 519321135-7	519 321 248	607 716 341	jana.lastovickova@khsbrno.cz

w.p. Hodonín Plučárna 1a	695 27	518 321 211 518 398 611	518 398 612	606 725 233	ladislav.simecek@khsbrno.cz
w.p. Vyškov Masarykovo nám. 16	682 01	517 346 322	517 347 288	724 210 316	miroslav.dolezal@khsbrno.cz
w.p. Znojmo MUDr. J. Jánského 15	669 02	515 213 709 515 213 711	515 213 753	724 186 787	jana.tuserova@khsbrno.cz

RHS Olomouc Region Olomouc Wolkerova 74/6	779 11	585 719 246 585 719 111	585 719 245	606 759 458	sekretariat@khsolc.cz podatelna@khsolc.cz
w.p. Prostějov Trávnícká 2	767 20	582 340 323	582 338 501	724 334 312	podatelna@pv.khsolc.cz
w.p. Přerov Dvořákova 75	750 11	581 283 214	581 205 090	724 583 117	podatelna@pr.khsolc.cz
w.p. Šumperk Rooseveltova 11	787 01	583 215 226	583 213 684	602 745 532	podatelna@su.khsolc.cz
w.p. Jeseník K.Čapka 10/1147	790 01	584 411 108	584 411 414	602 745 532	podatelna@je.khsolc.cz

RHS Moravia-Silesia Region Ostrava Na Bělidle 7	702 00	595 138 200 595 138 111	595 138 109	602 741 682	podatelna@khsova.cz
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w.p. Frýdek-Místek Palackého 121	738 02	558 433 191 558 418 111	558 435 015	602 521 345	blazena.braunsteinova@fm.khsova.cz
w.p. Karviná Těřeškovové 2206	734 01	596 397 444 596 397 111	596 315 233	602 510 368	pavla.urbankova@ka.khsova.cz
w.p. Nový Jičín Štefánikova 9	741 01	556 770 371 556 770 370	556 770 360	602 704 192	pavel.jiricek@nj.khsova.cz
w.p. Opava Olomoucká 82	746 01	553 715 388	553 715 388	602 562 714	zdenek.ucen@op.khsova.cz

RHS Zlín Region Zlín 01 Havlíčkovo nábř. 600	760	577 210 266 577 006 711	577 006 746	602 813 383	khs@khszlin.cz
w.p. Kroměříž	767 01	573 504 113 573 504 111	573 339 504	602 783 323	khs.km@khszlin.cz

Havlíčková 792/13				
w.p. Uherské Hradiště 686 01 Františkánská 144	572 540 876 572 551 699 572 551 727	572 551 727	606 717 862	khs.uh@khszlin.cz
w.p. Vsetín 755 01 4. května 287	571 498 013 571 411 910 571 498 011	571 498 077	724 178 681	khs.vs@khszlin.cz

The e-mail addresses are subject to regular revision and, as required, are updated.

11. Current State of Preparation for Prevention, Prophylaxis and Treatment

If an influenza pandemic caused by a new variant of the influenza virus occurs at a time when a suitable vaccine has not yet been prepared, the method of choice will be use of the currently available antiviral drug Tamiflu (Roche company), which the CR has prepared in an amount of 650 000 doses, with a plan for a further increase in antiviral drugs for 20% of the population by 2007. This approach is fully in accordance with Resolution of the Government of the CR No. 595 of May 17, 2006. This reserve will be provided free-of-charge in accordance with the priorities set forth in Annex No. 13. In the first phases, the antiviral drug will be used primarily for treatment and prophylaxis of high-risk and endangered groups of the population, primarily physicians and groups of persons important for the functioning of the country (see Annex No. 12). At the time of danger from a new shift variant of the virus, a vaccine must be available against seasonal influenza to prevent the occurrence of seasonal strains of the influenza virus.

A group of six European Vaccine Manufacturers (EVM) has commenced preparation of prototype vaccines with various strains that could be expected to be shift pandemic variants. These are the H5N1, H9N2 and H7N7 strains, which have caused human morbidity, and the H2N2 strain, which disappeared from the human population in 1968, but is still present in the bird population; it cannot be excluded that this subtype could return to the human population. Annex No. 14 gives a survey of vaccine preparation.

The MH is in contact with the manufacturers of candidate influenza pandemic vaccines. Experience gained in the pandemics of 1957 and 1968 indicate that the greatest morbidity, complications and mortality occurred during the second wave. The virus had become well-adapted to humans and, consequently, it is planned that a greater number of doses of antiviral drugs from the MH reserves would be used in the first wave; in contrast, for the second wave, it is planned that the vaccine would be used primarily for persons that did not succumb in the first wave. If developments are otherwise than in the 20th century, the Epidemiology Commission will decide on how the situation should be resolved.

The main targets of therapeutical use of antiviral drugs should be reduction of morbidity and mortality. In the framework of the prophylactic context, the main target is post-exposure and long-term protection of special and susceptible groups of the population (see Annex No. 13).

In case of an influenza pandemic, it is necessary to choose the right antiviral substance. M2-inhibitors and neuroaminidase inhibitors come into question. Nonetheless, neither of them constitutes an ideal solution to antiviral treatment of influenza.

Oseltamivir (Tamiflu) and zanamivir (Relenza) can reduce the seriousness of infection caused by the seasonal virus. Neuraminidase inhibitors are effective only if administered within 48 hours of the onset of the first symptoms of the disease. When administered in response to infection by H5N1, this drug can improve the survival prognosis only when administered in time. Oseltamivir is preferred for the creation of major reserves, because zanamivir is prepared for inhalation application. However, it is recommended that smaller reserves also be created of other substances, so that it is possible to deal with unexpected cases, such as resistance to the substance and supply problems.

The formerly known group of antiviral drugs, i.e. M2 ion channel inhibitors - amantadine and rimantadine, could also be used to treat an influenza pandemic, but resistance to these substances appears very frequently and rapidly. This can substantially reduce their effectiveness in treatment of an influenza pandemic. Some of the currently circulating variants of the H5N1 virus are fully resistant to M2 inhibitors. Nonetheless, the creation of pandemic variants by reassortment (regrouping of segments of the genotype of the virus) still makes it possible that these substances will be effective.

Research workplaces have developed models on which the dynamics of the transfer of influenza during a pandemic can be studied using various types of intervention strategy. Most scientists agree that simply treating patients is inadequate for managing an epidemic. In contrast, the use of antiviral drugs for prophylaxis could substantially retard the transmission of influenza. In the absence of any type of prophylaxis, one model predicts that the total number of infected individuals would correspond to 33% of the population and that mortality would be 0.58 per 1000 inhabitants. The use of prophylaxis program amongst close contacts of index cases of influenza, with a prophylactic period of 8 weeks, reduces the morbidity rate to 2% of the population and mortality to only 0.04 per 1000 inhabitants. Finally, a substantial part of the mortality caused by influenza is the result of secondary bacterial infection by pneumonia. Consequently, it is necessary to have a sufficient supply of suitable antibiotics.

It is stated on the basis of joint analysis of placebo-controlled clinical tests that the period of alleviation of the symptoms of the disease was reduced by approximately 1 day in recipients of oseltamivir (100.6 hours compared to 124.5 hours) if treatment was commenced within 36 hours of onset of symptoms. Median duration of fever was reduced by 36% (44 hours compare to 69 hours). It was found that treatment with oseltamivir leads to a substantial reduction in the period for stopping release of viruses.

It followed from joint analysis of all the placebo-controlled tests that oseltamivir reduced the infection of the influenza-related lower bronchial tract infection (especially bronchitis) leading to treatment with antibiotics by 55% (4.6% compared to 10.3%) and the overall use of antibiotics for any reason at all by 27% (14% compared to 19.1%). Hospitalization for any reason at all was reduced in recipients of oseltamivir (0.7% compared to 1.7%).

12. Program of Early Measures for the Case of a Pandemic: Activities in the 2001 – 2006 Period

Survey of the most important measures from 2001 to 2006

- A new system has been developed for daily reporting of epidemiological data during a pandemic (the “Pandemie” web site – see the manual in Annex No. 9).
- In October and November of 2005, the MH informed the Security Council of the State and the Government of the CR of the state of preparedness of the CR for an influenza pandemic and the current epidemiological situation in the occurrence of seasonal influenza and “bird influenza” in the world (submitted by the Vice-Premier, the Minister of Labour and Social Affairs and the Minister of Health).
- On May 17, 2006, the Government of the CR adopted Resolution No. 595, entitled “Information on the Preparedness of the Czech Republic for dealing with an influenza pandemic”. The material discusses provision of personal means of protection for the sectors of the interior and health, purchase of antiviral drugs so as to ensure a stockpile for 20% of the population of the CR and also provision of pandemic vaccines for an adequate portion of the population, if required. A uniform standard in provision of antiviral drugs and pandemic vaccines has not yet (October 2006) been established in the EU.
- A Czech version has been prepared of the ECDC recommendations related to rules for administration of post-exposure prophylaxis using the Tamiflu preparation, which has been distributed to all RSH and medical institutes. This information was also published on the MH web site and is regularly updated.
- Suitable areas have been secured and equipped in the NIPH for work with virulent strains of the influenza virus, including bird strains. The NRL for Influenza in the NIPH cooperates with the SVA.
- In 2005, the Senior Hygiene Officer of the CR established an intersectoral working group for intensified influenza surveillance, which meets once each 2 months or ad hoc. This group informs the Epidemiology Commission.
- As a Member State of the EU, in the autumn of 2005, the CR participated in a union-wide influenza pandemic simulation exercise called “Common Ground”, which was intended to evaluate:
 - procedures in the framework of the individual EU Member States in implementation of preventative measures and surveillance,
 - cooperation and coordination with neighbouring countries, coordination with the European Commission,
 - implementation of measures limiting some parts of public life and the population,
 - limited stays, appropriateness of identification sources and increased capacity measures,
 - development of vaccines against a possible pandemic influenza strain,
 - specification of communication strategy between the individual units and the public.
- Regional pandemic plans and a pandemic plan of the Capital City of Prague have been prepared.

- The manner of consulting communications with neighbouring states and ECDC/WHO has already been implemented through teleconferences. In case of an urgent situation, personal telephone contact is possible. Representation in the relevant medical sections of the EU was ensured following accession to this Community.
- Basic information was prepared on influenza morbidity and its prevention, and was then provided to the citizens of the CR (see Annex No. 15).

