



Action plan in Catalonia in the event of a possible influenza pandemic

**Response Plan by health centres in the
event of a possible influenza pandemic**

September 2008

RESPONSE PLAN BY HEALTH CENTRES IN THE EVENT OF A POSSIBLE INFLUENZA PANDEMIC

Most of the experts in influenza consider that the appearance of an influenza pandemic is probable, but they also agree that its impact may be reduced if suitable surveillance, control and follow-up systems are established. If we accept that this pandemic may occur, at this moment nobody can predict when it may happen.

The data of the population that would be affected are difficult to specify and will depend on:

- The antigenic characteristics of the new strain.
- The degree of virulence.
- Person-to-person transmission capacity.

One differential characteristic is that while natural or provoked disasters are usually limited in time (hours or days), a pandemic lasts for weeks or months.

The social and health impact that this represents justifies the need for a plan that facilitates an effective response at the time of the pandemic. For this reason, the Department of Health coordinated the preparation of the *Action Plan in Catalonia in the event of a possible influenza pandemic* (February 2006), which was distributed to all centres and is available on the website of the Department of Health.

The actions in health centres were framed within the context of the Action Plan in Catalonia in the event of a possible influenza pandemic and, in this sense, the General Board of Public Health plays a key role in leading the strategies and actions of the influenza pandemic campaign.

The objectives of the plan are as follows:

- To provide an efficacious health care response to the patients that reach the emergency services, interfering as little as possible in the work of the rest of the hospital.
- To achieve maximum coordination/cooperation between the services of the same hospital and the available extrahospital resources/services/devices (primary care centres, continuous care centres and Medical Emergency Services).
- To adapt the physical and human structures to the conditions of the evolution of the pandemic.

CONTENT OF THE PLAN IN THE HEALTH CENTRES

The Emergency Plan must provide for spaces/equipment, personnel, protocols and organisational procedures to respond to the situation caused by the emergency, following the protocols and specific procedures based on the plan published on influenza on the www.gencat.net/salut web, in the section on "Professionals sanitaris" [Health professionals], "Vigilància Epidemiològica" [Epidemiological Surveillance], subsection "Grip aviària" [Avian influenza].

This plan expresses the need to draw up an action plan for phase 6 of the pandemic period in each one of the hospitals and primary health care centres (PC). This phase would produce a high and sustained transmission among the general population, and therefore the number of people going to the hospitals and PC to seek health care would increase.

1. PRIMARY CARE

In the sphere of primary care, the plan must provide for the following aspects:

- **Agenda management.** What changes would you make to facilitate faster care for the cases?
- **Home care.** Who would provide it and how would you organise it?
- **Phone attention.** Taking into account that two aspects would have to be addressed, namely screening and health care, how would you organise telephone attention?
- **Definition of the role of the different professionals.** For example, the role of Nursing in screening and performing health care tasks.

2. HOSPITALS

The plan must contain the following aspects:

- **Definition of spaces:**
 - Can you provide supplementary spaces for conventional hospitalisation? These spaces may be in the actual hospital or in centres with which collaboration agreements are reached (transfer of spaces and beds with own personnel or that of the hiring hospital).

- Taking into account the difficulties involved in isolating patients in phase 6 of the pandemic, would it be possible to sectorise the hospital? How would you implement it?
- What specific spaces for intensive treatment do you have? Taking into account the availability of mechanical ventilation and specialised personnel, how many intubated patients can the hospital take on at the same time?
- **Provision of extra resources according to maximum assigned health care volume:**
 - **Number of beds:**
 - Do you have the possibility of arranging home admissions as an alternative to hospital admission?
 - How would you organise the possibility of visiting patients every day of the week, including weekends? Specify what personnel would be involved in it.
 - **Personnel management.** Taking into account that more personnel would be required, and that the health staff might also be affected by the disease,
 - Can you hire additional personnel?
 - Calculate the number of extra personnel that would have to be hired according to health care pressure on the basis of forecasts of the effect on population and complications.
 - **Material for the treatment of the airways and isolation.** Calculate needs for masks, gloves, gowns, goggles, etc.

- **Drugs.** Calculate needs for drugs to treat possible complications.
- **Hospital access policy for visitors and relatives.** Would you address any kind of restriction on visits to hospitalised patients?
- **Departments involved.** Determine what departments would be involved.
- **Universal protocols and procedures that should be applied:**
 - How would you transport samples?
 - How would you transport patients between hospitals?
 - How would you organise circuits to inform both the patients and the relatives and the health management?
- **External coordination.** How would you coordinate with other health care areas and resources?
 - Taking into account that continuous contact would be required with the primary health care and continuous care centres of your area of influence for admission and pre-admission provisions, the hospital - and also the primary health care centres - should appoint people to perform this coordination, with a calendar stating who would be in charge every day.
 - What agreements might be addressed for possible special back-up plans for doctors in the hospital Emergency Room?

- Coordination with health transport. It would be necessary to agree to what special procedures might be developed for the situation, as to how many vehicles might be available.
 - Coordination with the Integral Emergency Plan of Catalonia (PIUC). The network of the PIUC's information system may be used taking into account the possible inclusion of specific data, since they would be indispensable in deciding to activate the different levels of warning.
- **Dissemination of the plan.** How would you disseminate the plan among the workers?
 - **People and structures in charge.** These structures should have all the functional organs/departments/units that might play a role in the dynamics of preparation and/or intervention in the emergency.

They are normally organised on two levels:

1. **Broad level:** all the functional structures mentioned are represented and those that the hospital, by virtue of its idiosyncrasy, deems fitting.
 Functions: definition, drafting, trial, assessment and update of the plan.
 Suggested name: *Emergency Council/Committee.*
 - General Direction/Management.
 - Medical Direction.
 - Head of the Emergency Department (ED).
 - Nursing Direction.

- Heads of the clinical departments and relevant support: Medicine, Surgery, ICU, etc., or else a person representing them.
- Chairman of the Infectious Disease Committee.
- Human Resources Direction.
- Head of Occupational Safety.
- Head of General and Maintenance Services.
- Head of porters/sanitary assistants at functional/operative level.

2. **Restricted/operative level:** configured by the people that hold key jobs/positions in the development of the plan and are always present in the hospital.

Functions: in charge of starting up the plan, immediately and operatively, following the procedures established and adapting them to the concurring specific characteristics.

Suggested name: *Crisis Committee*.

People that take on the responsibilities:

- Director/of the hospital or acting Director.
- Duty manager (who often acts as the Hospital Director in these cases).
- 1 representative of the health care Services/1 representative of Support Services.
- Nursing Head/Manager (who will take on the responsibility of the sanitary assistants/porters in the absence of the specific manager).
- Head or Manager of General and Maintenance Services.
- Head of telephone communications.
- Head of Admissions and Discharges (who is part of the Admissions/Discharges Committee).

- Head of liaising with relatives.
- Head of liaising with the authorities (Executive Committee, Technical Secretary of the Action plan in Catalonia in the event of a possible influenza pandemic).
- Head of press relations (coordinated with the head of Communication of the Action Plan in Catalonia in the event of a possible influenza pandemic).

Some of these functions may be performed by the same person.

Similarly, there has to be a person or advisory technical committee for the previous levels, specific for influenza, to take on the technical responsibility of the specific plan in the case of a pandemic.

By way of examples of emergency response plans, those of the two phase 4 and 5 reference hospitals, the Hospital de Bellvitge and Hospital Universitari Vall d'Hebron, are attached.

Bibliography

1. *Action plan in Catalonia in the event of a possible influenza pandemic*, Department of Health, 2006.
2. *A practical tool for the preparation of a hospital crisis preparedness plan, with special focus on pandemic influenza*, WHO Europe, 2007.

ACTION PLAN IN AN INFLUENZA PANDEMIC OF THE HOSPITAL UNIVERSITARI DE BELLVITGE

January 2008

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INTRODUCTION

This action plan contains the organisational, structural and human resources actions required to face up to an influenza pandemic in the Hospital Universitari de Bellvitge.

OBJECTIVES

1. To provide the best possible health care response to patients that may have influenza on arrival at the Emergency Department, interfering as little as possible in the normal work of the rest of the hospital.
2. To achieve maximum coordination/cooperation between the departments of our hospital and available extrahospital resources (hospitals, primary care, Medical Emergency Services-061, etc.).
3. To have and provide reliable information to:
 - The relatives and people linked to the patients
 - The health authorities
 - The mass media
4. To re-establish the normal operation of the hospital as soon as circumstances allow.

OPERATIVE MANAGEMENT AND COORDINATION TEAMS

- 1. Management:** To know the general situation of the hospital at all times, particularly the affluence to the Emergency Department, the rate of hospital admissions caused by the influenza pandemic, and authorise the resolute strategic measures recommended by Medical Direction and Nursing Direction.
- 2. Medical Direction:** To have information in real time on the general situation of the hospital, affluence by time brackets to the Emergency Department, rate of admissions and cases of influenza detected. To know the evolution of these data over time. To know the number of hospital discharges per department, and consequently take the convenient and strategic decisions envisaged in the plan. To have suitable information in terms of the surgical schedule itemised by procedures, Major Ambulatory Surgery Unit (MAS) and the spaces and resources required. To know the health care programmes that may be modified (patients with scheduled admission for study, patients requiring admission for complementary tests and/or treatment (Fast Track Unit, possibility of ambulatory arrangements, etc.). To know and adapt the human resources needed to achieve the health care objectives required. To set up spaces to respond to health care needs. To forecast the material resources needed for this objective. To maintain regular informative contacts, and whenever necessary, with the heads of department, the Personnel Board and the mass media.
- 3. Nursing Direction:** To have information in real time on the general situation of the hospital, basically the number of discharges and beds available at all times. To know and adapt the human resources needed to achieve the health care objectives required, including

nursing, social workers, nursing staff, technicians in radiology and stretchers. To prepare the necessary spaces to provide better health care. To maintain and resupply the necessary stocks of perishable material and technology indispensable to provide coverage for foreseeable increases in health care.

4. **Emergency Coordinator:** To know the activity of the department in real time, by time brackets and their evolution. To recognise and forecast human and technical needs to provide suitable coverage for increased health care. To maintain clinical sessions to provide greater flexibility in the care of patients that really are Emergency Department cases, referring all those that are not necessary to the corresponding health care level. To know the flows of patients inside the institution. To maintain contacts and transmission of information on the situation with the other hospitals in the territory and with the primary care and the Emergency Services-061. To keep the Medical Direction informed.

5. **They will all be reachable 24 hours a day for the duration of the influenza pandemic for any eventuality and for the need to take strategic decisions.**

6. **Assistant Medical Directions:** They will provide constant support to Medical Direction in matters such as the management of admissions, management of discharges, surgical scheduling and logistics support to the Emergency Department, home hospitalisations and hospital services. Similarly, they will be permanently in contact with the activity and the needs of the rest of the hospitals of the territory and primary care.

7. **Heads of Department:** In this pandemic period all the heads of the medical specialities, mainly Internal Medicine, Infectious Diseases, Intensive Medicine, Pneumology and Cardiology, will be involved. The heads of department of surgical specialities will be kept informed and will remain in the alert status as long as the activity of their department may be modified with regard to health care needs.
8. **Head of the Pharmacy Service:** They will be responsible for maintaining the stocks of drugs needed to cover health care demand. They will know the evolution of the disease in our setting and in the hospital.
9. **Human Resources Direction:** They will keep the Medical and Nursing Directions promptly informed on the number of workers with sick leave for different reasons and mainly of variations in health staff caused by the appearance of the influenza pandemic. Similarly, with the help of the assistants and the Nursing supervisor, they will seek the human resources needed to offset the extraordinary absence of these workers and will help to hire extra human resources to reinforce the activity generated by the pandemic.
10. **Head of Service of Preventive Medicine and Head of the Basic Prevention Unit:** They will know of and will collaborate in order to resolve the problems generated by the pandemic. They will provide assessment, when considered necessary, on the possible impact of the staff's extra workload and will propose solutions.
11. **General Services Direction:** Their work will consist, as always, and even more forcefully in this period, of ensuring that the general

conditions of the usual hospitalisation floors, emergencies and operating theatres are in optimal operating conditions both with regard to the supply of medicinal gases, mainly oxygen, and consumables and furniture and fittings (beds, stretchers, chairs, etc.). They will maintain sufficient stock of consumables (flowmeters, stretchers, etc.) to cover demand, as well as any extraordinary needs that the increase in patients and their subsequent health care and/or hospitalisation in areas set up for this purpose may generate. They will keep the heating systems in perfect working order and will replace any deficiencies that may arise. They will keep Medical Direction informed of all this.

12. **Head of UFISS:** They will be part of the work groups and clinical services needed to accelerate and facilitate the early detection, diagnosis, treatment and transfer to social and health centres of any patients that require this. They will keep Medical Direction informed of all this.
13. **Head of the Home Hospitalisation Unit (HHU):** They will participate in the necessary work groups and clinical services (mainly emergencies and medical specialities) to expedite and facilitate early detection and transfer to home hospitalisation of patients who are candidates for this as quickly as possible. They will coordinate with the Emergency Department and with primary care to avoid unnecessary hospitalisations. They will keep Medical Direction informed of all this.
14. **Head of the Surgery Area:** They will assess, jointly with Medical and Nursing Direction and the Head of Admissions, the needs generated by the influenza pandemic in terms of modifying

surgery scheduling, the activity of the MAS and/or the possibility of using areas under their charge such as hospitalisation and/or urgent visit areas.

15. **Duty Head:** They will assess the activities performed, will expedite discharges and admissions, will forecast bed requirements and liaise the Nursing assistant and supervisors to cater to the needs of the Emergency Department as rapidly as possible. They will issue the daily communications necessary to the different interlocutors involved on the state of the hospital, the Emergency Department, the availability of beds in the hospital, the availability of beds in critical care and visiting delay time, as well as any other incidence they feel should be reported. They are in charge of urgent notifications to the Epidemiological Monitoring Unit. They will keep the coordinator of Emergencies periodically informed, and whenever they deem this necessary.

16. **Nursing assistants and supervisors:** They will know the activity in their area and the probable changes at all times. They will be aware of the forecast for discharges and admissions in their area. They will keep their management informed.

17. **Head of the Admissions Department:** They will know the hospital's occupation status in real time, they will know as promptly as possible the forecast of discharges and admissions required, basically those from the Emergency Department. They will expedite formalities and report punctually on all these data to Medical and Nursing Direction.

18. **Head of Customer Service.** They will keep anyone that so requires informed, they will explain to the users, in general terms, the measures taken by the centre, they will attend to any complaints and claims made and will seek to solve them without generating further conflicts.
19. **Head of Communication:** They will keep the media and the mass media informed transparently and punctually on the consequences of the actual pandemic and its impact on ordinary health care activity, the measures taken in this regard and any delays generated.

Different commissions and coordination groups will be maintained, reinforced and created to accelerate and optimise available resources. The number, composition and functions of these groups will be as follows:

1. **Crisis Committee:** First thing in the morning the Emergencies coordinator and the Nursing assistant will report to the Management, Medical and Nursing Direction on the status of the Emergency Department, as well as the activity performed, the incidents detected, hospital beds available, mortality observed, measures taken, the areas involved and the forecast of admissions.
2. **Changes of Emergency duty shifts:** The activity carried out will be assessed, both in terms of the number of conditions attended to, and the measures taken in every case, as well as their evolution.
3. **Emergency Department meetings:** This is comprised of Medical and Nursing Direction, the coordinator of the Emergency Department, the Nursing assistant of the Emergency Department, a

representative of the Internal Medicine Department, of the Intensive Medicine Department, of the ERU and the Home Hospitalisation Department. First thing in the morning this commission will assess the activity performed, the number of admissions made, specific information will be provided on visiting delays, all the patients in the Emergency Department awaiting hospitalisation and/or assessment will be reviewed so as to ascertain needs and locate them by specialities and areas. They will also know those who may be transferred to social and health centres and to home hospitalisation. The closest possible forecast will be made on discharges from the Emergency Department and admissions by specialities, and the data obtained will be used for management in the Admissions Department.

4. **Hospital Admissions Commission:** This commission is comprised of a representative of Medical Direction, one from Nursing Direction, the head of Admissions and of the Surgery Area. At noon, and once the forecast of hospital discharges and the availability of beds is known, the beds will be assigned. Decisions will be taken on the modifications that are advisable in the surgical scheduling, both in terms of rescheduling and physical redistribution. The extraordinary measures required will be decided according to health care demand (new spaces for emergency care and hospitalisation, need for extra personnel, etc.). Management will be informed of the situation and the measures taken and those envisaged.

5. **Infectious Disease Commission:** It is comprised of representatives from Internal Medicine, Infectious Diseases, Clinical Microbiology, Intensive Medicine, ERU and the Emergency Department. They will report daily on the positive cultures. During

the pandemic, the information on the number of cultures performed, the rate of positivity and the use of reagents required helps to ascertain intensity and evolution over time. This makes it possible to convey the information to the clinicians reliably and rapidly.

WARNING CRITERIA

When the Department of Health activates the pandemic alert phase 6.

EXTRA AREAS AND SPACES

Emergency Department:

These measures will be established in staggered fashion according to the needs that are generated in phase 6, and responsibility falls to the emergency coordinator or the Duty Manager, in the absence of the former.

1. Adaptation and reinforcement of screening to guarantee the standard precautions (isolation measures to prevent transmission by air and by contact) and generate flows of patients that avoid contact between patients suspected as having influenza and those that come to consult for other reasons.
2. Blocks box 5 of level I as initial care for patients suspected as having the disease, until they are admitted or are attended to in the floor 12 beds.
3. Availability of the Urgent Ambulatory Centre (UAC) in the Outpatients Department to refer any low-complexity pathology that may not be suspected of having influenza outside the main building, moving level 0 activity of the Emergency Department to the UAC. Having boxes 1 and 2 of level 0 as initial care for patients suspected as having the disease, until they are admitted or are attended to in the beds of floor 12.
4. If it became necessary, due to an important increase in potential cases, to relocate the activity of level I of Medical and surgical Emergencies and level II of Surgery and Trauma to the Emergency Observation Unit (EOU) and to the Surgical Specialities Urgent Pre-

Admission Unit (SSUPA) located on floor 18, to free a whole area of emergencies for the exclusive use of patients with suspected influenza, until they are admitted or are attended to in the beds of floor 12 or in any others set up.

Hospitalisation:

1. Prepare hospitalisation beds on floor 12.2 (24 beds) to admit any patients necessary from Emergencies.
2. Prepare extraordinary hospitalisation beds in the UCE.
3. Prepare extraordinary hospitalisation beds in the MAS.
4. Prepare extraordinary hospitalisation beds in other conventional hospitalisation units.
5. Increase the capacity of the Home Hospitalisation programme (HHP) in collaboration with primary care.
6. Set up areas in every hospitalisation floor where the patient that has been discharged from acute care is waiting to return home and thus release hospital beds more quickly.

General Areas:

1. All the actions to be implemented will be coordinated from Medical and Nursing Direction, which will be in permanent contact. The

physical space for these meetings will be the meeting room annexed to the Medical Direction office on floor 0. Any eventuality must be reported to this Direction, telephone extension no. 7530, 2459 and 7510. The telephone operator also has the telephone numbers of the management and crisis cabinet for any emergency.

2. The people in charge of the telephone switchboard have the telephone numbers of the people in charge of the centre and the crisis group. This area is broad enough to cater to the growth in communications. The hospital has sufficient telephones, a switchboard and sufficient personnel, the people in charge are on call 24 hours by mobile, there is an intranet and general Internet coverage to guarantee fluent communications.
3. There are two meeting rooms in the centre where press conferences can be held. This is all the responsibility of the Department of Communication and Protocol.
4. The hospital has different rooms in the Emergency Department and on the ground floor that could be set up to attend groups of relatives and provide information on the evolution of the situation.
5. There is spacious area with resources in the hospital morgue to cater to a foreseeable rise in deaths. There are also social workers with spaces and sufficient offices to cover this demand.

OPERATING REGULATIONS

Suitability and reinforcement of screening

Prioritisation of the complementary tests that must be performed, both from the Emergency Department and from the general hospitalisation floors, with a view to avoiding delays in hospital discharges for this reason. With a view to ensuring that this objective is met, the reception and rapid performance of these tests will be coordinated. This will affect the following departments:

- Conventional radiology
- Ultrasound
- CT scan
- MRI
- Digestive endoscopies
- Fibrobronchoscopies
- Ergometries
- Holter
- Echocardiographies
- Cardiac haemodynamics

Presence of all the duty specialists in the Emergency Department to accelerate its operation, minimising stays, the need for complementary tests and the number of admissions.

The Intensive Care Unit (ICU) and the Emergency Reanimation Unit (ERU) will be available 24 hours to support critical patients that need it. They have 44 ICU beds and 7 ERU. The Centre also has enough mechanical ventilators to provide coverage for possible needs. Areas can

be set up to ventilate patients with acute respiratory failure in other parts of the hospital, depending on the needs of the moment. These areas are:

- The Casualties area of the Emergency Department with three boxes available with mechanical ventilation and monitoring (box C, 31 and 32).
- Postsurgical Reanimation Area (PRA) with 12 boxes available with mechanical ventilation and monitoring available.
- MICI, 4 beds.
- Possibility of non-invasive ventilation on the Pneumology floor for patients with decompensated COPD, both initially to facilitate early draining of patients from the Emergency and/or Intensive Medicine area.

The Home Hospitalisation Unit (HHU) will be reinforced with another care team to at least double its capacity. It will act on different levels:

- Early detection, both in Emergencies and the general hospitalisation floors, patients subsidiary to be attended in this department with the twofold objective of taking pressure of Emergencies, which will avoid hospital admissions and will shorten the stays of patients on the hospitalisation floors.
- They will be present at the Emergencies coordination meeting every morning and noon to know about cases early, detect them and talk to the relatives to obtain consent.
- They will liaise with the different PCC of the area for the purpose of coordination and detection of potentially serious patients so that home-care provision can be made for them and their admission into hospital avoided.
- They will report daily on their activity to both Medical Direction and Nursing Direction.

The FEISS Department will maintain its usual activity, seeking to ensure, in the hospitalisation floor, the early detection of all patients that can be attended to in another health care level (social and health or palliative care centres). Coordination with the different hospital departments will also be ensured for the prevention, early detection and treatment of all complications in cases of their competence, i.e., the elderly or those requiring palliative treatment. They will facilitate, through their own structure (nursing, social workers and assistant personnel) the resolution of these cases in order to shorten hospital stays.

If the case so requires, and the centre were at its maximum capacity and hospitalisation and/or critical care beds were still required, after reporting this to Medical Direction, the latter will assess the need to **relocate patients to another centre**. The Health Region will be informed and will indicate which centres are available. The centres will be contacted and a joint agreement will be reached with the physicians as to the number and type of patients that have to be referred from the Emergency Department, Hospitalisation or Intensive Medicine. In the case of Intensive Medicine patients, and as is normal and mandatory, the SEM-061 will be contacted to agree to the best alternative for the centre and for the patient. In these cases the relatives of the patients will be informed of the convenience of this transfer.

As has already been stated, a daily evaluation will be made on the need to postpone and/or cancel all or part of the scheduled surgery by the **Hospital Admissions Commission**, in order to have extra hospitalisation beds, visiting, treatment and hospitalisation areas and to release nursing and auxiliary personnel to perform the urgent health care tasks.

Every **weekend and on holidays**, a system will be coordinated for doctors to see the patients on the hospitalisation floors, and to generate new discharges on holidays by the departments affected, in other words:

- Internal Medicine
- Infectious Diseases
- Pneumology
- Cardiology
- Intensive Medicine

In order to avoid paralysing the operation of the hospital over the holidays, the necessary human resources will be provided to make this possible, besides the relevant medical personnel, i.e. secretaries, social workers, etc.

If the situation so requires, and according to the needs of the Centre Management at the request of Nursing and Medical management, the need to **suspend the holidays of the personnel required to** carry out the extraordinary health care work will be assessed.

EXTRAORDINARY HUMAN RESOURCES

- Restructure the work hours of the Emergency assistants, changing from 7-hour to 12-hour shifts.
- A specialist in Family and Community Medicine in the Emergency Department for the initial patient care 24 hours a day.
- Hire two additional Internal Medicine doctors for the conventional hospitalisation floor for the duration of the pandemic.
- The medical personnel will not finish their working day after their duty spell in order to help in health care work.
- Two more nurses in the Emergency Area.

- One more nurse on each medical hospitalisation floor.
- Reinforcement of the necessary auxiliary staff and sanitary assistant (2).
- Reinforcement of secretariat working hours for administrative work.
- Reinforcement of a radiologist to accelerate complementary tests.

EXTERNAL COORDINATION

Coordination with the different services of the territory will be ensured:

- With primary care by means of the HHP unit, as expressed above.
- With the health transport service attached to CatSalut, so that the new discharges will be carried out as fast as possible.
- With the SEM-061 for the reception and transfer, both primary and secondary, of patients. Daily and sporadic communication, if necessary, both of the time taken to attend to patients and whether or not they can be attended.
- Daily coordination of the health care situation of the other hospitals in the area through Medical Direction and Coordination of Emergencies.
- Coordination with the social and health care centres of the area by means of the UFISS, as reflected previously.

MATERIAL AND TECHNOLOGY

- The hospital has sufficient stretchers, beds, flowmeters, invasive and non-invasive ventilators, continuous perfusion pumps and monitoring material (EKG, pulsioxymeters, etc.) to cater to an abrupt increase in demand of up to 40%. In the event of demand

above 25% of regular consumption, extraordinary demand will be generated, so that warehouse stocks will render it possible to attend to the extraordinary health requirements.

- The same applies to the hospital pharmacy store (antivirals, antibiotics, vasoactive drugs, bronchodilators, etc.) with a level of warning of 15% of excess consumption.
- The same applies to consumables.
- The same applies to diagnostic test material, both radiology and microbiology.
- There is a daily follow-up of blood bank needs.

If needs increased, the response varies according to the urgency, from a few minutes to less than 24 hours, for all this material and necessary technical resources.

MONITORING

Both the different commissions and work groups will monitor the following daily:

1. General activity of the Emergency Department
2. Activity of the Emergency Department by specialities
3. Admissions from emergencies by specialities
4. Occupation of the ICU, ERU and PRA
5. Number of patients on mechanical ventilation in the different areas by day
6. Emergency pressure
7. Special open hospitalisation areas and rate of occupation
8. Discharges by specialities
9. Admissions by specialities
10. Number of beds occupied by specialities

11. Microbiology results and consumption of reagents and blood cultures
12. Modifications and activity of the surgical programme

With all these data we can deliberate the attitude to be taken at all times and ascertain the evolution of the different parameters over time, which will enable us to take the most suitable decisions quickly.

Similarly, at the end of the pandemic the results obtained will be assessed, analysed and any possible errors and deviations will be corrected for similar pandemics in the future.

INFORMATION TO THE USER AND THE RELATIVES

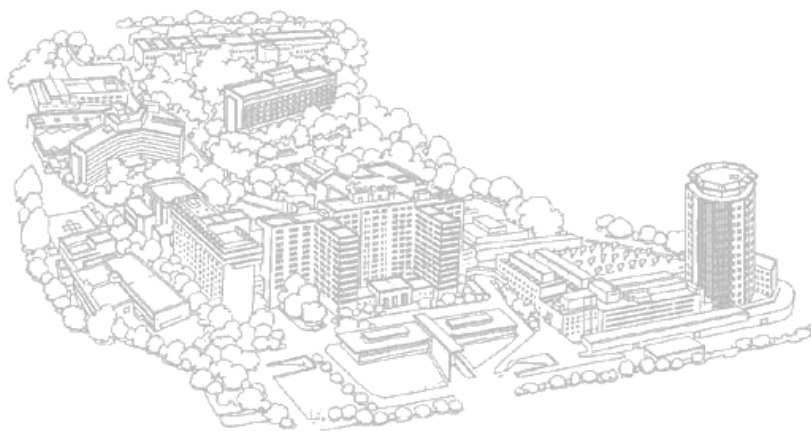
It will be based on different points:

1. Daily by the doctor in charge of the patient to the relatives and provided that clinical condition so requires.
2. Daily, a press release.
3. Visual information at the entry to the Centre, the Emergency Department and different hospitalisation floors.
4. Written information from the different health care levels and how to contact them, as well as the convenience of repairing to the Emergency Department only when strictly necessary.
5. Regular information in the Emergency Department on delays in health care for less serious cases (level 0).
6. Information, thanks to the screening system, on the seriousness of the case, the care to be received and how long will be required.
7. Information from the Home Hospitalisation Unit.
8. Personalised and deliberated information on changes in scheduled surgery, both cancellations/delays and rescheduling for the MAS.

9. Information of the UFISS and social and health services available.

ACTION PLAN FOR AN INFLUENZA PANDEMIC

GENERAL ASPECTS



Hospital Universitari Vall d'Hebron

June 2008

ACTION PLAN FOR AN INFLUENZA PANDEMIC

General Aspects

Hospital Universitari Vall d'Hebron

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1. INTRODUCTION

From the clinical standpoint, influenza is generally speaking a self-limiting disease that affects the general population. Its morbidity and mortality are important in certain risk groups of the population.

Avian influenza is an infectious disease transmitted through birds and is caused by influenza A virus strains. This type is the one that causes human epidemics and pandemics.

The natural reservoir of the virus are migratory birds —particularly wild ducks —which are most resistant to infection. Farm birds, including chickens and turkeys, are particularly susceptible to the disease, with a mortality of close to 100% in the case of the so-called avian influenza, which is highly pathogenic. The avian influenza virus rarely affects humans, and normally neither does it affect species other than birds and swine.

The first cases of human infection by this virus A (H5N1) were identified in 1997, in Hong Kong, where it infected 18 people, 6 of whom died. Other recent outbreaks of avian influenza in humans have been limited. In February 2003, an outbreak of avian influenza caused by the influenza A (H5N1) virus was reported, causing two cases in human beings and one death in Hong Kong. In the Netherlands, an outbreak of the influenza A (H7N7) virus caused the death of a vet in April 2003, and mild disease in 89 people. In Hong Kong, in 1999, two mild cases of avian disease were reported in children, caused by the flu virus A (H9N2) and another case was reported in December 2003.

The investigation into these outbreaks showed that the source of human infection was close contact with infected live chickens. This is why it is

recommended that poultry should not be sold directly to consumers in places with outbreaks of avian influenza in poultry. The eggs of infected birds may also be contaminated by the virus, whereby care should be taken when handling them. Proper cooking will eliminate the virus (cooling or freezing do not). Although transmission through food has not been described, for the sake of precaution the World Health Organisation (WHO) recommends that they always be cooked until an internal temperature of 70°C is reached.

In human beings, the period of incubation of the disease produced by the A (H5N1) virus would be between 2 and 4 days (it may reach 8 days). Symptoms seem to begin with acute respiratory symptoms, with fever above 38° C, cough, odynophagia, respiratory difficulty and general malaise evolving to symptoms of respiratory distress secondary to a viral pneumonia. Marked lymphopenia has also been observed, and a high number of cases presented diarrhoea at the onset of symptoms. The mortality rate among the hospitalised cases is high (40-60%), and death occurs between 6 and 29 days as of the onset of symptoms (with the mean ranging from 8 to 13 days in the different studies carried out). The high mortality recorded hitherto renders specialised and immediate medical care advisable for these cases. The early use of neuraminidase inhibitors may be a relevant approach for the treatment of these patients.

Initial in vitro studies on the sensitivity of the influenza A (H5N1) virus have shown that it is resistant to M2 protein inhibitors (amantadine and rimantadine) and sensitive to oseltamivir.

As yet there is no efficacious vaccine for the H5 virus. Nevertheless, vaccination with the usual epidemic flu vaccine is recommended for

everyone involved in the slaughter of poultry in countries affected or in those in direct contact with live infected birds and/or their excrements.

The WHO has confirmed cases of avian influenza in humans caused by the influenza A virus (H5N1) in 15 countries. Until May 2008, 383 cases had been declared in human beings, 241 of whom died. The appearance of human cases coincided with the spread of the infection by same virus in poultry.

In Spain, the anti-flu vaccination is recommended for people who have to travel to areas affected by avian influenza in poultry. This recommendation aims to avoid confusion between common influenza symptoms caused by a virus contained in the vaccine and influenza symptoms caused by the avian virus. Moreover, it aims to reduce the probability of a possible coinfection by the two viruses (human and avian) in the same person, since this could contribute to the regrouping of the genetic material of the aforementioned viruses. For the same reason, anti-flu vaccination must be promoted among health staff.

In Spain there is a study plan of avian influenza in poultry in progress. In Catalonia, the Centre de Sanitat Avícola de Catalunya i Aragó is the official laboratory of the Department of Agriculture, Livestock and Fisheries of the Generalitat of Catalonia and of the Autonomous Ministry of Agriculture of the General County Council of Aragon, for the poultry sector. This laboratory has been conducting, for the last 8 years, different samples for the detection of avian influenza and has obtained negative results in all the analyses carried out. Hitherto, no avian influenza virus has been detected in our country.

Moreover, the Department of the Environment and Housing performs regular controls on wild birds, particularly in major risk areas such as marshlands and areas where migratory birds arrive.

At the moment, the entry of meat, eggs and other poultry-derived products and live birds from all the countries affected by the epizooty into the European Union is prohibited.

Although there has been some transmission of H5N1 between human beings, it has been limited, inefficient and discontinuous. For updated information, consult the web of the Department (<http://www.gencat.net/salut>), of the [CDC](#) for the areas where there is an outbreak of the avian influenza in poultry (<http://www.fao.org>) and the countries where cases have been documented in human beings (<http://www.cdc.gov/flu/avian/outbreaks>).

In summary, the appearance of an antigenically new strain capable of infecting human beings, together with favourable ecological conditions, has led experts to assess the theoretical possibility that in the not too distant future, although it is evidently unpredictable, a new influenza virus will appear. This may give rise to a new pandemic that could affect the world population.

For this reason, there is a need to develop national plans to fight an influenza pandemic. The Ministry of Health and Consumer Affairs of the Central Government drew up a document on the preparation and response to an influenza pandemic. Following the guidelines, the Department of Health of the Government of Catalonia, taking into account the health, social and political reality of Catalonia, has

developed a plan whose objective is to minimise mortality, morbidity and the impact of this infectious process in Catalonia.

As a consequence of this plan, the health centres of Catalonia have been asked to draw up the general lines of their plan of action, specific and adapted to the circumstances that occur in every centre. Annex 1 contains the *Action Plan in Catalonia in the event of a possible influenza pandemic*, drawn up by the Department of Health and which contains the general lines to minimise mortality, morbidity and the social and health impact of this infectious process in Catalonia.

The Hospital Universitari Vall d'Hebron has drawn up three working documents on the Plan in the event of an influenza pandemic. The first one contains the general lines of the plan and the other two correspond to the operating plans of the Adult Emergency Department and the Paediatric Emergency Department.

In this order, this document contains the general lines of the action plan to face up to a possible influenza pandemic of the Hospital Universitari Vall d'Hebron, following the indications sent by the Department of Health.

2. PHASES OF AN INFLUENZA PANDEMIC

The different phases of an influenza pandemic recognised by the WHO, and adopted by the Department of Health are the following:

🚩 Interpandemic period

- **Phase 1.** No new subtype of the influenza virus has been detected in human beings. The subtype that causes human infection may be present in animals. If this is the case, the risk of human infection or disease is regarded as low.
- **Phase 2.** No new subtype of the influenza virus has been detected in human beings. Nevertheless, the existence of a new subtype in animals entails a substantial risk of disease for human beings

🚩 Pandemic warning period

- **Phase 3.** Detection of human infection(s) by a new subtype without reliable evidence of person-to-person transmission, although it may rarely be transmitted through intimate contact.
- **Phase 4.** Detection of small clusters of cases with scant person-to-person transmission and high local dissemination, which suggests that the virus has not yet adapted well to the human being.
- **Phase 5.** Detection of major clusters of cases; despite person-to-person transmission, it still has to be considered as local, and suggests that the virus is adapting better to the human being but as yet does not present a total transmissibility (substantial pandemic risk).

Pandemic period

- **Phase 6.** Pandemic phase: substantial increase in transmission among the general human population.

This phase is divided into 4 subphases:

- **Subphase 6.1:** Spain is not affected.
- **Subphase 6.2:** the pandemic is declared in Spain.
- **Subphase 6.3:** end of the first wave in Spain
- **Subphase 6.4:** the end of the pandemic is declared.

Postpandemic period

Return to the interpandemic period.

At the moment we are in the pandemic alert phase 3, with the appearance of cases in human beings, without person-to-person transmission.

3. EFFECT EXPECTED ON THE HOSPITAL UNIVERSITARI VALL D'HEBRON

In the spring of 2007, the Preventive Medicine Service of this hospital performed a study to address the health care burden that might be generated. It was done on the basis of different epidemiological suppositions that agree with the knowledge of the disease at the time. The complete information is attached as annex 2. A summary of the main contents is provided below.

- ✚ The reference population of the Hospital Universitari Vall d'Hebron is about 600,000 people.

- ✚ The estimated duration of the epidemic outbreak is 15 weeks.

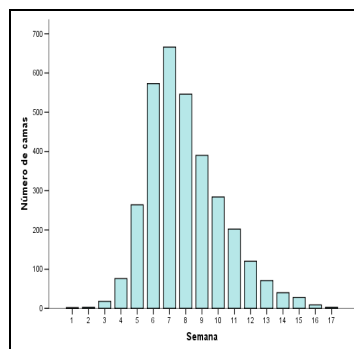
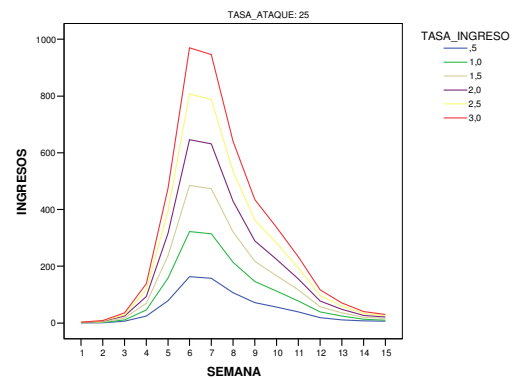
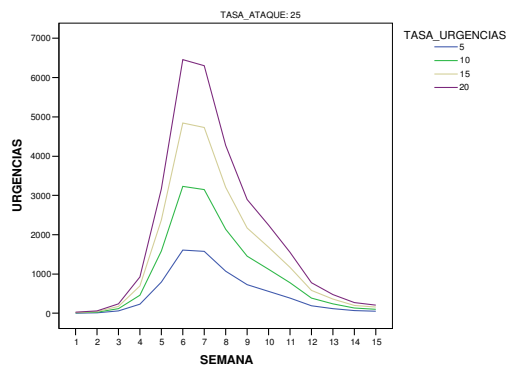
- ✚ The attack rate taken is 25%, in other words, in the 15 weeks that it might last, the pandemic would affect 25% of the population. This is the estimate of the WHO, of the English government and the CDC. For the 600,000 people of the area of Vall d'Hebron, 150,000 people would be affected (people "with influenza").

- ✚ It has been estimated that 10%, 15,000 people, might go to the emergency services in the course of the 15 weeks the outbreak might last. The bracket could be between 10,000 and 20,000 people

- ✚ It has also been estimated that 1.5% of the total of 150,000 affected, would be hospitalised, which could be about 2,250 patients. Many of them (60%?) will have multiorganic syndrome with pneumonia, respiratory distress, kidney failure..., that will require major ICU support and instrumentation: respirators, dialysis, ...

- ✚ The emergencies and admissions would be performed in accordance with a well-proven epidemic curve which, according to the simulations carried out in British studies, we have adapted to our situation.

✚ The effect on the hospitalisation of the centre would mean occupying a high number of beds over the 15 weeks of estimated duration of the outbreak. At its peak, forecasts would place 666 hospitalised patients in different areas of the hospital.



4. DEFINITION OF THE MANAGEMENT AND OPERATING COORDINATION TEAMS

Three structures are established:

a) Emergency committee

Mission: to define, draft, maintain, assess and update the plan and articulate it with the other health care areas.

Composition: all the management teams, health care, technical support and clerical services, that develop their activity in areas related to health emergencies.

 Members:

- Management
- HUVH health care Direction
- Direction of Medical, Surgical and Maternity-Paediatric Processes
- Direction of Central Clinical Services
- Nursing Direction
- Emergency Coordinators
- Head of Internal Medicine Service
- Head of the Pneumology Department
- Head of the Paediatric Department
- Head of the Intensive Medicine Department – AGE
- Head of the Intensive Medicine – AMI
- Head of the Infectious Diseases Department
- Head of the Microbiology Department
- Head of the Preventive Medicine and Epidemiology Department
- Chairman of the Infectious Disease Committee
- Direction of Catering Services
- Maintenance and Work Direction
- Head of Communication
- Head of Admissions
- Head of the Occupational Risk Protection Unit
- Head of Customer Service
- Functional/operative Head of porters/sanitary assistants

✚ Frequency of the meetings:

- This will be established depending on the phase of the pandemic. By way of guidance:
 - In the event of a phase 5 pandemic warning: fortnightly meetings
 - In the event of a subphase 6.2 pandemic: daily meetings

b) Crisis committee

Mission: to manage the implementation of the plan, in other words to deploy and coordinate it, and maintain and update its contents to the characteristics of the centre and to the degree of the pandemic.

Composition: people with key positions in the development of the plan.

✚ Members:

- Health care Director and/or Processes Directors
- GA and IM Emergency Coordinators
- Assistant Nursing Director of the Emergency and Ambulatory Process
- Head of Admissions
- Head of Communication

✚ If deemed necessary the following may be added to the committee:

- GA and IM duty managers (daily)
- GA and IM Emergency Nursing Supervisors (duty)
- Duty Internal Medicine and Pediatrics Assistant (every day)

- Head of Occupational Safety

Frequency of the meetings:

This will be established depending on the phase of the pandemic and assessing the centre's excess health care burden. By way of guidance:

- In the event of a phase 5 pandemic warning: weekly meetings
- In the event of a subphase 6.2 pandemic: daily meetings

c) Admissions committee

✚ Mission: manage hospitalisations and discharges, scheduled activities and leverage health care and transport structures to address the needs of patients affected by the pandemic.

✚ Composition: in charge of the admission of patients and others involved in the sphere of patient hospitalisation, programming of activities, communications with patients and relatives, and patient transport.

✚ Members:

- Assistant Director of Information Systems
- Head of Admissions
- Assistant Director of Nursing of the Hospitalisation Process for Adults and Rehabilitation
- Assistant Director of Nursing of the Hospitalisation Process for Children and Women
- Head of Archive and Clinical Documentation
- Head of Customer Service

- Coordinator of Health care resources of Medical, Surgical and Maternity and Paediatric Processes

✚ Frequency of the meetings:

This will be established depending on the phase of the pandemic and assessing the centre's excess health care burden. By way of guidance:

- In the event of a phase 5 pandemic warning: fortnightly meetings
- In the event of a subphase 6.2 pandemic: daily meetings

5. SETTING UP SPACES AND CIRCUITS

The Hospital Universitari Vall d'Hebron is currently engaged in its Master plan that entails the remodelling of a large part of its health care spaces. More specifically, in the coming years it plans to restructure extremely sensitive areas such as the Emergency Department of the General Area, the critical care areas (ICU and Reanimation) and many hospitalisation areas. Therefore, the availability of spaces to cover an influenza pandemic will be affected by the work performed in the centre. Nevertheless, four spaces of activity related to the plan are established: coordination, reception of patients and relatives, care to patients and extension of health care. Similarly, extraordinary actions and circuits for the arrival and departure of patients and relatives are being reviewed.

a) Coordination area

This is the office where the actions of the plan are coordinated. It has sufficient resources for communication by phone, fax and the Internet, as well as ample areas for holding meetings.

It is located in the Management Board Room, on the ground floor of the General Area (GA). To improve operativity, certain meetings may be held in the Doctor's Room on the first floor of the GA.

b) Patient and relative reception areas

- ✚ Patients. Secretariats of admissions of the emergency services used for patient admission.

- ✚ Relatives. Waiting rooms for the relatives of patients receiving emergency care or who are hospitalised for influenza and its complications.

c) Patient care areas

- ✚ Areas of classification, screening and emergency care in the General Area

There is an area for the initial clinical assessment and classification of the patient.

The patients are classified according to seriousness in patients requiring level I care (not very serious) or in level II (serious, with associated condition, etc.).

The level II physical spaces will be divided into: patients with a condition suggesting influenza and its complications (level II-A) and patients with other conditions (level II-B)

✚ Areas of classification, screening and emergency care in the Maternal and Paediatric Area.

The consideration of this centre as a reference in Catalonia for paediatric patients by the Department of Health includes some specific requirements in the Emergency Department and will be followed by the ones proposed by the General Board of Public Health.

Two areas will also be defined as the General Area: patients with a condition suggesting influenza and its complications, and the rest of patients, for which purpose a variable number of boxes will be assigned to this condition according to the degree of the pandemic.

At the request of the Department, between two and four spaces of the service will have negative pressure.

✚ Health care areas:

Both the General Area and the Maternal and Paediatric Area have care areas depending on the clinical situation of the patients admitted.

- Initial health care in Emergencies. Spaces for initial basic care. The two levels of care were described and established in the previous point.

- Observation area. Rooms for care forecast as 12 hours and in many cases prior to in-ward hospitalisation.
- Conventional hospitalisation. Hospitalisation rooms in the centre (Health care and ICU services). The centre has 1,263 beds used at the moment, which could be extended by a further 25 beds if health care needs so recommend. The centre has a total of 100 critical care beds, including neonatology. The centre can simultaneously provide for a total of 150 patients intubated patients, which at no time in the pandemic outbreak may be exclusively patients with influenza or its complications. The consideration of this centre as a reference in Catalonia for paediatric patients by the Department of Health will entail the adaptation of two or three conventional hospitalisation rooms of the Maternal and Paediatric Area, equipping them with negative pressure systems.
- **Home hospitalisation.** The PISA Programme envisages home hospitalisation, which will be useful for care to patients in certain clinical and environment situations. The programme's capacity is limited only by the number of professionals that carry on their work there.

d) Areas where health care is extended

Moreover, additional spaces are envisaged, if the pandemic situation so requires:

- Complementary conventional and ICU hospitalisation spaces set up, located in the actual premises of the Hospital Universitari Vall d'Hebron.
- The use of the available spaces in our reference social and health care centre should be guaranteed (Parc Sanitari Pere Virgili) in order to send patients who, while not requiring acute hospital care, have a clinical situation that renders home discharge inadvisable.

e) Extraordinary actions

The centre, given its structure, may divide different areas into sectors to guarantee patient isolation. If phase 6 (established pandemic) is activated, this sectorisation may be implemented on a by-floor basis in the different areas or even activating the different buildings that make up the complex.

The use of non health care premises close to the centre may be considered within the framework of the health care planning of the Department of Health for the city of Barcelona.

f) Entry and exit circuits

The circuits through which patients and relatives have to go must be well-defined and indicated with signs. It should be possible to go from the initial Classification area to the Health care area and from there to the hospitalisation areas or the centre exit.

The possibility of restricting the visits of relatives to hospitalised patients should not be ruled out depending on the extent of the pandemic. To this end, regulations will be established so that the relatives of hospitalised patients can be informed of their status and given short-term forecasts.

6. MODIFICATIONS IN THE ORGANISATION OF THE CENTRE IN THE EVENT OF THE ACTIVATION OF THE PANDEMIC PHASE

Until the pandemic phase is reached, phase 6 of the WHO classification, there should be no changes in the organisation of the centre beyond those pertaining to the organisation of the emergency departments. Only clinical surveillance should be maximised to detect and identify possible cases of transmission between human beings.

This section reviews the main organisational changes that may take place if the pandemic phase is activated. Its definition in terms of spaces and phases is to be found in the operating plans of the Adult Emergency Department and those of the Paediatric Emergency Department.

Hospital activity

Hospital activity must be maintained as usual until the intensity of admissions renders it advisable to restrict hospitalisations for elective surgery, which means unscheduling non-urgent surgery. Ambulatory activity will proceed as normal. They may be restricted if space needs if the centre render it advisable or instructions restricting people mobility are issued.

Availability of beds for hospitalisation

In order to address admission needs, the centre envisions the continuous monitoring of bed occupation in the three health care areas and of the different units for critical patients.

Areas for the admission of adult patients

The first patient hospitalisations will be carried out in the second floor of the building of the General Area and the other floors of Medicine and Surgery will be used progressively, according to needs. Non-urgent hospitalisations will be unscheduled.

Areas for the admission of paediatric patients

The first patient hospitalisations will be carried out in the second floor of the Maternity and Paediatric building, in rooms set up with negative pressure. The spaces of the Paediatric Department will be occupied gradually, followed by the other paediatric departments, as required.

Availability of spaces for the emergency departments

In the case of a progressive increase in health care demand, the capacity of levels I and II will be extended progressively and the spaces will be redistributed, occupying part of the hospitalisation areas.

Availability of health care professionals

The need for supplementary personnel caused by the increased activity or to cover staff on sick leave due to the pandemic will have to be studied.

Actions on professionals. Generally speaking, prevention measures will be applicable to health staff to minimise the risks of contagion and absenteeism caused by the influenza in the centre's personnel. Steps will be taken to ensure that the professionals attending to patients suspected of having influenza have received the flu vaccination for the season.

7. REINFORCEMENT OF AVAILABLE RESOURCES

- ✚ An exhaustive and reliable map of all the beds immediately and potentially available will be kept updated and there will be a search for areas for the expansion of hospitalisation areas both in the actual hospital and in other ones that usually collaborate in social and health care.
- ✚ To guarantee maximum rotation of the available beds and an optimal leverage of the installed structures, doctors' activities will be organised in such a way as to allow them to visit patients every day, including holidays.
- ✚ The specific spaces for intensive treatment will be set up specially for patients affected by the pandemic (availability of mechanical ventilation and specialised personnel).
- ✚ Resources in the emergency departments and hospitalisation areas will be reinforced according to the health care burden generated as a consequence of the established pandemic.

- ✚ The home hospitalisation programme will be reinforced and the assignment of nursing personnel to establish sufficient home support to the patients that can be attended to.
- ✚ The personnel assigned to the departments whose workload is increased as a consequence of the influenza pandemic or its complications will be reviewed.
- ✚ A forecast of health resources will be made according to the health care load, and according to the forecasts of the population affected and complications. Not all the equipment has to be in the hospital, but it must be available and furnished by the corresponding suppliers within the terms agreed to; this will be done by means of pre-agreements with the suppliers, both in terms of equipment, installations, perishable material, health products or drugs for the treatment of the complications that may present. By way of guidance, an increase scenario of 40% of activity and the associated supplies is established.
- ✚ With the assumptions formulated in point 3, pertaining to the reference population, rate of attack and activity generated in Emergencies, patients hospitalised and mean stay, an estimate of the material necessary has been made. By way of guidance, it is quantified as 5,000 goggles, 35,000 masks and 250,000 gowns, as is reflected in the specific study performed for this centre and which figures as annex 2.
- ✚ As for human resources, there will be lists of the personnel of the centre available by dates and by specialisation of doctors, nurses, technicians, auxiliary personnel and porters. All holidays and leave

will be cancelled for the period necessary and that which is envisaged by the General Board of Public Health.

- ✚ As far as possible, and with regard to the illness of staff members, extra professionals that can cover the centre's health care needs will be hired.

8. OPERATING PROCEDURES AND PROTOCOLS

If the pandemic warning period is entered (phases 4 and 5 of the WHO), the protocols drawn up for this purpose by the Department of Health, the General Board of Public Health, which are attached to the document as annexes 3 and 4, will be applied.

As soon as the pandemic situation is declared in Spain, (subphase 6.2) besides the clinical care to patients that come to our centre, the *Protocol for the prevention of infection in health centres* will be applied in our centre, and which is attached as annex 5 of this document and refers to different measures that have to be applied to minimise the possibility of contagion in the centre, be it patients and relatives or health workers. An extract of some of the contents is provided below:

- ✚ PRECAUTIONS TO BE GIVEN TO PATIENTS WITH COUGH THAT ARRIVE AT THE HUVH

To prevent the transmission of any respiratory infection in the hospital, at the first contact of a person potentially infected, the following measures should be taken to control the infections.

A.- Visual information. At the entrance to the health care services there will be signs telling the patients:

That they must inform the health staff if they have symptoms of respiratory infection.

The indispensable measures that have to be adopted on respiratory hygiene and general behaviour on coughing.

The entry and exit circuits they should use.

B.- Respiratory hygiene and general behaviour on coughing.

People with cough and/or symptoms of respiratory infection should be told:

To cover their mouth and nose with a cellulose handkerchief when they cough or sneeze to avoid transmission of the virus.

That after using cellulose handkerchiefs they should dispose of them in a waste paper basket as soon as possible.

To wash their hands with warm water and soap after touching respiratory secretions and potentially contaminating objects or materials.

To facilitate compliance with these indications:

Cellulose handkerchiefs will be supplied to the patients that need them and guarantee the presence of wastepaper baskets that can be foot-operated.

In washrooms, soap and paper should be available for washing the hands. A mask will be offered (with side rubbers to secure to the ears) to everyone with cough.

C.- People with fever and/or respiratory symptoms will be advised against going to hospital.

▪ **SPECIFIC PRECAUTIONS FOR PREVENTING PERSON-TO-PERSON TRANSMISSION**

A.- Precautions against transmission by drops

Whenever possible patients with suspected or confirmed diagnosis of influenza will be admitted to an individual room. When the number of patients with influenza surpasses the number of individual rooms available, they should be hospitalised in collective rooms where there are only patients with influenza. When patients with and without influenza have to be hospitalised in the same room, steps will be taken to ensure that the patients without influenza are not those that are most susceptible to its complications (patients with heart disease, chronic pulmonary disease, kidney failure, diabetes, immunocompromised patients). To minimise contact between the health staff and the patients with influenza, the patients will be assigned to a small group of health professionals.

When the number of patients hospitalised with suspected or diagnosed influenza is high enough, the possibility of hospitalising them in a specific area will be addressed; the patients of this cohort can only be attended to by Nursing staff vaccinated against influenza.

The health staff must use a surgical-type mask to enter the patient's room. The patient may only exit the room in justified cases. When any such movement or transport is necessary, the patient must use a surgical-type mask to minimise the dispersion of drops.

Patients hospitalised with influenza will be subject to all the common regulations for any type of isolation (cleaning and disinfection of the room,

use of clinical material, restriction of visits, management of clothes used, patient transfer, etc.), as specified in the corresponding protocol.

B.- Eye protection

The use of eye protection by health care professionals is recommended when they enter into the room of a patient with suspected or diagnosed influenza.

C.- Isolation by contact precautions

No recommendation is made regarding the precautions to be taken to avoid transmission by contact (besides transmission by drops) in patients with suspected or diagnosed influenza.

D.- Standard precautions

Decontamination of hands before and after attending or touching a patient, or after touching respiratory secretions, regardless of whether gloves are used or not. If the hands are dirty or have been contaminated with secretions of the patient, blood or body fluids, they must be washed with soap and water or else with antimicrobial soap and water. If the hands are not dirty, they should be decontaminated by friction with an alcoholic solution.

Gloves should be used when the hands may be exposed to the patient's respiratory secretions.

A disposable gown should be used when the clothes may be exposed to the patient's respiratory secretions.

E.- Air

In general, it is not justifiable to hospitalise patients with influenza in rooms with negative pressure.

F.- Restrictions on personnel

Health staff with symptoms suggesting influenza will be assessed by the Occupational Health Unit as to the convenience of performing work in direct contact with the patient. These restrictions will be stricter for personnel of the hospitalisation areas for patients particularly susceptible to influenza complications (ICU, newborns, transplantation units, particularly haemopoietic precursors).

Personnel with influenza or with symptoms of it cannot attend patients.

9. INFORMATION AND COORDINATION WITH OTHER HEALTH CARE AREAS AND RESOURCES

- ✚ Daily information will be maintained on health care statistics and other incidences through the PIUC network. Daily information will be maintained with the physicians of the referring centres.
- ✚ In order to guarantee coordination with the primary health care centres for the monitoring of continual care and home hospitalisation, of the forecasts of hospitalisations and discharges and pre-discharge plans, suitable monitoring organs and communication channels will be established.
- ✚ To expedite the referral of patients to social and health care centres, suitable coordination mechanisms will be set up, with a forecast of discharges and medium-term needs.
- ✚ Depending on the scope of the health care burden, and until the authority so determines, mechanisms will be articulated to optimise the healthcare transport resources available in our area of influence, in collaboration with the service providers.

10. DISSEMINATION OF THE PLAN

- ✚ The contents of this document will be disseminated to all the professionals of the centre, using all the possible routes of communication, presentations in the departments, meetings, circulars and IT systems.

- ✚ Specific presentations will be given on the contents of this plan to the clinical committees most actively involved in the monitoring of the pandemic, as is the case of the Commission of Infectious Diseases and the Pharmacotherapeutic Commission.

- ✚ Different training sessions will be given for the professionals particularly involved, addressing the contents of the different protocols to be applied in the centre. The other professionals of the centre will be kept informed at all times.

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