

Pandemic Influenza Preparedness

Joint Self-Assessment Report



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SUMMARY

Pandemic Influenza Preparedness. Joint Self-Assessment Report. Helsinki, Finland 2008. 53pp. (Reports of the Ministry of Social Affairs and Health, ISSN 1236-2115; 2008:2) ISBN 978-952-00-2516-8 (PDF)

Representatives of the European Centre for Disease Prevention and Control (ECDC), the EU Commission and the WHO/European Region acquainted themselves with Finland's pandemic influenza preparedness from 12 to 15 June 2007. The aim of the visit was to investigate the degree of Finland's preparedness for a pandemic, identify its strengths and development objects and encourage national experts to continue and share the work with other EU member states. A corresponding assessment is under way in other European countries.

On the basis of the visit the ECDC experts drew up together with the national experts a report with proposals for measures *Joint Self-Assessment Report on the Pandemic Influenza Preparedness in Finland, June 2007*.

The ECDC's report describes the situation in Finland's pandemic preparedness in summer 2007. The national preparedness plan for a pandemic influenza was completed towards the end of 2006. In connection with its publication, a number of information and education events were arranged in all the special responsibility districts at which representatives of the hospital districts were present. Thereafter the hospital districts have drawn up preparedness plans of their own.

According to the main observations in the ECDC's report the greatest challenge for Finland is how to develop the national and regional instructions into applications that also function at the municipal level. The ECDC estimates that it will demand a couple of years of intensive work. The most important proposals for continued measures in the report concern the continuity and coordination of the national preparedness planning, as well as the operability of the regional and local level plans. The report also stresses the importance of coordinating the preparedness of public health care with social services and private health care.

Key Words

Health care personnel, health care system, health protection, instructions, medical care, proposals, reports

TIIVISTELMÄ

Pandemic Influenza Preparedness. Joint Self-Assessment Report. Helsinki 2007. 53 s. (Sosiaali- ja terveysministeriön selvityksiä, ISSN 1236-2115; 2008:2) ISBN 978-952-00-2516-8 (PDF)

Euroopan tautiviraston (ECDC), EU komission sekä WHO-Euroopan alueen edustajat perehtyivät Suomen influenssapandemia-varautumiseen 12.-15.6.2007. Tutustumiskäynnin tavoitteena oli kartoittaa Suomen pandemia-varautumisen aste, todeta sen vahvuudet ja kehittämiskohteet sekä tukea kansallisia asiantuntijoita työn jatkamiseksi ja jakamiseksi muiden EU-jäsenmaiden kesken. Vastaava arviointi on meneillään myös muissa Euroopan maissa.

Tutustumiskäynnin perusteella ECDC:n asiantuntijat ovat yhdessä kansallisten asiantuntijoiden kanssa laatineet toimenpidesuosituksia sisältävän raportin ”Joint Self-Assessment Report on the Pandemic Influenza Preparedness in Finland, June 2007”.

ECDC:n raportissa kuvataan Suomen pandemiavarautumisen tilanne kesällä 2007. Kansallinen varautumissuunnitelma influenssapandemiaa varten valmistui loppuvuonna 2006. Sen julkistamisen yhteydessä järjestettiin tiedotus- ja koulutustilaisuuksia kaikissa miljoonapiireissä, joissa oli sairaanhoitopiirien edustus läsnä. Sen jälkeen sairaanhoitopiirit ovat laatineet omia varautumissuunnitelmiaan.

ECDC:n raportin päähavaintojen mukaan Suomen suurin haaste on saada valtakunnalliset ja alueelliset ohjeet toimiviksi sovellutuksiksi myös kunnallisella tasolla. Tähän ECDC arvelee kuluvan vielä pari vuotta intensiivistä työaikaa. Raportin keskeisimmät jatkotoimia edellyttävät ehdotukset koskevat kansallisen varautumissuunnittelun jatkuvuutta ja koordinaatiota sekä alueellisen ja paikallisen tason suunnitelmien operationalisuutta. Raportissa korostetaan myös julkisen terveydenhuollon varautumisen sovittamista yhteen sosiaalihuollon ja yksityisen terveydenhuollon kanssa.

Asiasanat

ehdotukset, ohjeet, raportit, sairaanhoito, terveydenhuoltohenkilöstö, terveydenhuoltojärjestelmä, terveydensuojelu

SAMMANDRAG

Pandemic Influenza Preparedness. Joint Self-Assessment Report. Helsingfors 2008. 53 s. (Social- och hälsovårdsministeriets rapporter, ISSN 1236-2115; 2008:2) ISBN 978-952-00-2516-8 (PDF)

Representanterna för den europeiska smittskyddsmyndigheten (ECDC), EU-kommissionen och WHO i Europa bekantade sig med Finlands beredskap för en influensapandemi 12–15.6.2007. Målet för studiebesöket var att kartlägga Finlands grad av pandemiberedskap, fastställa dess styrkor och utvecklingsmål samt stödja nationella experter i att fortsätta med och dela arbetet med de övriga medlemsländerna i EU. En motsvarande utvärdering pågår även i andra länder i Europa.

På basis av studiebesöket har ECDC:s experter tillsammans med nationella experter utarbetat rapporten "Joint Self-Assessment Report on the Influenza Pandemic Preparedness in Finland, June 2007" med åtgärdsrekommendationer.

I ECDC:s rapport beskrivs situationen för Finlands pandemiberedskap sommaren 2007. En nationell beredskapsplan för en influensapandemi blev färdig mot slutet av år 2006. I samband med dess publicering ordnades informations- och utbildningsmöten i samtliga s.k. miljonkretsar där sjukvårdsdistriktens representanter var närvarande. Därefter har sjukvårdsdistrikten utarbetat egna beredskapsplaner.

Enligt de främsta observationerna i ECDC:s rapport är den största utmaningen för Finland att se till att de riksomfattande, regionala och lokala anvisningarna blir fungerande tillämpningar också på kommunal nivå. ECDC tror att detta ännu kräver ett par år av intensivt arbete. De viktigaste förslagen i rapporten som förutsätter fortsatta åtgärder gäller den nationella beredskapsplanens kontinuitet och koordination samt planernas operationalitet på både regional och lokal nivå. Rapporten poängterar även förenandet av den offentliga hälso- och sjukvårdens beredskap med socialvården och den privata hälso- och sjukvården.

Nyckelord

förslag, anvisningar, rapporter, hälso- och sjukvård, hälsovårdspersonal, hälsovårdssystem, hälsoskydd

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ABBREVIATIONS

CDA	Communicable Diseases Act
Evira	Finnish Food Safety Authority
GMHP	Government Meeting of the Heads of Preparedness
HC	Health Centre
HCW	Health Care Workers
KTL	National Public Health Institute
MAF	The Ministry of Agriculture and Forestry
MMPS	Meeting of the Ministries' Permanent Secretaries
MSAH	The Ministry of Social Affairs and Health (STM)
NABHCE	National Advisory Board on Health Care Ethics
NAMA	National Author for Medicolegal Affairs
NESA	National Emergency Supply Agency
NIC	National Influenza Centre
PHC	Primary Health Care
PHCA	Primary Health Care Act
SPO	State Provincial Office

SUMMARY

MAIN FINDINGS:

- Finland has a number of inherent strengths for preparing for a pandemic – not least is the involvement of the central Heads of Preparedness group with representation from each Ministry; as well as the role of the National Emergency Supply Agency in ensuring sufficient stockpiles in such a professional manner.
- Finland has come a long way in pandemic preparedness in the health sector and has advanced very well in involving the other sectors likely to be affected.
- As the basic Healthcare services are the responsibility of 400 Municipalities, applying common standards for the whole country will be a big challenge over the coming years.
- Finland probably needs about two more years of intensive work to have fully implemented the national preparedness plan,.

Country Recommendations

1. A National Pandemic Planning committee should be established with the role of ensuring continuity in coordinating pandemic preparedness and to ensure the plan becomes operational at all levels - the present arrangement of the Heads of Preparedness is not dedicated exclusively to this problem.
2. The present plan contains many issues which still require definite decisions. This plan now needs to be made operational at all levels (including at the municipal level) and a dedicated National Pandemic Planning Committee is probably the right mechanism for this.
3. To ensure long term sustainability, the government should consider introducing a specific budget line for the pandemic preparedness planning, coordination and implementation.
4. There needs to be closer collaboration with the private sector to ensure greater congruence in pandemic preparedness, including with the medical private sector for their possible recruitment during pandemic phase 6.
5. There is potential to establish a more solid basis for future joint planning between the National Emergency Supply Agency and the pandemic preparedness teams (together with KTL).
6. Further development of the main communication messages for use at various levels, especially the local level, and in different scenarios, should ensure uniformity and one governmental web portal will be an efficient tool to help achieve this.
7. It is unclear how the coordination and crisis management at the Regional level will operate in an actual crisis situation: there is a need for a clearer command and control structure from the regional to the local level, especially for phase 6. The plans need to be tested in simulation exercises.

8. There needs to be stronger guidance and support offered from the National level to the local and regional levels to help in the implementation and further operationalization of their preparedness plans (especially storage of vaccines, distribution, dealing with corpses, massive clinical waste disposal, etc).
9. The plan needs to undergo more simulation exercises to improve its implementation, particularly at the local level. So far the exercises have mainly been held at the national level. There is the need for more operational exercises especially involving the regional and local level of hospitals and health care centres (also possibly some should be planned with neighbouring countries).
10. A surprisingly small number of technical human resources are available to work on pandemic preparedness at all levels, including at the national level. These vulnerable structures need strengthening with stable financing to ensure sustainability and the surge capacity needed in larger biothreat situations. Without this, there is a risk that infectious disease surveillance and control in other substance areas will deteriorate.
11. The risk perception of the public and professionals is declining, possibly in reaction to the declining media attention - this should not be allowed to influence the commitment of the political stakeholder. The involvement and participation of the media in the planned pandemic exercises could help reduce this trend.
12. Regional and local plans should be made available to one another so that there can be sharing of each others preparedness and operational strategies. Also wider inter-sectoral sharing of the plans, e.g. health with food and transport etc, would be beneficial to all parties.
13. The preparedness plan needs to be updated on a continuous basis, amending and adding various specific plans and guidelines and elaborating further and in greater detail the role of the social care sector at national, regional and local levels or elaborating guidance to help the local level in dealing with such delicate matters as day care and school closures, mass gatherings reduction policies, etc.
14. The development of the planned national electronic patient record system needs to bear in mind the specific needs and opportunities for surveillance in a pandemic, from its early planning phases.
15. Although the infectious disease control capacity at many of the Hospital Districts has improved, it is important that more administrative and financial incentives continue to be offered to encourage the remaining hospitals with weak or non-existing infectious disease teams to improve their capacity.
16. Some effort needs to be spent in ensuring that the level of material and organisational preparedness is sufficient and equal across the different geographic parts of the country.
17. Various health workforce concerns on the impact of the pandemic, including occupational safety, compensation, and absenteeism need to be addressed and a common position prepared before the pandemic.

ECDC Recommendations

- 1) ECDC should formalise an 'exchange of information relationship' with the Finnish government so that the country data on the effectiveness and use of antivirals and the pre-pandemic vaccine at the national level for dissemination to the other EU MS.
- 2) ECDC should consider objective criteria for measuring the level of the country's stage of advanced pandemic planning, possibly by linking to how well it could be expected to do in a pandemic.
- 3) ECDC should enter into discussion with WHO to see how to improve the system of grading and describing the pandemic, to continue to improve the elaboration of details of the country preparedness plans.
- 4) ECDC should finalise its 'menu' on the effective non-pharmaceutical public health measures and distribute these to assist in Finland's planning activities.

Purpose of mission – Specific Objectives

1. To support the national authorities in evaluating and improving the status of pandemic influenza preparedness in Finland, including the interoperability of its plans with other countries in Europe;
2. To determine the current level of influenza preparedness;
3. To identify strengths of pandemic influenza preparedness and areas where further work is needed;
4. To identify specific steps for improvement and areas where support from the European Centre for Disease Prevention and Control (ECDC) / WHO/ EC and other organizations may be needed.

The end product is an agreed recommended action list for improvement for both the country and the ECDC.

Background

Evaluating the readiness of the European Union and its Member States for influenza are integral components of the overall process of improving overall pandemic preparedness in Europe. A starting point for improving pandemic preparedness was a workshop on preparedness planning organized jointly by the European Commission (EC) and WHO EURO in Luxembourg, March 2005. A second workshop convened by WHO took place in Copenhagen in October 2005 after the activation of ECDC (in May 2005) which then became the third partner in the process and a third workshop was convened by ECDC in Uppsala, Sweden in May 2006. Between May and October 2005 a process for assessing countries' pandemic preparedness was developed by ECDC with the other two partners. Key to this was an assessment tool which then began to be used by Member States and the partners.¹ In 2005, country visits were started, conducted by the ECDC/Commis-

¹) ECDC Pandemic Influenza – Assessment Tool http://www.ecdc.eu.int/Health_topics/Pandemic_Influenza/Assessment_tool.html

sion/WHO-EURO partnership in a number of EU and non-EU European countries with a view to completing all European countries by the end of 2007. The assessment tool derives from WHO documents and an EU Communication on pandemic planning and has developed steadily based on experience and events.^{2,3,4} For example over time the approach has become more of a joint effort between an internal and external members of the Assessment team. Also there has been a steadily increasing emphasis on interoperability and non-health sector contributions and greater emphasis on dealing with seasonal influenza and (since the autumn of 2005) the response to highly pathogenic avian influenza.⁵

The third European workshop in Uppsala in May 2006 reviewed progress since March 2005 and concluded that although major progress had been achieved a number of ongoing needs remained including:

- political commitment for preparedness planning,
- increased resources (human and financial),
- more research,
- the resolution of complex legal and ethical issues,
- need to develop common solutions and cross-border co-operation (interoperability),
- use of antivirals,
- development of preparedness in the primary care and hospital sectors,
- preparation for avian influenza.

In 2006, further assessment visits have taken place in Belgium, France, Germany, Italy, Lithuania, Portugal, Slovakia, Spain, Latvia and Austria. Visits continued in 2007 (Ireland, Luxemburg, Malta, Sweden, Netherlands, Cyprus) with a view to finalising the remaining countries within the year. Regional and focused meetings were undertaken partially to help prepare a *Status Report*⁶ on pandemic preparedness requested by Commissioner Kyprianou and also to focus on the issues of Communications, Interoperability, Use of Antivirals and Hospital Preparedness. That report gave many policy options but especially focused on the need to work in the coming two to three years in the following five areas

- Integrated planning across governments.
- Making plans operational at the local level.
- Interoperability at the national and regional level.
- Stepping up prevention efforts against seasonal influenza.
- Extending influenza research.

From 12 to 15 June 2007 a six-person group visited Finland to join a local group from relevant Government departments to form a joint team to undertake an assessment with these objectives (Annex 2).

²⁾ WHO Global Influenza Preparedness Plan 2005

http://www.who.int/csr/resources/publications/influenza/GIP_2005_5Eweb.pdf

³⁾ WHO Checklist for Pandemic Preparedness Planning 2005

<http://www.who.int/csr/resources/publications/influenza/FluCheck6web.pdf>

⁴⁾ Assessment tool Version September 2006 http://www.ecdc.eu.int/documents/pdf/AssessmentToolPandemicInfluenzaPreparedness_13_9_2006.pdf

⁵⁾ WHO Responding to the avian influenza pandemic threat:

Recommended Strategic Actions 2005 http://www.who.int/csr/resources/publications/influenza/WHO_CDS_CSR_GIP_05_8-EN.pdf

⁶⁾ European Centre for Disease Prevention and Control. Pandemic Influenza Preparedness in the European Union Status Report as of Autumn 2006 ECDC January 2007

http://www.ecdc.eu.int/pdf/Pandemic_preparedness.pdf

Organization of the Visit and Application of the Assessment Tool

Part A of the Assessment Tool was sent in advance to the local team and the information from this was analysed prior to the mission. Several teleconferences were held to discuss the main priority areas of focus, the programme and the logistics. Once in the country the Assessment Team held meetings with a number of individuals from a range of institutions over the four days of the visit. This included representatives from other (non-health) Ministries, national technical agencies (National Emergency Supply Agency, Evira, KTL, etc), regional and local level government and non-government bodies and service bodies (annexes 1 and 3). The external team members wish to express their gratitude for the time so generously provided by the many individuals they met and the care and attention afforded them by their Finnish hosts in what was an intensive time for all concerned. An impressive number of presentations were made to the team and an excellent record of the discussions was kept (see Annex 4).

The conclusions in this report are based to varying degrees on the completed Assessment Tool (Annex 5) the presentations and background documentation, systematic questions, site visits and less structured discussions held within the limited time frame available with the persons listed in Annex 2.

General Information

Organization of the health services

Finland has a population of 5,2 million with 416 municipalities responsible for organizing their health and preventive health care measures. Municipal self-government gives these municipalities and their 20 Hospital Districts (run by the municipalities) extensive opportunities for deciding on how to organise their own health care services, including what is required in a possible pandemic situation. These powers are laid down by the Primary Health Care Act (PHCA) and the Act on Specialised Medical Care. In the case of infectious diseases, they are also bound by the Communicable Diseases Act (CDA). The regulations of the Local Government Act must also be taken into account.

As part of primary health care (PHC) services, the local municipal level authority is responsible for maintaining health advisory services, organise immunisations, organise medical care and emergency outpatient services regardless of the patient's place of residence. In order to carry out these functions, a municipality, or several municipalities jointly, must have a Health Centre (HC) consisting of a number of service outlets. According to recent survey of the Finnish Medical Association there were in the beginning of 2007, 3600 medical doctors working in the health centres (about 21% of working medical doctors (total 17 200)). HC may have in-patient beds. The municipality can also purchase the services from the private sector, although the private health sector cannot be obliged to offer services in a crisis situation. The mean density of medical doctors is 310 inhabitants per MD, but there has been lack of physicians in HCs in the more remote areas.

Secondary (specialized) health care is provided by a particular Hospital District, each of which contains a central and some also a regional hospital providing care for the population in its area. Of the 20 central hospitals, five are university hospitals, which also provide tertiary levels of treatment.

The Ministry of Social Affairs and Health (MSAH, STM) is made up of two ministers and both have a small number of politically appointed staff. The MSAH sector has the biggest overall budget of the Finnish Ministries (overall annual estimate of health: Euros 8 billion). The MSAH prepares legislation in the area of social welfare and health care and steers and supervises its implementation. The

Ministry prepares a Target and Action Plan for Social Welfare and Health Care for each four-year legislative period for approval by the government. The social welfare and health care sector contains eight agencies and institutions (the institutes work with great independence) which in cooperation with the MSAH take care of a range of research, development, statistical and supervising functions. On national level, the general planning, management and monitoring of protection against infectious diseases is the remit of the MSAH, which is responsible for the preparedness of social and healthcare services for an influenza pandemic. MSAH recruits the support of the National Public Health Institute (KTL), which alongside MSAH maintains contact with international organisations. The KTL also provides expert guidance to regional and local authorities and the public.

Under healthcare legislation, MSAH, the National Authority for Medicolegal Affairs (NAMA) and the 6 State Provincial Offices (SPO) are responsible for directing, planning and supervision of the municipal health care. The health system is led by means of “guidance through information” rather than a top-down command and control structure. The latter could be introduced in such cases as during a pandemic, when marked societal disruption would be expected to take place and then require the Emergency Powers Act to be used. MSAH, NAMA and SPOs are also regulating the quality and legality of health care, public and private.

Particular Strengths of the Country

- The historically strong collaboration between the human and animal health sector on all levels has led to a great deal of good work carried out with the veterinary sector;
- The plans have been very good at defining the roles of all players, although the interoperability not yet been fully tested;
- A large amount of good technical materials, processes and procedures has been prepared;
- Many of the delicate ethical issues have been well thought out and resolved;
- The Heads of Preparedness meetings in the PM office is a good example of ensuring the right level of inter-sectoral collaboration. This collaboration is just as excellent at the lower levels, maintained by interministerial coordination groups at the provincial and municipality levels.
- There appears to be a good level of pandemic preparedness at the university hospital level, where the plans have been developed to a highly operational level and the level of involvement of their Communicable Diseases departments in the epidemiological investigations on the field has been very good.
- The legislation on obligatory stockpiling of frequently used medicines and basic medical supply is a very positive element;
- The plans for 25% antiviral stockpiling should ensure that most curative treatment needs are covered, however this will not be sufficient for any prophylaxis;
- There is a high technical quality of knowledge and understanding of the main issues and difficulties related to pandemic preparedness;
- The planned national electronic patient record system should form a very strong basis for surveillance in a pandemic.

- The intensive media public awareness campaign to improve this year's seasonal vaccination uptake is welcomed.
- The additional training in epidemiology and public health for the regional level is an important activity, with positive implications also for the control of other CDs;
- The infectious disease capacity at the Hospital District has benefited greatly from the direct economic support and guidance from the centre.
- The National Emergency Supply Agency is a very suitable and flexible tool for special purchases outside the normal state budget and is a real asset for pandemic preparedness.
- The level of cooperation with the relevant international organisations such as ECDC, WHO, EC, etc, is very good and should continue to be strengthened for the benefit of all parties, in particular to enhance the interoperability of Finnish plans with neighbouring countries.
- The 'Prepandemic' vaccine ordered for the whole population and the advance purchase agreement on pandemic vaccine for the whole population are important achievements.

SEASONAL INFLUENZA

1. Seasonal influenza surveillance

Description

All the laboratories carrying out influenza diagnostics notify their positive findings to the National Infectious Diseases Registry (NIDR) maintained by KTL, resulting in approximately 1,000-3,000 influenza diagnoses confirmed by laboratories annually.

Finland has had surveillance for respiratory infections and influenza for a long time in selected population groups, such as army conscripts. The KTL is developing a better surveillance system in cooperation with health centres, which will automatically extract information from the patient record databases and pass on to the KTL data on visits caused by respiratory infections.

Comment

Syndromic surveillance for respiratory diseases is recognised as a useful tool for both seasonal and for pandemic influenza and the plans for starting a sentinel system this year are welcomed. The planned system to ensure automated extraction from routine patient records using algorithms to flag up specific problems should be an effective method also for monitoring in an epidemic. The web-based notification system into the NIDR database and the centralised electronic patient records are also important elements that should contribute towards a good notification system for influenza surveillance. However these systems do rely on the routine systems to remain functioning normally, which may not always be the case, especially for the primary care sector, during the peak periods of an influenza season.

Recommendations

- Explore ways of making the primary care surveillance more robust so that it would be more sustainable in a severe epidemic/pandemic.
- Seasonal influenza surveillance system: as yet there is no solid data collection system (only in special arrangements (sentinel sites like garrisons, some health care centres) – this needs development.

2. Seasonal influenza vaccination programmes

Description

Finland has provided free influenza vaccination for several years to specific risk groups. In 2002 the recommendations for seasonal influenza vaccination was extended to all those aged 65 years or older. The vaccine coverage in the risk groups is assessed each year by a questionnaire survey to influenza vaccination contact persons in the primary health care centres. The consumption of influenza vaccine doses in the whole population is based on statistics collected by the Finnish Pharmaceutical Data Ltd and is based on the sales figures. The doses used in 2006 for the risk groups and the private market together were approximately 753 000. The vaccination coverage for those included in the national recommendation has been in 2002: 43%, 2003: 45%, 2004: 46%, 2005: 52% and 2006: 46%. For the year 2007, the KTL has planned a large scale communication campaign to help increase the vaccination coverage. For that part of the

campaign focusing on the risk groups, a special website has been set up which contains a variety of promotional materials (poster, leaflet and letter of invitation to vaccination) and also ideas for activities by the primary health care centres responsible for the vaccination programme. In addition, articles about the importance of influenza vaccinations in the risk groups have been published annually in professional journals. The first national campaign targeting directly the elderly and parents to children 6 – 35 months of age is starting in the autumn 2007. The campaign includes information through TV, radio and website.

Comment

The seasonal vaccination programme is coordinated well by the KTL, who is also responsible for purchasing the vaccines. The present uptake of the seasonal influenza is lower than expected considering the strong tradition of public health in this country. One reason for this could be because the seasonal vaccination programme is implemented by the municipal health care centres, there is quite a high degree of variability in their perception of the importance of this activity.

It is important that this vaccine is given greater priority to enable the seasonal influenza vaccination programme to achieve (or exceed) the WHO target of 75% by 2010. The true accuracy of the data on vaccine coverage appears to be doubtful and the plans to improve the routine system of data entry of the vaccinated patients needs to be supported as a priority.

Recommendations

- The plans for the enhanced campaign this autumn aiming to increase the uptake of the seasonal vaccine, are welcomed. One audience that will need particular targeting to increase their awareness, apart from the general public, should be the health care workers, as many of these do not appear to perceive influenza vaccination as a priority.
- The method of recording the vaccine coverage needs to be strengthened, as this will also be of benefit in the event of a pandemic. One eventual aim should be to collect routine data on vaccine uptake in both the target high risk groups as well as in the health care workers. This can be collected routinely based on 'returns' (numbers of persons vaccinated versus those not vaccinated) in order to monitor uptake by provider and detect under-performance.

3. Seasonal influenza laboratory capacity

Description

The KTL Influenza Centre (NIC) examines the specimens for epidemiological purposes using viral culture methods. The laboratory isolates influenza virus from patient specimens, defines their type and subtype, analyzes their antigenic and genetic properties, and monitors mutation of the influenza viruses during the influenza season and between epidemics.

The number of specimens that can be handled per day at the NIC laboratory is about 40 in regular circumstances. The number of qualified staff in NIC is four: 1 PhD, 1 MSc, 2 technicians. There are good specimen transport arrangements in place for getting specimens to the national centre. So far there is no explicit plan for NIC surge capacity. The time from receipt of specimens to having the confirmation of a WHO novel type (H5N1) is a maximum of 48 hours.

The NIC plans to merge with the Respiratory Virus Reference Laboratory at KTL during Fall 2007. This will double the number of technical staff. The Re-

spiratory Virus Reference Laboratory currently is responsible for all the PCR diagnostics, including detection of unusual influenza virus subtypes, and currently serves as EISS reference laboratory.

Five virus laboratories in the university hospitals in Helsinki, Kuopio, Oulu, Tampere, and Turku use immunofluorescence staining of exfoliated, respiratory epithelial cells, immunoassays, rapid culture, and in some instances also PCR for influenza diagnosis. In addition, hospital laboratories as well as laboratories of public and private health care centers use point-of-care tests to identify influenza viruses and RSV in certain patients. Virus-positive results are reported to the NIDR.

Comment

The five main laboratories involved in virological surveillance, all in association with the university hospitals, appear to be adequately prepared for virus isolation, PCR or RSV (Rapid Shell Vial Culture?). The provisions for typing and subtyping (done centrally) also appear to be very good. There needs to be some clarification of plans specifying at what stage of the pandemic the central reference lab will stop accepting routine sample requests for sub-typing and turn only to occasional anti-viral resistance cultures and some sentinel typing. This 'triaging' of samples may be necessary in a large seasonal epidemic as well as during a pandemic. Also it is not entirely clear how the virology lab data will link in with the epidemiology data during a peak seasonal epidemic, and especially so during a pandemic.

Recommendation

- It was not clear whether the stockpiles of essential laboratory reagents and disposables are adequate – these should be estimated carefully and the stockpiling of a suitable stock of reagents clarified in the plan.
- The breakpoint for changing the testing strategies during a peak epidemic or pandemic should be formally defined and agreed. These could take the form of clinical algorithms.
- These plans for stockpiling the reagents, as well as the clinical algorithms for triaging samples in a seasonal epidemic/pandemic should be tested in one of the forthcoming national pandemic exercises planned.

4. Planning and Coordination

Description

▪ Political awareness

According to the Government policy decision of 27 November 2003, *Strategy For Securing The Functions Vital To Society*, one of the four focal areas in the next few years in terms of improving performance is health protection, including unexpected serious epidemics. The Government is drafting proposals for Parliament for further amendments to current legislation to support this strategy. The Government including the Prime Minister is committed to organise exercises on both avian influenza and pandemic influenza preparedness.

▪ Legal and ethical framework

The powers and obligations stipulated in the *Communicable Diseases Act, CDA (583/1986)* are central to combating an influenza pandemic, and they form an adequate basis for governance. The obligations stipulated in this law cover all administrative levels of public healthcare: the MSAH, KTL, SPOs, HDs and local municipal authorities. This law obligates the authorities to take urgent action, if the population is in danger of being exposed to a spreading dangerous communicable disease. The decisions of the authorities must be executed immediately, regardless of submission or appeal. Revisions have been made in the CDA to make it fully compatible with International Health Regulations (IHR), which has been accepted as law in Finland.

When prompt action is required in order to prevent the spread of a communicable disease posing a serious threat to public health, the MSAH and, on provincial level the SPO, are empowered to make the necessary decisions. These decisions include the compulsory implementation, within a fixed time period, of any measures that may be applicable in cases of infectious diseases involving serious danger to the public.

The local authority is obliged to organise the work of infectious disease prevention in its area, as part of their primary/public health care services. Under the PHCA, implementation of primary health care is organised by an organ set up by the municipality, with multiple membership. In the CDA, this is called the municipal body responsible for the prevention of communicable diseases. The practical work is organized through the Health Center.

Ethical issues in national influenza pandemic planning have been extensively discussed in several multidisciplinary ethical groups, including the main National Advisory Board on Health Care Ethics (NABHCE).

▪ National pandemic planning committee (working group)

On April 2005, the MSAH nominated a **National Working Group for Pandemic Preparedness**, with the following duties: (1) to prepare a national plan for pandemic preparedness; (2) to establish guidelines for preparedness in the health care services; (3) to ensure efficient cooperation between different administrative sectors. This Working Group consists of representatives of the MSAH administrative sectors, from the KTL, the National Agency for Medicines (NAM), SPOs, HDs, PHC, the Association of Finnish Local and Regional Authorities (AFLRA), and civic organizations, as well as the Ministry of Agriculture and Forestry (MAF), the Ministry of the Interior, the Ministry of Foreign Affairs, and the Ministry of Defence. This working group was an ad hoc group and it finished its work at the

time when the proposal for a National Influenza Pandemic Preparedness plan was produced in March 2006.

Government Meeting of the Heads of Preparedness (GMHP), consisting of a high level official in each Ministry, is the permanent coordinating group functioning at the national level. The group functions under the group of the **Meeting of the Ministries' Permanent Secretaries (MMPS)**. GMHP has the coordination duty of all preparedness issues in its responsibility.

At MSAH the main permanent body involved is the **National Advisory Body on Communicable Diseases**, with the task to advise the MSAH on all communicable disease issues. Another permanent body at the MSAH is the **Advisory Board for Health and Welfare in Emergency Conditions**, which also deals with some aspects of pandemic preparedness. MSAH does not at present have a specific permanent committee on pandemic planning.

■ National influenza pandemic preparedness plan

The ad hoc national pandemic planning committee reported to Liisa Hyssälä, Minister of Health and Social Services, on 15 March 2006. After circulation of the proposal for comments (altogether by 50 organizations), the plan has been updated and adopted at the MSAH. The final version was also approved by the GMHP. In addition to the National Working Group for Pandemic Preparedness, several other ministries and government bodies have implemented measures to improve their pandemic preparedness. The plan is published in Finnish, Swedish and English on the web address www.stm.fi.

The responsibility for the basic operative management of a pandemic situation lies with the health authorities – mainly of the MSAH, in cooperation with Social and Health Departments of SPO. Operative management involves the direction of the service system operations, securing of resources and their appropriate management, obtaining special powers and expert services as may be required by the situation, as well as ensuring adequate cooperation with the authorities. The expert services required for operative management are obtained by the Ministry from KTL and other expert bodies. The pandemic committee at the KTL assesses the situation and advises decision-makers.

The establishment of a command and control centre within the Ministry will not affect the responsibilities of the administrative sector, nor its power relations. The decisions are made in accordance with the Ministry procedure and other statutory powers. The control centre will participate in drafting, presentation and implementation of decisions. A pandemic situation may require redistribution of resources within an administrative sector.

Summary diagrams can be found in the National Preparation plan pp. 53 and 49 and a simplified model in appendix 2.

The pandemic coordination group (PCG) or committee is foreseen in the national plan, but has not yet been established in the current phase 3 situation. Whenever considered necessary, the MSAH may appoint a PCG. Its remit is to reinforce the delivery of social and health services and to deal with anything requiring urgent or multi-sectoral measures, including the preparation and coordination of issues which do not fall under the remit of the GMHP or the MMPS. Such measures may be e.g. public communications, required amendments to regulations, restricting mobility of the population (e.g. quarantine arrangements), prioritisation of medical preventive measures (possibly limiting availability), stockpiling, reserve stocks, controlled release of reserve stocks, and rationing of other materials and equipment. The responsibilities of the Coordination Group also include obtaining international expertise and experience to support national decision-making. The PCG is chaired by a representative from the MSAH. Members are appointed from various organisations, including: Prime Minister's Office, MSAH, KTL, NAM,

Finnish Institute for Occupational Health (FIOH), NABHCE, SPOs, Hospital Districts, health centres, AFLRA, and representatives from the relevant ministries.

Comment

Political awareness: At the state level, political awareness is high, resulting in an adequate level of funding to cover the essential activities related to pandemic preparedness. The Heads of Preparedness are considered to be an appropriate level of authority to deal with the coordination of the response to a pandemic. As they manage a threat model which includes 61 scenarios, only one of which is pandemic influenza, this means that this issue may have to compete against many others for their full attention.

The Heads of Preparedness officially confirmed the pandemic preparedness plan in November 2006 and have shown good commitment by meeting regularly to discuss updates, and prepare for the permanent secretaries' meetings on the subject. This mechanism is a very good example of a high level, cross-sectoral approach, focusing on pandemic preparedness with all ministries involved. It is, however, of concern that knowledge about pandemic preparedness plans across other sectors seems to be lower than desired. Thus, while it is positively noted that almost all sectors do have a preparedness plan for a pandemic, these sectors should do more to share their plans or obtain information about other plans across sectors.

The National Emergency Supply Agency is another important key national stakeholder, responsible for financing and coordinating the security of supplies that may be required in any emergencies. It has clearly been instrumental in promoting contingency planning for both the public and private sectors as well as organising the general stockpiling, including of pharmaceuticals and medical substances.

On the provincial and municipal level there appears to be a good level of awareness of pandemic preparedness but perhaps the scope and magnitude of the problems related to, and caused by, a pandemic may not be fully recognized. This is also reflected in the small number of people dedicated to pandemic preparedness at sub-national level.

Furthermore, it was observed during the assessment visit that there is a tendency of declining awareness at all levels, probably in response to declining media interest and attention on avian and pandemic influenza. This is a phenomenon which is apparent throughout Europe. It is of particular concern when this happens at state level, as it is expected that at this level it should be feasible to maintain the focus on pandemic preparedness even in times where the risk is generally perceived as low. A welcome initiative to help combat this trend would be the planned pandemic phase 6 simulation exercise in Finland in 2008.

Legal and ethical framework: The central state administration does not appear to have a specific legal mandate to become involved in the management of affairs at the regional level, even in the event of a pandemic. Despite this, it was the perception of the assessment team that in fact there is a broad legal framework for handling outbreaks of communicable disease from the center and therefore this could also be applied to pandemic preparedness and response.

The law ensuring obligatory stockpiling of frequently used medicines and basic medical supplies at the local and regional level is a very positive asset to the pandemic preparedness.

National pandemic planning committee: There is no specific national pandemic planning committee in Finland (i.e. a committee whose sole reasonability is to work on preparing for the pandemic) but rather, pandemic preparedness issues are addressed in the meetings of the Heads of Preparedness referred to above. A surprisingly small number of technical persons are dedicated to work on pandemic preparedness at practically all levels, including at the central level.

National influenza pandemic preparedness plan: The current version of the national pandemic preparedness plan is robust and addresses a broad range of relevant topics. A positive feature of this plan is that it draws upon the lessons learnt from the previous exercises of pandemic phases 3-5. The plan should be further strengthened when a simulation exercise of pandemic phase 6 is conducted in 2008, leading to a revision and refinement of the plan in its current form.

There are still several of the items mentioned in the Finnish pandemic preparedness plan that have still not been implemented. Also there are some elements that may be limited in their level of operability. One of these issues that the national authorities should address is how the regions will actually work together in a pandemic. National exercises will probably help to clarify this, although there are some models from other countries that might be adopted, but a solution would need to be devised that best suits Finland.

Recommendations

- Political awareness: A dedicated pandemic preparedness committee would help ensure that a group of people are fully committed and dedicated to pandemic preparedness and thus not occupied for most of their time with other issues. In addition, such a committee would help ensure that the national pandemic preparedness plan is implemented at all levels of society. Such a pandemic committee could also work more to improve the awareness of pandemic preparedness at sub-national level, including initiating more thorough planning at municipal level, which is strongly recommended.
- In addition, it is recommended that a specific permanent budget line for pandemic preparedness is established in order to secure long-term commitment and sustained upgrading of pandemic preparedness in Finland.
- To improve the general level of awareness it is recommended that representatives of the media are invited to participate in the 2008 simulation exercise, as this is an excellent opportunity to increase their focus on this issue in the country. As general media interest in avian influenza declines, attention should focus on how the present good relationships between the Ministries can be maintained in the longer term.
- National pandemic planning committee: The assessment team recommends the establishment of a permanent committee with pandemic preparedness as their sole focus. While the Heads of Preparedness committee and the people involved in pandemic preparedness at the MoH and the KTL have clearly come a long way with preparations for a pandemic, it is feared that this 'part-time' system (shared with all the other potential crisis) may be too vulnerable or is not sufficiently robust (with regards to human resources) either for sustaining the desired level of further planning needed or for the implementation of preparedness, nor for coordination of all the activities during a pandemic.
- National influenza pandemic preparedness plan: The version presented is a good plan that needs to be implemented at all levels, in an operational and practical manner. Several important decisions still need to be taken on a number of issues and these then need to be written into the plan as part of the on-going process of updating.

5. Situation Monitoring and Assessment, Pandemic Surveillance

Description

▪ Situation Monitoring and Assessment

In a pandemic the MSAH will set up a national command centre to support its operative management activities, situation monitoring and assessment, as the situation requires. The MSAH command centre is in continuous contact with the Social and Health Departments of SPOs and the KTL, the NRID and the European Union Early Warning Response System (EWRS) of infectious diseases together with other EU and international authorities.

MSAH, assisted by this national control centre, continuously assesses the situation based on the epidemiological surveillance information, antiviral consumption monitoring and the reports of the SPOs, which will supply the control centre with a clear picture of the situation in the social and healthcare services, resources and pandemic situation in their own areas.

The national assessment of the social and healthcare services situation is delivered to the situation assessment system of Prime Minister's Office. It will also receive situation monitoring information from other sectors as well.

▪ Pandemic surveillance

The NIDR is expanding its applications to include a web-based simple notification system for influenza cases, in the event of a pandemic developing, which is anticipated to be functional by Mid-2008. Until then the robust telefax based notification system would be used in case of a pandemic.

KTL is developing another new surveillance system with the main software providers for PHC patient data systems, an automated surveillance system which will extract patient visit data and send them automatically to a central data base every 24 hours. This sentinel surveillance will be coordinated with the virological surveillance system. The development of this project, however is currently stagnated due to shortage of expert personnel at the KTL.

A law has been passed for a comprehensive national data holding system which will have continuous updated patient visit data, expected to be fully operation within 4-6 years. Developments are being explored on how to extract data relevant for syndromic surveillance from this holding system in a timely manner. Procedures are in place for the timely identification of individual suspected cases in pandemic threat phases 3-5 (WHO).

Comment

In a severe pandemic the operating conditions for surveillance and what is required from surveillance systems can be very different from the situation in 'peace-time'. Equally, daily monitoring becomes more important. The surveillance system as planned by the KTL should work well for the inter-pandemic and pre-pandemic phases (Phases up to Phase 4-5), however it is less certain whether it will be robust enough for the demands of Phase 6. This is because the proposed system of automated extraction from the routine records system relies on the presumption that some sort of routine electronic patient record keeping will be maintained throughout, which may not be the case in all areas during the peak stress periods. The other plans, to centralise all patient electronic records, should also allow the possibility of extracting data for other purposes such as syndromic surveillance, and this is another positive element. The web-based notification system as planned should be robust enough even for use in a pandemic – but again there may possibly be doctors in some areas who will be unable to find the time to do even this simple task in the peak of Phase 6 – this needs to be borne in mind.

The plans for the virological surveillance to be carried out by the five regional labs, in association with the university hospitals (with typing and sub-typing done in the central reference laboratory , see below) are all perfectly logical.

Recommendations

- There needs to be some thought given to planning a simplified 'secondary' system of surveillance in the peak of the pandemic – in case the planned systems, mainly based on electronic reporting, break down.

6. National reference laboratory for influenza / National influenza centre (NIC)

Description

The National Influenza Center (NIC) is part of the Department of Viral Diseases and Immunology at KTL. Currently there are 8 staff members, 3 with an academic education and 5 technical support staff. In addition, 2 graduate students are paid through extramural funding. The NIC serves as a reference laboratory for both the WHO and for EISS. The NIC has facilities for virus culture, typing, sub-typing, and antigenic characterization of influenza virus isolates. A separate laboratory for large-scale culture of influenza viruses is available. Also, the NIC has separate rooms for the different steps in molecular detection of influenza viruses. (PCR). These facilities are shared with other units within the Department. By the end of the year 2007, a biosafety-level 3 laboratory will be available adjacent to the NIC. The NIC receives clinical specimens through a sentinel network of health-care centers. Specimens are tested by virus culture in MDCK cells and by PCR. Influenza virus isolates are typed, subtyped, and antigenically characterized by hemagglutination inhibition test. The nucleotide sequence of hemagglutinin and neuraminidase genes from selected viruses is determined and the phylogenetic relationship of viruses isolated through consecutive influenza season is analyzed. In addition to influenza viruses, adeno-, parainfluenza-, respiratory syncytial-, and human metapneumoviruses are detected by PCR. Human bocavirus PCR is performed on selected specimens.

Comment

Virological surveillance will be carried out by the five regional labs, in association with the university hospitals, while the typing and sub-typing is done in the central reference laboratory. The central staffing appears to be just adequate under normal circumstances but can be expected to come under considerable strain in a pandemic, partly because they would commendably strive to keep up processing the flow of samples for rapid characterisation of circulating strains, match/mismatch between circulating- and vaccine-strains, drift variants, new strains and antiviral resistance. Therefore the decision to merge the two main reference labs is sound and should help increase the staffing capacity in a pandemic. Still, the viral laboratory plans are not very clear about at what stage the central reference lab will stop accepting routine samples' requests for sub-typing and switch only to occasional anti-viral resistance cultures or some sentinel typing only. Also it is unclear whether the plans for laboratory reagents and disposable stockpiling are adequate for the excess load in a pandemic.

Recommendation

- The emergency plans for the engagement of personnel from research staff or other laboratories to improve the lab's response capability or to replace sick technical staff in a pandemic should be more formalised.

- Support from the other laboratories at the regional level needs to be better planned as it will probably be required. Routine primary virus detection and identification capabilities should be further developed at various other regional institutions to enable them to partly take over this workload of pandemic diagnostics, shifting it from the centre, and allowing the centre to focus more on the better characterization of emerging threats (new or changing viruses) and contributing to policy development.
- Given the strategic importance of national virological capacity, more attention needs to be paid to succession planning and the long-term support for training of a virology cadre.
- The viral laboratories should have clearer protocols detailing how best to deal with times of excess load and when to introduce selective sample testing.
- The viral laboratories should ensure that they have adequate stockpiles of reagents and essential disposable equipment for use in the Phase 6 of a pandemic.

7. Outbreak investigation capacity, general and during a pandemic

Description

Outbreak investigation capacity for influenza is limited to relatively small incidents, such as individual cases of imported suspected pandemic influenza, or small clusters. Larger or multiple clusters or outbreaks, or the actual beginning of a pandemic would probably overwhelm the capacity.

The organisational model for investigating an outbreak under normal conditions is shown in appendix 3. The same operational mode could be used in suspected influenza cases or clusters in pandemic threat phases 3-5. The general outbreak investigation and control model and its capacity have been tested several times per year in the investigation of food and waterborne epidemics, and found to function appropriately.

KTL has a very close collaboration with Hospital District infectious diseases teams and is conscious of their needs for more field or interventional epidemiology training.

KTL is starting a limited national field epidemiology training program during late 2007, which is partially funded by the new preparedness funds. It will focus initially on University Hospital District teams, and will gradually expand this training. The objective is that each Hospital District will have 1-2 infectious disease specialists with recent infectious diseases control training.

The Center of Biothreats, consisting of laboratory staff from the Finnish Defence Forces and minimum allocated laboratory staff from KTL working in KTL premises, may increase in staff number, but there is no projected field epidemiology or infectious disease control training for this group.

Comment

The regional and local authorities recognize that most of the epidemiology capacity is centralized at the national level, while there is limited capacity on the regional and municipal level. The epidemiologists at KTL are ready to provide support in the field at any time (and have done so regularly in the past), but in case of a pandemic these resources will be exhausted quite quickly.

In terms of protective equipment for the outbreak investigation teams, the plans to see that these are provided through the obligatory stock at regional and municipal level appear to be adequate.

Recommendation

- Strong support should be given to the planned short training sessions in field epidemiology (6 persons over 2 years from the regional level, who will be trained during 4 months at KTL), in order to strengthen the epidemiological capacity at both regional and municipal level.
- It could be envisaged to broaden this sort of training to include even more professionals. Consideration should be given to maintaining national training of regional HD staff through a field epidemiology training programme that could then undertake nationally-directed investigations during a pandemic. The same training would also serve to strengthen national, regional and local capacity to protect the health of the public against other threats.

8. National Public Health Response - Non-Pharmacological Public Health Measures

Description

In pandemic phases 3-5, the number of cases is small. The objective of the actions at this phase is to prevent a pandemic altogether or to significantly delay the timing of its onset. Once the pandemic has begun (phase 6), the aim is to delay the timing of the pandemic peak, minimisation of adverse effects to the health of the population, and securing of vital functions. During a pandemic, case numbers can be expected to be very high and the infection risk for the whole population is so great that certain preventive measures used in phases 3-5 are no longer feasible, due to limited resources. Some methods used in phases 3-5 would no longer have any effect on the progress of the pandemic at phase 6.

There are a number of recommended preventive measures, not based on using vaccines or drugs, listed in appendix 3 of the national pandemic plan. These preventive measures may be used in a pandemic alert situation or during the actual pandemic, although in the knowledge that there is little definitive scientific evidence on their effectiveness.

For travel-related measures no restrictions in international travel have been planned, only recommendations to avoid non-essential travel. Information should be given to the population not to travel when ill. It is possible that some members of the neighbouring country populations might travel to Helsinki seeking to obtain antivirals during the pandemic. Still, no attempts of screening on borders or no similar restrictions in domestic travel has been planned.

For reduction of transmission of infection from person to person, advice about personal behaviour will be provided. Suitable hand and coughing hygiene should be indicated. Routine wearing of masks are not being recommended. The practice of hand shaking should be stopped during the pandemic. Surface contamination by respiratory effluents should be avoided. Advice on cleaning practices and information about suitable antiseptic agents should be made available on the internet for everybody. Congregating at public meeting places, where close contacts are possible, should be avoided e.g. mass gatherings, swimming halls, unnecessary visits and public transport vehicles and possibly even restrict children playing together. Other public places, such as schools, day care, movies, theatres, etc should be closed. There should also be plans for reducing army garrison crowding and re-deployment. In the event that they are needed for other essential work, they should receive specific education and training. For reducing social interaction, another recommendation is to introduce distance work by as many workers as possible, and these should be trained so that they could start this as early as possible in

the pandemic. The equipment and systems for this distance working should be developed beforehand, during the pandemic planning.

People should learn to recognize the first symptoms when falling ill and they should be guided straight to the "final point of treatment". The population should understand the objectives for the correct use of antivirals. Patient isolation at home or in health care facilities needs to be planned on all levels, including both families and persons living alone. Everybody should have their own individual pandemic plan. In the individual family plans and neighbourhood plans, there should be considerations for food and work-travelling support to each others.

Comment

Several good 'non-pharmaceutical prevention measures' are referred to in the plan, these include: advice to avoid non-essential travel, not travelling if ill, the decision that there will be no border screening; personal protective measures – such as promoting hand washing with the general public and simple measure like covering the mouth in coughing (no kissing, including the use of alcohol based rubs in the home), possibly the general use of masks especially by those ill, recommending that no one who feels ill goes into work (encouraging home/distance working) and to reduce daily contact within the family. These appear to be reasonable and adequate. The plan still needs to clarify the decision processes regarding the prohibition of mass gatherings, including public leisure services, triggers to possibly break-up army conscripts and send them home for the duration of the pandemic, triggers to close schools and day care centres (even though this may adversely affect a significant proportion of the work force, including health carers - more than half of the employees in the municipal sector work in social services and health care - by causing them to stay at home) – this latter step is a major cause of concern that needs further thought. Other planned activities to help improve individual behaviour (e.g. early recognition of the disease by the person falling ill and then providing clear patient guidance leading them straight to the final point of treatment) are relatively clear.

The KTL itself seldom carries out campaigns directly to the general public but it is felt that in this case a health education campaign should be carried out, probably together with food safety authorities. The main stakeholders behind a broad hand hygiene campaign targeted at the general public are still unclear although most large companies could be involved.

Recommendation

- The EU Health Security committee, drawing from the scientific background work of the ECDC needs to consider and discuss in greater detail all the non-pharmaceutical measures to clarify exactly when to introduce each of these in a pandemic
- There needs to be an attempt to create national guidelines for the decision-maker's consideration on closure of schools and day care centres, to help ensure that the municipalities all follow the same criteria and to avoid inconsistencies.
- The KTL, together with other stakeholders such as food safety authorities, needs to plan and carry out education campaigns directly to the general public on a regular basis, which should be planned to benefit not only by improving public behaviour in a pandemic but also other public health issues.

9. Simulation Exercises

Description

Finland participated in the "Common Ground" exercise in November 2005, with all Ministries and KTL participated, including the Prime Minister's Office. In addition two extensive preparedness exercises have been held in 2005 to test preparedness on national level in a pandemic situation. In the first "Valha 2005", the state and SPO level authorities were also involved.

An avian influenza preparedness exercise testing the functioning of the management system was held in March 2006, and a Ministry-level influenza pandemic exercise was held in April 2006.

When the updating of the provincial level plans has been completed, the effectiveness of their operation should be tested through an exercise specifically designed for assessing the Provincial Offices and regional level administrative sectors. This is expected to take place early 2008.

In human health sector : Two national multisectoral exercises, including the southern province, have so far been conducted, with simulations on an avian flu outbreak (March 09 – 2006) and then on a cluster of human cases in phases 4 and 5 (April 28 – 2006), using the first version of the national pandemic influenza plan. A new exercise on phase 6, supported by the December 2006 version of the plan, will be organized in spring 2008 by Finnish government. This exercise should seek to ensure that there is adequate multisectoral involvement and that the communications aspects are fully involved, to better clarify their roles.

In animal health sector : An exercise on Newcastle disease has been conducted in 2004. Since then, several exercises on avian influenza outbreak simulations have been carried out at provincial level, specifically to look at the level of cooperation between veterinarian and communicable disease teams involved in investigations. The focus was on the rapid assessment of exposure and on contact tracing, the use of individual protection, and the management of the containment measures.

Comment

In human health sector : National exercises did not involve observers from outside the main Finnish authorities – such as panels of journalists. The capacity of the Ministry of Interior to become involved in ensuring certain important issues in pandemic situations, such as security of stores and distribution of antivirals, should be tested by an exercise. No major simulation exercise has been yet organized at provincial, hospital district and municipal levels.

In animal health sector : According to the Ministry of Agriculture and Forestry, the new National Food Safety Agency "Evira" and a state provincial officer, there appears to be a good level of cooperation on outbreak control between both the human and animal health sectors at all levels.

Recommendation

- In human health sector: In addition to the next national exercise, there is a need to organise simulation exercises for the regional and local level, focussing on the organizational needs of all the health care systems in the time of pandemic influenza.
- The next national exercise should ensure the participation at national level of a variety of external observers (including the essential services from the non-health sector), and especially including the media, various levels of other health care workers and the general public/private sector, for their reactions. There is also a need for testing and modelling the impact of the main

non-pharmaceutical measures, such as school closure, on the intersectoral operations, including private firms and the private health sector.

- In animal health sector: national exercises need to be planned as an ongoing event, as these have been shown to be very useful in building on and continuing to improve relationships and ensure more harmonized communication between human and animals sectors in an avian influenza outbreak.
- The exercises organised at national, regional and local level need to be sufficiently spaced apart to allow assimilation of the lessons learnt and to avoid exhaustion of those doing the organising. The work required to organise exercises should not be underestimated. There needs to be a national mechanism for measuring the effectiveness of each of these simulation exercises, drawing out the lessons learnt and then for improving the design of the next exercises.
- Exercises organised at an international or cross border level with neighbouring countries should be considered.

10. Intersectoral Response

Description

The MSAH provides the framework of the national pandemic plan. The other ministries have their own basic plans incorporated into it, but they all also have their own more detailed plans prepared. The intersectoral work is coordinated by the GMHP, which supports the MMPS. The intersectoral cooperation takes place on all administrative levels from the Prime Minister's Office to the command centres of municipalities (Appendix 1). MSAH has also had several negotiations with a number of ministries and civil organizations about how to improve cooperation during a pandemic.

The emergency supplies maintained by the National Emergency Supply Agency (NESA) refer to state-owned drugs, pharmaceutical and raw materials procured to ensure security of supply in an effort to ensure the availability of so-called crisis-specific drugs during a long-term crisis, mainly using the principle of compensatory production. The stockpile is created on the basis laid out by the Act on Safeguarding Security of Supply (1390/1992). NESA's work is intersectoral and it even cooperates with the commercial sector. It has several subdivisions, which strive for security on different sectors.

At the provincial level, the planning and control is also intersectoral. SPOs have Departments of Health and Social Affairs, Rescue, Education, Transport, Police, Consumer and can call on any other indispensable authorities and sections to the planning group (environmental authorities, frontier guards, military forces, customs, TV, broad casting, food deliverers etc). These sectors can be also be represented at the provincial control (command) centre when needed. Their health care plan is a part of a provincial plan and has been produced in close collaboration with the hospital districts, municipalities and provincial authorities headed by the Provincial Medical Officer. At the provincial level the other members involved are the Provincial Veterinary Surgeon, Provincial Health Inspector and Forensic Medical Officer. There should also be a representative from the private sector. The municipal level is described elsewhere.

Comment

The early identification of the so called 'critical' companies is an important step and their response to the letters sent to invite them to prepare their own detailed

contingency plans was very encouraging. Most companies already had appointed a preparedness chief, while by 2006-2007 most businesses have prepared contingency plans for ensuring that their activities are maintained in a pandemic.

The National Agency for Medicines is responsible for ensuring that all public hospitals, health centres and clinics have adequate stockpiles of basic medicines for use in emergencies (usually about 6 months consumption). This includes the private sector pharmaceutical companies which should ensure that they have between 5-10 months of sales stock. This is an excellent element of the national response and should be maintained in the long term.

General Transport: On 22 February 2007, the Ministry of Transport and Communications adopted guidelines on how their administrative sectors should prepare for an influenza pandemic. These guidelines include very good exercises to identify essential and priority routes, including such elements as a 5 months fuel stockpile. The Ministry had already prepared pandemic contingency plans in 2006 when an exercise was conducted for public administration on how to best coordinate operations in the public and private sectors in a pandemic situation. The most important businesses involved in transport and communications took part in the exercise.

Foreign Ministry: the FM have their own central contingency plan which includes 112 recommendations. Each foreign mission has developed its own pandemic plan – focusing on key functions to ensure business continuity throughout the pandemic. The level of preparation here appears to be adequate.

Others: Nearly all of the key components of preparedness appear to have been worked out, with responsibilities between the various administrative levels and different sectors defined for the different pandemic threat phases, although the interoperability has not yet been fully tested in the exercises. The preparedness of and collaboration with veterinarian sector (Phase 3-4) has been tested and works well.

At the moment the planned level of preparedness at the agencies within the Ministry's administrative sector is good or satisfactory. The preparedness level in the businesses and companies varies, but with regard to the more important players it is at least satisfactory.

Recommendation

- It is essential that the joint activities with the non-health sector continue to be organized with a view to maintain the interest and commitment of these sectors and also the private sector, in this important plan.

11. Health System Response (including Antivirals and Vaccine issues)

Description

The Hospital District (HD) assists the HC, the municipal organ responsible for combating infectious diseases, in the diagnostics of infectious diseases, in identifying epidemics and in the surveillance of infections. The HD directs the prevention, surveillance and investigation of hospital infections in its area. In addition to the duties indicated in the Communicable Diseases Act, the Hospital District is obliged to: ensure that any special medical services that may be required for treatment of infectious diseases are available within the HD's area and organise the necessary education and training for combating infectious diseases within the HD. There has been a general lack of specialists in infectious diseases and especially specialists trained in epidemiology, in the HDs. KTL has started a limited field epidemiology training program to increase and improve these capacities.

1. A National antiviral strategy has been developed and it is updated up to December 2006. According to the national preparedness plan, the patients will be provided with their medication (the antivirals from the governmental stockpile) from the local healthcare units. The antiviral medicines stored at the licensed distributors will be delivered to these healthcare units as far as possible by normal logistic methods. When the local authorities specify which healthcare units will be responsible for the influenza patients, the municipal preparedness plan for antiviral logistic will adapt these changes into the regional and local operation environments. The NAM is responsible for the development and maintenance of this logistics plan, for practical guidance and for supervision of the distributors, retail pharmacies and hospital pharmacies operating in this field.

The principles and rationale behind possible prioritization are described in the National Plan, but in practice the detailed clinical protocols would only be finalised once the exact type and nature of the pandemic influenza would be known.

2. The pandemic vaccination strategy, regulatory issues, liability and logistics are addressed in the national preparedness plan for an influenza pandemic. A detailed logistics and operational plan will be distributed through the Internet to the healthcare centres and to hospital pharmacies as soon as the pre-pandemic vaccine stock is in the warehouses in Finland.

Finland has ordered sufficient supplies of pre-pandemic or prototype vaccine to inoculate the entire population. This pre-pandemic vaccine will only be used once the pandemic is declared and a good cross-reactivity between the vaccine strain and the pandemic strain has been confirmed. To boost the protection of the population, a second dose, this time using the specifically developed vaccine will be administered as soon as it is available.

Finland has an advance purchase agreement with a private vaccine producer to secure the availability of 5.5 million doses pandemic vaccine approximately 6 months after declaration of the pandemic.

Different protocols of vaccinations in different pandemics – two examples:

Moderate pandemic (as in 1957–58 or 1968–69)

- 1) Personnel caring for infected patients (50,000–150,000 people).
- 2) Over-65s and those in seasonal influenza risk groups due to chronic conditions (in 2005 approx. 1.1 million persons)
- 3) 0.5⁷⁾–64-year-olds not in risk groups (approx. 4.1 million persons).

Possible prioritisation between these groups will be made early during the pandemic or during the immediately preceding alert phase, on the basis of the mortality information collected. Modification of the recommendations for seasonal influenza vaccination would be likely to be based on this ranking of vaccinations.

Severe pandemic (as in 1918–19)

- 1) Personnel caring for infected patients (50,000–150,000 people).
- 2) Everyone else from the age of six months, from youngest to oldest.

Once the pandemic is declared, inoculations using the prototype vaccine will begin as quickly and comprehensively as possible, if there are stocks of suitable prototype vaccine at the start of the pandemic. In Finland, the decision on using the prototype vaccine, the vaccination recommendations and the order to be applied are made by the Ministry of Social Affairs and Health on the advice of the National Public Health Institute. The vaccines must be distributed quickly

⁷⁾ Research shows that influenza vaccination results in a protective level of antibodies only from the age of 6 months.

throughout Finland. Local authorities have detailed plans in place for the practical aspects of the vaccination and for dissemination of information on them, so that the entire population can be vaccinated in a few weeks. In municipalities, vaccinations may be carried out at different locations e.g. in health centres, hospitals, occupational healthcare, advisory health clinics, residential homes for the elderly, sheltered housing and community nursing, as well as possibly in schools

3. Protection of Health Care Workers (HCW), these have been prioritised in the national plan for preventive and therapeutic measures, should their availability be limited. An ongoing discussion has raised the issue of prophylactic antivirals to HCW during a pandemic, and the standard of respiratory protective gear for HCW involved in assessing or treating (suspected) influenza patients. There is a concrete risk of hospital districts making policy decisions on these issues that would be sufficiently diverse to cause major disruption in the HCW work force during a pandemic. MSAH has nominated an expert group to give further national recommendations on these issues by early 2008.

Comment

Vaccine policies and procurement: The vaccination plan for an immediate first dose of pre-pandemic (H5N1) vaccine (to be stockpiled to be readily available) to be given to the whole population immediately the pandemic is declared and then to provide the targeted H5N1 pandemic vaccine again for all the population (5.2 million doses) is a sound one. The pre-pandemic vaccine, has been ordered, but at the time of assessment visit (June 2007) the timetable of the manufacturing process was not yet known. A supply agreement for 5.5 million of the specific monovalent pandemic-strain vaccine has also been made, with the condition that this should arrive approximately six months after the phase six is announced. This strategy, although a logical one, still relies on the premise that the pandemic strain will be sufficiently close to the present H5N1 for there to be some cross-immunogenicity, which may not be the case.

A good vaccine distribution strategy and reasonable prioritisation plans (identifying in order of prioritisation the essential groups to be vaccinated first) are also in place. The Health Centres also have their own plans on how to actually carry out the vaccination in a rapid manner. The planned system for recognising adverse effects from either of the vaccines appears to be quite efficient. The system should pick up any adverse effects rather quickly, both for the H5N1 as well as for the pandemic, although right now the system cannot take the load nationally. This system could certainly be considered to be a Regional asset, as the early identification of suspected vaccine adverse effects findings would be relevant for many other countries in Europe. A similarly efficient model is also available for the anti-virals, so Finland would be in a position to be amongst the first to evaluate the effectiveness and safety of the recommended medical interventions.

Anti-virals: The present plans for the provision of anti-virals aim to provide a single course of treatment for 25% of the population, but it is still unclear whether the plans cover sufficiently any prophylactic indications or use, or repeated treatment courses (false positive cases), both of which should be foreseen. Apart from this the National Agency for Medicines has the overall supervision of a general logistic plan of anti-viral medicines and other pharmaceuticals for use in a pandemic, including stocks of antiviral medicines (oseltamivir, tsanamivir and amantadine), antibiotics, infusion equipment, etc. This emergency stock of essential drugs and basic medical supplies is ensured through solid legislation, but the management of these stocks in case of problematic supply could perhaps be defined more explicitly. Also regarding children – only normal capsules of anti-virals were available until now, but for the future smaller capsules should be ordered – but until then,

the plans are to reconstitute anti-virals from the adult capsules for the paediatric treatment, not an ideal solution.

The sub-national system of stockpiles as seen in one Region appeared to be well managed, however at the more local level it was less clear how these would be managed during Phase 6, particularly at the primary care level. In general the central authorities need to be more assured that there are similarly robust mechanisms in all the regions throughout the country.

The system for on-line surveillance up of consumption is projected to be developed soon, and appears to be adequate. There is the need to strengthen the surveillance of the adverse drug reaction system. The local plans for the distribution of the anti-virals, including visits at homes, appear to be good, but should preferably be further tested in simulations.

Health Services: The basic plan is to channel flu patients to specific pandemic reception units. Other plans include prioritising those health services that would need to be maintained during the peak of a pandemic. These recognise the need to concentrate on the more acute treatments, logically freezing preventive and health care, chronic disease controls, etc., hoping to release staff from dental care, rehabilitation, etc., for use in other challenges and to meet the increased need for advice and information services. There is a need to clearly identify and train now these 'additional' medical staff, and any non-medical staff who will be reallocated work in case of a pandemic. The preparation of specific training materials will allow faster additional training during a crisis.

The discussions with the Unions have been recognized to be necessary. They should cover such delicate matters as the obligation to work in a pandemic, the level of personal protective equipment (common surgical mask vs HEPA) and so on, however these have not really been tackled fully. Discussions among staff during local and regional planning have shown, that protection of health workers is a crucial issue. The level of protection should preferably be equal across the country.

It appears that the level of preparedness is not uniform throughout all levels of the health system. Limited staff ratios and wide geographical coverage in many of the municipalities (particularly in the north), together with a different risk perception at local levels, make it difficult to motivate staff in some places.

Challenges to pharmaceutical preparedness: The plans of the regional and local authorities specify the healthcare units that will be responsible for the influenza patients. They also spell out how the antiviral medicines will be delivered - as far as possible using the normal logistic chains, but in a pandemic situation there are clear plans to prioritize and secure transportation. The plans include how patients will get the antiviral medication from the local healthcare units together with instructions for purchasing other necessary medication. These plans are adequate and appear to be clearly understandable, both for the pharmaceutical operators as well as the consumers. There needs to be further thought to planning how to reduce any hoarding of pharmaceutical products and the risks of other pharmaceutical crimes.

Recommendation

- The local and regional level would surely benefit by being provided with stronger guidance from the national level on the implementation and further development of their preparedness plans. This could also serve to raise awareness on the importance of their preparedness planning and to ensure a more realistic insight into the consequences of a possible pandemic.
- Although the plans for the emergency stock of drugs and medical equipment provides a certain degree of security during a pandemic, the possible need for additional procurement needs to be studied and planned for.

- Planning and decisions on the details of possible prophylactic (especially for health care workers) or curative use of anti-virals during all pandemic phases should be finalised and implemented.
- Detailed plans on the practical problems (in terms of cold chain or waste management) of dealing with the enormous quantities of vaccines, especially their storage, should be finalised.
- Other detailed plans to be further developed include the management of corpses and dealing with of extraordinarily large quantities of medical waste like protective equipment, needles, etc.
- The use of operational modelling could be helpful to determine more precisely the anticipated needs in terms of human resources surge capacity. The development of training materials for people with different medical or non-medical backgrounds, to enable these to take on different functions during a pandemic response, should already be prepared from now, for faster implementation when it is needed. Training for certain target groups could already start now, which would raise a more broad awareness about additional resources that might be mobilised.
- The sharing of preparedness plans between the same levels (regional or municipal level) would certainly provide opportunities to learn from the strategies and solutions presented in the other regions' or municipalities' plans and should be encouraged more. All levels should be motivated to regularly update their preparedness plans, as well as to ensure their rapid implementation in the event they are needed.
- The region reviewed had clear and practical plans for the timely delivery of anti-virals to individual patients (including the home bound patients) in the event of a pandemic. It is unclear whether there will be any central coordination of these plans which at present may vary from region to region.

12. Regional and Local Preparedness

Description

416 self-governing Municipalities provide citizens with basic services - 430 000 employees serve municipal residents and more than half of the employees in the municipal sector work in social services and health care-; the Municipalities would become front-line public health actors and implementers in case of pandemics.

The municipalities have a multidisciplinary planning group responsible for developing the influenza pandemic plans, led by the municipal manager who is responsible for emergency planning. The health care planning group consist of the Chief Physician, Physician Responsible of Communicable Diseases (PCD), Veterinarian, Chief Nurse, Health Inspector, Social Leader, representative from private medical care and NGOs etc. The municipalities can choose to prepare their plan alone or together with a neighbouring municipality or even several municipalities can do it together. Pandemic preparedness planning should be included in the municipal emergency plan. Ministry of Social and Health Affairs has urged the municipalities to engage and integrate their pandemic planning to the regional process led by the Hospital Districts and State Provincial Offices.

The SPO of the Province of Western Finland collected basic information about the pandemic planning from the HCs, Private Occupational Health Services and Hospital Districts. This sort of investigation has not been carried out done in all SPOs yet. The greatest weakness identified is the lack of guidelines of the social

sector, which has an important role during a pandemic. Also the current reforms of the service structure, which aim to ensure that there will be at least 20 000 inhabitants for the smallest area covered by the health care services, partly slows down the planning process. During the pandemic, the HCs' services would need to have increased nursing staff for the offices and to meet on call advice. Over half of the HCs estimate that they would probably have problems in getting the required extra personnel during a pandemic. 29 per cent of the HCs estimated that the private health care could help in carrying out the vaccinations. 24 per cent estimated that the private health care could probably provide nursing services against a fee. The Private Occupational Health Care is responsible for 250 000 employees' health care. The POHC could help the HCs with the vaccinations and call advice. Some representatives of POHC have expressed interest and willingness to take part in the pandemic training.

Comment

Local and Regional implementation of the plan

It is a legal obligation (Emergency Powers Act, Health Protection Act) for state and municipal authorities to ensure, by means of emergency plans and prior planning for emergencies, that their services will continue to be performed also in emergency situations. The MSAH and Health Care Departments of State Provincial offices can offer guidance, direction and monitoring of the preparedness planning, but they have no authority to issue any binding orders to municipalities who enjoy a high degree of autonomy.

However in a pandemic the local authorities will be the front-liners. Most of the expertise below the national level is based at the hospitals on the regional level, as the level of planning is less advanced at the Health Centers – where several have lagged behind. The role of the Association of Finnish Local and Regional Authorities to improve coordination and cooperation between municipalities is an important one. They need to help develop plans on how to shift from normal service delivery to a pandemic level of cover. Also the provinces themselves have a strong tradition of working together on preparedness plans (especially in the north) and this should be further encouraged. There appears to be relatively good multisectoral collaboration at the provincial level, especially between the police, rescue, ambulance, education and social and health sector and veterinary who are involved in a regular meeting of the heads of these sections (which operates as a command center for emergencies).

Regarding communication needs, the municipalities are each responsible for their own communication. This means that it may be possible that the primary health care and the Hospital Districts take care of their own communications, which may lead to some confusion during a pandemic. Ideally the KTL will prepare and send standard materials for use in regional and local communications, which the hospital districts on the regional level could use and adjust for the regional and local context. Provincial officers should ensure that the message doesn't vary significantly from district to district.

One of the main weaknesses identified at the local level is the lack of social care involvement, especially the social care focussing on vulnerable groups, who have not yet become fully involved in pandemic preparedness. Also the general guides for the social care's preparedness plans are old, in particular those referring to child day care and elderly care in the homes, nursing for disabled in their homes and meals on wheels services. Their role in assisting to maintain some sort of home quarantine needs to be clarified. These all require specific plans as the National Preparedness Plan describes the role of social services only on very general level.

The local and regional level authorities did recognise that they may need some guidance from the center to carry out simulations as there have been no simula-

tion exercises at the local level. Although there have been a few exercises at the university hospital level, these are recognised to have been insufficient. There needs to be a team set up at the national level to help coordinate such regional exercises.

The lack of well trained experts at the regional and local level is clear. The KTL national field epidemiology training program, partially funded by the new preparedness funds, prioritises initially the University Hospital District teams. Hospital Districts will have 1-2 infectious disease specialists who have received limited field or intervention epidemiology training. This lack of expertise is especially acute in the more remote areas where there is a chronic lack of all doctors and nurses.

The Health Centers are responsible for delivering much of the seasonal influenza vaccination programme and the one visited ([Kangasala](#)) was generally quite pleased with their uptake rate. In a pandemic they appreciate that they will be very much involved in the pandemic vaccine delivery, once it arrives – although many HCs need to plan in more detail where and how these large stocks will be stored.

The primary care surveillance systems would be very stretched in a pandemic and there should be some further planning on how this can be made more automated, although the HC visited believed that they should be able to maintain all their normal computerised record keeping during the pandemic.

The provincial officers appear to have looked into the necessary cold storage for an excessive amount of corpses and there seems to be enough space capacity space for emergency situations.

Several of the Regional (central) hospitals have developed models of service demand in a pandemic, including how to increase further hospital capacity. There are still some concerns about the stocks of the “routine” drugs used for intensive care (25% of total yearly consumption), IV-apparatus and other consumables, IV-electronics, IV-racks..., ‘hotel’ consumables: linen, food..., but especially reconstitution liquids (purchase, storage, post-pandemic needs), Ventilators / respirators. There are still problems with how to select the right patients for admission to the hospitals but also with many other details like how to find enough well trained personnel, how to persuade professionals to do what they are not exactly trained to do, how to maintain order and discipline both in the community as a whole but also around the health care facilities especially, the effective and safe use of “fever hospitals”, transport between units (patients, relatives, drugs, materials, cadavers), etc.

Regarding the working ethics and conditions, there has not yet been consultation or agreement with the nursing unions on such issues like appropriate compensation for the extra risks and work efforts in a pandemic.

Recommendation

- The regions should consider appointing the regional (central) and university (central) hospitals as their main coordinator of communications in a pandemic, to minimise the possibility of potentially damaging conflicting messages emerging from the lower levels
- The local social care services caring for vulnerable groups (child day care, elderly care in the home, nursing for disabled in their homes, meals on wheels, etc) need to be encouraged to update and further develop their own preparedness plans.
- Although many have been completed there are still some areas where regional and local preparedness plans still need to be finalised, these should be completed as soon as possible.
- The regional and local level authorities need guidance from the national level to help them carry out effective preparedness simulations/exercises at the regional and local level. There needs to be more regional and local exercises

undertaken, repeated in the other regions using the lessons learned, to improve that exercise each time.

- The lack of well trained experts in Infectious Disease control at the regional (central hospital) and local level requires further investment in training.
- A variety of models for delivering anti-virals and vaccines in the most effective and safe manner should be explored and tested with operational modelling and small scale exercises in order to make a clear recommendation on the most appropriate method.
- There needs to be more discussion with the health care workers unions and professional associations regarding the working ethics and conditions in a pandemic.

13. Large Cities Pandemic Preparedness

Description

The same guidelines apply to the large cities as to the smaller municipalities. The large cities however have better planning and manpower capacity. They may also have unique health care structures concerning the division between primary health care, secondary health care and tertiary health care.

In the municipal level the health and social pandemic preparedness plans are done in close collaboration. They are integrated to the other plans in municipalities and cities.

In Finland the obligation of local authorities to organize children's day care is unchanged in a pandemic situation.

Comment

At the city level, there appears to be good structures in place to deal with a crisis such as a pandemic. There is a 'serious emergency office' that is responsible for preparing business continuity plans, which usually refer to the central security service guidelines. The capital has prepared special preparedness plans with an intersectoral co-operation scope, excellent antiviral and personal protective equipment protection policies and guidelines and an airport safety procedures and emergency plan. The capital is the regional transportation hub and the place of work for many international commuters and its preparedness plan reflects this accordingly. Many cities have a Rescue Services coordinating body – led by their Mayor and includes many members from different sectors. This coordinating body covers pandemics and avian flu also and the discussions on the pandemic are led by the health sector of the city

Again a main concern at the city level refers to the problem of the care of children – should they be forced to shut down the day care system. Many of the health care workers are mothers and this decision will have serious effects on the workforce availability at a time of heightened need.

Recommendation

1. There needs to be more discussion on the decision regarding border restrictions in a pandemic with neighbouring countries. A balanced approach should be the aim, so as not to deprive the capital of its vital international personnel or not to paralyse regional transportation.
2. The national, regional and local plans should clearly anticipate the additional burdens on the public health systems in the main cities (including such

delicate sites as the airports), and should prepare plans to assure business continuity.

3. There needs to be more crisis management exercises carried out at the decision making level in the capital, possibly with the health sector in a supporting but not decisive role. These should serve to try to better delineate the competences and responsibilities between the public health institutions and the different crisis management institutions.

14. Regional and Local Public Health Manpower

Description

KTL gives expert support to Provincial Medical Officers and to the Communicable Disease Experts (CDE) in Hospital Districts (i.e. central hospitals). The last – mentioned will guide the Local Public Health Officers and especially the medical doctors responsible for the communicable diseases. The field epidemiology training program will enhance the expertise of communicable diseases in HDs and thus also make the education of the local health care workers possible. The number of the CDE's as well communicable disease nurses at HD level is currently too small to allow full-scale epidemiological support to doctors responsible for communicable diseases in the health centres at the local level. Some improvement is expected following ear-marked state financial incentives to HD's in the years 2006 and 2007. The infectious disease education of all health workers and on all levels belongs to the pandemic plans. Large one day seminars have been held by KTL and provinces since 2006.

Comment

The provincial medical officers have an administrative role in epidemic/pandemic planning. At the municipality level, the Health Centre doctors carry out this function, although in general they are less well trained, while the veterinarian leads the epidemiological investigations when it involves food. Also the health inspector is involved in the tracing food- and water-borne epidemics. Most contact tracing is carried out at the local level, but KTL or the regional level central hospital infectious disease teams also advice, assist and coordinate part of the contact tracing if required.

Clearly at the local level there is too few personnel with the right public health skills - well trained personnel are central to any local public health response. This is of greater concern as in a pandemic there will be limited possibilities for 'mutual aid' (one neighbouring area assisting another) as every area will be stressed.

Recommendation

- Authorities should continue to support the field epidemiology training programme so as to strengthen regional and public health capacity that could be utilised in a pandemic.

15. Hospital Preparedness

Description

Under the Communicable Diseases Act, direction of the work of combating infectious diseases within its territory is the duty of the Hospital District (Central Hospital functioning on the Regional level,), which also acts as regional expert adviser

on combating infectious diseases and monitors execution of such work in its area. The Hospital District assists the municipal organ responsible for combating infectious diseases in diagnosing infectious diseases, identification of epidemics and in trace-back infections. It also directs prevention, surveillance and investigation of hospital infections in its area. In addition to the duties indicated in the Communicable Diseases Act, as obligations under the same Act the HD must: - ensure that special medical services required for treatment of infectious diseases are available within the its area; organise the necessary education and training for combating infectious diseases within the HD; participate in development of measures to combat infectious diseases within the HD; provide, on demand, summary details of notified infectious diseases registered in the health centre catchment area.

Comment

The regionally functioning Central Hospitals will take the substance lead in a pandemic on their HD. Among them, the University Hospitals, comprising larger populations, will act as opinion leaders. The level of knowledge and expertise in the dedicated infectious diseases of those University Central Hospital specialists met was excellent. There was less confidence in the degree of expertise at the local health care level or of their knowledge of preparedness in the general.

Some University hospitals have prepared good detailed models, including various estimates of the potential severity of disease and even clinical protocols/indications for admissions, intensive care, etc. The model presented to the assessment team was based on a pandemic scenario presented in the national preparedness plans, with a severity between the 1918 pandemic and the 'Hong Kong' and 'Asian pandemics', and that there would be about 30 days 'warning' to implement measures and guidelines before the strain enters the Finnish population. The plans presented were very detailed and included measure such as shifting personnel from non-urgent care clinics, suspension of leave, recruitment of students and re-training of other professionals, recruitment of the voluntary sector also, etc. The regional plan estimates that the full vaccination initiative could be completed within 1 week, although the plans regarding the storage and distribution of the vaccine need to be further elaborated. Stockpiles for medicines have been ordered, as have the personal protective equipment, based on detailed estimates of how many masks would be required per patient. There are still some concerns about certain details such as the numbers of ventilators needed or the additional storage space required for the volume of stockpiled reconstitution liquids, all of which have still not been solved.

Most of the hospital district plans have been prepared, but many municipalities' plans still need to be finalised and then tested in simulations exercises. In fact few local multisectoral exercises have been conducted.

Recommendation

- There should be several pandemic models devised that can be used by hospitals in their planning process, particularly for the pandemic peaks (phase 6), and which include such aspects as how the hospitals will protect their staff, provide essential services and deal with the severely ill influenza patients.
- The regional (central) hospital plans need to be harmonised as much as possible, in particular on such aspects as the selection of cases for admission, training needs for professionals to carry out work that they are not trained to do during the pandemic peaks and other non-health aspects as how best to maintain order in the community as a whole as well as parking around the hospital, etc.,

- More regional and local exercises need to be carried out to specifically test the Hospital District level plans as well as the multisectoral municipalities' plans.

16. Interoperability Issues

Description

The Nordic countries signed the Nordic Public Health Preparedness Agreement in 2002. The Agreement commits the Nordic countries to mutual social and health-care cooperation in crisis and catastrophic situations, taking into account national needs. A widespread influenza pandemic does constitute a crisis situation as defined in the Agreement.

The agenda of Finland's presidency of the Nordic Council of Ministers in 2007 includes active promotion of Nordic cooperation in issues related to vaccines and a possible pandemic. There is currently an initiative which is looking into exploring the production of a possible common Nordic influenza vaccine.

The plans of the neighbouring Nordic countries are shared and available, but those for Russia not.

The members of the European Union are legally obliged to participate in the Early Warning Response System (EWRS) of communicable diseases and Finland also contributes to this system.

Comment

There has been a good level of collaboration between the Nordic countries on specific issues of pandemic preparedness such as on the establishment of a Nordic influenza vaccine production, and there is a good exchange of information of the pandemic preparedness plans of the Nordic countries. Experience from elsewhere has shown that sharing plans with neighbouring countries is useful as there is always something that countries can learn from each other. There has been little collaboration with the other neighbouring countries like Estonia and none at all with the Russian Federation despite the large border and the close proximity of the two countries.

This should be tackled in the near future as there are particular concerns over the likelihood of asymmetric responses in a pandemic between Finland and its neighbours, which may lead to public confusion and specific difficulties during the pandemic.

Recommendation

- It is recommended that the country continues to share and obtain more knowledge about the pandemic preparedness plans of all the neighbouring countries (including non-EU countries as these countries are likely to have a different approach to pandemic preparedness than EU countries) in order to identify differences and similarities (e.g. in policies regarding protective measures offered to the population).
- Finland should strive to acquire a better knowledge of the Russian preparedness measures and take into consideration what different policies (such as protective measures recommendations for the general public) in the two countries could mean before and during a pandemic. This should also be addressed on provincial and municipal levels for provinces and municipalities that border the Russian Federation.
- There should be specific bilateral discussions with neighbouring states to discuss interoperability issues and how these can be overcome.

17. Communications

There are plans addressing Communication Aspects in the National Plan (Chapter 13). The main party responsible for communications is the MSAH, in cooperation with departments and agencies in its sector, particularly the KTL, which is responsible for planning and directing communications concerning the pandemic alert and pandemic.

Each Ministry is responsible for providing for the particular communications needs within its own administrative sector during the pandemic. There are systematic procedures for cooperation between the Ministries' communications units and these are appended to each Ministry's preparedness plans concerning communications during a pandemic.

Responsibility for communications always lies with the responsibility for directing operations. If the responsibility for directing pandemic preparedness and a pandemic situation is transferred from the MSAH to the Government then the responsibility for communications would also pass to the Communications Unit of Prime Minister's Office.

In a pandemic situation, it is very important to ensure good regional and local communications. The general public should have very detailed instructions and information for example on the places of treatment. Such information must be provided at as local a level as possible, preferably by the local authority. SPOs, Hospital Districts and Health Centres should ensure that regional and local communications plans regarding a pandemic are included in the preparedness plans.

The target of communications are: general population, social and health service professional personnel, members of the media at home and abroad, personnel of each administrative sector (internal communications) and various interest groups. The channels of communication are: mass media, Internet, Telefax, telephone helplines, replying to letters and emails from the public, printed information for distribution at every home, school or workplace, and paid advertising.

The details of the national communication plan is still being developed together with MSAH and KTL. The plan is expected to be finalized by the end of 2007.

Comment

The concept that at the central level, the authority (member of the Heads of Preparedness) designated to be responsible for coordinating that particular emergency response operations (in case of a pandemic this would be the Ministry of Social Affairs and Health) would also be responsible for the communications is a good one. It is important that every other Ministry involved in the response (e.g. Ministry of Interior or Foreign Affairs) does continue to maintain its own separate pandemic-related communication plans. However the danger that several communication channels and sources of information suddenly open up during a pandemic, revealing different levels of competencies giving varying advice and messages would be very damaging – so it is important to ensure coherency in front of the media and the political pressures.

The procedure that in serious emergencies the other Ministries' communications directors meet and discuss these communication strategies is also very important. At the regional and municipal levels, it is appropriate that the KTL is responsible for the internal communications within the health care system and provides guidance on what to could be communicated with the media on this crisis. Coordination of the communication at municipal level is ensured by the State Provincial Medical Officers. This entire system appears to be reasonable well thought out and should operate well in a pandemic.

The communications plans presented correspond reasonably well to what would be expected, however it is unclear whether there is sufficient 'surge capacity' (in

terms of numbers of trained personnel) that would be needed for all the communications workload in a pandemic.

Recommendation

- The main communication messages to be used at various levels should already be developed at this stage for the different scenarios. This includes the communication lines to be used for health professionals at regional and municipal level, as well as for the general public and media. For the latter, the planned use of a single governmental web portal, dedicated to influenza, would be an efficient tool to ensure coherent communication messages countrywide.
- The central role that will be taken up by KTL, in close collaboration with the Ministry of Social Affairs and Health, in determining the main communication lines during a pandemic, could be more emphasised in the national preparedness plan.
- The possibility of establishing a group to further develop communication strategies in anticipation of needs in a crisis should be considered.
- Investigate how best to provide the general public with the means to cope with illnesses and improve their own empowerment (such as self-diagnosis, possibly telemedicine facilities, on-line psycho-social support, etc).

18. Avian Influenza

The Ministry of Agriculture and Forestry (MAF) and, at regional level, the SPOs, have drawn up detailed operational instructions for veterinarians to deal with avian influenza.

The Finnish Food Safety Authority (Evira) screens for avian influenza antibodies in poultry and for the incidence of the virus in wild birds, as well as mapping the risk factors of avian influenza. In the event of a disease cluster on a poultry farm, the prevention of the further spread of disease and the disease eradication is the responsibility of the MAF and is regulated by the Decision on Control of Newcastle Disease and Avian Influenza (3/EEO/96). If necessary decisions can be made on the emergency vaccination of poultry. This sector has plans and is prepared for any transmission of avian influenza to humans and a possible new pandemic with human-to-human transmission, in cooperation with the MSAH.

The Customs and similar other relevant sectors have been informed on the need for import bans imposed on poultry and foodstuffs posing a potential risk of infection. Similarly import licences for caged birds from infected areas are not granted.

The MAF Press and Information Unit has prepared a communications plan in case of avian influenza, and maintains a communications 'code of practice' for crisis and emergency situations. In addition, the MAF maintains a constantly updated avian influenza website on the Internet.

A media seminar on avian influenza was held in The National Food Safety (and Veterinary) Agency (Evira) on February 14th 2007. The media has published information at end of May 2007, when keeping poultry outdoors was again allowed; there is information on Evira's web site available continuously.

A joint human and veterinary exercise has been held in March 2006. Also other training sessions for contingency veterinarians has been held.

19. Human Avian Influenza and Avian Influenza (H5N1) Issues

The response to the threat of avian influenza falls under the responsibility of the Ministry of Agriculture and Forestry and its new National Food Safety – Evira. This is responsible for the coordination of the work of provincial Veterinary Officers (25), contingency veterinarians (82) and Municipal Veterinary Officers (313). It relies on the good cooperation of the farmers, who are obliged to notify any symptoms of disease to a veterinarian (Act of Animal Diseases). There are good systems in place for the surveillance in poultry and wild birds, veterinarian disease reporting, sampling and analysis processes, immediate local restrictive measures for containment and the provision of protective equipment. All these systems include provisions for working in conjunction with the local health care authority, and where necessary, with HD infectious disease team, state provincial medical officer, provincial veterinary, provincial health inspector and the national epidemiologic team from KTL. Cooperation between animal and human health fields seems well established at provincial, HD and local level.

Several detailed contingency plans/manuals of operations have been prepared. There is a good provincial contingency plan, that includes a specific part for avian influenza (revised in 2006) including the duties, responsibility and updated contacts for every sector (police, military, health sector). There has been a large scale national exercise in 2004 for Newcastle disease (a very similar plan as for the avian influenza) and since then there have been several provincial exercises.

The recommendations from the European commission on AI have been followed since 2003 ; in 2006, 2133 samples have been analysed, 41 found positive serologically in two farms (and containment was effected) but no virus was found. In 2006, there was no positive test in any of the wild birds tested. The Evira risk assessment for last two years have led the ministry to order the restriction of outdoor poultry during spring.

Recommendation

- The Evira appears to be a well organised agency for risk assessment, to provide or revise standard operating procedures and recommendations for avian influenza or any zoonotic disease. Even closer collaboration with the KTL then at present is recommended.

20. Specific Country Issues

Comment

The small size of the central team responsible for leading the process of pandemic preparedness is now becoming a handicap to the progress in the development of preparedness. This will become even more apparent in a federal-style country where the central capacity has to focus more on a coordinating role, forming consensus with a large number of partners, rather than employing a more simplified command and control model. Also the small size of this team means that it is unlikely that they will have the time and capacity to develop the documents needed and carry out the work with all the groups that need to be mobilised.

Recommendation

- The external team members recommend that the national authorities consider how they can reinforce/enlarge the central team for the next two to three years, when the more detailed preparedness work will need to be undertaken by the country.

ANNEXES

Annex 1. Timetable assessment of influenza, pandemic and avian influenza preparedness in country

Tuesday 12 June 2007

Introduction: the Finnish health care system and national pandemic influenza preparedness

The Ministry of Social Affairs and Health, meeting room Meritulli, Meritullinkatu 8, Helsinki

Chair: Mr. Tapani Melkas, Director, Department of Health, MSAH

NB. Additional meeting room 5D Debet has been reserved for the ECDC team 9.00-16.15. Room has wireless internet connection.

- 10.00 **Welcome**
Mr. Ilkka Oksala, Secretary of State of the Ministry of Social Affairs and Health
- 10.30 **Introduction: the Finnish health care system and the Ministry of Social Affairs and Health**
Mr. Tapani Melkas, Director, Department of Health, MSAH (max. 15 min)
- 11.00 **Introduction: the national pandemic influenza preparedness**
Mr. Tapani Melkas, Director, Department of Health, MSAH (max 5min)
Mr. Petri Ruutu, Head of Department, National Public Health Institute (max 5min)
Mr. Jouko Söder, Ministerial Counsellor, Health Affairs, MSAH (max 5min)
Mr. Raimo Ikonen, Director-General, Finance and Planning Department, MSAH (max 5min)
- 12.00-13.30 **Lunch, Restaurant Rodolfo**

Tuesday 12 June 2007:

Governmental coordination and State level resource management for pandemic preparedness

The Prime Minister's Office, Helsinki, meeting room Konselji

Chair: Mr. Risto Volanen, State Secretary of the Prime Minister's Office

- 13.30 **Governmental coordination of preparedness:**
Structures of preparedness on the government level,
Heads of Preparedness: actions concerning pandemic preparedness
Mr. Risto Volanen, State Secretary of the Prime Minister's Office
Mr. Timo Härkönen, Head of Government Security, Prime Minister's Office
- 15.15 **Coffee**
- 14.30 *State level resource management for pandemic preparedness*
Resource management for pandemic preparedness (max 5min)
Mr. Mika Purhonen, Director General, National Emergency Supply Agency
The National Emergency Supply Agency (max 5min)
Mr. Riku Juhola, Special Adviser, National Emergency Supply Agency
Municipal resources for pandemic preparedness (max 5min)
Mr. Jussi Merikallio, Director, Social Welfare and Health Care,
The Association of Finnish Local and Regional Authorities
Ms. Liisa-Maria Voipio-Pulkki, Senior Medical Adviser,
The Association of Finnish Local and Regional Authorities

Current status of preparedness on provincial level and future needs

(max 5min)

On behalf of all invited State Provincial Medical Officers:

Ms. Hannele Havanka, State Provincial Medical Officer,
The State Provincial Office of Oulu

16.00 Preparedness through different sectors in municipal level

Case: City of Helsinki

Aaro Toivonen, Risk Management Chief, City of Helsinki

16.30 End of the day

Wednesday 13 June 2007: Technical aspects of pandemic influenza preparedness

National Public Health Institute, Mannerheimintie 166, Helsinki, Meeting room A3, third floor

Chair: Ms. Merja Saarinen, Ministerial Counsellor, Health Affairs, MSAH

08.30 Preparedness on Influenza in Animals

The Ministry of Agriculture and Forestry (max 5 min)

Ms. Riitta Heinonen, Deputy Director General,
The Ministry of Agriculture and Forestry

Finnish Food Safety Authority Evira(max 10 min)

Ms. Jaana Husu-Kallio, Director General, Evira
Ms. Sirpa Kiviruusu, Senior Veterinary Officer, Evira
Ms. Saara Raulo, Head of Zoonosis Centre, Evira

Discussion

9.30 Preparedness at the Ministry level: two cases

The pandemic preparedness under the Ministry of Transport and Communications

The Ministry of Transport and Communications (max 5 min)

Mr. Seppo Öörni, The Ministry of Transport and Communications

Finavia (max 5 min)

Ms. Silja Laakkonen, Legal Advisor, Finavia

Discussion

The pandemic preparedness under the Foreign Ministry

Mr. Pasi Tuominen, Counsellor, Foreign Ministry of Finland (max 5 min)

Mr. Jussi Tanner, First Secretary, Foreign Ministry of Finland

Discussion

15.15 Coffee

10.30 Expert guidance for health care services

Preparedness of clinical surveillance and health care system

Preparedness of virological surveillance

Vaccine policies and procurement

Mr. Pekka Puska, Director General, National Public Health Institute (KTL)

Mr. Petri Ruutu, Head, Department of Infectious Disease Epidemiology,
KTL

Ms. Terhi Kilpi, Head; Department of Vaccines, KTL

Mr. Thedi Ziegler, Department of Virology and molecular medicine, KTL

12.30 – 13.30 Lunch, National Public Health Institute

- 13.30 Occupational safety and pandemic preparedness**
Finnish Institute of Occupational Health FIOH (max 5 min)
 Ms. Helena Taskinen, team leader, Health and Work Ability
The Department for Occupational Safety and Health, MSAH (max 5 min)
 Mr. Leo Suomaa, Director, MSAH
 Mr. Heikki Savolainen, Ministerial Counsellor, Health Affairs, MSAH
 Discussion
- 14.15 Anti-viral and other pharmaceutical preparedness and logistical planning**
 Mr. Hannes Wahlroos, Director General, National Agency for Medicines NAM
 Ms. Eija Pelkonen, Head of Inspectorate, Department of Enforcement & Inspection, National Agency for Medicines NAM
 Discussion
- 14.45 Coffee**
- 15.00-16.30 Public Health Measures, Prof. Angnus Nicoll**
- 16.30 –18.30 Possibility for internal evaluation team meeting**
 National Public Health Institute, *Meeting room A3*
- 19.00-21.30 Dinner Cruise in the archipelago of Helsinki**
 Departure from the Market Square, m/s Natalia

Thursday 14 June 2007: Local and regional implementation

City of Tampere

- 7.30 Train from the Helsinki central railway station**
 Conference cabin reserved for the ECDC team (max 7 pers.)
- 09.00 Arrival to the city of Tampere**
- 09.30 Local and Regional implementation of the national pandemic influenza preparedness plan**
 Tampere University Hospital, hallituksen kokoushuone
Local implementation and regional governmental monitoring
 (max 10 min)
 On behalf of State Provincial Medical Officers
 Ms. Maarit Varjonen-Toivonen, MD and Mr. Simo Harju, MD,
 State Provincial Office of Western Finland:
 Jukka Lumio, MD, PhD, Head of Infectious Diseases,
 Pirkanmaa hospital district
Preparedness on the municipal level (max 10 min)
 Mr. Jarmo Salmi, Risk Management Chief, City of Tampere
- 10.30 Preparedness on the hospital district level**
 Jukka Lumio, MD, PhD, Head of Infectious Diseases,
 Pirkanmaa hospital district
- Specialized medical care
 - Regional cooperation
 - Hospital hygiene
 - Ward for Infectious Diseases
 - Laboratory Centre

- 12.00- 14.00 **Lunch and transfer to the Health care centre of City of Kangasala**
(20 min)
- 14.00 **Preparedness on the primary health care centre level**
Health care centre, City of Kangasala

Ms. Tuuli Löfgren, Head Physician responsible for pandemic preparedness,
Health care centre, Municipality of Kangasala
- 16.00 **Train from the Tampere railway station**
Conference cabin reserved for the ECDC team (max 7 pers.)
- 17.30 **Arrival in Helsinki**

Friday 15 June 2007: Conclusions

The Ministry of Social Affairs and Health, Meritullinkatu 8, Helsinki, meeting room 4D Debet Room has wireless internet connection.

- 09.00 **Opportunity for additional questions**

Experts available include:
Ms. Merja Saarinen, Ministerial Counsellor, Health Affairs, MSAH
Mr. Petri Ruutu, Department Head, National Public Health Institute
Mr. Jouko Söder, Ministerial Counsellor, Health Affairs, MSAH
- Conclusions and light lunch**
The Ministry of Social Affairs and Health, meeting room Barometri
- 12.15 Ms Liisa Hyssälä, Minister of Social Affairs and Health
- 12.30 Mr. Kari Välimäki, Permanent Secretary, MSAH
- 13.30 **End of the visit**

Annex 2. Participants of country assessment visit

External Team Members

- **Dr. Andrew Amato** – Dep. Head, Surveillance Unit, ECDC
- **Dr. Evelyn Depoortere** – Epidemiologist, Preparedness and Response Unit, ECDC
- **Prof Angus Nicoll** – Influenza Coordinator, ECDC
- **Dr Stephane Veyrat** - *Département des situations d'urgence sanitaire Direction générale de la santé, Ministère de la santé et des solidarités*
- **Ms Beatrice Toussaint** - expert END, C3-health threats, Euro Comm
- **Ms Michala Hegermann-Lindencrone** – CD Sur. and Resp. WHO European Region

Internal Team Members

- **Dr. Merja Saarinen** – Ministerial Counsellor, Health/Medical Affairs, Health Dep., Ministry of Social Affairs and Health.
- **Prof. Petri Ruutu** - Director/Research professor, Department of Infectious Disease Epidemiology, National Public Health Institute.
- **Dr. Jouko Söder**, Head of the Preparedness Unit, The Ministry of Social Affairs and Health.
- **Dr. Leena Soininen**, Temporary Consultant for pandemic preparedness for MSAH,
- **Ms. Martta Forsell**, Project Coordinator for the national health project, The Ministry of Social Affairs and Health.

Annex 3. Persons met

Day 1

Mr. Tapani Melkas, Director, Department of Health, MSAH
Mr. Ilkka Oksala, Secretary of State of the Ministry of Social Affairs and Health
Mr. Raimo Ikonen, Director-General, Finance and Planning Department, MSAH (max 5min)
Mr. Risto Volanen, State Secretary of the Prime Minister's Office
Mr. Timo Härkönen, Head of Government Security, Prime Minister's Office
Mr. Mika Purhonen, Director General, National Emergency Supply Agency
Mr. Riku Juhola, Special Adviser, National Emergency Supply Agency
Mr. Jussi Merikallio, Director, Social Welfare and Health Care, The Association of Finnish Local and Regional Authorities
Ms. Liisa-Maria Voipio-Pulkki, Senior Medical Adviser, The Association of Finnish Local and Regional Authorities
Ms. Hannele Havanka, State Provincial Medical Officer, The State Provincial Office of Oulu Aaro Toivonen, Risk Management Chief, City of Helsinki

Day 2

Ms. Merja Saarinen, Ministerial Counsellor, Health Affairs, MSAH
Ms. Riitta Heinonen, Deputy Director General, The Ministry of Agriculture and Forestry
Ms. Jaana Husu-Kallio, Director General, Evira
Ms. Sirpa Kiviruusu, Senior Veterinary Officer, Evira
Ms. Saara Raulo, Head of Zoonosis Centre, Evira
Mr. Seppo Öörni, The Ministry of Transport and Communications
Ms. Silja Laakkonen, Legal Advisor, Finavia
Mr. Pasi Tuominen, Counsellor, Foreign Ministry of Finland (max 5 min)
Mr. Jussi Tanner, First Secretary, Foreign Ministry of Finland
Mr. Pekka Puska, Director General, National Public Health Institute (KTL)
Ms. Terhi Kilpi, Head, Department of Vaccines, KTL
Mr. Thedi Ziegler, Department of Virology and molecular medicine, KTL
Ms. Helena Taskinen, team leader, Health and Work Ability
Mr. Leo Suomaa, Director, MSAH
Mr. Heikki Savolainen, Ministerial Counsellor, Health Affairs, MSAH
Mr. Hannes Wahlroos, Director General, National Agency for Medicines NAM
Ms. Eija Pelkonen, Head of Inspectorate, Department of Enforcement & Inspection, National Agency for Medicines, NAM
Ms. Maarit Varjonen-Toivonen and Mr. Simo Harju, State provincial Medical Officers, State Provincial Office of Western Finland:
Mr. Jukka Lumio, MD, PhD, Head of Infectious Diseases, Pirkanmaa hospital district
Mr. Jarmo Salmi, Risk Management Chief, City of Tampere
Ms. Tuuli Löfgren, Head Physician responsible for pandemic preparedness, Health care centre, Municipality of Kangasala

Day 3

Mr. Seppo Simula, Chief super intendent, Police department, Ministry of Interior
Ms Liisa Hyssälä, Minister of Social Affairs and Health
Mr. Kari Välimäki, Permanent Secretary, MSAH

Annex 4. Documents presented

Advance Reading Material:

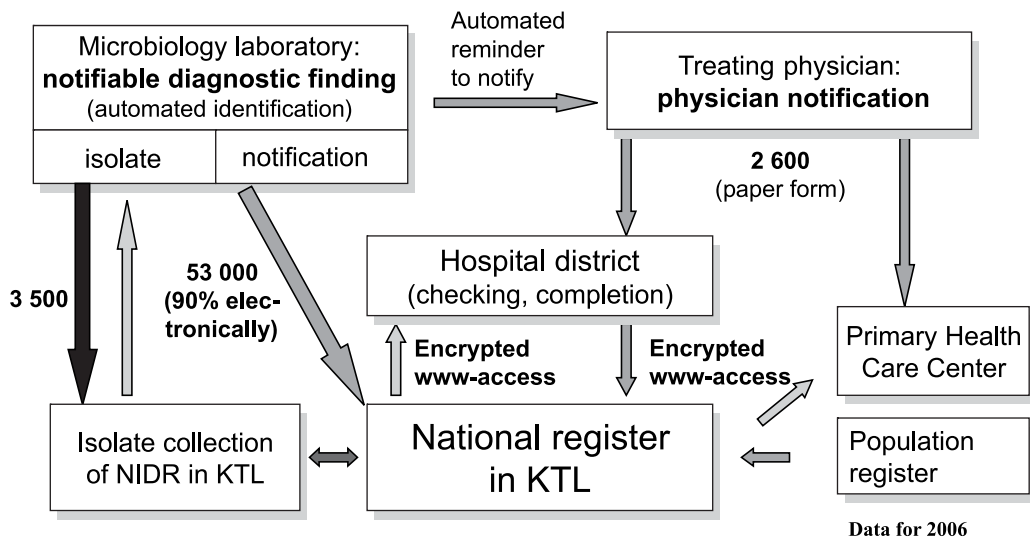
National preparedness plan for an influenza pandemic. Helsinki 2007. Publications of the Ministry of Social Affairs and Health, 2007:10

Social Welfare and Health Care Preparedness in case of Exceptional Situations in Finland, brochures 2006:5eng

Annex 5. Completed assessment tool (Section A only)

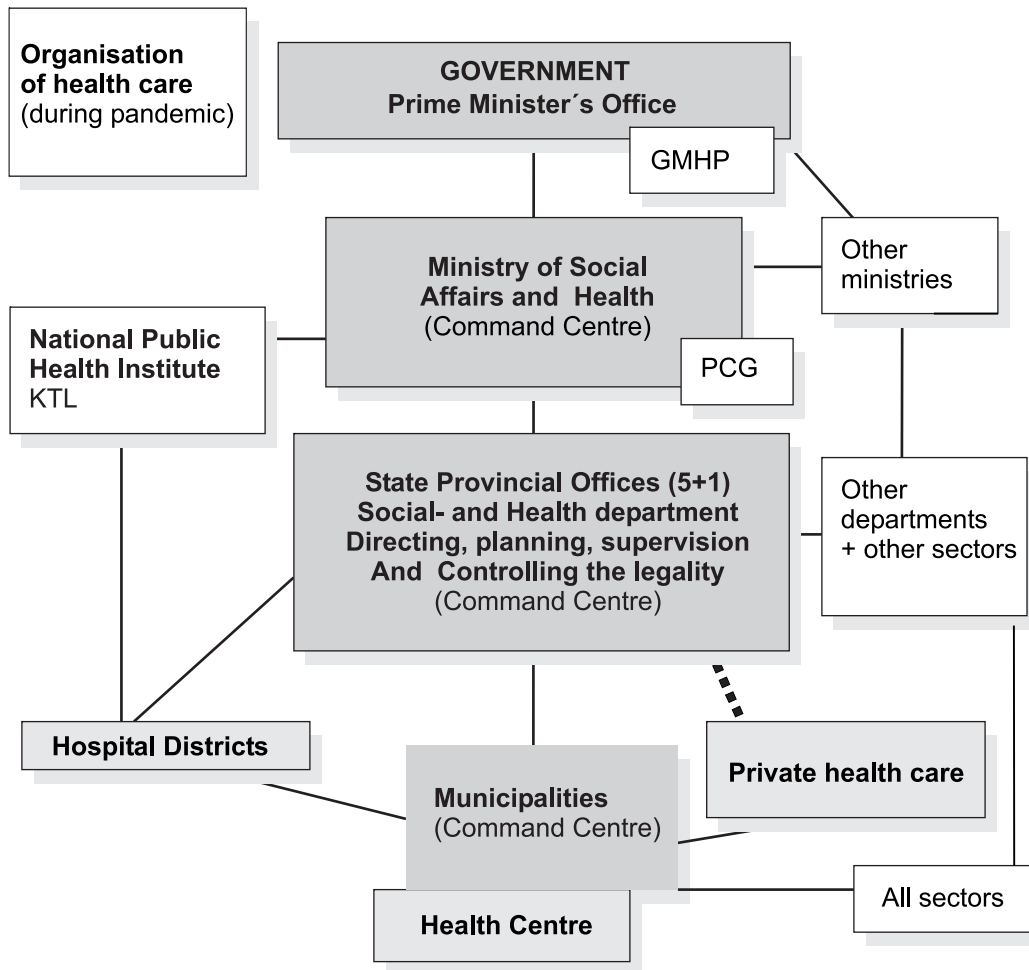
See separate document.

Appendix 1. Flow of data and information in NIDR

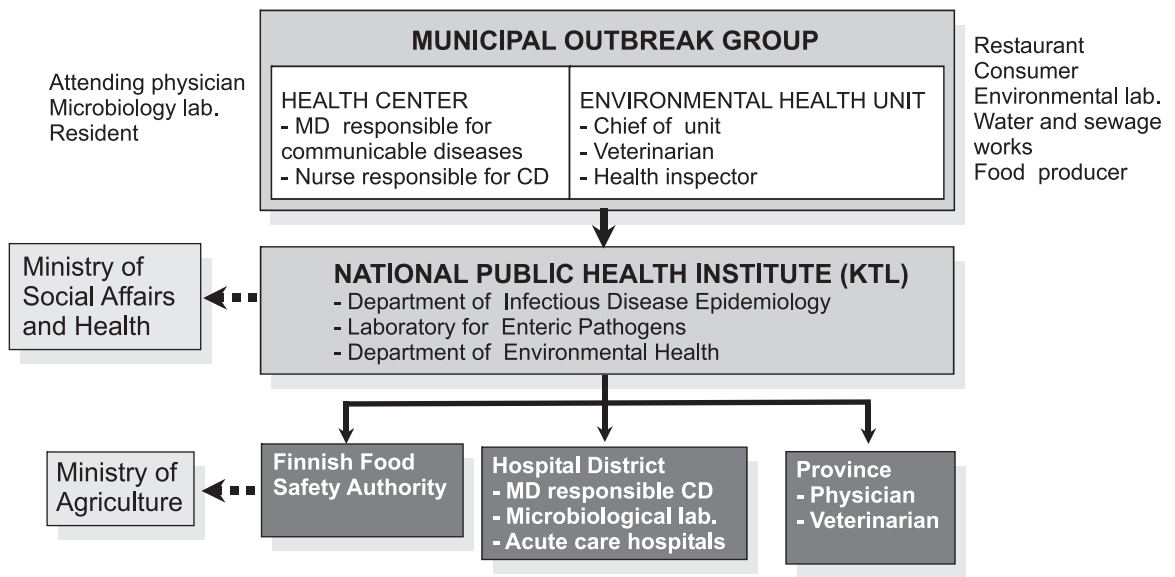


Source: KTL

Appendix 2.



Appendix 3. Suspected food- or waterborne outbreak



Source: KTL