

## ANNEX 3

### CONSOLIDATED RECOMMENDATIONS GIVEN FOR MEMBER STATES – WORK REMAINING TO BE DONE

These lists represent a compilation of the detailed recommendations agreed with EU-EEA Member States during the pandemic preparedness self-assessments that took place in 2007. They have been edited to standardise the language and terminology. Inevitably there is a degree of overlap and duplication in the topics. Some comments and elaborations have been added for clarity by ECDC staff.

Because not every assessment can cover all the topics that now make up pandemic preparedness they are listed here so that all Member States, especially those that underwent the process in 2005 and 2006 (when the assessments were more limited), can take advantage of them and see if the recommendations also apply to them.

#### 1. Seasonal influenza surveillance

1. Extend sentinel seasonal influenza surveillance to include automated hospital and death surveillance based on syndromes and multiple ICD codes and/or all-age deaths.
2. Make primary care surveillance more robust so that it would be more likely to be sustainable in a pandemic.
3. Develop electronic reporting from sentinel GPs to ensure the simplicity of the system and make it less subject to the disruptive pressures that will result from a pandemic.
4. Extend the dates of seasonal influenza surveillance to cover the period outside the influenza season (noting that recently the influenza season has been starting and finishing later in recent years).
5. Expand the evidence base for public health action against seasonal influenza through the evaluation of the effectiveness of influenza vaccination and use of antiviral medications. **To be done by ECDC.**
6. Geo-code data on influenza cases so that they can be mapped using GIS mapping tools. Such a GIS approach would allow high-resolution identification of influenza activity throughout the country.
7. Inform GPs in a timely manner about the status of influenza activity nationwide to ensure and encourage their continuing participation in the surveillance system, and link the information to potential action (e.g. use of antivirals).
8. Increase local awareness in countries and communities at higher risk of avian influenza outbreaks<sup>66</sup> in domestic poultry. Plan for effective case detection of human AI infection to be

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<sup>66</sup> ECDC Scientific Advice: Who is at risk of getting HPAI? Version 20 May 2006 ([http://www.ecdc.europa.eu/Health\\_topics/Avian\\_Influenza/pdf/Table\\_Who\\_is\\_at\\_risk\\_H5N1.pdf](http://www.ecdc.europa.eu/Health_topics/Avian_Influenza/pdf/Table_Who_is_at_risk_H5N1.pdf)).



used in areas with bird outbreaks and test the Draft ECDC Tool-kit for outbreaks. **ECDC to make this available.**

## 2. Seasonal influenza vaccination programmes

1. Immunisation for influenza in the EU is usually generally lower than that agreed by the World Health Assembly<sup>67</sup>. Interventions should be initiated at different levels in order to seize all opportunities to inform and vaccinate the risk groups.
2. Routinely collect data on vaccine uptake in the target high risk groups and healthcare workers in order to better define specific immunisation strategies. **ECDC to prepare guidance on how this can best be done.**
3. Acknowledging the difficulties in identifying high risk groups, efforts should be made to improve mechanisms for collection of data on vaccine uptake in such groups.
4. Wherever possible administrative methods to routinely monitor vaccine uptake by providers and detect under-performance should be developed in preference to survey methods.
5. Where administrative methods will take some years to develop, use telephone, or other surveys in the mean time, performed by national authorities and routinely supplement them with the estimates of total numbers of vaccines used in a season.

## 3. Public health institutes

1. Public health institutes (PHIs) are to be found in many, but not all, EU countries albeit in different forms. They will play an essential role in preparing for pandemics as part of whole health sector and whole government approaches. However, they cannot undertake the whole responsibility for pandemic preparedness any more that they can deliver the national response during a pandemic.
2. Each function potentially allocated to a PHI needs to be examined critically to ensure that it is best done by the Institute rather than by the Ministry or another body.
3. Like other key players during a pandemic, PHIs need to have strong business continuity plans that can be used to reallocate staff and sustain the response through the months of a pandemic.
4. PHIs are often well placed to provide expert scientific advice in preparing for a pandemic and during a pandemic itself.
5. PHIs need exceptionally good communications with ministries of health, other bodies and other parts of the country. They will need robust emergency operations centres (EOCs) to achieve this. These are also needed for other operations.
6. There are advantages to PHIs sharing facilities with other similar institutions (e.g. veterinary institutes).

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<sup>67</sup> Prevention and control of influenza pandemics and annual epidemics, 56th World Health Assembly, 28 May 2003 ([http://www.who.int/gb/ebwaha/pdf\\_files/WHA56/ea56r19.pdf](http://www.who.int/gb/ebwaha/pdf_files/WHA56/ea56r19.pdf)).

7. PHIs should prepare to undertake the role of providing surveillance during a pandemic. However, they cannot take on the broader role of monitoring of national functions, and the two should be separated.

8. There are a number of central functions and capacities that PHIs should have. These include national surveillance, modelling and training.

#### **4. Influenza laboratory capacity, National Influenza Centres**

1. Triggers for changing and amending the test strategy during a pandemic should be formally defined and agreed (i.e. at what level efforts would be made to test all those thought to be infected).

2. Where one does not already exist, there needs to be a nationally recognised reference centre for influenza that should also be a WHO-recognised National Influenza Centre (NIC). This centre should also have a national responsibility for quality assurance schemes and should be resourced accordingly. The level of national capacity should not be less for human influenza than it is for animal influenza.

3. NICs are best placed within a PHI or should work very closely with them so that they can deliver integrated virological and epidemiological surveillance.

4. National reference centres would need adequate space and proper BSL3 facilities. Standards should be agreed across the EU.

5. Central laboratory surge capacity under adequate biosecurity conditions should be secured.

6. There should be frameworks and protocols for inter-pandemic population-based serological surveys undertaken in some countries so as to determine the incidence of influenza.

7. Regional laboratories in a country should be coordinated under the NIC so there is one unified system.

8. Initiatives for training laboratory personnel and activities to expand regional laboratory capacity should be supported to allow for up-scaling activities when necessary such as during a pandemic.

9. In countries where more than one national reference laboratory or NIC exists, the respective roles and responsibilities of the NICs should be reviewed and agreed and the organisational structure and flow of information between laboratory networks should be reviewed. Also practical laboratory plans for use in Phase 6 at the national and regional levels should be developed, including how and when clinical testing will be turned on and off, and how the laboratory staff and functions will be protected, e.g. through formalisation of special recruitment procedures to increase capacity.

10. Laboratory plans should explicitly refer to operations in two circumstances: a) during an H5N1 outbreak involving humans; and 2) during a pandemic. The latter should include an explanation of when the laboratory would move from testing all specimens to only sampling. There should also be explicit plans for providing surge capacity.



11. Ensure there is more than one virologist at a national level. This is necessary to provide continuous service. This will be even more important in a pandemic because of the higher demands of laboratory services during a pandemic (more tests, short turnover times), but also because the staff will fall sick.
12. Plan so that diagnostic capacities can be increased when needed through developing and rolling out rapid testing capacities in peripheral laboratories with testing for the new pandemic strain.
13. Routine primary virus detection and identification capabilities should be further developed at other local institutions to partly take over the pandemic diagnostics from the NIC and allow it to focus work on better characterisation of the emerging threats (new or changing viruses, markers of antiviral resistance).
14. Policies for handling samples from humans with suspected HPAI should be developed further, including written SOPs and higher biosafety level BSL2+ for preparation of the unknown sample for PCR analysis.
15. Link in with other national laboratories in Europe through the EISS Community Network of Reference Laboratories to agree who performs what for Europe with regard to specialist work, such as testing for antiviral resistance, especially during a pandemic.

## 5. National planning and coordination

1. National authorities need to develop mechanisms for ensuring that their regions will work together in a pandemic. National exercises will assist in this. There are models from other countries that ECDC should draw to their attention but probably a solution would need to be devised to suit the specific country.
2. A country with a more federal structure and where healthcare is a devolved responsibility requires more, rather than less, management capacity centrally to ensure national coordination and interoperability.
3. Pandemic preparedness should include emergency scenarios that differ from a short-term, localised disaster type (i.e. scenarios for which experience of the civil protection agency and other bodies may be limited). Classical hospital emergency plans generally do not transfer easily to pandemics without major adaptation.
4. All levels of the health administrations should consider how they would maintain services over a sustained period of up to four months with staff illness of up to 20% at some points. Higher levels of the administration should consider how they would relieve intense pressure at lower level administrations.
5. Pandemic planning should be moved out of the health sector and broadened to include other parts of government. Particular consideration should be given to making preparations on the maintenance of essential services in a pandemic, including the supply of food, water and energy.
6. Ensure there are resources and plans to rapidly reinforce the existing 'flu teams' and sustain the response for several months.

7. Triggering points should be defined and consideration be given to having 'forward look' groups that would convene in a pandemic to anticipate needs in the near and medium future of the crisis.
8. There should be guidance on hospital management planning during a sustained crisis like a pandemic with tools to estimate impact and needs. This needs to be developed centrally with local authorities assisted in their operational planning process as well as in conducting simulation exercises to test the level of preparedness. National plans should then have 'reality checks' through local exercises.
9. Pay special attention to the provision of emergency supplies (e.g. antivirals, masks) and procedures for their access and distribution require special attention and planning (e.g. definition of priority groups).
10. Consider the implications for providing surge capacity staff from sources such as medical students, retired staff, etc, and develop further planning on these issues. This includes ensuring there is a legal basis for their use.
11. Development and testing of curriculum and materials for short practical courses on influenza and infection control for surge capacity staff.
12. The national coordination structure should build a monitoring system aimed at measuring progress in operational planning and its implementation at local levels. This should include a clear list of indicators and analytical capacity to provide information for decision-making at local, regional and federal level specific to their competence and responsibilities. This would be particularly valuable when planning for health crises in large federal countries.
13. There should be central spreadsheets to monitor how different sectors are performing during a pandemic and these should be tested in national exercises. **ECDC to provide examples from other countries.**
14. Vulnerable groups (those living in rural areas, the poor, retired, minority groups, etc) should be identified and plans made on how to reach and protect them during a pandemic. Ensure that representatives of these sectors of society are involved in discussions.
15. Where most of the initial efforts have been made preparing for avian influenza the work should move on to preparing for pandemic influenza.

## 6. Legal issues

1. Legal frameworks should be established and be coherent with international legislation (International Health Regulations).
2. Legislative developments should be made that improve the ability to centrally manage large scale complex national outbreaks, epidemics and pandemics. Testing this system could be one of the goals of a national exercise.
3. Legal framework may be for emergencies in general or for specific diseases such as a pandemic or an unknown / novel emerging infection. If emergency legislation does not cover pandemic influenza, potential time delays to adapt the current law should be discussed. Examples of legal issues that might need to be addressed are many but include:



- the enforcement of quarantine for cases or suspected cases (overruling individual freedom of movement);
  - use of privately-owned buildings for hospitals;
  - off-licence use of drugs where necessary – for example, prolonged use of antiviral drugs after the expiry of the normally accepted shelf-life;
  - ability to close schools for medical reasons;
  - implementation of emergency shifts in essential services.
4. Ethical committees may need to be involved in some discussions on legal issues and vice versa.
5. The legal basis for the public health measures should be judged against the broader public interest.

## **7. Ethical issues**

1. Pandemics will bring ethical dilemmas because the medical need will exceed supplies (antivirals and intensive care) and one particular countermeasure (specific pandemic vaccine) will only become available slowly. Governments or Ministries of Health should anticipate these issues. This can be done either through pre-existing or special committees to advise them on the special ethical issues that arise during a pandemic.
2. Public health authorities should identify issues for the consideration of ethical committees.
3. Mechanisms should be put in place to allow the ethical committees to be contacted and consulted quickly during a pandemic. ECDC should direct the authorities to other countries (e.g. UK, France and Finland) that have developed such mechanisms.

## **8. Maintenance of basic services in a pandemic**

1. Work should be undertaken by/with the other Ministries to ensure that basic services are sustained in their area of responsibility as well as for Ministry staff during an influenza pandemic.
2. It should be clarified whether or not there are high-level plans prepared under other Ministries for the maintenance and monitoring of essential services during the pandemic.
3. A severe pandemic would be analogous to an external assault on the country. Authorities should review whether current models for dealing with such events (crisis management plans) would be appropriate during a severe pandemic, especially if the maintenance of basic services such as power, food and fuel distribution is threatened.
4. The authorities should examine how best to integrate preparedness across the non-health sectors at the national level.
5. A framework should be developed for private companies and other non-health sectors, essential to the continuity of essential functions during a pandemic.

6. Examples of guidelines of business continuity in the private sector produced in Ireland to encourage private sector planning should be developed to further improve business continuity.

## 9. Simulation exercises

1. There are advantages to working towards national multi-sectoral exercises in 2008 or 2009 to give a focus to pandemic planning and preparedness especially in non-health sectors.
2. National and regional simulation exercises (including cross-border exercises) should be used to identify weak points in the planning and further improve preparedness. There should be further exercises organised at national and local level. Extensive and sustained command post exercises should be undertaken at national and state level. As opportunities arise these arrangements should be tested out in other health events and crises.
3. Focused local exercises should be planned and carried out in order to make local plans operational and test their capacity to manage the large number of people that could be requiring care during a pandemic.
4. The work required to plan and organise exercises should not be underestimated.
5. There needs to be mechanisms for measuring the effectiveness of simulation exercises which should be spaced out so as to allow for proper feedback and assimilation of the lessons. Specifically there needs to be efforts to avoid 'exercise exhaustion' among central staff.
6. Local and focused exercises can be done to investigate particular issues (e.g. managing patients in primary care, hospital preparedness, antiviral distribution, communications, etc).
7. Regions, and even more local authorities, should be encouraged/required to organise and conduct their future exercises and to consider the lessons learnt from the ones undertaken at national level and vice versa.
8. Through exercises, ensure a programme of regular testing of regional pandemic plans and their interoperability.
9. Consideration should be given by national authorities to the development of an exercise toolkit for use at regional levels, including basic scenarios, etc.
10. So called 'exercise banks' can be expanded to include best practices from regions on pandemic preparedness.
11. As an indication of priority it is suggested that the following set of exercises can be conducted.

### Desktop:

- Infection control during Phase 6 in one or more hospitals.
- Triggering of provincial emergency mechanisms and sustained management for a long period, including essential services other than health.
- Implementation of public health measures in one or more regions with cross-border issues.



#### Command Post:

- Crisis management during a peak of phase 6 with interaction with media, addressing specific competences of partner institutions and their respective line of command
12. Preparedness exercises concerning 'bird flu' including scenarios with bird outbreaks and transmission to humans are needed at the national and regional level. **ECDC to organise this with veterinary authorities at EU level.**
13. Adapt exercises developed in other countries for countries where specific exercises have not yet been organised. **ECDC to alert Member States on exercises undertaken in other countries through the pandemic good practices innovations pages<sup>68</sup> on its website.**

## 10. Avian influenza (H5N1) issues

1. As interest in avian influenza declines attention should be paid to how the good relationships between Ministries of Health and Agriculture can be maintained and extended to other zoonoses.
2. Each State should have and practise an operational set of arrangements between human and animal health services for dealing with a zoonotic crisis, including having the ability to focus forces at an outbreak.
3. Plans of States/regions in federal countries should be reviewed to a national specification on the issue of whether it is clear what protection should be given to those engaged in control during an outbreak in poultry and that these plans are practical. It should be checked that the lessons learnt from the avian influenza crisis have been implemented at the local level.
4. The risks to humans from culling in non-H5N1 avian influenza outbreaks should be assessed within the hierarchy of risks. This should be done by linking with ECDC which is doing a short risk assessment on this and the other countries having discussions on this aspect (Denmark, Netherlands and the UK). **ECDC to undertake a (non-H5N1) risk assessment.**
5. There should be more integrated operational plans for human and animal health responses to animal cases as recommended by WHO and using the ECDC toolkit.
6. Attention should be paid to the laboratory surge capacity and an interim emergency plan be developed in case of outbreaks.
7. The national case definitions of avian influenza in humans should be harmonised with the new EU case definition.
8. Systems and routines for active case detection of human cases of AI (taking into account the possibility also of mild disease) should be in place and well known to local doctors.

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<sup>68</sup> ECDC Pandemic preparedness innovations.  
([http://www.ecdc.eu.int/Health\\_topics/Pandemic\\_Influenza/innovations.html](http://www.ecdc.eu.int/Health_topics/Pandemic_Influenza/innovations.html)).

9. Avian influenza emergency plans (including animal and human health) should be part of pandemic preparedness plans.

10. There should be an agreed strategy for the use of antivirals in a containment approach and technical factsheets should be offered for formal endorsement by professional bodies and then extensively distributed. It seems necessary to also explore the feasibility of protection of the healthcare workers most exposed to risk during the early phases, and the use of antivirals for vets and poultry workers should be described and made operational.

11. The plans for the human health and animal health response to outbreaks should be either integrated or closely linked. **ECDC should ensure this also happens at an EU level.**

## 11. Pandemic surveillance, situation monitoring and assessment

1. Where possible, an electronic integrated system should be set up that links the entry points in the health centres and hospitals. Computerisation of surveillance data would increase system ease of operation during a pandemic.

2. Separate the issue of 'monitoring' from 'surveillance' the latter should be orientated and linked to public health action using the working paper developed by ECDC in conjunction with experts from MS and from other EU partners. **ECDC to make available the 'Surveillance in a Pandemic'<sup>69</sup> paper.**

3. It should be made explicit who will undertake situation monitoring during a pandemic, and develop coordination between this monitoring system and a separate surveillance system.

4. Surveillance plans should be developed and made coherent with objectives and decision points that will operate under the stress and strain of a pandemic.

5. Surveillance plans should include exercises where those who will expect outputs from the surveillance should participate so that they do not have unrealistic expectations of what outputs can be produced during a pandemic.

6. Plans for situation monitoring systems and reports should be developed in advance of a pandemic.

7. Specific teams should be identified, in addition to the staff doing routine surveillance, to carry out specific studies to collect essential information during the pandemic.

8. Specific studies (pragmatic surveillance in a pandemic) should be further developed defining the outputs that would be needed to inform action, e.g. for evaluation of interventions. 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.

9. The following kinds of information will be needed: number and characteristics of ill persons; severity (for resource allocation, treatment and further planning); deaths; adverse vaccine events; treatment failures.

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<sup>69</sup> Influenza Surveillance in a Pandemic: Paper from ECDC Working Group, August 2007. ([http://www.ecdc.eu.int/Health\\_topics/Pandemic\\_Influenza/pdf/070801\\_Influenza\\_surveillance.pdf](http://www.ecdc.eu.int/Health_topics/Pandemic_Influenza/pdf/070801_Influenza_surveillance.pdf)).



10. Developing 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.

11. Criteria for when to scale down collection of routine surveillance data (both epidemiological and laboratory diagnosis) should be defined ahead of time.

12. Planning for monitoring health crises in a federal country produces special difficulties. A structured reporting system based on a clear set of indicators self-assessed at all levels should be rapidly developed and adopted to facilitate the task and provide the central level with up-to-date knowledge and monitoring of the status of preparedness of the country, including information on available resources within (and outside) of the health sector.

## **12. Outbreak investigation capacity, general and during a pandemic**

1. Consideration should be given to how national and local experience with outbreak investigation for other infectious diseases can be utilised during the first part of Phase 6 of a pandemic.
2. To strengthen outbreak investigation capacity, dedicated resources and personnel have to be identified (including alternates) and committed and responsibilities have to be allocated to the staff involved.
3. Out of hours service should be in place for outbreak detection and investigation.
4. A legislative basis for the early involvement of national public health/surveillance institutes in significant local outbreaks should be developed where needed.
5. The WHO plan for rapid containment<sup>70</sup> should be used in the case of the emergence of a pandemic strain within or close to the EU/EEA area.
6. Develop thinking and clarify policy and protocols around use of antivirals for PEP in avian influenza incidents (WHO Phases 3–5) and early pandemic cases (WHO Phase 6).
7. If it is decided to develop the option of containment around the first cases in a country after world-wide spread has started there should be clear criteria for when attempts are abandoned.
8. At national level, protocols for national assistance in major outbreaks, including protocols for unusual types of outbreaks such as a pandemic, should be developed and tested with the involvement of local medical officers.
9. Protocols for activities during nationally coordinated outbreaks should be developed at a local level.
10. Review the capacity in terms of human resources for outbreak investigation at the local level, and strengthen it where necessary.

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<sup>70</sup> WHO Interim Protocol: Rapid operations to contain the initial emergence of pandemic influenza. Updated October 2007. ([http://www.who.int/csr/disease/avian\\_influenza/guidelines/draftprotocol/en/index.html](http://www.who.int/csr/disease/avian_influenza/guidelines/draftprotocol/en/index.html)).

11. Consideration should be given to establishing national training of local staff through field epidemiology and microbiology training programmes that would undertake nationally-directed investigations during a pandemic. The same training will be used to strengthen national and local capacity to protect the health of the public against other threats.
12. The already existing training options for public health officers should be continued. The close cooperation with WHO and ECDC in the field of training for outbreak investigation should be continued in order to educate key persons as regional level 'multipliers', who educate their staff within the region.
13. Outbreak capacity should be highlighted in any review of public health capacity.
14. Exercises to assess the functioning of alert systems for outbreak detection during Phase 6 should be conducted within national and local outbreaks.
15. Outbreak investigation plans should emphasise more the necessity of management of single outbreaks (e.g. avian flu) in order to allow the public health authorities to apply the full range of containment measures and antivirals in a timely manner. All staff expected to participate in this task should receive simple but special training in the epidemiological investigation of these or similar outbreaks.

### 13. Planning assumptions

1. It is important, especially for federal countries, to have national planning assumptions – that is the range of numbers of patients that local and regional units of primary and secondary care can be expected to have to deal with in Phase 6 along with levels of absenteeism.
2. Centrally agreed planning assumptions should be published to ensure that all parts of the country are working to a single range of assumptions. More extreme assumptions should be avoided.
3. Estimates should also allow for more intense pressures of morbidity and mortality at local level including pressures involving up to 20–30% sickness absence. **ECDC should produce recommended planning assumptions for European countries at different administrative levels, based on what some Member States have already developed.**
4. It is important that accurate inventories of resources are available to use as a baseline for planning purposes.
5. Modelling capacity should be further developed either at national level or to extend across groups of countries. Special emphasis should be made concerning practical operational planning which is usually neglected by academic investment.
6. Where assumptions have been developed for hospital planning, this should be expanded to plan other essential services as well (e.g. primary health care, food, transport, etc.). This would be essential to determine the required surge capacity and to prioritise the resources.



## **14. Antivirals and other medicines and supplies needed for health care**

1. Local public health authorities should urgently develop models and practical plans for the timely delivery of antivirals to individual patients in the event of a pandemic. These would need to be centrally coordinated though there may not be just one single model suitable for any single country.
2. Although plans for acquiring and managing stockpiles at national and regional level have been developed, it should be clarified what would happen in Phase 6 at the very local level in primary care.
3. The logistics for the distribution of antivirals should be further developed at strategic and local levels. This should include piloting and exercising the proposed mechanisms for distribution and management of antivirals and antibiotics at the local level and their more strategic use across the country.
4. Technical plans on use of antivirals should be offered for formal endorsement by professional bodies and then extensively distributed.
5. The plans for the therapeutic use of antivirals have to be further refined: currently stocks are available on national level for prophylactic use. There should be a preparedness concept for the therapeutic use of antivirals.
6. Training those in primary care in the use of antivirals during the influenza season based on antiviral indication for high risk groups.
7. There should be stockpiled supplies of antibiotics for use in a pandemic as local supply capacity will be exceeded by demand and there may be difficulties in delivering further supplies at the height of a pandemic.
8. Where they do not already exist, consider developing monitoring mechanisms for utilisation of hospital services (pressure on hospitals) including maintaining flows of relevant hospital supplies.
9. National mechanisms should be developed for the strategic management of antiviral stocks, for monitoring levels and predicting when they will be exhausted, for equitable distribution (so that areas that are affected late in a pandemic are not deprived), and for changing indications at a national level.
10. Test the delivery of antivirals and antibiotics and other strategic supplies from national stockpiles to the local level and down to the patient level.
11. Develop national guidance on when and how to give antivirals to healthcare workers and ill patients.
12. Each hospital should do their own small-scale simulation exercise and amend plans accordingly.
13. There is also a need to develop more general solutions for the mass distribution of medicines following the laws and regulations in place.

14. During the pandemic, there should be mechanisms in place to document whether antivirals are effective and what kinds of side effects occur.
15. Monitoring of antiviral resistance is recommended.

## 15. Public health measures and personal measures

1. So that these can be effectively planned and implemented, a cross-sectoral approach should be made involving different governmental authorities and ministries.
2. Work on non-pharmacological public health measures should continue in a systematic way in the coming one to two years, taking advantage of common EU approaches as they develop and drawing on the ECDC 'Guide to public health measures'<sup>71</sup> as a technical resource and as a tool for discussion.
3. There should be common discussion of the most difficult public health measures at the EU level between Member States.
4. Prepare information materials for the general public on non-pharmacological personal measures and public health measures utilising the guidance produced by ECDC<sup>72</sup> and WHO<sup>73</sup>, and include these in communication packages.
5. Information kits should be prepared drawing on the ECDC guidance<sup>74</sup> containing clear instructions to members of the public so that they can protect themselves and their families. These should be developed for seasonal influenza so that the public is used to them well ahead of a pandemic.
6. ECDC should propose that WHO takes on responsibility for the grading and basic description of pandemics.
7. The legal basis for the public health measures should be judged against the broader public interest.
8. It should be noted that during Phase 6 of a pandemic there is, according to WHO<sup>75</sup>, little value in exit/entry screening, but as in other circumstances people who are acutely unwell should not travel.

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<sup>71</sup> ECDC Pandemic Public Health Measures Menu.  
([http://www.ecdc.eu.int/Health\\_topics/Pandemic\\_Influenza/phm%20.html](http://www.ecdc.eu.int/Health_topics/Pandemic_Influenza/phm%20.html)).

<sup>72</sup> Personal (non-Pharmaceutical) Protective Measures for Reducing Transmission of Human Influenza – Interim ECDC Recommendations. ([http://www.ecdc.eu.int/documents/pdf/PPHM\\_Recommendations.pdf](http://www.ecdc.eu.int/documents/pdf/PPHM_Recommendations.pdf)).

<sup>73</sup> ECDC Pandemic Public Health Measures Menu.  
([http://www.ecdc.eu.int/Health\\_topics/Pandemic\\_Influenza/phm%20.html](http://www.ecdc.eu.int/Health_topics/Pandemic_Influenza/phm%20.html)).

<sup>74</sup> Personal (non-Pharmaceutical) Protective Measures for Reducing Transmission of Human Influenza – Interim ECDC Recommendations. ([http://www.ecdc.eu.int/documents/pdf/PPHM\\_Recommendations.pdf](http://www.ecdc.eu.int/documents/pdf/PPHM_Recommendations.pdf)).

<sup>75</sup> ECDC Pandemic Public Health Measures Menu.  
([http://www.ecdc.eu.int/Health\\_topics/Pandemic\\_Influenza/phm%20.html](http://www.ecdc.eu.int/Health_topics/Pandemic_Influenza/phm%20.html)).



## 16. Pandemic vaccines

1. Discussions at national level should be commenced and work should be undertaken on refining detailed plans as to how the pandemic vaccine will be prioritised and delivered when it becomes available.
2. In parallel to securing supplies, detailed plans should be drawn up as to how the pandemic vaccine will be delivered to the population. This includes planning the logistics for mass vaccination, and also some advance thinking on planning the prioritisation within populations (including the ethical considerations).
3. When a new vaccine is introduced a system needs to be in place to practically monitor the effectiveness and side effects of the vaccine. This should be based on systems that work routinely with seasonal influenza. **ECDC should discuss this with EMEA.**
4. There should also be discussion over whether an H5N1 human vaccine (pre-pandemic) should be considered, drawing on the technical guidance produced by ECDC<sup>76</sup> and the work of EMEA.
5. Given the availability of human H5N1 vaccines, attention should be given to the acceptability and delivery to specific groups.
6. National authorities should continue to develop their pandemic vaccine policy, including considering the option of having available human H5N1 vaccines and discussing these options with other European states.
7. For countries with low seasonal influenza vaccine uptake, efforts should be made to achieve a higher coverage in risk groups because, in addition to the primary benefit, this would be likely to positively affect the country's capacity to deliver pandemic vaccines when needed.
8. Plans for rapid mass-distribution of vaccine may be built upon other mass emergency vaccination programmes that have been already tested in exercises (e.g. smallpox vaccines).
9. Since clear strategies for the use of antivirals and plans to purchase pandemic vaccines are difficult to make, more consideration needs to be given to protect crucial workers including healthcare personnel, to plan for personnel surge capacity, and to respond to the first phase of person-to-person transmission in the population.
10. MS should comply with the procedures put in place by EMEA for the monitoring of adverse events following immunisation and with attempts by ECDC, EMEA, the Commission and WHO to pre-plan methods for evaluating whether credible adverse events are real or not.

## 17. Interoperability issues

1. Bilateral discussions should take place between neighbouring states both at the national level and by the regions where this applies.

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<sup>76</sup> ECDC technical report: Expert advisory groups on human H5N1 vaccines: Scientific Questions. Stockholm, August 2007. (<http://ecdc.europa.eu/pdf/Sci%20Questions%20final.pdf>).

2. Regions with external borders should be encouraged to undertake cross-border command post exercises with neighbouring countries during national exercises so as to explore interoperability. Lessons learnt from these exercises should be reported via the national level to ECDC and the Commission.
3. National pandemic plans should be discussed, and tested, with neighbouring countries.
4. Cross-border exercises with external observers at each other's national exercises should be encouraged.
5. The European Commission should be encouraged to facilitate these bilateral arrangements by having multi-national discussions, for example, under the Health Security Committee.
6. Common solutions, cross-border co-operation and regular communication need to be developed among neighbouring countries.

## 18. Resilience of state and local healthcare systems

1. All levels of health administrations should consider how they would maintain services over a sustained period of up to three months with staff illness of up to 20% for some short periods. Higher level administrations should consider how they would relieve intense pressure at lower level administrations.
2. The ECDC 'Acid Tests'<sup>77</sup> should be used to give necessary targets so that local services can be ready to ensure that citizens would benefit from the national plans and preparedness.
3. Special attention should be paid to protecting staff in a pandemic though, as for other infections, personal protective measures and equipment need to be balanced against operational considerations.
4. Implement the regional and local planning, in collaboration between the authorities and the health organisations and institutions.
5. The primary care organisation and the capability of GPs to continue their activity during the crisis should be extensively tested through simulation exercises.
6. There should be a requirement that all hospitals have a pandemic preparedness plan working to nationally agreed local planning assumptions. Models for such preparedness should be developed. These are likely to be distinct from conventional hospital emergency plans or at least have significant variations.
7. Consideration should be given to identifying specific regional hospitals to act as reference hospitals to meet the increased demand.
8. Distribution of antiviral medication and masks to the primary healthcare personnel should be subject to local mathematical modelling as well as part of simulation exercises.
9. Further discussions are needed on the role of pharmacists in administering antiviral medication and antipyretics.

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<sup>77</sup> ECDC suggested 'Acid Tests' for helping assess, strengthen local preparedness for moderate or severe pandemics ([http://www.ecdc.eu.int/Health\\_topics/Pandemic\\_Influenza/tests.htm](http://www.ecdc.eu.int/Health_topics/Pandemic_Influenza/tests.htm)).



10. A variety of models for delivering antivirals should be explored and tested with operational modelling and small scale exercises.

11. There need to be intensive information and education campaigns to inform healthcare workers. These should include advice on how to rapidly train workers to perform different tasks during a pandemic from those that they usually undertake.

## 19. Hospital preparedness

1. Models of resilience for preparing hospitals for Phase 6 should be devised with the aims of hospitals protecting their staff, providing essential services and dealing with severely ill influenza patients. This should be done drawing on work undertaken by WHO, ECDC and other European countries.

2. Guidance on hospital management planning during a long crisis with tools to estimate impact and needs will need to be developed at central level and local authorities assisted in their operational planning process as well as in conducting simulation exercises to test the level of preparedness.

3. Support for hospital managers in planning for pandemic preparedness should be developed.

4. Hospital preparedness should be evaluated by the competent authorities against some standard pandemic assumptions. Hospitals would need national guidance on when and how to give antivirals to healthcare workers and ill patients.

5. Mechanisms should be devised for the systematic auditing of local preparedness using or adapting ECDC's 'Local Acid Tests'<sup>78</sup>.

6. All hospitals should be required to have a pandemic preparedness plan agreed nationally and locally and based on planning assumptions produced by national authorities.

7. Stockpile capacity should be checked in each hospital and, where not available, plans should be developed to centralise shared stocks.

8. Each hospital should undertake their own small scale simulation exercise and amend plans accordingly. Lessons from these exercises should be shared across the health services.

9. Recommendations should be made on how local secondary care systems (e.g. hospitals and care homes, etc.) should function during a pandemic.

10. Non-infectious diseases (ID) hospital services should be engaged in pandemic preparedness, through education and training. There should be further planning to prepare non-ID hospital services to cope with pandemic 'overspill' and more emphasis on infection control training to cope with a medium/low hazard.

11. Expand general business continuity planning for hospital functions to include pandemic provisions.

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<sup>78</sup> ECDC suggested 'Acid Tests' for helping assess, strengthen local preparedness for moderate or severe pandemics ([http://www.ecdc.eu.int/Health\\_topics/Pandemic\\_Influenza/tests.htm](http://www.ecdc.eu.int/Health_topics/Pandemic_Influenza/tests.htm)).

12. Develop monitoring mechanisms for utilisation of hospital services (pressure on hospitals) including maintaining flows of hospital supplies.
13. Sharing plans between hospitals to provide specific ideas which could further improve individual hospital plans.
14. At hospital level specific training on case-finding, risk assessment, clinical management (including treatment policies on antivirals and antibiotics), triaging, lab support, and infection control practices should be developed locally and shared across EU countries.
15. Special attention needs to be paid to how local primary care, social care and hospitals will work together during the combined stress of surges in people needing care and significant temporary loss of staff through illness.

## **20. Local public health manpower**

1. It should be considered nationally as to whether the public health manpower is adequate at the local level for supporting a response to pandemic influenza and other crises.
2. A public health out of hours service should be set up where it is not already in place.
3. Allocating resources for pandemic preparedness has to be managed within overall staffing resources and with regard to other competing demands and has to be based on making the best use of existing resources, including through improved work practices and skill mix where appropriate.
4. There should be an inventory of trained medical personnel (public health officers, doctors in hospitals and private practice) in the different medical fields needed during the response to a pandemic.
5. Authorities should consider investing resources in the development of a field epidemiology training programme so as to strengthen local public health capacity that could be utilised in a pandemic.
6. Training in epidemiological investigation should be on general public health and thus a worthwhile investment independent from a pandemic.

## **21. Large cities' pandemic preparedness**

1. Exercises on decision-making level in crisis management in the EU capitals are recommended, with the health sector in a supporting but not decisive mode. Better delineation of competences between public health institutions and among different crisis management institution should be carried out.
2. A balanced approach may be required in order that the capital is not deprived of its vital international personnel and so as not to paralyse regional transportation (for example, in the case of border closures).
3. Additional burden on public health in the city and the airport should be anticipated to retain business continuity.



4. Consideration should be given to the suggestion from Berlin authorities of organising a meeting on pandemic preparedness in large European cities.

5. Stockholm's work on the potential impact of a pandemic on the transport system is innovative and interesting, and can be usefully shared with others.

## 22. Communications

1. There should be more communications on the basic influenza facts and protection against seasonal influenza as preparation for a pandemic.

2. It will be important to determine in pandemic planning that there are clear definitions for each of the phases of 'strategic communication' which involves all the relevant sectors of government (national and local levels), their administrations, and national/international organisations to ensure consistent and accurate messages to the public.

3. Structured communication plans should be developed at federal, regional and local level for the pandemic period (WHO Phase 6) as well as the pandemic alert period (WHO Phases 4 & 5). This should be done so that the messages coming from the human and animal institutions are clear and harmonised whether from federal, regional or local institutions.

4. Preparation of ready-to-use media briefings and nomination of pandemic spokespersons at national and local levels should be undertaken to meet the demands for communication in the event of a pandemic or even for extended inter-pandemic periods.

5. Ready-to-use messages should be used for the public media and health professionals.

6. There should be networking about communication amongst key stakeholders, including risk communicators, non-health government departments, and professional and technical groups early on in any national or regional simulation exercises.

7. Surge capacity plans should be developed to deliver what would be expected in a pandemic when communication staff will be working under pressure for six months or more and with the same levels of staff absenteeism as any other parts of society.

8. There should be a 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.

9. Communication exercises for other health issues should be used to test communications systems in a pandemic.

10. Operationally a horizontal communication staffing will be needed and prepared for in order to release key coordinators at the top of the ministries to reinforce the staff capacity for a pandemic.

11. While a close relationship between risk assessors and communicators is useful and gives information credibility, it is important that the public is clear that decisions are ultimately political, and although they must be guided by science-based risk assessments, these should not be used erroneously in the communication of pandemic action.

12. Communication plans are heavily based on a 'top down' approach from national to federal level. It is important therefore that federal-level communicators fully buy into this strategy,

and implement it to ensure consistency. Central to this is clearly defining and communicating trigger points when moving to different phases of the national communication strategy to all communication officers at federal level.

13. Communication channels are understandably reliant in the continued maintenance of key infrastructures, such as websites and telecommunications. It will therefore be useful to consider innovative approaches to communication in the event that such infrastructures are not functioning.

14. There should be further development of messages concerning use of public health measures and personal protective measures (early self-isolation, hand-washing, etc.) in the overall communication plan using the media and/or other institutions to spread messages to more remote and marginalised communities in the country.

15. Telephone hotlines should be tested to ensure that there is both the capacity and robustness to function efficiently in a pandemic situation, including, for example, how the required manpower and logistics for this will be managed, particularly given staff absenteeism, etc.

16. Response mechanisms that are not people dependent (given that many staff will be ill during the pandemic) should be investigated, e.g. use of voice recognition technology in terms of phone line response.

17. Communication centres should have the support of adequate IT equipment.

18. Healthcare workers are deserving of special attention. Particular care needs to be taken to communicate about staff protection. There should be joint efforts from the ministries of health and public health institutes to determine who has responsibility for educating healthcare workers about avian and pandemic influenza, and how this will be achieved in a widespread and systematic way.

19. There needs to be clarity and pre-planning on who would speak on health service functioning and broader service issues ahead of the pandemic.

20. More pandemic communication awareness and activities should be undertaken at the regional, provincial and local levels. Communication should also focus on raising awareness in other sector departments less prone to consider themselves at risk of impact by the pandemic.

21. Studies should be conducted to better understand what the public currently understand and what advice they perceive they will need if the pandemic threat increases.

22. Consideration should be given to the development of a one-channel information source for flu pandemic, i.e. development of a web portal, following on from the positive avian flu response.

23. Press conferences should be linked with any new information available (e.g. the publication of the communications plan detailing all messages and forecasting numbers that will fall ill, hospitalisations and deaths or announcements of money to be spent by government to fund vaccines).



24. Development of training courses and materials for health staff for use in preparation for a pandemic would be beneficial.

25. Apart from the general population, material specific to target groups could be developed for special groups (e.g. for immigrants and other minority groups).