Pandemic Preparedness Plan of the Czech Republic 2007

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The Czech Republic

Capital city: **Prague**
Historical parts: **Bohemia, Moravia and Silesia**
Population size: **10, 3 mil. inhabitants**, out of them **1.4 mil.** are younger than 15 years
Executive and legislative branches:
**Current President:** Václav Klaus
Head of Government is Prime Minister Mirek Topolanek (since September 2006).
Parliament consists of the Senate and the Chamber of Deputies.
After last elections Civic democratic party has its leadership at Parliament.
**Gross domestic product per capita:** 20 715 USD (2005)
In the CR mean life expectancy at birth reached almost 72.5 years in men and 79.0 years in women (2005)

Longer average life span is *inter alia* a proof of success of modern health care based on effective methods of treatment and increased accessibility of modern drugs

It is also a proof of positive developments in peoples’ life styles, made possible by better access to health information

For the health systems, ageing population is clearly a challenge calling for a change in the structure of health services which will have to respond to demographic changes in population
Beginning of Public Health

the very first endeavour for a system concept of public health services in our country is probably dated to a resolution of the Czech assembly from the year 1585,

there were appointed four „especially gifted doctors“ who were *physici regni*

they were supposed to notice the early signs of general diseases of a population, they should take measures to prevent their spread and should report about it
History of reporting of infectious diseases

Austro - Hungary, Kingdom of Bohemia

**Reporting of epidemics:**
- Court decree of 3.11.1808
- Decree of 19.11.1848
- Decree of Home Office No. 14.067 of 5.8.1886 (already the first case of cholera)

**Case reporting:**
- Decree of Home Office of 13.12.1888
- Mandatory reporting of following infections to the responsible political authority as early as the first case occurs:
  - variola, scarlatina, diphtheria, typhoid fever of every form, dysentery, cholera, puerperal sepsis (and also measles and pertussis if possible)
History of reporting of infectious diseases

- Law No. 67 of **14.4.1913**.
  Consisted of 5 parts (detection, reporting including epidemiological measures, costs reimbursement, penal and general provisions). 17 following infections were reported according to the above mentioned law to responsible Health Office:
  - Variola, cholera, plague, typhus, scarlatina, diphtheria, epid. meningitis, dysentery, typhoid fever, antrax, glanders, rabies, leprosy, yellow fever, recurrent typhus, trachoma, puerperal sepsis.

- During 1914 – 1920 (Czechoslovak Republic) the obligation of reporting was extended to *malaria, varicella, influenza, poliomyelitis, lethargic encephalitis, paratyphoid fever, measles, pertussis, mumps, rubella*. 
Scarlatina (Scarlet fever), Czech Lands, 1890-2003, morbidity per 100 000 population
# Incidence of the preventable diseases

**CR 1950 - 2005**

<table>
<thead>
<tr>
<th>Year</th>
<th>Polio</th>
<th>Difterie</th>
<th>Pertusse</th>
<th>Tetanus</th>
<th>Morbilli</th>
<th>Rubeola</th>
<th>Parotitis</th>
<th>TBC</th>
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<td>0</td>
<td>8</td>
<td>1803</td>
<td>981</td>
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</tr>
</tbody>
</table>
“Most experts agree that it is not a question of whether another serious influenza pandemic will occur, but when it will occur ...”.
The next pandemic will come. But when?

The influenza virus is a master of camouflage!

Antigenic Drift

Antigenic Shift
Pandemic Spread of HPAI H5N1 Viruses in Birds
# Phases of an Influenza Pandemic

<table>
<thead>
<tr>
<th>Inter-pandemic phase</th>
<th>Low risk of human cases</th>
<th>1</th>
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</thead>
<tbody>
<tr>
<td>New virus in animals, no human cases</td>
<td>Higher risk of human cases</td>
<td>2</td>
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<tr>
<td>Pandemic alert</td>
<td>No or very limited human-to-human transmission</td>
<td>3</td>
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<tr>
<td>New virus causes human cases</td>
<td>Evidence of increased human-to-human transmission</td>
<td>4</td>
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<tr>
<td>Pandemic</td>
<td>Evidence of significant human-to-human transmission</td>
<td>5</td>
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<tr>
<td></td>
<td>Efficient and sustained human-to-human transmission</td>
<td>6</td>
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</table>
Legal Framework in the Czech Republic


- Central Epidemiological Commission - intersectorial composition under the Ministry of Health
  (Ministries of Agricultural, Interiors, Defense, Transportation, etc.)
Czech National Pandemic Preparedness Plan 2006 – main objectives

- Improvement of the national rapid warning system
- Rapid detection of the occurrence of a new subtype of influenza virus in population
- Protection of the population against the occurrence of a new pandemic virus to the greatest possible degree
- Limitation of morbidity and mortality in spreading of a pandemic strain of the influenza virus
Measures within health in case of a pandemic

WHO Phase

3 4 5 6

Pre-pandemic vaccine H5N1

Development Production Storage

H5N1-vaccination for exposed professions

Supply the population with the prepandemic vaccine (PPV)

Appearing of the pandemic

Development Production

Supply the population with a pandemic vaccine

Pandemic outbreak

Treatment of all patients

Prophylaxis for contacts

Prophylaxis for exposed professions

Antiviral drugs

Pandemic vaccine

18.9.2012 MARPHLI
Vaccination

World-wide H5N1 Pandemic

Phase 3
- Only planning for manufacturing during pandemic

Phase 4
- Manufacturing of prepandemic vaccine

Phase 5
- Manufacturing of prepandemic vaccine
- 1st dose
- 2nd dose
- Protection
- 3-4 weeks

Phase 6: PANDEMIC
- 1st dose
- 2nd dose
- Protection
- 3-4 weeks
- 6 months

Cross Protection
- 1st dose
- 2nd dose
- “3rd” dose
- Direct Protection
- months or years

Pre-Pandemic Vaccine
- 1st dose
- 2nd dose

Pandemic Vacc.
Antiviral drugs

Emerging Infectious Diseases • www.cdc.gov/eid • Vol. 11, No. 9, September 2005
R. Gani,* H. Hughes,* D. Fleming,† T. Griffin,* J. Medlock,* and St. Leach*
KEY SEASONAL - PANDEMIC HEALTH MESSAGES

- Wash your hands
- Cover your cough
- Stay home if you are sick
- *Annual flu vaccine*
Preparedness for Avian Influenza

- epidemiological surveillance
- preparedness in health-care facilities
- preparedness in ports of entry
- collaboration with the Ministry of Agricultural Development
Preparedness of Health-Care Facilities for Avian and pandemic Influenza

- guidelines for the prevention of transmission and management of cases
  - health-care facilities
  - primary health-care facilities
  - transportation, ambulances
  - private sector professionals

- algorithms for the management of avian influenza cases
  - within hospitals
  - within primary health-care facilities
Priorities for Seasonal Influenza

Health-care facilities

- campaign to increase HCWs influenza vaccination
  - informative leaflets - letters to HCWs about seasonal influenza, vaccine safety and effectiveness
  - posters carrying messages to increase vaccine uptake among HCWs
  - strategies to increase vaccine uptake among HCWs
  - data collection and analysis to search for risk factors for HCW low vaccine uptake
Priorities for Seasonal Influenza

Surveillance

- expand the morbidity sentinel system to primary health-care facilities
- increase collection of clinical specimens (primary health-care facilities)
- implementation of new surveillance systems
  - mortality surveillance (hospitals, regional town-halls)
  - absenteeism surveillance (schools, companies)
  - expand the morbidity sentinel system to emergency rooms
Pandemic Plan of the Czech Republic: pending

- development of communication plan for the general public
- development and completeness of antiviral stockpile and delivery plan
- order of pre-pandemic (AH5N1) vaccine?
- order of pandemic influenza vaccine
- development of vaccine delivery plan
Prepandemic vaccination

Waiting for a vaccination: Influenza pandemic, New York, 1947

Times Photograph
And believe me, the pandemic could start tomorrow. By the time the pandemic starts, preparation will be too late. So, we should be doing this now, and that's my message.”

David Nabarro
UN System Influenza Coordinator
Presented in Berne the 29.06.06
Thank you for your attention!
IT'S A SMALL WORLD AFTER ALL!... IT'S A SMALL WORLD AFTER ALL!...

MODERN GLOBAL MOBILITY