

ECDC Joint Self-Assessment Report **Pandemic Influenza Preparedness**

The Netherlands



Ministerie van
Volksgezondheid,
Welzijn en Sport



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**Pandemic Influenza Preparedness
Joint Self-Assessment Report
Netherlands Report**

Travel to: The Netherlands
Dates: 22-25th April
Purpose: Influenza Preparedness Assessment Visit
Background*: Series of visits 2005-7 to all European Union Countries

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Summary: specific recommendations

Seasonal Influenza

1. *Seasonal influenza surveillance*

- 1.1. VWS: The routine influenza surveillance would benefit from having even more explicit objectives and if possible having a closer relation to public health action and evaluation of interventions, in particular the effects of influenza vaccination and use of antiviral medication.
- 1.2. ECDC: ECDC should supply the Netherlands some sample of even more explicit objectives and linkages to action for seasonal surveillance
- 1.3. RIVM: Surveillance of severe influenza disease through hospital surveillance with hospitals that have suitable data systems should be piloted as a priority.
- 1.4. RIVM: Mortality surveillance should be considered to assess daily crude mortality updates in relation to daily influenza data. If possible, they be considered including investigating how it would perform in a pandemic. Coordination of methodology within countries developing these systems will allow for comparability of data across countries.¹
- 1.5. ECDC: The establishment of protocols and mechanisms to measure vaccine effectiveness at the EU level in a number of countries by ECDC would be advantageous along with the making of sufficiently fast anti-viral resistance monitoring routine.²
- 1.6. VWS: The increase of the population coverage by sentinel surveillance network and enhance GPs electronic reporting to ensure the robustness of the system is sensible and should be supported, especially the latter as it will make the system less subject to the disruptive pressures that will result from a pandemic.
- 1.7. ECDC: ECDC should see if it can gather or acquire data on the use of antivirals at a national level in the EU and further data on their likely effectiveness.

2. *Seasonal influenza vaccination programmes*

- 2.1. VWS: Sustain the exemplary high uptake in the elderly
- 2.2. ECDC: give the high uptake prominence in publications as the standard to beat in the EU
- 2.3. VWS / RIVM: Consider establishing routine evaluation of vaccine effectiveness to be established.
- 2.4. ECDC: Consider undertaking a coordination to allow homogeneity of methodology between a group of countries carrying out these studies to allow for comparability of data across the EU and to feed back the results to the rest of the countries.

3. *Seasonal influenza laboratory capacity*

- 3.1. RIVM: Mechanisms designed to increase coordination of regional laboratories with each other (and the NICs for influenza) should be developed probably by the initiative using RIVM-employed 'regional microbiologists'.
- 3.2. RIVM: A proposed Initiative of training laboratory personnel and expanding of activities to regional laboratories should be supported to allow for up-scaling activities when necessary.

Pandemic Influenza

¹ Activities of a group working on mortality monitoring in Europe should be supported (ECDC) (see Mazick A, Participants of a workshop on mortality monitoring in Europe. Monitoring excess mortality for public health action: potential for a future European network. Euro Surveill 2007;12(1):E070104.1. Available from: <http://www.eurosurveillance.org/ew/2007/070104.asp#1>)

² Currently it is a process based on research funding.

4. *Planning and Coordination*

- 4.1. VWS: Rationalisation of geographical boundaries across sectors within the Netherlands so that they 'fit' for most if not all sectors should be encouraged for a number of reasons including pandemic preparedness.
- 4.2. VWS: Development of operational plans should continue. The priorities for development are those identified for the EU more generally.³ That is by expanding out across all sectors (multi-sectoral planning) at the national level and down to the regional and local levels using tools like the ECDC recommended Acid Tests.⁴ It would be helpful to have a target date for the completion of these operational plans for example leading up to the concept of a multi-sectoral national exercise involving the regional and national level and private parties.
- 4.3. VWS: The cross-sectoral working group should be encouraged and facilitated to take the steps necessary to improve business continuity throughout the country and throughout the different government and private parties.
- 4.4. ECDC: ECDC to give some thought on what would be judged measures of success for pandemic planning aside from how well the country does in a pandemic.

5. *Pandemic Surveillance, Situation Monitoring and Assessment*

- 5.1. RIVM: Consider identifying teams, in addition to the staff doing routine surveillance, to carry out specific studies to collect essential information during the pandemic. These teams could be regional teams, building on the existing framework of cooperation with municipal health services.
- 5.2. RIVM: Specific studies (pragmatic surveillance in a pandemic) should be further developed defining the outputs that would be needed for (evaluation of) interventions.
- 5.3. ECDC: ECDC should assist in the coordination and the exchange of information at EU level since some studies will be done in few countries and the results should feed back to the rest. Some standardisation of methodology is important in order to allow for comparisons across countries and for pooling of data
- 5.4. RIVM: Strengthening surveillance on specific settings and risk groups should be continued and linked to public health action and evaluation of interventions.
- 5.5. RIVM: Share expertise related to near real-time modelling ('now-casting' and short term forecasting) combining modelling and surveillance data and expertise to produce regular outputs early in a pandemic drawing on developments in other countries and future meetings being convened by ECDC.
- 5.6. RIVM: Methods of evaluation of proposed interventions during a pandemic in relation to the last point should continue to be developed by RIVM.
- 5.7. RIVM: Criteria for when to scale down collection of routine surveillance data (both epidemiological and laboratory diagnosis) should be defined ahead of time.

6. *National reference laboratory for influenza / National influenza centre (NIC) and Laboratory Capacity in a Pandemic*

³ See EU Pandemic Preparedness Status Report January 2007
http://www.ecdc.eu.int/pdf/Pandemic_preparedness.pdf

⁴ See Acid Tests <http://www.ecdc.eu.int/pdf/Acid%20Tests.pdf>

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- 6.1. RIVM: Support and keep under review the initiative using RIVM-employed 'regional microbiologists'.
- 6.2. RIVM: Develop and agree on practical laboratory plans for use in Phase 6 at the national and regional levels including how and when clinical testing will be turned on and off and the laboratory staff and functions protected.
- 6.3. RIVM: Link in with other national laboratories in Europe through the EISS-ECDC mechanism and the EU Community Network of Reference Laboratories (CNRL) to undertake further work on who does what in Europe in specialist work especially during a pandemic.

7. *Outbreak investigation capacity, general and during a pandemic*

- 7.1. The Dutch authorities could look at the ECDC mechanism of epidemic intelligence or the HPA weekly teleconference as logical next step mechanisms for strengthening the exchange of information in 'peace time' and as a basis for how to work in event of crises such as a pandemic.

8. *Planning Assumptions*

- 8.1. VWS: Tools to develop strategies for planning should be used to develop local plans for pandemic containment.
- 8.2. GHOR-NL: It is important that accurate inventories of local resources are developed to be used as a baseline for planning purposes.

9. *Antivirals and other Pharmaceuticals*

- 9.1. NHG: Consider GPs training in the use of antivirals during the influenza season based on antiviral indication for high risk groups, while respecting the Dutch policy on restrictive use of antimicrobials, including antivirals for in principle selflimiting conditions.
- 9.2. VWS: Further develop the logistics for antivirals distribution in the country at a strategic and local level
- 9.3. VWS: Consider piloting and exercising the proposed mechanisms for distribution and managing of antivirals and antibiotics at the local level and their more strategic use across the country.
- 9.4. VWS: Consider the need of establishing a stockpile of antibiotics for treatment of severe cases or at least a way that it will be possible to deliver supplies so that all people with severe disease due to influenza can be treated even at the height of a pandemic.

10. *Non-Pharmacological Public Health Measures*

- 10.1. VWS: Continue to develop policy options on the public health measures drawing on developments in other EU countries and at the European Union Level (the Health Security Committee)
- 10.2. ECDC: Discuss with WHO on the grading and basic description of pandemics and consider how best to proceed with this area for example by getting a WHO view. ECDC Involvement

11. *Pandemic Vaccines*

- 11.1. VWS: Develop the plan for vaccine distribution building on the smallpox plan
- 11.2. VWS: Preparation should be made for a review by the Netherlands authorities following the review by ECDC (July 2007) on human H5N1 vaccines.

12. *Simulation Exercises*

- 12.1. VWS: Consider developing a strategic approach to avoid exercise fatigue while investigating particular issues by local and focused exercises (e.g. managing patients in primary care, Hospital preparedness, antiviral distribution, communications etc)
- 12.2. VWS: Consider a future large multi-sectoral national and regional exercise to give a target for full national preparations at all levels.
- 12.3. RIVM: Encourage Regions and Localities to log their future exercises and the lessons from ones undertaken on the RIVM site.
- 12.4. RIVM: Expand exercise-library to include best-practices from regions on pandemic preparedness, like for instance the video from Utrecht

13. *Maintenance of Basic Services*

- 13.1. Sustain the involvement of the national inspectorates for health services and crisis management (IGZ and IOOV) to review regional and local health plans and preparedness.

14. *Interoperability (Neighbouring States) Issues*

- 14.1. VWS: Bilateral discussion should continue with neighbouring countries with some cross border exercises and having observers at each others national exercises.
- 14.2. ECDC: The European Commission should be encouraged to facilitate these bilateral arrangements by having multi-national discussions for example under the Health Security Committee.

15. *State and Local Health Care Systems – Resilience*

- 15.1. VWS: The practicalities of planning and coordination at the Regional Level should be tested with focal exercises leading up to a national exercise.
- 15.2. VWS: Special emphasis be placed on preparing hospital services.

16. *Large City / Capital Pandemic Preparedness (Amsterdam, Rotterdam)*

Not discussed during assessment

17. *Local Public Health Manpower*

Not discussed during assessment

18. *Hospital Preparedness*

- 18.1. GHOR: Practicalities of planning and coordination at the Regional Level should be tested with focal exercises.
- 18.2. IGZ: Continuation and rapid completion of the project under IGZ to review and make recommendations about how local secondary care systems (e.g. hospitals/carehomes etc) should function during a pandemic.
- 18.3. GHOR: Adapt the ZIROP model for hospital pandemic preparedness including a model plan for how a hospital would cope during a pandemic including dealing with
 - Staff protection
 - Surges of patients
 - Protecting core emergency services

19. *Communications*

- 19.1. VWS: Critical review of the communication strategy at operational level to ensure that material and capacity identified are able to cope at the height of a pandemic.
- 19.2. VWS: Consider using communication exercises for other health issues to test communications systems in a pandemic.
- 19.3. VWS: Give clarity on who can speak on health service functioning and broader service issues.
- 19.4. VWS: Consider if there is adequate surge capacity of communications personnel for a pandemic.

Avian Influenza

20. Avian Influenza Issues (Veterinary Health)

- 20.1. LNV: The following important planned initiatives that need to be sustained;
- long term strategy to improve value for money for investment in zoonoses research.
 - improving technical methods for reducing the risk to human health from controlling zoonoses (protective equipment and culling procedures).
 - continuing to retain compliance with public health standards by those involved in animal disease control.

21. Human Aspects of Avian Influenza

- 21.1. LNV: Investigate the feasibility and added value of shared (animal health – human health) data-bases for use during outbreaks of HPAI and other zoonoses.

22. Specific Country Issues

- 22.1. That the work on pandemic preparedness should be given priority at all levels in the face of budget cuts though if at all possible without detracting from other important public health work.

Requests/issues for input from ECDC (extract from above)

Seasonal Influenza

1. ECDC: ECDC should supply the Netherlands some sample explicit objectives and linkages to action for seasonal surveillance
2. ECDC: The establishment of protocols and mechanisms to measure vaccine effectiveness at the EU level in a number of countries by ECDC would be advantageous along with the making of anti-viral resistance monitoring routine.⁵
3. ECDC: ECDC should see if it can gather or acquire data on the use of antivirals at a national level in the EU and further data on their likely effectiveness.
4. ECDC: give the high uptake prominence in publications as the standard to beat in the EU
5. ECDC: Consider undertaking a coordination to allow homogeneity of methodology between a group of countries carrying out these studies to allow for comparability of data across the EU and to feed back the results to the rest of the countries.

Pandemic Influenza

6. ECDC: ECDC to give some thought on what would be judged measures of success for pandemic planning aside from how well the country does in a pandemic.
7. ECDC: ECDC should assist in the coordination and the exchange of information at EU level since some studies will be done in few countries and the results should feed back to the rest. Some standardisation of methodology is important in order to allow for comparisons across countries and for pooling of data
8. ECDC: Discuss with WHO on the grading and basic description of pandemics and consider how best to proceed with this area for example by getting a WHO view. ECDC Involvement
9. ECDC: The European Commission should be encouraged to facilitate these bilateral arrangements by having multi-national discussions for example under the Health Security Committee.

⁵ Currently it is a process based on research funding.

Key indicators (shortened version) – The Netherlands

Twenty indicators have been defined as key indicators because they are considered especially important for national preparedness. The indicators may be used as a quick checklist for the preparedness status and reported in a table that can be updated by the national authorities.

	Goal	KEY INDICATOR	CURRENT STATUS
	SEASONAL INFLUENZA AND VIROLOGY		Y = yes / N = no
1.	An influenza surveillance system in place collecting epidemiological and virological information	1. Surveillance data published during the influenza season for: (a) National Level? (b) Administrative regional level?	 Y Y
2.	National laboratory capacity able to provide timely, high quality, validated routine and diagnostic influenza laboratory support with committed budget to facilitate this work	2. National laboratory capacity to perform: (a) Virus isolation? (b) Influenza typing? (c) Influenza subtyping?	 Y Y Y
3.	National annual seasonal influenza vaccination programme in place achieving >75% uptake in over 65s and increasing uptake in occupational and clinical risk groups	3. Vaccine uptake figures published annually?	National annual uptake in persons aged >65 available: Y 2005: 76,9% for all high-risk groups; 83.5% for > 65 y
	PANDEMIC PLANNING AND COORDINATION		
4.	National planning committee/structure in place that has a coordinating role for pandemic preparedness	4. List of participating bodies/members?	Y Cross-sectoral body? Y
5.	National pandemic plan consistent with international (WHO and EU) guidance, publicly available	5. National health sector influenza plan?	Y Last month/year updated: policy plan: July 2004. Operational plans: November 2006
6.	National command and control structure in place for managing an influenza pandemic	6. National command and control structure?	Health services command and control structure Y Cross-sectoral command and control structure Y
7.	National contingency plan for maintenance of non-health	7. National contingency plan for maintenance of non-	N The Dutch Critical

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	essential services, such as power supply, food distribution etc, publicly available	health essential services?	Infrastructure Protection Project covers much of this. An actual plan will be the National Crisis Response Plan Influenza pandemic
	SITUATION MONITORING AND ASSESSMENT		
8.	Ability to detect initial cases, and to monitor the spread and impact during the different phases of a pandemic	8. Pandemic surveillance and information plan?	Y Last month/year updated: 02/2006
9.	Ability to investigate initial cases of a pandemic influenza strain	9. Outbreak investigation capacity?	Y
	PREVENTION, MITIGATION AND TREATMENT (includes health system response)		
10.	Public education materials as part of a national strategy on personal non-pharmacological public health measures (personal hygiene, self isolation)	10. Public education materials available?	Material on seasonal influenza published Y Material on pandemic influenza ready Y, partially
11.	National strategy for community non-pharmacological public health measures (travel, mass gatherings, school closures etc)	11. Group established to develop such a strategy?	Y There is no group. Strategies are formulated in general terms. During a pandemic the Outbreak Management Team will advise on specific measures.
12.	National antiviral strategy developed, including plans for procurement, stockpile and delivery to patients	12. National antiviral strategy developed?	Y / in progress Last month/year updated: 2007
13.	National pandemic vaccination strategy developed, including procurement, distribution and targeting of pandemic vaccines	13. National pandemic vaccination strategy developed?	Y Last month/year updated: 2006 (contract) 2004 (distribution plan smallpox)
	REGIONAL AND LOCAL ARRANGEMENTS		
14.	Regional/local planning and coordination structure for pandemic preparedness in place	14 Regional/local planning and coordination structure?	Y Cross-sectoral: Y
15.	Regional/local health services able to cope with an influenza pandemic and continue to provide other essential health services	15 Planning document issued to local health services which includes the nationally agreed parameters for which local services should plan	Y Last month/year updated: Model: Nov 2006

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		(expected range of cases and percentage of staff off sick)?	
	COMMUNICATIONS		
16.	National communication strategy developed and published	16 National communication strategy?	Y in progress Last month/year updated: 04-2007
	INTERNATIONAL INTEROPERABILITY		
17.	Potential impact of measures for neighbouring countries and the EU discussed	17. Joint work undertaken with neighbouring country/s on mutually relevant policy areas?	Y Last month/year of joint work: January 2007 (Belgium)
	PANDEMIC EXERCISES		
18.	Pandemic preparedness regularly and systematically tested at all levels and across all sectors, including lessons learnt, report published and fed back into planning.	18 National level health sector exercise?	Y and N Last month/year of national exercise: autumn 2005
	AVIAN INFLUENZA		
19.	National system in place for influenza surveillance in animals (including wild birds) which meets EU requirements	19 National system for influenza surveillance in animals?	Y
20.	National capacity for managing an outbreak of HPAI with human health implications, developed in collaboration between health and veterinary authorities	20. Joint health and veterinary plan or complementary plans?	Y Last month/year updated: Model: 2004 Implemented model: 2006

Main Report

Purpose of mission – Specific Objectives

1. To support national Dutch authorities in jointly evaluating and improving the status of pandemic influenza preparedness in the Netherlands, 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) and other organizations may be requested.

The intended end product was an agreed recommended action list for improvement and a follow-up programme which also clarifies the further support needed from the ECDC.

Organization of the Visit and Application of the Assessment Tool

Following careful preparation by the Dutch Authorities and the completion of a standard published assessment tool http://www.ecdc.europa.eu/Health_topics/Pandemic_Influenza/Assessment_tool.html The Joint Assessment Team (Annex 1) met with a number of individuals from a range of Dutch institutions over the four days of the visit. As well as the main partner, the Ministry of Health, Sport and Welfare, this included representatives from other (non-health) Ministries, representatives from the national inspectorates, the relevant national technical public health agency (RIVM), the national organisation of General Practitioners and other service bodies. As a glimpse into the Regional and Local services there was a short visit to the Regional Structure in Utrecht. The timetable of the visit, a list of the persons met and the documents and presentations received comprise Annexes 2, 3 and 4.

Acknowledgements The external team members are very grateful for the time that the many people they met generously provided and the care and attention afforded them by their Dutch hosts in what was as ever an intensive visit for all concerned taking place at a busy time for the Netherlands. An impressive set and number of presentations were made to the team and a strong list of documents were supplied which underpin this report and have been archived for further reference (see Annex 4). It was also noted that there were many innovations and developments a number of which that the External Team felt were Deserving of European Attention for example at the forthcoming 4th European Pandemic Preparedness Workshop in September 2007 (see Particular Strengths).

Results were based to varying degrees on the completed Assessment Tool for the Netherlands especially its Key Indicators which are at the end of the Summary (the whole completed Tool is 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 Annexes 2 & 3 .

General Information

Particular Strengths

The External Members of the Assessment Team noted the following areas where the pandemic preparedness in the Netherlands was especially strong, some of which are Deserving European Attention.

Pandemic Influenza

1. Strong pandemic planning in the health sector at the national level going back a decade.
2. The Netherlands Ministry of Health, Welfare & Sport (VWS) has committed manpower for pandemic planning and there is agreement on a joint approach to multi-sectoral planning between the Ministry of Health and the Ministry of the Interior (BZK) including the imaginative placement of a member of BZK staff within the Ministry of Health to help achieve this end.
3. There was early use of the Dutch Health Inspectorate System to Review the Plans at the Disaster Medicine Region Levels (GHOR). This is now expanding to the Inspection of other sectors of preparation, **Deserving European Attention**.
4. There are guidelines developed for general practitioners with specific information on characteristics and treatment of pandemic influenza. **Deserving European Attention**
5. There are good mutual aid relations between the Municipal Public Health Services (GGD) and the supra-regional medical professionals (microbiological and public health) organised under RIVM.
6. RIVM has developed an innovative programme for strengthening and coordinating public health microbiology in the Regions – the Public Health Microbiologists. **Deserving European Attention**.
7. There is strong epidemiological and microbiological surveillance operating all year round through primary care (electronic reporting) and hospital sample referrals of samples gathered in hospitals.
8. There are attractive and accessible videos developed by one region and designed to raise consciousness among local planners and professionals of what the experience would be like when a severe pandemic arrives in the Netherlands. These Video's will be available with English subtitles. **Deserving European Attention**.
9. From the experience of other emergencies there are groups trained in responding to human bereavement and loss.
10. RIVM is developing an innovative outbreak investigation approach to determining the necessary epidemiological and virological parameters in a pandemic for real time pandemic modelling to inform policy and planning. **Deserving European Attention**
11. A significant start has been made to the logistics of distribution of antivirals at the national level.
12. There is a contract for the initial supply of pandemic vaccines.
13. There is exceptionally good uptake of seasonal influenza vaccination (83.5% in the elderly, the over 65 year olds). This is expanding to the next five year age group (those age 60 to 64 years) **Deserving European Attention**.
14. There is an ongoing focus group approach to measuring and monitoring attitudes concerning pandemics in different public and professional groups.
15. There is clarity about how communication should be taken to the public on health matters.
16. There is a good working relationship between the authorities and the scientific community through mechanisms such as RIVM and outbreak management team

Avian Influenza

It needs to be noted that The Netherlands has some of the highest concentrations of livestock production in the EU along with a dense human population. Therefore zoonoses (human infections derived from animals) are a special priority in the Netherlands.

17. There is especially strong experience and expertise in veterinary health underpinned by previous joint planning by veterinary services and human health services for responding to zoonoses
18. Experience between the human and animal veterinary authorities following the H7N7 avian influenza outbreak of 2003 means that these relationships are grounded in real joint activities.
19. There is broadly based public health guidance for contact with infected birds, including Low Pathogenic Avian Influenza (LPAI) with a sound risk basis. **Deserving European Attention**
20. In preparing for further events there are pre-defined animal disease containment teams with a capability to address the public health aspects supported by advanced training. **Deserving European Attention**
21. There is an innovative vaccination programme for poultry against H5 viruses. **Deserving European Attention**

Seasonal influenza

1. Seasonal influenza surveillance

Description

The Netherlands has a well established primary care and virological seasonal influenza surveillance system based on a sentinel GP network run from the NIVEL Institution which has also been the base for influenza surveillance at the EU level (European Influenza Surveillance Scheme - EISS). The objectives of the surveillance are implicit rather than explicit.

The sentinel network operates year-round (not just during the winter influenza season) and collects epidemiological and virological data though only through primary health care (70 GPs and around 45 practices) and hospital (virological sample referrals). The sentinel system has broad representative coverage of 1% of the population as judged by age, gender, degree of urbanization and region (it is intended that this should increase to 3%). There are standard routine outputs (an influenza newsletter, an annual report, and a NIC website). There is no surveillance of severe disease (hospital cases) though mortality surveillance is to be developed to provide timely data reflecting the likely impact of influenza epidemics / pandemics.

Swabs sent in by GP's to the surveillance system are typed by the National Influenza Centre which spans two institutions and sites (see below). RIVM isolates and types the virus; the Erasmus Medical Centre characterizes the virus.

Peripheral laboratories are not participating in the sentinel surveillance. They are mostly private and independent and mechanisms of coordination between them and with the national level are being developed further, with support of the regional microbiologists employed by the RIVM. In view of a pandemic situation were diagnosis of cases or other tests would need to be rapidly extended, several laboratories who could accommodate some of the needed surge capacity have been identified. Coordination between these laboratories in view of a pandemic situation has been implemented through exchange of information and protocols for diagnosis of emerging viruses using a dedicated website and the arrangement of surge laboratories in case the sample flow overwhelms the NIC laboratories.

In some EU countries the results of influenza surveillance is linked to the use of antivirals. Antivirals are used little in primary care in the Netherlands so that is not the case here.

However, surveillance of antiviral susceptibility of viruses isolated from sentinel specimens has been implemented since the 2005/2006 winter season.

Considerable thought and planning has already been undertaken to adapt and enhance the current seasonal surveillance mechanisms to produce daily pandemic surveillance information (morbidity and perhaps also mortality data).

Comments

There is a plan to increase the population coverage from 1% to 3% and to expand electronic reporting to the point where it could be done by all GPs and to develop IT structures to enable rapid analysis and feedback. However there is currently no surveillance for severe disease attributable to influenza. I.e. little information is being gathered on more severe cases seemingly attributable to influenza, those cases with confirmed influenza and requiring hospitalization or being reported as dying.

In many EU national systems the objectives of the surveillance and their link to actions are more implicit than explicit and therefore it is not that clear what the systems are intended to achieve and specifically the actions they are linked to. This could make a system vulnerable, especially the primary care component. Current objectives of the Dutch influenza surveillance system include the monitoring of trends on incidence and burden of disease, by risks groups, as well as understanding variation in epidemiology, clinical presentation, and response to interventions. These data can be linked to data on circulating viral strains (typing, susceptibility patterns).

It is striking that the use of antivirals for seasonal influenza differs greatly across the EU. Some countries have explicit policy on their use linked to primary care surveillance, others have implicit policies and a third group have no policy at all. There are no formal EU data on the use of antivirals by countries. In the Netherlands, the generally accepted policy is that use of antivirals should be restrictive (conform the Dutch approach to antibiotic use).

Recommendations

- 1.1. VWS: The routine influenza surveillance would benefit from having even more explicit objectives and if possible having a closer relation to public health action and evaluation of interventions, in particular the effects of influenza vaccination and use of antiviral medication.
- 1.2. ECDC: ECDC should supply the Netherlands some sample of even more explicit objectives and linkages to action for seasonal surveillance
- 1.3. RIVM: Surveillance of severe influenza disease through hospital surveillance with hospitals that have suitable data systems should be piloted as a priority.
- 1.4. RIVM: Mortality surveillance is being piloted to assess daily crude mortality updates in relation to daily influenza data. If possible, they be considered including investigating how it would perform in a pandemic. Coordination of methodology within countries developing these systems may allow for comparability of data across countries.⁶
- 1.5. ECDC: The establishment of protocols and mechanisms to measure vaccine effectiveness at the EU level in a number of countries by ECDC would be advantageous along with the making of sufficiently fast anti-viral resistance monitoring routine.⁷

⁶ Activities of a group working on mortality monitoring in Europe should be supported (ECDC) (see Mazick A, Participants of a workshop on mortality monitoring in Europe. Monitoring excess mortality for public health action: potential for a future European network. Euro Surveill 2007;12(1):E070104.1. Available from: <http://www.eurosurveillance.org/ew/2007/070104.asp#1>)

⁷ Currently it is a process based on research funding.

- 1.6. VWS: The increase of the population coverage by sentinel surveillance network and enhance GPs electronic reporting to ensure the robustness of the system is sensible and should be supported, especially the latter as it will make the system less subject to the disruptive pressures that will result from a pandemic.
- 1.7. ECDC: ECDC should see if it can gather or acquire data on the use of antivirals at a national level in the EU and further data on their likely effectiveness.

2. Seasonal influenza vaccination programmes

Description

Seasonal influenza immunisation is delivered through the robust Netherlands primary care system. The policy is to offer immunisation to the elderly (presently all those over age 65 years), to those with certain chronic medical conditions.

Comments

The Netherlands has an exceptionally high uptake of seasonal influenza vaccination with around 83.5% coverage in the elderly (65 years and older) which deserves European attention. There are plans to expand the already extensive programme to people 60 years old and over.

Recommendations

- 2.1. VWS: Sustain the exemplary high uptake in the elderly
- 2.2. ECDC: give the high uptake prominence in publications as the standard to beat in the EU
- 2.3. VWS / RIVM: Consider establishing routine evaluation of vaccine effectiveness to be established.
- 2.4. ECDC: Consider undertaking a coordination to allow homogeneity of methodology between a group of countries carrying out these studies to allow for comparability of data across the EU and to feed back the results to the rest of the countries.

3. Seasonal influenza laboratory capacity

Description

As well as the NICs (see Section 7) there are a series of accredited laboratories undertaking routine testing for influenza.

Comment

There is a need to further develop mechanisms for coordinating what is essentially an independent group of laboratories (also see Section 7).

Recommendations

- 3.1. RIVM: Mechanisms designed to increase coordination of regional laboratories with each other (and the NICs for influenza) should be developed probably by the initiative using RIVM-employed 'regional microbiologists'.
- 3.2. RIVM: A proposed initiative of training laboratory personnel and expanding of activities to regional laboratories should be supported to allow for up-scaling activities when necessary.

Pandemic Influenza

4. Planning and Coordination

Including covering the following:

- Political awareness
- Legal and ethical framework
- National pandemic planning committee
- National influenza pandemic preparedness plan
- Command and control issues

Description

On national level, there has been a thorough and continuous planning of pandemic preparedness within the health care sector going back to the late 1990s when a highly pathogenic avian influenza emerged in Hong Kong. Following the experience with highly pathogenic avian influenza in 2003 in poultry in the Netherlands there is an especially close relationship between planning for avian influenza and pandemic influenza. There is significant political awareness and though as in other EU countries this is likely to be waning as memory of the 'crisis' of H5N1 infected birds in Europe decline and other health priorities compete.

The current main players in the health sector planning are:

- Ministry of Health, Welfare and Sports
- National Institute for Public Health and the Environment (RIVM)
- Local Public Health Services (GGD)
- Regional Disaster Medicine Organization (GHOR)
- Hospitals, specialists (NVZ, Board of specialists)
- General Practitioners (NHG)
- Health Inspectorate (IGZ)

Of late a multisectoral element has been achieved by involvement of the Ministry of the Interior (BZK) in pandemic preparedness. The current planning committee (the Griepteam) is bi-sectoral in an informal way and has members from the Health Department (the Ministry of Health, Welfare, Sport and Youth) and the Department of the Interior (BZK). This is operationally achieved by placement of a committed and energetic member of BZK in the Ministry of Health. This is a strong feature of Dutch preparedness. As of June 2007 a working group with members of both the Departments has been formed to broaden the preparation to all essential sectors, both health and non-health, government and private. In cooperation with other departments, local governments, vital sectors and private enterprises the working group aims at improvement of business continuity in all these sectors.

The national pandemic preparedness plan is supported by three plans on: avian influenza, incidental introduction and pandemic preparedness. These operational pandemic preparedness plans are implemented on a regional level and were evaluated by the health inspectorate in 2005 and 2006. The evaluations had 'teeth' (i.e. they were public and in some case critical) and led to improvements. All regions now have an adequate level of preparedness.

In the Dutch legislation the local government is responsible for managing an outbreak of an infectious disease. The local public health services (GGD) play an important role. The regional disaster medicine organisation (GHOR) are responsible for coordinating the response of all the different, most private, health sectors in case of an outbreak of pandemic influenza. There are 25 regions.

A planned revision of the legislation for infectious diseases will lead to more control by the national government over the outbreak management by the local government in case of a pandemic. This revision is planned for mid 2008.

The Netherlands have a National handbook on crisis management, to be used in every crisis, including a pandemic. It provides the structure for and process of decision making if two or more departments are involved in mitigating the crisis. In the interdepartmental policy team (IBT) the directors-general meet and decide, in the ministerial policy team (MBT) the ministers meet and decide. The coordination of crisis communication by the different local and national governments is also a subject of this handbook. The National Crisis Centre (NCC) facilitates the interdepartmental decision making and is responsible for information exchange.

Comments

The complex geographical divisions of the country potentially pose problems. Initiatives to align these geographical divisions are being undertaken. These should be encouraged though this is not exclusively the domain of the health ministry and pandemic planning and preparedness would only be one of the beneficiaries of such a development.

Revision of the legislation in order to allow national management of infectious disease control in case of a pandemic is a welcome development and a good approach to ensure a more efficient and uniform response to a pandemic throughout the Netherlands.

Despite the work in recent years strengthening preparedness for a pandemic, there is a continuing need for focus and resources within this area. Therefore it was a concern to the external members of the assessment team to hear about forthcoming economies in government man-power devoted to pandemic preparedness. This may threaten the work that needs to be undertaken between the time of the visit and 2010.

A question that arose was by what methods would pandemic preparedness be judged a success? This is an area where ECDC would be asked to assist ECDC involvement

Recommendations

- 4.1. VWS: Rationalisation of geographical boundaries across sectors within the Netherlands so that they 'fit' for most if not all sectors should be encouraged for a number of reasons including pandemic preparedness.
- 4.2. VWS: Development of operational plans should continue. The priorities for development are those identified for the EU more generally.⁸ That is by expanding out across all sectors (multi-sectoral planning) at the national level and down to the regional and local levels using tools like the ECDC recommended Acid Tests.⁹ It would be helpful to have a target date for the completion of these operational plans for example leading up to the concept of a multi-sectoral national exercise involving the regional and national level and private parties.
- 4.3. VWS: The cross-sectoral working group should be encouraged and facilitated to take the steps necessary to improve business continuity throughout the country and throughout the different government and private parties.
- 4.4. ECDC: ECDC to give some thought on what would be judged measures of success for pandemic planning aside from how well the country does in a pandemic.

⁸ See EU Pandemic Preparedness Status Report January 2007
http://www.ecdc.eu.int/pdf/Pandemic_preparedness.pdf

⁹ See Acid Tests <http://www.ecdc.eu.int/pdf/Acid%20Tests.pdf>

5. Pandemic Surveillance, Situation Monitoring and Assessment

Description

At a central level the Netherlands is advancing its preparedness regarding pandemic surveillance beyond those activities to strengthen the routine reporting systems. The current existing influenza sentinel surveillance network (see 1) is considered robust and will be used as the backbone system to assess the impact of an influenza pandemic on the Dutch population. The surveillance plan for the pandemic covers activities during WHO phases 3-4-5-6. The plan is currently being updated, as the Netherlands is finalising integrated research-control protocols during prepandemic outbreaks, and have explored daily reporting of ILI and mortality surveillance data during a pandemic phase. The routine surveillance system is robust and is expected to be continued until at least into the early part of phase 6. of a pandemic.

Protocols for specific investigations to collect essential information for the control of a pandemic such as antiviral susceptibility, clinical management of cases and impact of interventions, are being developed. Essential data, resulting from the investigations described above will be collected during phase 3-4-5-early 6 using the available resources at RIVM and the regional health services through field investigations.

Models for possible pandemic scenarios including the investigations of the impact of interventions, were developed and continuously updated to guide policy and communication in a pandemic.

Strengthening and expanding sentinel surveillance is also being planned including surveillance in nursing homes and targeted potential high-risk groups (e.g. related to profession, mobility, and social cohesion). Syndromic surveillance is being developed which might provide additional tools to improve early warning capacity.

Comments

Surveillance preparations have focused on what should be done in Phases 3, 4 & 5 but plans are less developed for phase 6 which is the most definite scenario for Europe. Public health measures and actions may have the greatest benefit during the actual pandemic. This focus on surveillance in the prepandemic phases is a common finding in other European countries. Plans for what will be done in Phase 6 should be developed further and the work being done at EU level by ECDC and to which Dutch specialists are contributing.

It is not clear whether in a pandemic the staff at the concerned institutions will be able to manage carrying out the routine surveillance and at the same time performing specific studies.

Recommendations

- 5.1. RIVM: Consider identifying teams, in addition to the staff doing routine surveillance, to carry out specific studies to collect essential information during the pandemic. These teams could be regional teams, building on the existing framework of cooperation with municipal health services.
- 5.2. RIVM: Specific studies (pragmatic surveillance in a pandemic) should be further developed defining the outputs that would be needed for (evaluation of) interventions.

- 5.3. ECDC: ECDC should assist in the coordination and the exchange of information at EU level since some studies will be done in few countries and the results should feed back to the rest. Some standardisation of methodology is important in order to allow for comparisons across countries and for pooling of data
- 5.4. RIVM: Strengthening surveillance on specific settings and risk groups should be continued and linked to public health action and evaluation of interventions.
- 5.5. RIVM: Share expertise related to near real-time modelling ('now-casting' and short term forecasting) combining modelling and surveillance data and expertise to produce regular outputs early in a pandemic drawing on developments in other countries and future meetings being convened by ECDC.
- 5.6. RIVM: Methods of evaluation of proposed interventions during a pandemic in relation to the last point should continue to be developed by RIVM.
- 5.7. RIVM: Criteria for when to scale down collection of routine surveillance data (both epidemiological and laboratory diagnosis) should be defined ahead of time.

6. National reference laboratory for influenza / National influenza centre (NIC) and Laboratory Capacity in a Pandemic

Description

There are in the Netherlands in effect two laboratories forming a single functional National Influenza Centres (NICs). Both laboratories at RIVM and EMC have qualified personnel to perform both classical virological and molecular influenza diagnostics.

Both laboratories participate in international External Quality Assurance programmes for Influenza diagnostics, provided by the European Influenza Surveillance Scheme (EISS) (virus isolation and identification), and by WHO and by EISS in collaboration with Quality Control for Molecular Diagnostics (QCMD) for molecular detection and identification.

EMC and RIVM can handle about 600 specimens/day. Normal amounts of respiratory specimens during seasonal flu do not exceed about 50 specimens/day. For scaling up of influenza diagnostics (>600 specimens/day) qualified laboratories in the Netherlands have been selected. These laboratories perform molecular influenza diagnostics routinely now and have sufficient capacity to analyse together an additional 500 specimens/day.

In a pandemic these peripheral labs would be employed though the arrangements for this have not yet been agreed with those labs. Protocols for peripheral labs are made available by RIVM and EMC. QA through QCMD. Updated protocols for influenza diagnostics, sample taking and biosafety are accessible at the RIVM website
http://www.rivm.nl/cib/infectieziekten/aviaire_influenza/publicatie_aviare_influenza.jsp.

Comments

The combined NIC is a strong feature of the Netherlands though it has all the advantages and challenges of being on two sites and under two management systems. Mechanisms for coordinating the independent group of laboratories in a pandemic need further development. This is crucial when during a pandemic new tests (pcr primers) to detect the pandemic strain have to be rolled out rapidly. An obvious mechanism for this is the RIVM employed 'regional microbiologists'.

There is not yet an agreed plan for switching in a pandemic from testing all specimens to syndromic diagnosis, presumably when numbers build up and a certain predictive value has

been passed. Then testing will be limited to a sub-set of specimens (abnormal cases and a representative sample of all specimens).

Recommendations

- 6.1. RIVM: Support and keep under review the initiative using RIVM-employed 'regional microbiologists'.
- 6.2. RIVM: Develop and agree on practical laboratory plans for use in Phase 6 at the national and regional levels including how and when clinical testing will be turned on and off and the laboratory staff and functions protected.
- 6.3. RIVM: Link in with other national laboratories in Europe through the EISS-ECDC mechanism and the EU Community Network of Reference Laboratories (CNRL) to undertake further work on who does what in Europe in specialist work especially during a pandemic.

7. Outbreak investigation capacity, general and during a pandemic

Description and Comment

This is centrally organised under RIVM which is a strong feature of the Dutch system. In the event of any significant event RIVM is involved at an early stage. This is being strengthened with the extension of RIVM out into the Regions 7 GGD regions.

Recommendation

- 7.1. The Dutch authorities could look at the ECDC mechanism of epidemic intelligence or the HPA weekly teleconference as logical next step mechanisms for strengthening the exchange of information in 'peace time' and as a basis for how to work in event of crises such as a pandemic.

8. Planning Assumptions

Description

The planning assumptions for the Netherlands are to be made more explicit. They will be part of the revision of the pandemic policy plan and will be available before the end of 2008. Furthermore, the development of an updated set of standard scenario's for planning purposes are being made. They will function as part of the planning assumptions.

Comments

At national level, clear planning assumptions have been applied to develop good conceptual thinking on possible risk mitigation strategies using the strong modelling team at RIVM. There is also good commitment to pandemic planning at the Regional level. The one region that was visited was doing the right things, including the recent purchase of a tool to develop scenario planning. However it was not clear if national assumptions had been rigorously applied at regional level or that an inventory of local resources in both health care and other essential services had been fully developed to input for planning. There was for example, no indication as yet of a convincing hospital preparedness plan.

Recommendations

- 8.1. VWS: Tools to develop strategies for planning should be used to develop local plans for pandemic containment.

- 8.2. GHOR-NL: It is important that accurate inventories of local resources are developed to be used as a baseline for planning purposes.

9. Antivirals and other Pharmaceuticals

Description and Comments

The Netherlands has stockpiled 5 million treatment courses of oseltamivir courses for a population of 16 million people, which is estimated on the basis of being sufficient to treat all of the 30% of the population that would get ill given the planning assumptions.

Antivirals will be used as prophylaxis to protect professionals involved in the control of avian HPAI cases; to treat eventual cases and for prophylaxis of their close contacts in the situation of incidental introduction of a human strain during phases 4 and 5; and for treatment of cases in phase 6. Early treatment with antivirals is expected to shift the pandemic curve and to reduce the peak of incidence and the number of hospitalizations. A distribution plan is available in concept, implementation is in progress. For the delivery of antivirals to the population the current structures will be used. After diagnosis of the diseases, which maybe done by telephone, the GP will write a prescription and the regular pharmacy will deliver it to the patient.

It was consistently assumed by all those concerned that the normal mechanisms for prescription and dispensing of antivirals and other treatments (antibiotics) would work well though this has not been tested. The rationale behind the idea not to switch to alternative distribution is the though infrastructure of pharmacies and his robust functioning distributing network. It was noted by the external members of the team that other countries have discovered that new developed distribution mechanisms might not work well in Phase 6 when undertaking operational modelling or running exercises. There is a need to pilot and exercise different mechanisms for distribution and managing of antivirals and antibiotics at the local level.

Establishing a stockpile of antibiotics has not been considered in the Netherlands although there will be a need to treat severe cases during a pandemic and hospitals may have problems to obtain antibiotics in phase 6.

Recommendations

- 9.1. NHG: Consider GPs training in the use of antivirals during the influenza season based on antiviral indication for high risk groups, while respecting the Dutch policy on restrictive use of antimicrobials, including antivirals for in principle selflimiting conditions.
- 9.2. VWS: Further develop the logistics for antivirals distribution in the country at a strategic and local level.
- 9.3. VWS: Consider piloting and exercising the proposed mechanisms for distribution and managing of antivirals and antibiotics at the local level.
- 9.4. VWS: Consider the need of establishing a stockpile of antibiotics for treatment of severe cases or at least a way that it will be possible to deliver supplies so that all people with severe disease due to influenza can be treated even at the height of a pandemic.

10. Non-Pharmacological Public Health Measures

Description

Part of the National pandemic plan is an outline of a policy on non-health measures, such as school closures and restricting mass gatherings. This subject will be elaborated upon in the revision of the policy plan.

A goal of the interdepartmental project for the protection of critical infrastructure (Vitaal) is to strengthen all the essential services in case of a crisis. A pandemic is one of the approximately 60 events that can lead to a crisis.

There are plans to use the pandemic scenario to assess the intersectoral vulnerabilities. Furthermore departments are supposed to prepare their essential services for a pandemic.

Comment

An issue that arose in light of recent American developments is whether it would be desirable to grade pandemics. See the American 5 point scale proposal.¹⁰

Recommendations

- 10.1. VWS: Continue to develop policy options on the public health measures drawing on developments in other EU countries and at the European Union Level (the Health Security Committee)
- 10.2. ECDC: Discuss with WHO on the grading and basic description of pandemics and consider how best to proceed with this area for example by getting a WHO view. ECDC Involvement

11. Pandemic Vaccines

Description and comments

An advanced order has been placed for 8 weeks supply of a specific pandemic vaccine from a national vaccine producer (15 µg for per person for the total population of 16 million people). A distribution plan for rapid application of the vaccine will be established based on those developed for smallpox vaccine (vaccinate all the population in 4 days).

A decision on the use of pre-pandemic vaccines has yet to be made but the possibilities are being investigated. The Netherlands' authorities will consider that following the review by ECDC (July 2007).

Recommendations

- 11.1. VWS: Develop a plan for vaccine distribution building on the smallpox plan
- 11.2. VWS: Preparation should be made for a review by the Netherlands authorities following the review by ECDC (July 2007) on human H5N1 vaccines.

12. Simulation Exercises

Description

Exercises are seen as important in the Netherlands, and there is good record in practicing for generic disaster management at both national and local level. Hence exercises are regularly

¹⁰ See United States HHS/CDC Guidance <http://www.pandemicflu.gov/plan/community/mitigation.html>

undertaken on different levels and across different sectors. Not necessarily related to pandemic preparedness but preparedness in general.

The first national pandemic exercise was when the Netherlands took part in the EU-exercise Common Ground in October 2005. A number of regions have conducted exercises and there are plans for a coherent set of exercises, both regional and national. Funding is not yet certain. If funding is available the Netherlands has a specific scenario to test the national preparation together with the testing of the international cooperation within the EU- scenario. Particularly noteworthy is the development of a web-portal at RIVM where outputs and experience from regional exercises can be shared though to date not many regions have taken advantage of this.

Comments

While generic planning is important, pandemic influenza places unique longer term burdens and technical challenges on those responsible for providing health care and essential services. Hence while there are some benefits for pandemic preparedness from other exercises it remains important to continue to conduct meaningful pandemic exercises to specifically test the likely operational capacity. For example how people will cope over a sustained period of crisis with a reduction in staff numbers. This would be particularly beneficial at the local level. The concept of using exercises to strengthen preparedness and response is a good initiative. Exercises should be targeted and also proper time set aside for reflection and identifying lessons learned. (Also see comment on hospital preparedness exercises)

One or two countries had scheduled a large scale pandemic-specific exercise in the medium term (1-3 years time) as a target to optimize preparedness and to ensure continued activity and resources are directed to planning. This may be an approach that the Netherlands could also usefully consider.

The newly created RIVM site on the web where exercises can be shared is considered a good way of sharing experiences between regions and a source of inspiration.

Recommendations

- 12.1. VWS: Consider developing a strategic approach to avoid exercise fatigue while investigating particular issues by local and focused exercises (e.g. Managing patients in primary care, Hospital preparedness, antiviral distribution, communications etc)
- 12.2. VWS: Consider a future large multi-sectoral national and regional exercise to give a target for full national preparations at all levels.
- 12.3. RIVM: Encourage Regions and Localities to log their future exercises and the lessons from ones undertaken on the RIVM site.
- 12.4. RIVM: Expand exercise-library to include best-practices from regions on pandemic preparedness, like for instance the video from Utrecht

13. Maintenance of Basic Services

Description and Comment

The joint work between the Ministry of Health, Sport and Youth and the Ministry of the Interior on multisectoral planning at national level demonstrates a strong commitment to developing a broad approach to pandemic planning.

Recommendations

- 13.1. Sustain the involvement of the national inspectorates for health services and crisis management (IGZ and IOOV) to review regional and local health plans and preparedness.

14. Interoperability (Neighbouring States) Issues

Description and Comment

A bilateral workshop took place with Belgium in January 2007 and a similar event will take place early 2008 with Germany to share information and consider common strategies. Concerns about health care shopping in particular were raised by regional representatives. The Netherlands, like all other EU countries, suffer from the lack of a common development focus for EU policies on pandemic flu. Bilateral meetings with neighbouring countries are a sensible approach and should be continued. Given the proximity of the Netherlands to federal Germany, in addition to scheduled meetings with relevant German Länder, focused discussions between local representatives on both sides of the border are being organised.

Recommendations

- 14.1. VWS: Bilateral discussion should continue with neighbouring countries with some cross border exercises and having observers at each others national exercises.
- 14.2. ECDC: The European Commission should be encouraged to facilitate these bilateral arrangements by having multi-national discussions for example under the Health Security Committee.

15. State and Local Health Care Systems – Resilience

Description

The health services in the Netherlands are generally robust with a solid primary care sector. Evidence was also presented of good commitment to generic planning at the Regional Health level. In 2004 the national government published its model for a regional pandemic preparedness plan (and also a model plan for avian flu and an incident based early outbreak of pandemic flu). The model has been implemented by the 25 regions and assessed by the Health Care Inspectorate. As of the end of 2006 all plans are of sufficient quality. The regional plans are partly cross-sectoral, especially on the medical subject. Preparedness for societal stability and essential services has to be developed yet, but form the major part of current developments.

The Dutch college of General practitioners (NHG) has developed guidelines (Standaard) for the treatment of influenza like illnesses during an influenza pandemic, to be used by the general practitioners.

Comments

The robust primary care services will stand the country in good stead for responding to a pandemic at the regional level. At a more local level, pandemic planning appears to be carried forward across the health care sector; good attempts were observed with engagement of General Practice through dedicated pandemic training events and the development of guidelines (Standaard) for general practitioners. There are also good mutual aid relations between Municipal Public Health Services (GGD) including supra-regional medical professionals (microbiological and public health) organised under RIVM. The region

that was visited had had good experience with the development and implementation of infectious disease control plans (concerning smallpox) and population level vaccination (meningococcal infection) that were being usefully applied for pandemic planning. Hence the direction of travel appeared positive. However no convincing evidence was presented that these other plans had been or could be adapted so that they would be fit for purpose operationally, particularly for the unique challenges from pandemic influenza.

From the one locality that was visited (Utrecht) it seems that there is good commitment to pandemic health service planning at the 'Regional' level. The region was doing the right things but could not present convincing evidence that all the local actors (notably those in charge of hospital services) were fully engaged operationally and committed to preparedness. Hence there was no convincing plan for hospital preparedness. This is common finding in Europe and is one of the reasons for the hospital component in ECDC's Acid Tests. See: <http://www.ecdc.eu.int/pdf/Acid%20Tests.pdf>

Recommendations

- 15.1. VWS: The practicalities of planning and coordination at the Regional Level should be tested with focal exercises leading up to a national exercise.
- 15.2. VWS: Special emphasis be placed on preparing hospital services.

16. Large City / Capital Pandemic Preparedness (Amsterdam, Rotterdam)

This issue was not tackled during the visit.

17. Local Public Health Manpower

The issue was not tackled during the visit

18. Hospital Preparedness

Description and Comment

There was little evidence presented that there had been much work yet preparing hospitals which is recognised as being one of the most difficult topics of pandemic preparedness. Much work remains to be done, though there is a useful project under the Health Inspectorate (IGZ) to develop recommendations about how local secondary care systems (hospitals & care homes) should function during a pandemic. Consideration should be given to repeating it for primary care. There is also a need to adapt the generic hospital disaster plan (ZIROP) for pandemic preparedness which has important differences from most other disasters.

At regional level it was clear that generic planning included the provision to redirect resources towards the point of need, although hospitals are managerially and financially relatively autonomous.

There appears to be good commitment to pandemic planning at the Regional level. The one region that was seen was doing the right things, including preparations at local level, including some detailed generic planning, such as extending general provisions for residential care through the use of hotels and developing thinking towards infection control, such as designating influenza wards as a place of infection containment with the possibility to reverse this and limit infection in other acute wards if systems became overwhelmed etc. However some of the details, such as staffing etc, were not presented, and it was not clear

that such measures were wrapped up into a coherent operational plan or that all the local actors (notably hospitals) were fully engaged operationally.

As part of the process, the need for exercises was stressed, although a comment was made that exercises are not always seen as high priority by hospital boards as they offer no income. The national government has allocated a substantial budget to be used by hospitals to prepare for disasters.

Recommendations

- 18.1. GHOR: Practicalities of planning and coordination at the Regional Level should be tested with focal exercises.
- 18.2. IGZ: Continuation and rapid completion of the project under IGZ to review and make recommendations about how local secondary care systems (e.g. hospitals/carehomes etc) should function during a pandemic.
- 18.3. GHOR: Adapt the ZIROP model for hospital pandemic preparedness including a model plan for how a hospital would cope during a pandemic including dealing with
 - Staff protection
 - Surges of patients
 - Protecting core emergency services

19. Communications

Description

External communication to the public have clear lines of responsibility. On seasonal influenza there are Q & A's that are the responsibility of RIVM and are available at www.rivm.nl. These have conventional foci on signs and symptoms, basic facts, vaccination, and there is a leaflet, posters etc. On pandemic influenza a brochure by the ministry of health is available with answers to 10 important questions. A website with Q & A's and preparedness information is currently under construction. A handbook for communication of the central government with the public during a pandemic has been developed.

In terms of raising awareness of the issue of pandemic, innovative and attractive videos have been developed to raise consciousness among local planners and professionals and these are deserving of European Attention. Ongoing focus group work on attitudes concerning pandemics in different groups (public and professionals).

Comments

All regions and other stakeholders are clear that RIVM is responsible for providing key health-related information to the public. However it is less clear who will act as source of information on broader non-health topics and who can speak on health service monitoring issues such as whether the hospitals and primary care were coping, antivirals were getting through etc.

While the infrastructure was inherently strong, there was little evidence of operational preparatory work for communication to the public. The logistics for front line communication via telephone call centres had been identified, and capacity was large, although no evidence was presented that the identified capacity both in terms of personal and infrastructure would match the planned assumptions on call volume.

Recommendations

- 19.1. VWS: Critical review of the communication strategy at operational level to ensure that material and capacity identified are able to cope at the height of a pandemic.
- 19.2. VWS: Consider using communication exercises for other health issues to test communications systems in a pandemic.
- 19.3. VWS: Give clarity on who can speak on health service functioning and broader service issues.
- 19.4. VWS: Consider if there is adequate surge capacity of communications personnel for a pandemic.

Avian Influenza

20. Avian Influenza Issues (Veterinary Health)

Description and comments

The Netherlands have some of the highest concentrations of livestock production in the EU along with a dense human population. Therefore zoonoses (human infections derived from animals) are a special priority in the Netherlands. There is especially strong experience and expertise in veterinary health underpinned by previous joint planning with human health services for responding to zoonoses. Experience during the H7N7 avian influenza outbreak of 2003 means that these relationships are grounded in real joint activities.

There is broadly based public health guidance for contact with infected birds including Low Pathogenic Avian Influenza (LPAI) with a sound risk basis. In preparing for further events there are pre-defined animal disease containment teams with a capability to address the public health aspects supported by advanced training and there is an innovative vaccination programme for poultry against H5 viruses which has contributed to European experience and knowledge on the use of these vaccines.

Recommendations

- 20.1. LNV: The following important planned initiatives that need to be sustained;
 - long term strategy to improve value for money for investment in zoonoses research.
 - improving technical methods for reducing the risk to human health from controlling zoonoses (protective equipment and culling procedures).
 - continuing to retain compliance with public health standards by those involved in animal disease control.

21. Human Aspects of Avian Influenza

Description

Maintaining human health during an outbreak of HP avian influenza is a responsibility for the local government. In 2004 the national government wrote a model for a regional preparedness plan for the human health implications of a HPAI outbreak. This plan has been implemented in all regions. The department of agriculture has a plan for the veterinary aspects of HPAI. Both plans have been carefully compared

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For avian influenza the RIVM and EMC are collaborating with the Dutch Ministry of Agriculture and its designated laboratory for animal influenza surveillance in the Netherlands, the Central Institute for Animal Disease Control (CIDC) in Lelystad.

Comments The large H7N7 avian influenza outbreak in 2003 created challenges to public health sectors due to mild symptoms (conjunctivitis etc) in poultry workers, and a single human fatality. Mechanisms for protection and prevention of workers and clinical follow-up were initiated during the crisis, and these have been strengthened since 2003. Dedicated culling teams are identified and have been given advanced training to minimise risks from contact with potentially infected poultry. Public health hygienists have been identified to accompany culling teams at the time of deployment to assist in appropriate clinical follow-up.

Of particular note is the specialist guidance for the use in the event of Low pathogenic Avian influenza (LPAI) outbreaks; given the concerns of some member states about the need to adopt more pragmatic public health measures when dealing with clearly identified LPAI outbreaks, the guidance, and particularly any underlying risk assessment work on which it is based could be usefully shared more widely.

The Netherlands is currently one of the few EU member states to engage in a long-term protective vaccination programme for high risk flocks; this voluntary pilot is an innovative approach and will provide key evidence on the feasibility of the use of protective vaccination as a whole. The plan is currently being revised to make it easier to implement at flock level with the aim of improving uptake, although movement restrictions and marketing meat from vaccinated animals remain difficult obstacles.

There are complex and somewhat different approaches to tackling zoonoses in humans (decentralised) and animals (centralised). There is some inevitability to this given EU legislation and the delegated responsibility for the health services in the Netherlands. It is clear that there was strong commitment from both veterinarians and public health specialists to continue to forge close links and work together. However it gives some concern as to how the two groups would work together in the event of a zoonoses outbreak with animal and human cases and specifically how the public health services would be coordinated.

Recommendations

- 21.1. LNV: Investigate the feasibility and added value of shared (animal health – human health) data-bases for use during outbreaks of HPAI and other zoonoses. To this purpose RIVM has prepared a covenant to regulate exchange of data, which is currently under consideration by the LNV judicial department.

22. Specific Country Issues

Description

It became apparent to the external members of the assessment team that there was a government intention to cut central public sector spending and man-power including in the health sector

Comment

The external ECDC/WHO members of the team expressed the concern that forthcoming economies in government spending and man-power could prejudice the remaining work that needs to be undertaken between now and 2010, or result in other opportunity costs on other

essential work in the health sector as resources have to be focused on pandemic preparedness.

Recommendation

- 22.1. That the work on pandemic preparedness should be given priority at all levels in the face of budget cuts though if at all possible without detracting from other important public health work.

Annexes

Annex 1. Participants of country assessment visit – Team Members

External

Name	Position	Institution
Prof Angus Nicoll	Influenza Coordinator	ECDC
Dr Karoline Fernandez De La Hoz	Senior Expert Surveillance Unit	ECDC
Mr Howard Needham	Influenza Project Officer	ECDC
Ms Michala Hegermann-Lindencrone	Communicable Diseases Specialist	WHO European Region

Internal

Name	Position	Institution
Dr Philip Van Dalen	National Influenza Coordinator	Ministry of Health, Welfare & Sports
Mr Marc Bökkerink	Influenza Team VWS	Ministry of the Interior
Ms Corine Van Lingen	Policy Officer International Affairs	Ministry of Health, Welfare & Sports
Mr André Jacobi	Policy adviser preparedness and response.	RIVM Centre Infectious Disease Control
Dr Mariken van der Lubben	Virologist	RIVM Centre Infectious Disease Control
Dr Marianne van der Sande	Projectleader Respiratory Infections	RIVM Centre Infectious Disease Control

Annex 2. Timetable assessment of preparedness in country

Time	Description	Persons attending	Place
Monday 23 April			
9.10	Reception by director Public Health Dirk Ruwaard	<ul style="list-style-type: none"> • Delegation ECDC • Philip van Dalen 	B 1317
10.30-12.00	Ministry of Health, Welfare and Sport Meeting on national coordination. Focuspoints: - consequences for society/multidisciplinary approach - to be determined through Toolkit-output	<ul style="list-style-type: none"> • Delegation ECDC • Philip van Dalen • Danny van Deursen (VWS, unit head crisis prevention and management) • André Jacobi • Linda van der Steenhoven (Influenza Team VWS) • Marc Bökkerink • Elly Dijksman (Influenza Team VWS) • Erik Wachelder (Influenza Team VWS) 	B-1417
12.00-13.00	Lunch	<ul style="list-style-type: none"> • Delegation ECDC • Philip van Dalen • Danny van Deursen • André Jacobi • Linda van der Steenhoven • Elly Dijksman • Erik Wachelder 	Ministry Restaurant
13.00-14.00	Ministry of Agriculture	<ul style="list-style-type: none"> • Delegation ECDC • Huibert Maurice (LNV) • Philip van Dalen 	B-1417
14.00-15.00	Crisiscontrol in the Netherlands: national response plan	<ul style="list-style-type: none"> • Delegation ECDC • Ton Zwennes (VWS, Crisiscoördinator) • Rene Letsch (National Police Services Agency) 	B-1417
15.30-17.00	Consequences for society	<ul style="list-style-type: none"> • Delegation ECDC • Philip van Dalen • Marc Bökkerink 	B-1417
19.30	Diner	<ul style="list-style-type: none"> • Delegation ECDC • Dirk Ruwaard • Lenie Kootstra (Director International Affairs) • Danny van Deursen • Philip van Dalen • Marianne van der Sande • Corine van Lingen 	Schlemmer Lange Houtstraat 17 Den Haag
Tuesday 24 April			
9.30-9.45	Welcome, introduction to the Center of Infectious Disease Control (CIb) Gerard Loeber (Head Laboratory Infectious Diseases and Screening)	<ul style="list-style-type: none"> • Delegation ECDC 	Bilthoven (RIVM)
9.45-	Epidemiological surveillance of	<ul style="list-style-type: none"> • Joris IJzermans (NIVEL) 	Bilthoven

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Time	Description	Persons attending	Place
10.15	influenza - seasonal and pandemic: Frederika Dijkstra, Marianne van der Sande, - syndromic: Liselotte van Asten		(RIVM)
10.15-10.45	Lab surveillance and diagnostics (including new developments): Marieken van der Lubben and Marion Koopmans)		Bilthoven (RIVM)
10.45-11.00 Coffeebreak			
11.00-11.30	Preparedness and guidelines- André Jacobi and Aura Timen		Bilthoven (RIVM)
11.30-12.15	Research on public health interventions - Jacco Wallinga, Marianne van der Sande		Bilthoven (RIVM)
12.15-13.15 Lunch			
GROUP I			
13.15	Departure to the National association of Medical Assistance in case of accidents and emergencies (GHOR-NL)	Group I Delegation ECDC Corine van Lingen	Utrecht Kobaltweg 59-61 Utrecht
14.00-15.30	Dutch college of General Practitioners (NHG)	Ted van Essen (NHG), Ton Drenthen (NHG) Kees in 't Veld (NHG) Wim Opstelten (NHG)	Utrecht
16.00-17.00	National association of Medical Assistance in case of accidents and emergencies (GHOR/NL)	Carian Cools (GHOR-NL)	
GROUP II			
13.15	Departure to the Medical Assistance in case of accidents and emergencies Utrecht (GHOR/Regio Utrecht)	Group II Delegation ECDC Philip van Dalen	Utrecht
14.00-17.00	Medical Assistance in case of accidents and emergencies Utrecht (GHOR/Regio Utrecht)	Charlotte Meiss (GHOR Utrecht) Henk Schenk (deputy chief regional health officer GHOR, GGD Eemland) Frits Woonink (GGD Midden Nederland en HSGHOR) Ineke Welschen (GHOR Utrecht)	Utrecht
17.00-18.00	Travel time to the Hague	Group I and II	
Wednesday 25 April			
9.00-10.00	Inspectorates	Robbin Westerhof (Health Inspectorate, IGZ) Anton Dorst (Inspectorate for crisismanagement, IOOV)	
14.00-16.00	Debriefing	a number of senior officials are invited (#20)	Ministry Apollozaal

Annex 3. Documents presented and presentations received

- Part I Procedures Manual Avian influenza, consequences for public health
- Part II Operational Procedures Manual-Incidental introduction of a new human influenza virus in the Netherlands
- Part III-Wide scale pandemic
- ACID-test (at local level)
- Assessment tool
- Overview of Netherlands health system and organization of infectious disease control in the Netherlands
- Logistical Information
- Centre for Infections Disease Control (CIB at RIVM), Gerard Loeber
- Pandemic Preparedness: a brief overview of the Dutch situation, André Jacobi/ Marianne van der Sande (RIVM/Cib)