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NORTHERN IRELAND CONTINGENCY PLAN FOR HEALTH RESPONSE FOR AN INFLUENZA PANDEMIC

NOVEMBER 2008

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FOREWORD

Influenza (flu) is a highly infectious viral infection that affects the UK most winters. For the majority of sufferers it results in a short term debilitating illness from which they make a rapid recovery, although complications remain a significant source of serious illness and death. For that reason, seasonal vaccination of susceptible groups and regularly practising good personal hygiene habits are important health measures. Flu is impossible to eradicate as the viruses that cause it change continually, is one of the hardest infectious diseases to control and can spread rapidly within a country, often resulting in an epidemic.

The possibility of a world-wide influenza epidemic (a pandemic) presents a serious risk to the health of the population. Influenza (flu) pandemics are natural phenomena that occurred three times in the last century, though their exact timing is impossible to predict. No country can expect to escape the impact of a pandemic entirely, although its severity can range from something similar to seasonal flu to a major threat with many millions of people worldwide becoming ill and a proportion of these dying. Although the number of people infected by the A/H5N1 avian influenza virus remains small, the unprecedented increase in avian influenza amongst domestic and wild birds in Asia and Europe has also raised international concern.

Flu pandemics therefore pose a unique international and national challenge. In addition to their potential to cause serious harm to human health, they threaten wider social and economic damage and disruption. Effective measures to prevent, detect and control them require co-ordinated international effort and co-operation, with one country's action – or inaction – potentially affecting many others.

This plan sets out the Department's strategic approach to limiting the internal spread of a pandemic and minimise health, economic and social harm. The plan is intended for use by all those involved in Health and Social Care in Northern Ireland. It builds upon and supersedes the most recent version of the Northern Ireland Health Plan, *NI Interim Influenza Pandemic Plan*, published in October 2005.

Although it is highly likely that another influenza pandemic will occur at some time, it is impossible to forecast its exact timing or the precise nature of its impact. This uncertainty is one of the main challenges for policy makers and planners. Even if - as seems likely – a pandemic originates abroad, it will probably affect the UK within two to four weeks of becoming an epidemic in its country of origin and if uncontained could then take only one or two more weeks to spread to all major population centres here.

An effective response will require the co-operation of a wide range of organisations and the active support of the public. As there may be very little time to develop or finalise preparations, effective pre-planning is essential.

Given the limited scope to avoid the increased risk of infection when the pandemic is in Northern Ireland, the Plan advises that in most circumstances the public should carry on with their daily lives for as long and as far as that is possible, within the constraints a pandemic will impose, whilst adhering to government advice and adopting good hygiene measures.

The plan identifies some actions, which if taken now could have a positive impact on health in advance of a pandemic as well as during one. Good basic hygiene practices, for example, will play an important role in slowing the spread of a pandemic and have the potential to reduce ill health this year and every year.

The pandemic threat and the UK level of preparedness are constantly evolving. This framework is a living document and will be reviewed and updated regularly. Readers should check appropriate websites for the current position.

It should be noted that this contingency plan has been written for the current arrangement of Boards and Trusts. The Board refers to the relevant Health and Social Services Board until the Regional Health and Social Care Board is operational from April 2009.

Dr Michael McBride

Chief Medical Officer
Department of Health Social Services and Public Safety

1 STRATEGIC APPROACH

1.1 Introduction

This document describes the Department of Health Social Services and Public Safety (DHSSPS) strategic approach to and preparations for an influenza pandemic. It provides general information on the likely impact and sets out some of the key assumptions for use in response planning.

1.2 Aim

The primary aim of this document is to guide and support contingency planning and preparations for pandemic influenza in health and social care organisations.

1.3 Scope

The arrangements described relate specifically to an influenza pandemic. They do not cover planning for – or the response to – seasonal influenza outbreaks or localised incidents involving avian (e.g. A/H5N1) or other animal influenza virus infection in birds or humans. Those remain the responsibility of the appropriate public health bodies, animal health bodies and HSS Boards and HSC Trusts in accordance with normal procedures. However, they do cover the recognition and management of cases of influenza-like illness in humans that raise suspicion of a new influenza virus variant that might cause a pandemic, which may have its origin in an avian virus.

This document provides general information and planning assumptions to inform and encourage wider contingency planning.

This document should be read in conjunction with the UK Plan which provides for a co-ordinated UK wide approach.

1.4 Audience

This guidance is intended primarily for those in Health and Social Care with responsibility for developing policies and strategies, or co-ordinating, managing, maintaining or testing contingency arrangements for responding to an influenza pandemic. Additionally, it will be of interest to those seeking general information or an overview of the DHSSPS general preparations for and planned response to a pandemic.

1.5 Strategic Health Objectives

The health objectives of the contingency arrangements are to:

- protect citizens and visitors against the adverse health consequences as far as possible
- Prepare proportionately in relation to the risk
- support international efforts to prevent and detect its emergence and prevent, slow or limit its spread
- minimise the health impact
- organise and adapt the health and social care system to provide treatment and support for the large numbers likely to suffer from influenza or its complications whilst maintaining other essential care
- cope with the possibility of significant numbers of additional deaths
- support the continuity of everyday activities as far as practical
- instil and maintain trust and confidence by ensuring that the public and the media are engaged and well informed in advance of and throughout the pandemic period
- promote a return to normality and the restoration of disrupted services at the earliest opportunity

A more prolonged pandemic with lower 'peak' incidence of illness and work absence will be less disruptive than a period of very high impact. Therefore, as the pandemic emerges, the Government will also review strategies that may delay its arrival or slow its spread in the UK if time and data allow.

1.6 Operational Response Arrangements

Achieving these strategic objectives will require the development, maintenance, testing and when necessary, implementation of operational response arrangements that are:

- able to respond promptly to any changes in alert levels
- developed on an integrated basis, combining local flexibility with national consistency and equity
- capable of implementation in a flexible, phased and proportionate way
- based on the best available evidence
- based on existing services, systems and processes wherever possible, augmenting, adapting and complementing them as necessary to meet the unique challenges of a pandemic
- understood by and acceptable to service providers and the general public
- adaptable to other threats, to the extent that this is practicable without compromising their effectiveness for pandemic flu
- implemented in advance of a pandemic if this action has significant potential to mitigate the effects of a pandemic and, where possible, other threats or hazards.
- designed to promote the earliest possible return to normality

Although the intention will be to maintain normal services for as long as, and as far as that is possible, the unique nature of the challenges

presented by a pandemic and their likely duration will inevitably require the curtailment of some services and activities to allow the diversion of resources or protect those who may be particularly vulnerable. The impact on the provision of health care in particular is likely to last well beyond the pandemic itself and restrictions on elective and other activity will inevitably result in additional discomfort, pain and suffering for many people. Minimising the impact and securing the gradual resumption of services at the earliest possible opportunity are key planning aims. All organisations should take the potential effects on others of curtailing their services, and the impact on their own business continuity and response arrangements of curtailments by others, into account when developing their plans.

1.7 Underpinning Scientific Advice

Planning and preparedness for an influenza pandemic need to be informed by the best available scientific evidence at all levels. Continuing to improve the evidence base - and applying the results of research and modelling to the development of plans - is of critical importance to its strategic and operational approach to an influenza pandemic. As knowledge and information are constantly advancing regular reviews and revisions of plans at all levels are essential. A UK Scientific Pandemic Influenza Advisory Group (SPI) advises DHSSPS and the other UK Health Departments on the scientific evidence base for policy.

1.8 Legal Framework

1.8.1 International

The World Health Organisation adopted new International Health Regulations (IHRs) in 2005. These place a duty upon States to notify WHO of all events - irrespective of cause - occurring in their territory that potentially constitute a public health emergency of international concern. Annex 2 of the IHR is designed to assist States in deciding whether to notify an event and makes clear that any case of "human influenza caused by a new subtype" must be notified. The IHR also set out core requirements for surveillance and response.

The IHRs came into force on 15 June 2007, and the World Health Assembly in May 2006 passed a resolution urging States to implement those provisions deemed relevant to pandemic influenza early. The goal is to create a framework within which WHO and others can actively assist States in responding to international public health risks by directly linking the regulations to the WHO's alert and response activities.

Article 4 of Decision 2119/98/EC of the European Parliament requires Member States to inform the Commission and each other via the Early Warning and Response System of any relevant infectious disease

threats with public health implications for other Member States and the control measures applied. The decision also requires member states and the EC to collaborate in the control of communicable disease threats.

1.8.2 Northern Ireland

Public health powers in Northern Ireland are provided by the Public Health Act (Northern Ireland) 1967 (c.36) in Northern Ireland.

Powers under public health Acts rest with the Health and Social Services Board (HSSB) or its proper officer, the Director of Public Health (DPH). In practice this function may be devolved by the DPH to a Consultant in Communicable Disease Control (CCDC) who will be a member of the public health team in his/her area. Key provisions of the public health act include:

- powers to seek orders from a justice of the peace (resident magistrate) requiring a person to be medically examined or to be removed or detained in hospital
- powers for a Health Board proper officer to request a person not to work with a view to preventing the spread of infection, to require a child who has been exposed to infection not to attend school and to place restrictions on children's places of entertainment
- the creation of criminal offences where people expose others to the risk of infection
- some powers to require the provision of information to help control the spread of disease.

In Northern Ireland, the Public Health Act (Northern Ireland) 1967 relates to specific diseases and generally to people suffering from them, i.e. who have been infected and gone on to develop symptoms, not to those thought to have been exposed and potentially infected. This legislation does not cover submission of samples or laboratory reporting.

The provision of health and social care during an influenza pandemic may also be affected by a range of other legislation – for example the Human Rights Act 1998, health and safety, equality and medicines legislation.

Part 2 of the Civil Contingencies Act 2004 established a new generic framework for emergency powers. Emergency powers allow the Government to make special temporary legislation (emergency regulations) as a last resort in the most serious of emergencies where existing legislation is insufficient to respond in the most effective way. Emergency regulations may make provision of any kind that could be made by an Act of Parliament or by exercise of the Royal Prerogative, so long as such action is needed urgently and is both necessary and

proportionate in the circumstances. For further information about the powers and safeguards in Part 2 of the Civil Contingencies Act please consult Chapter 13 of *Emergency Response and Recovery* or the *Short Guide to the Civil Contingencies Act*, which can both be found on www.ukresilience.info

For planning purposes, the presumption should be that the government will rely on voluntary quarantine and other containment/control methods and is unlikely to invoke emergency or compulsory powers unless they become necessary, in which case the least restrictive measures will be applied first.

1.9 Ethical Considerations

In preparing for and responding to an influenza pandemic, governments, policy makers, public and private sector organisations, professional leaders, clinicians, health workers and many others involved in caring professions or leadership roles will face difficult decisions and choices that may impact on the freedom, health and in some cases prospects of survival of individuals. Many people are also likely to face individual dilemmas and tensions between their personal, professional and work obligations.

Given the expected levels of additional demand, capacity limitations, staffing constraints and potential shortages of essential medical material, hard choices and compromises are likely to be particularly necessary in the fields of health and social care.

People are more likely to accept the need for and the consequences of difficult decisions if those have been made in an open, transparent and inclusive way. Preparations for an influenza pandemic should therefore be based on widely held ethical values, with the choices that may become necessary discussed openly as plans are developed so that they reflect what most people will accept as proportional and fair. At the request of the Department of Health in London an independent committee with cross UK representations has developed an ethical framework to inform the development and implementation of health and social care response policy. The systematic use of the principles it contains can act as a check list to ensure that all the ethical aspects have been considered at all levels.

The Ethical Framework can be accessed at:

http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_080751

2 PLANNING ASSUMPTIONS AND PRESUMPTIONS

2.1 Key Planning Assumptions

The precise characteristics and impact of an influenza pandemic will only become apparent as the virus emerges. Therefore, some assumptions about a pandemic's course - and presumptions of Northern Ireland's likely response in a number of key areas - are necessary to describe the impact the Government is planning for. Although these are included in context in the relevant parts of this document, they are summarised here for ease of reference. Given the uncertainties, these should be regarded as working estimates rather than predictions. Response arrangements must be flexible enough to deal with a range of possibilities and capable of adjustment as they are implemented. If the origin of a pandemic is outside the UK, emerging surveillance data might also allow the use of real time modelling to confirm and/or refine these assumptions and presumptions.

2.1.1 Origins of a pandemic

- A pandemic will be caused by a new subtype of the influenza A virus.
- The emergence of new influenza A viruses is highly probable.
- The virus may be a re-emerging previously-known human subtype that has not recently been in circulation, or a new virus - most likely of avian origin - emerging either through stepwise 'adaptation' conferring greater affinity for people or through a process of genetic 're-assortment' between the genes of an avian and a human virus.
- From time to time, avian influenza viruses will infect people directly exposed to infected poultry or animals but will not necessarily evolve into pandemic viruses.
- A new strain is likely to transmit more easily to people if it contains genetic material from a human influenza virus.
- Although an influenza virus with potential to cause a pandemic could develop anywhere, it is most likely to emerge from South East Asia, the Middle East or Africa.
- The close proximity of humans to poultry, pigs and domestic animals in many parts of the world facilitates mingling of human and animal viruses and increases the risk that they may then exchange genetic material resulting in a new 're-assorted' human strain. The wide dissemination of the avian A/H5N1 virus in domestic poultry and water-fowl provides one seedbed for such re-assortment, but such viruses may also re-emerge from unrecognised or unsuspected reservoirs in other animal species.
- Whenever such a virus, or other novel influenza virus, is isolated following human infection, its potential to spread directly from person-to-person and cause outbreaks of illness needs assessment.

- False alarms are likely, but the pandemic potential of a new virus must remain under consideration until whether or not person-to-person transmission has occurred can be determined and such investigations will inevitably consume resources.

2.1.2 Timing and duration

- A future influenza pandemic could occur at any time (intervals between the most recent pandemics have varied from about 10 to 40 years with no recognisable pattern, the last being in 1968/9).
- A new virus may emerge at any time of the year.
- Initially pandemic influenza activity in the UK may last for three to five months, depending on the season, and there may be subsequent waves, weeks or months apart.

2.1.3 Geographical spread

- Although it may be theoretically possible to contain the initial spread of a pandemic virus originating in rural parts of Asia, the Middle East or Africa, the measures required to do so are difficult to implement.
- In the event of a novel influenza virus causing significant outbreaks of human illness elsewhere in the world, it is unlikely that the UK could prevent importation except by closing all borders entirely – modelling suggests that even a 99.9% restriction of travel into the country can only be expected to delay importation of the virus by up to two months.
- Spread from the country of origin is likely to follow the main routes of travel and trade.
- Increasing use of routes where surveillance is not as well developed may result in the failure to document the early stages of its spread.
- Spread from the source country to the UK through movement of people is likely to take two to four weeks. Experience of the dissemination of severe acute respiratory syndrome (SARS) from Hong Kong suggests modern travel may result in even more rapid international spread.
- From arrival in the UK it will take a further one to two weeks until sporadic cases and small clusters that will act as initiators of local epidemics are occurring across the whole country.

2.1.4 Infectivity and mode of spread

- Influenza spreads through the respiratory route by droplets of infected respiratory secretions produced when an infected person talks, coughs or sneezes.

- It may also spread by hand to face contact after a person or surface contaminated with infectious respiratory droplets has been touched.
- Finer respiratory aerosols (which stay in the air for longer and are therefore more effective at spreading infection) may occur in some circumstances.
- The incubation period is in the range of one to four days (typically two to three).
- People are highly infectious for four to five days from the onset of symptoms (longer in children and those who are immunocompromised) and may be absent from work for up to ten days.
- Children have been shown to shed virus for longer and at higher levels than adults.
- Some people can be infected without showing symptoms, but nevertheless may shed the virus and therefore be able to pass on the infection.
- Without intervention, and with no significant immunity in the population, historical evidence suggests one person infects about 1.4 to 1.8 people (the R_0 or 'basic reproduction number') on average. This number is likely to be higher in closed communities such as prisons, residential homes or boarding schools.

2.1.5 *Clinical attack rate, severity of illness and deaths*

- Important differences in the extent (clinical attack rate), age distribution and severity of illness - including number of deaths attributable to influenza (case fatality rate) compared with annual seasonal influenza - are likely. These will not become apparent until person to person transmission starts and epidemiological data become available.
- Most people will be susceptible, but not all will develop clinical illness. Previous experience suggests that roughly equal numbers will be infected but have no symptoms (asymptomatic) as develop symptomatic infection.
- All ages are likely to be affected, but children and otherwise fit adults could be at relatively greater risk, particularly if the elderly have some residual immunity from previous exposure to a similar virus earlier in their lifetime.
- Any age-specific differential attack rate will affect the overall impact. If working age adults are predominantly affected this will have a more direct impact on provision of services and business continuity, whilst illness in the very young and elderly is likely to have an indirect impact and will present a greater burden to health and social services.
- Although the potential for age-specific differences in clinical attack rate should be noted, they are impossible to predict and a

uniform attack rate across all age groups is assumed for planning purposes.

- More severe illness than the usual seasonal influenza is likely in all population groups - rather than predominantly in high-risk groups as with seasonal influenza - with a higher number of people than usual developing severe prostration and rapidly fatal overwhelming viraemia, viral pneumonia or secondary complications. It is not possible to give numbers in advance.
- In previous pandemics, the overall UK clinical attack rate has been of the order of 25% to 35%, compared to the usual seasonal range of 5% to 15%.
- Cumulative clinical attack rates of up to 50% of the population in total are possible spread over one or more waves of around 15 weeks, each some weeks or months apart. If they occur a second or subsequent wave could possibly be more severe than the first.
- The actual incidence (clinical attack rate) of illness will only become evident as human-to-human transmission develops but response plans should recognise the possibility of a clinical attack rate of up to 50% in a single wave.
- Up to 4% of those who are symptomatic may require hospital admission if sufficient capacity were to be available.
- Mortality due to pandemic influenza is expected to be much higher than in inter-pandemic years.
- The UK case fatality rate in previous pandemics was between 0.2 and 2%.
- The reported mortality for humans infected with this avian virus is currently over 50% but it should be noted that this is primarily an avian virus with its own specific characteristics and treatment has often been delayed.
- Diverse views regarding the link between virulence and ability to transmit between humans have been published, although a majority of scientists currently believe virulence to be independent from transmission ability.
- The likelihood of the current (avian) H5N1, or any other virus, developing pandemic potential cannot be qualified. In the face of these uncertainties, most experts agree that accepting the evidence from previous influenza pandemics suggesting a maximum case fatality of 2.5% is a reasonable worst case (as distinct from a worst case) scenario for planning purposes.
- To inform planning the following table shows the potential impacts of a 25%, 35% and 50% clinical attack rate and overall case fatality rates of 0.4%,1%,1.5% and 2.5% of those with influenza symptoms.

Range of possible excess deaths based on various permutations of case fatality and clinical attack rates, based on Northern Ireland population

Overall case fatality rate	Clinical Attack Rate 25%	Clinical Attack Rate 35%	Clinical Attack Rate 50%
0.4%	1700	2400	3400
1.00%	4300	6000	8600
1.50%	6500	9000	12900
2.50%	11000	15100	21600

2.2 Planning presumptions

The following table outlines the current health planning presumptions for developing response plans and maintaining essential services during an influenza pandemic. A list of all the UK Planning Presumptions is available in the national framework for responding to an influenza pandemic. These presumptions are based on provisional decisions by Ministers and on-going planning across essential services using currently available information and planning assumptions. They will be revised regularly, reviewed when the nature of the virus is known and may be altered because of international actions or evolving advice from the WHO.

Area of Policy Response	Phase 4 Small cluster of cases with limited person to person transmission	Phase 5 Large cluster(s) of cases with person to person spread	Phase 6 Increased and sustained transmission in general population (Pandemic confirmed)	
			UK alert level 1 cases outside UK	UK alert levels 2-4 outbreaks in the UK
Health screening	Based on available evidence, no entry or exit screening would be imposed in the UK. If recommended by WHO, or other countries impose requirements (such as requiring outgoing flights to undergo exit screening), the Government will consider screening on a case by case basis, bearing in mind the lack of evidence to support it.			
Hygiene measures on public transport	Public advice from DHSSPS and the HPA will encourage general good hygiene practice in reducing spread of infectious diseases e.g. regular hand washing		Advice to keep using public transport whilst adopting good hygiene measures and staggering journeys where possible.	
Essential Services				
Health care	Normal service levels		Health service planning care for large numbers of cases and will only provide essential	

Area of Policy Response	Phase 4 Small cluster of cases with limited person to person transmission	Phase 5 Large cluster(s) of cases with person to person spread	Phase 6 Increased and sustained transmission in general population (Pandemic confirmed)	
			UK alert level 1 cases outside UK	UK alert levels 2-4 outbreaks in the UK
				care.
Social Mixing				
Early years/ Childcare setting closures	Business as usual		Subject to the impact of the pandemic, the Government may recommend that schools and early years child-care settings close to children when the first clinical cases are confirmed in the area and that they remain closed until the local epidemic is over.	
Pharmaceutical interventions				
Antiviral Medicines	Initial allocations (two week supply) from the National stockpile may be pre-distributed to HSC Trusts. Normal supplies may remain available in pharmaceutical chain for seasonal influenza cases at Phase 4 and 5.		For rapid treatment and limited containment efforts. Move to treatment only as pandemic established.	
Access to antiviral medicines	Stockpile allows for treatment of some 25% of the population in the pandemic period (UK alert levels 2–4). Further stockpiles planned to cover at least 50% of the population.		All symptomatic patients treated if indicated, but stockpile consumption to be monitored and clinical prioritisation introduced if necessary.	
Face masks	Advice to public and business regarding government policy (face masks necessary for healthcare workers dealing with suspect cases or others at particular risk). Occupational risk assessments in other settings should be jointly conducted with staff. There is little evidence to support the routine		Protection advised for health workers and should be considered for	

Area of Policy Response	Phase 4 Small cluster of cases with limited person to person transmission	Phase 5 Large cluster(s) of cases with person to person spread	Phase 6 Increased and sustained transmission in general population (Pandemic confirmed)	
			UK alert level 1 cases outside UK	UK alert levels 2-4 outbreaks in the UK
	wearing of facemasks by the public and they will not generally be provided for those who are well.		others in close/regular contact with infectious patients or at occupational risk.	
Antibiotics	Government reviewing available stock levels and options for enhancing.		Administered for secondary infectious complications as per guidelines.	
Pre-pandemic vaccines	DHSSPS has stockpiled 144,000 doses of A/H5N1 vaccine (primarily to protect healthcare workers). Further stockpiling currently under consideration.		May offer limited protection if used as a pre-pandemic vaccine prior to cases in the UK, depending on match with pandemic virus but stocks are limited.	
Pandemic-specific vaccine	A specific vaccine can only be produced once the pandemic virus has been isolated and the vaccine has been developed and manufactured which will take four to six months.		DHSSPS will secure sufficient vaccine to protect the population as soon as it is available (likely to be at least four to six months, i.e. well after the first wave strikes the UK). Delivery of supplies would make clinical prioritisation inevitable.	
Other consumables and essential medicines	The DHSSPS will consider options for enhancing stocks and supply of those essential medicines for which there is likely to be a greater demand.		Implement changes to medicines legislation or regulations where necessary, to ensure ease of access.	

Area of Policy Response	Phase 4	Phase 5	Phase 6	
	Small cluster of cases with limited person to person transmission	Large cluster(s) of cases with person to person spread	Increased and sustained transmission in general population (Pandemic confirmed)	
			UK alert level 1 cases outside UK	UK alert levels 2-4 outbreaks in the UK
The Government will consider the relaxation of medicines and regulations where necessary to ensure ease and speed of access.				
Communications				
Isolation of cases/stay at home if ill	Possible implications for returning travellers with symptoms and their contacts, i.e. isolation of confirmed cases and voluntary quarantine at home of suspect cases and/or their close contacts		Those who believe they are ill will be asked to stay home in voluntary isolation. Voluntary home isolation may also be recommended for close contacts at early stages to contain/slow the spread.	
Health messages to the public	Increase in public information at Phase 4 – proportionate to level of risk. Different communication products such as leaflets and door drops will be used during Phases 4 and 5, emphasising good hygiene measures and reassuring the public. Regional/local communications to be consistent with national messages.		Main messages to include: stay at home if ill; adopt good hygiene practices; how to obtain help and antiviral medicines. Other areas may include information on face masks and health and safety advice on issues such as air-conditioning in the workplace. Messages must be consistent.	

Area of Policy Response	Phase 4 Small cluster of cases with limited person to person transmission	Phase 5 Large cluster(s) of cases with person to person spread	Phase 6 Increased and sustained transmission in general population (Pandemic confirmed)	
			UK alert level 1 cases outside UK	UK alert levels 2-4 outbreaks in the UK
Information to the public	DHSSPS will run a Northern Ireland door drop and advertising campaign in Phase 4, alerting the public to the heightened risk, emphasising the need for personal preparation and socially responsible behaviour. A public information film will demonstrate how to slow the spread of the virus, and the Pandemic Flu Information Line (telephone and web based) will be available. Information materials will also be available through primary care, pharmacies and on the DHSSPS website. Information will be available on the DH pandemic flu website as well as DHSSPS.		WHO will provide DH with regular updates on countries affected. This will be cascaded to DHSSPS and in turn to HSC Trusts and HSS Boards.	DHSSPS will report the numbers ill on a regional basis to the Civil Contingencies Committee This information may be made available to the public via the Pandemic Flu Information Line (telephone and web based), websites and media briefings.
			The National Flu Line Service will go live. A second wave of advertising will run in Phase 6 providing basic facts and advice on the measures people can take to help slow the spread. The dedicated information line will continue to operate and an updated public information film will be made.	

3. SUMMARY OF ROLES

Planning for and responding to the health, social care and wider challenges of an influenza pandemic requires the combined and co-ordinated effort, experience and expertise of all levels of government, public authorities/agencies and a wide range of private and voluntary organisations. Preparations require the active support of communities and critically, that individuals take personal responsibility for protecting their health, supporting each other and contributing to disease containment efforts. To ensure an effective response, each organisation needs to understand its responsibilities, plan adequately, prioritise its efforts and take pro-active steps to ensure the continuity of its services as far as that is possible. This section describes the roles and responsibilities of the main health participants in Northern Ireland.

3.1 The UK Central Government

The primary responsibility for developing preparedness plans for and an effective operational response to major emergencies in the UK rests with local organisations. However, given the national scale, complexity and international dimensions of a pandemic, strong central government coordination, explicit guidance and support will be critical at the planning and response phases.

3.1.1 DHSSPS and the Chief Medical Officer

The Department of Health Social Services and Public Safety (DHSSPS) is the lead Health Department in Northern Ireland in responding to an influenza pandemic. It also has overall responsibility for developing and maintaining Northern Ireland's contingency preparedness for the health and social care response and establishing stockpiles of countermeasures to support that response.

In the event of a pandemic, DHSSPS will initiate and direct the Northern Ireland health response, providing specialist advice and information to ministers, other government departments and responding organisations. It will also be responsible for the effectiveness of the health response, procuring a suitable vaccine, securing and distributing supplies of medical countermeasures, and leading and co-ordinating Health and Social Care activity in Northern Ireland. In order to provide a health focal point and reporting channel the Department would activate its Regional Health Command Centre in response to an increased threat level. The Centre will link with Health Boards and Trusts in Northern Ireland, Civil Contingencies Policy Branch (OFMDFM) who will facilitate the cross-government response, Department of Health in London, Department of Health and Children in Dublin, the Devolved Administrations, the Health Protection Agency through CDSC (NI) and the Civil Contingencies Committee (through CCPB).

The Department's Chief Medical Officer (CMO) will act as Northern Ireland's principal source of public health advice and information. The CMO will also give strategic and tactical health policy direction, form a central focal point for clinical advice and expertise and provide leadership for health professionals and the HSS Boards and HSC Trusts.

DHSSPS takes the lead in regional health contingency planning for pandemic influenza and is represented in national UK pandemic planning structures by its Senior Medical Officer/Consultant Epidemiologist with lead responsibility for communicable diseases. Pandemic planning work is progressed through a core DHSSPS pandemic planning group, which has six sub-groups each charged with taking forward various streams of work. Each HSS Board and HSC Trust has an identified 'Flu Lead' who meet regularly as a group and oversee planning for their respective organisation.

3.1.2 Specialist advice

The Chief Medical Officer will receive specialist advice on the health response from the UK National Influenza Pandemic Committee which consists of clinical, scientific and other experts drawn from a range of relevant organisations and agencies. The Government's Chief Scientific Adviser, the Pandemic influenza Scientific Advisory Group and other expert committees also inform and support this work. The Department's Senior Medical Officer/Consultant Epidemiologist provides the conduit between UKNIPC and NIPICC (see para 3.1.6)

3.1.3 DHSSPS Minister and co-ordination of the pandemic response

A Ministerial Committee (MISC 32), comprising Ministers from across government departments and the devolved administrations, oversees and coordinates national preparations for an influenza pandemic. In the event of an increased threat (i.e. at WHO phase 4 or above) and during the pandemic, the Government's dedicated crisis management mechanism – the Civil Contingencies Committee (CCC) - would be activated in support of the lead UK government department. The CCC will direct central government activities, co-ordinate the wider response, make key strategic and tactical decisions on the countermeasures required and determine national priorities. The CCC will be guided by input from central departments and agencies and from local responders through Regional Civil Contingencies Committees (RCCCs) and the devolved administrations. It will work with the national News Coordination Centre to maintain public confidence.

Planning for the non-health aspects is co-ordinated across Northern Ireland Government Departments and other key organisations by the Civil Contingencies Group, Northern Ireland (CCG(NI)), chaired by the Office of the First Minister and Deputy First Minister (OFMDFM) through a Pandemic Influenza sub group and a Pandemic Fatalities

Management sub-group. Departments liaise closely with key stakeholders within Northern Ireland and with equivalent Departments in the UK. The Civil Contingencies Policy Branch within OFMDFM is also represented on the UK MISC32 Pandemic Working Group, and CCG(NI) provides regular updates on planning to the Head of the Northern Ireland Civil Service and Permanent Secretaries Group.

Northern Ireland shares a land border with the Republic of Ireland and NI Departments maintain liaison with their opposite numbers in the Republic of Ireland to ensure that Pandemic Influenza planning issues are discussed and co-ordinated as far as possible.

3.1.4 Regional Health Command Centre (RHCC)

The Regional Health Command Centre will be chaired by the Chief Medical Officer and will include key personnel from within DHSSPS and Health Boards and Trusts. RHCC will come into effect during WHO phase 6. Once RHCC is convened it will become the lead command and control body to guide the health response during the period of pandemic activity. The RHCC operates at a strategic (gold) level and will have the following role:

- To protect and safeguard the health of the population of Northern Ireland.
- To minimise, and if possible, contain the spread of pandemic influenza.
- To ensure treatment of patients with influenza.
- To direct all appropriate Health and Social Care resources.
- To brief and provide information to Boards and Trusts.
- To provide advice to Ministers, CMG/CEMG and the NIIMC.
- To liaise with other UK health Departments and the Department of Health and Children (Republic of Ireland).
- To provide information to Cabinet Office/BR as required through CEMG/CMG.

3.1.5 Northern Ireland Pandemic Influenza Control Committee (NIPICC)

The Northern Ireland Pandemic Influenza Control Committee will be comprised of a range of key health professionals including a Deputy Chief Medical Officer and Senior Medical Officer from the Department, epidemiologists, Directors of Public Health, Consultants in Communicable Disease Control and virologists. NIPICC should be the lead control committee for WHO Pandemic Phases 3-5. During that time NIPICC will determine if any interventions or guidance is needed. NIPICC will advise on when RHCC should be convened. Once RHCC has been convened, NIPICC will remain as operational support to RHCC. During this period NIPICC may be asked to review and revise where appropriate any guidance issued by UKNIPC or to advise on the potential effectiveness of control measures. This would occur at WHO Phase 6, UK Alert Level 3 and 4.

The role of NIPICC will be to:

- Provide expert advice to CMO and the RHCC on all issues relating to the influenza pandemic in Northern Ireland
- Provide advice and guidance to HSS Board and HSC Trust Pandemic Control Teams
- Use the epidemiological information gained from regional, national and international monitoring to inform prevention and control measures
- Consider scientific data and advise RHCC on its implementation for Northern Ireland
- Appropriately adapt National guidance for pandemic flu management within the Northern Ireland context
- Monitor the surveillance systems and reporting arrangements to ensure robust and up to date information is available
- Assess the effectiveness of control measures and make recommendations for change where necessary
- Advise DHSSPS on public and professional communications

3.1.6 Public health advice at National level

At National level the Health Protection Agency (HPA) is the lead agency responsible for providing public health advice to the health service and supporting all aspects of the public health response to an influenza pandemic. At local level this role is fulfilled by CDSC (NI). The HPA has a key role in international and national surveillance and intelligence gathering, informing public health policy development, contributing to global efforts to prevent or detect the emergence of a new virus and supporting HSS Boards and HSC Trust planning at all levels. In any period of heightened alert and as a pandemic develops, the HPA nationally and CDSC (NI) locally will provide:

- reference virological and microbiological services
- coordination and advice on the investigation and management of early cases and contacts
- detailed epidemiological data on the emerging virus (from WHO phases 4 -6 UK alert level 2) and aggregate data thereafter
- data for national decisions such as choice of vaccine or antiviral strategy
- expertise and advice to the health service through local and regional teams
- coordination of the collection and publication of UK-wide influenza surveillance data.
- A real-time modelling capability

3.2 Regional and local health planning and response

At operational level, planning and response in the health sector is delivered at regional and local levels through the following key players:

3.2.1 Health and Social Services Boards (HSSBs) *

Health and Social Services Boards will play a key part in ensuring a strong public health input into contingency planning for an influenza pandemic at regional level. The Director of Public Health (DPH) in each Board area may devolve all or part responsibility to a Consultant in Communicable Disease Control who will be a member of the public health team in that Board area. HSS Boards have designated pandemic flu co-ordinators to ensure the development, maintenance and testing of effective and integrated health response plans in their areas. In the event of an influenza pandemic, HSS Boards will be responsible for the general oversight and co-ordination of the health and social care response and for ensuring the most effective deployment of available health resources over their area. They will also provide health advice and information to local multi-agency planning partners, act as reporting links to RHCC, collate and forward monitoring information, provide a communication link and support media handling and the provision of public information.

* It should be noted that this contingency plan has been written for the current arrangement of Boards and Trusts. The Board refers to the relevant Health and Social Services Board until the Regional Health and Social Care Board is operational from April 2009.

3.2.2 Health and Social Care Trusts (HSCTs)

HSCTs are responsible for assessing local risk and supporting and monitoring the development of integrated health and social care response plans. Trusts should ensure they have adequate contingency plans within their own area of work. Some Trusts also have responsibility for developing specific arrangements to maintain and support patients in a community setting. Through a designated pandemic influenza lead, HSCTs provide a health and social care input to local multi agency planning partners, co-ordinate plans with those of the parent HSSB and ensure that social care and other key partners are fully involved.

In the event of a pandemic, HSCTs will co-ordinate its local health and social care response, provide advice and information, collate and report information to the parent HSSB and make contingency arrangements for the distribution of antiviral medicines and delivery of vaccination programme if required.

3.2.3 Primary Care

The Primary Care sector in Northern Ireland is directly responsible for the provision of a wide range of health and social care services. Primary Care should support local planning arrangements and develop internal contingency arrangements for responding to the additional demands whilst maintaining essential health care throughout an influenza pandemic. Plans should pay particular attention to the projected requirement for significant surge capacity, patient transport, redeployment of staff at short notice, staff protection and strict infection control. Plans should also consider general practice continuity arrangements, and the development of inter-practice multi-professional planning and mutual aid in the primary/community care setting.

3.2.4 Telephone Helpline/Health Information

During a pandemic, demand for health information will increase significantly. The Pandemic Flu Information Line (telephone and web based) will be established to deal with calls from the public seeking advice, help and information. Symptomatic callers will be directed to the National Pandemic Flu Line Service, the tele-coordination centre for health assistance.

3.3 Other key contributors in planning/response

3.3.1 Voluntary sector organisations

Voluntary organisations offer a wide range of skills and experiences and membership often includes retired professionals. Many are routinely engaged in the provision of services to very vulnerable sections of the community and will therefore need to develop their own service continuity arrangements for a pandemic. Some also respond to emergencies as an integral part of their role and have personnel, expertise and facilities that could assist in providing surge capacity and support for statutory responders. Each can offer specific contributions - providing social support to maintain sufferers in a community setting, assisting those experiencing stress, anxiety and grief, staffing telephone help lines or supplementing healthcare resources. Although voluntary aid assistance is generally co-ordinated and activated through local authorities, direct engagement between voluntary agencies and statutory providers in developing response plans will encourage realistic expectations, foster mutual understanding, identify training/protective requirements and avoid the risk of double counting. Organisations benefiting from the support of volunteers will need to ensure that they have adequate briefing, training, skills, personal protection and indemnity for the role that they are expected to perform.

3.3.2 Private sector organisations

Private sector organisations are increasingly responsible for the provision of many essential services and the manufacture, supply and distribution of items critical to the response to an influenza pandemic and to minimising its social and economic effects. Planning to ensure the maintenance of supplies and services as far as that is possible is an essential part of developing effective response arrangements. Sector-specific emergency arrangements to build resilience and develop effective response frameworks are already required, and plans are in place in most key sectors. Those frameworks should recognise the unique nature of the disruptive challenges that an influenza pandemic is likely to present. A wider community of industrial and commercial organisations also plays a direct role in maintaining social normality and will want to minimise potential losses from disruption to business and promote a return to normality as soon as possible.

3.3.3 Individual and social responsibility

Every part of society must prepare for a pandemic and will be part of the response. However well response plans are prepared and implemented, the overall effectiveness of the Northern Ireland response will ultimately depend heavily upon the co-operation of individuals and their willingness to follow advice, take personal responsibility for their health and accept social responsibility for supporting each other. Pandemic plans must ensure that people's expectations of services are realistic and if they are being asked to take increased risks or face increased burdens that they are supported in doing so and that those risks and burdens are minimised as far as possible.

In inter pandemic years, individuals should keep themselves informed, practice good hygiene habits and ensure that they are routinely vaccinated against seasonal influenza and pneumonia if in a designated category. Should the threat increase, they should follow public health advice and consider how they and dependents might prepare for such socially disruptive effects as potential school closures, shortages and travel constraints. Where possible, individuals should take active steps to put in place self help measures in case of influenza and to ensure continuing care for existing health conditions. They should also ensure that they have supplies of normal home remedies and other basic necessities, explore the potential for support from family and friends not resident with them ('flu friends') and consider how they might be able to assist others.

In the pandemic alert and pandemic stages, increased fear and apprehension are natural and individuals should listen carefully to government advice and instructions made available in the media, on the internet and in printed material. They should also familiarise themselves with local arrangements for accessing health and social

care support - including antivirals - and follow public health advice and instructions. It is particularly important that anyone suspecting influenza like symptoms should stay at home if ill and make telephone contact with health services through the National Flu Line Service rather than attending surgeries, hospitals or other health establishments.

4 PREPARING FOR A PANDEMIC

4.1 The critical need for pre-planning

The periods between previous influenza pandemics have varied widely and the fact that nearly 40 years has elapsed since the last should not induce complacency. As it is highly probable that another pandemic will emerge, spread rapidly and result in grave consequences, robust and resilient preparations are essential. The Civil Contingencies Framework and its accompanying non-legislative measures provide a single framework for civil protection and 'resilience forums' have been established to co-ordinate develop and maintain links between partner agencies and co-ordinate planning at regional and local level. These forums provide an effective mechanism for developing integrated plans for all major threats, including pandemic influenza and a phased approach allows for a step-wise escalation of planning and responses, proportionate to the risk at any particular time.

Further information on the Civil Contingencies Act and Regional/Local Resilience arrangements can be found at <http://www.ukresilience.info/preparedness/ccact.aspx>

4.2 International collaboration

An influenza pandemic is by definition an international event expected to affect most countries. International collaboration offers the best opportunity for early warning, mitigating the impact and gaining public confidence.

4.3 National arrangements for early detection and alert

During the inter-pandemic period, clinicians and the public need to remain vigilant in order to identify individuals with unusual influenza or other respiratory virus infections – whether arising in the UK or imported from elsewhere. This must be supported by the laboratory capacity and capability to identify a new virus promptly. Close collaboration with animal health surveillance is also required to assess the risks of a new mammal or bird influenza virus crossing species and, if possible, take steps to prevent that occurring.

4.3.1 Clinical recognition

The Health Protection Agency (HPA) maintains WHO phase-specific algorithms on its website for the investigation, management and reporting of those patients for whom clinicians and virologists should maintain heightened awareness as being more likely to acquire or import novel influenza viruses. These would normally include patients with respiratory illness who have recently returned from an area affected by outbreaks of a novel virus in animals or humans, poultry

workers, contacts of people with known avian influenza, or unusual outbreaks of respiratory disease in, for example, a healthcare setting. Decisions on whether, and how, to investigate such patients should be taken in consultation with the local health protection unit. As alert levels increase, DHSSPS will reinforce the need for heightened awareness and provide relevant information to health professionals and the public.

4.3.2 Laboratory diagnosis

The UK has a network of regional laboratories capable of providing a specialist diagnostic service for Influenza A, influenza B and a specified potential pandemic influenza subtype (currently H5). Northern Ireland is included in this diagnostic capability.

4.3.3 Capacity and capability

Should it be required, the HPA Centre for Infections will be able to draw on the expertise, resources and containment facilities at the HPA Centre for Emergency Preparedness and Response, including the Special Pathogens Reference Unit.

4.3.4 Liaison with veterinary laboratories

The HPA National Influenza Reference Laboratory and the Veterinary Laboratories Agency maintain liaison links to ensure a continuous flow of new knowledge about the epidemiological, biological and genetic characteristics of influenza viruses.

4.4 WHO international phases and UK alert levels

The World Health Organization (WHO) has defined phases in the evolution of a pandemic that allow a step-wise escalation in planning and response proportionate to the risk from first emergence of a novel influenza virus and will inform its Member States of any change in alert phase. This global classification is used internationally. If a pandemic were declared, action will depend on whether cases are identified in the UK and the extent of spread. For UK purposes, four additional alert levels have therefore been included within WHO Phase 6 consistent with those used for other communicable disease emergencies. The table below details WHO international phases and UK alert levels.

WHO International phases		Overarching public health goals
Inter-pandemic Period		
1	No new influenza virus subtypes detected in humans	Strengthen influenza pandemic preparedness at local level Minimise the risk of transmission to humans; detect and report such transmission rapidly if it occurs.
2	Animal influenza virus subtype poses substantial risk	
Pandemic Alert Period		
3	Human infection(s) with a new subtype, but no (or rare) person-to-person spread to a close contact	Ensure rapid characterisation of the new virus subtype and early detection, notification and response to additional cases. Contain new virus within limited foci or delay spread transmission to gain time to implement preparedness measures, including vaccine development. Maximise efforts to contain or delay spread, to possibly avert a pandemic and to gain time to implement response measures.
4	Small cluster(s) with limited person-to-person transmission but spread is highly localised, suggesting that the virus is not well adapted to humans	
5	Large cluster(s) but person-to-person spread still localised, suggesting that the virus is becoming increasingly better adapted to humans	
Pandemic Period		
6	Increased and sustained transmission in general population UK alert levels 1 Virus/cases only outside the UK 2 Virus isolated in the UK 3 Outbreak(s) in the UK 4 Widespread activity across UK	Minimise the impact of the pandemic

4.5 Inter-pandemic Period (WHO Phases 1-2)

The inter-pandemic years provided opportunities to improve knowledge, refine policies, build capacity and prepare for the likely emergence of an influenza pandemic. Efforts also focussed on contributing to multinational efforts to reduce the opportunities for a new influenza virus to emerge, developing capability for effective surveillance and detection in every country and improving domestic preparations in all sectors to address the threat.

Scientists believe that it is highly probable that the next pandemic will emerge from an animal reservoir. Expanding and improving co-ordination and co-operation between the organisations responsible for human and animal health therefore remained an important objective.

Domestic preparations have focussed on developing surge capacity in health and social care, preparing measures to ensure wider business continuity and maintaining essential services and supplies in a pandemic scenario. Health priorities included the management of seasonal influenza, facilitating arrangements for the rapid development, manufacture and supply of a specific vaccine, maintaining adequate supplies of essential pharmaceutical and other materials, developing an ethical framework to underpin planning and improving hygiene awareness amongst the general population. Regular joint reviews, testing and exercising of business continuity and response plans across all sectors were critical to the development and robustness of UK arrangements throughout this period.

4.6 Pandemic Alert Period (WHO Phases 3-5)

As international phases change, the government will monitor developments, reassess national risk and review preparedness arrangements at all levels across each sector. The general aim is to accelerate, consolidate and test preparedness efforts before phase 4 and be fully prepared to initiate and implement response actions at any phase thereafter.

The initial UK response depends significantly on the location of an incident or outbreak and the extent of travel or trade connections with that region. Should a case, cases or outbreak originate in the UK, the overriding priority will be to halt, limit or slow the spread. If outside the UK, the priorities would include:

- supporting the efforts of the WHO and governments to limit or control the spread of infection
- maintaining international liaison
- providing advice and information to UK citizens or travellers abroad
- initiating domestic measures to increase vigilance and alerting the Health Service to look for and investigate any illness that might be due to the virus in the UK
- reviewing the likely efficacy of any possible travel or other restrictions and making UK policy clear
- contributing to vaccine research and development
- securing access to vaccine supplies and other pharmaceuticals and non-consumable supplies as they become available
- providing information that builds public awareness and understanding
- preparing to implement all response arrangements.

During Phase 4 all organisations should review business/service continuity arrangements, consider initiating measures to enhance and preserve essential supplies and finalise plans for pre-distribution of any stockpiled items. Expert groups should convene to review emerging information, provide advice on adjustments in response strategies and make recommendations in respect of optimal clinical practices. Steps to prepare and inform the public should accelerate, with particular emphasis on enhancing understanding, explaining the likely issues and limitations, describing how essential services will respond and advising on self and community help. Information messages will also emphasise the importance of staying at home if ill, taking sensible precautions, adopting good hygiene habits and identifying friends or relatives who may be able to provide or require assistance and support during the pandemic. Advertising campaigns and a door to door leaflet drop will be implemented with messages emphasising that people should maintain essential activities as far as possible and explaining how services will operate and how they should be accessed, with particular emphasis on the fact that symptomatic patients should stay at home if ill and seek assistance via the Pandemic Flu Information Line.

During Phase 5 response plans should be ready for instant implementation and activated when required. National and local co-ordination and communication arrangements may be activated, the influenza hotline established and arrangements for the development and supply of a specific vaccine reviewed. Health departments will be monitoring the development and emerging epidemiology of the pandemic and considering proportionate response measures including the implementation of service restrictions to allow healthcare organisations to finalise preparations, adjust working practices and release capacity in preparation for a pandemic.

4.7 Preventing a pandemic's initial development

Theoretical modelling suggests that it may be possible to contain (or at least slow) the spread of infection from rural parts of the country of origin at the source providing the virus is detected early, area quarantine and stringent social distancing measures are quickly applied and prophylactic antiviral medicines are given promptly to the 50,000 people nearest to the original source. WHO has established an antiviral stockpile for this purpose, but the success of such measures depends critically on early detection, the effectiveness of local planning and response in parts of the world where such systems are not well developed. Although that continues to improve, there can be little certainty that a containment policy would succeed, but even if it fails to contain the outbreak completely, it might delay spread by about a month giving others more time to prepare.

Should the virus originate in the UK, then rapid detection, isolation and treatment of sufferers, the application of stringent containment measures and the use of antiviral prophylaxis for all close contacts may possibly contain or limit its spread. However, if the virus enters the UK through travellers from infected areas such internal containment efforts are considered unlikely to succeed due to the large number of initial contacts expected.

5 THE PANDEMIC PERIOD

5.1 Declaring a pandemic

The WHO will inform the Department of Health in London (DH) of any change in alert levels, usually after international consultation. DH will communicate this information together with an assessment of risk to DHSSPS.

5.2 International phase 6 – UK alert levels 1 to 4

The UK response during an influenza pandemic has the following major elements:

- monitoring its emergence, spread and the impact/effectiveness of interventions
- slowing and limiting the spread of disease
- the targeted use of available pre-pandemic vaccine stocks
- ensuring that the vulnerable or affected receive appropriate treatment and care
- maintaining business/service continuity and social order
- dealing with additional deaths and
- ensuring that all involved in the response, including the public, are consistently well-informed.
- wider vaccination as pandemic specific vaccine supplies become available

5.3 UK Alert Level 1 (no cases in the UK)

5.3.1 Planning

At this heightened alert phase all organisations need to finally review and test their response plans and operational arrangements, paying particular attention to staffing, logistics and supply issues.

5.3.2 Health and social care response

The health and social care response at this stage will be an extension of activity at Phase 5, but with the certainty that the UK will be affected. This stage could last between 2-4 weeks or longer, during which heightened public concern, suspected cases and false alarms can be anticipated before the virus actually reaches the UK. All organisations therefore need to be prepared for that demand and ensure that it does not detract from steps to maintain core services and finalise preparations for the arrival of the pandemic.

5.3.3 Public information

Public information messages will acknowledge concerns whilst preparing the public for the imminent arrival of the pandemic, provide

advice on the response measures and encourage those who are well to adopt sensible precautions and preparations but continue to attend for work and undertake other essential activities.

5.4 UK Alert level 2 (virus isolated in the UK)

This level is anticipated to last about 2 weeks, until cases are occurring in all major centres of population in the UK.

5.4.1 Planning

HSS Boards and HSC Trusts need to focus on essential activities, implementing pre-planned measures to maintain core service/ business continuity and adjusting activity levels to cope with additional demand and allow for potential disruption.

5.4.2 Health and social care response

As suspected cases occur in Northern Ireland, public health priorities will be to:

- investigate cases and contacts promptly to confirm or refute the diagnosis at the earliest possible time
- provide appropriate care
- apply measures to control/slow spread of infection
- collect sufficient epidemiological and virological information to refine projections and inform public health and clinical management policies. (The HPA will maintain a central database on the first few hundred cases for this purpose).

5.4.3 Public information

Anyone who is ill and suspect that they may have influenza-like symptoms will be advised to stay at home, contact the National Pandemic Flu Line Service, inform a relative or friend and if necessary ask them to collect their antiviral medicines. Otherwise, the overall aim will be to maintain normal services and social and economic activities for as long as, and as far as that is possible. Personal and respiratory hygiene messages will be reinforced ahead of an escalation to UK alert level 3.

5.5 UK Alert level 3 (outbreaks occurring in the UK)

5.5.1 Planning

By the time outbreaks are occurring in centres of population, preparatory steps should have been completed. Response measures should be implemented proportionately as the pandemic impacts. DHSSPS priorities will include

- reviewing/revising the health response strategy
- coordinating the implementation of response measures
- monitoring the initial adequacy and effectiveness of measures
- maintaining antiviral, antibiotic and other essential pharmaceutical and clinical supplies
- maintaining public communications.

5.5.2 Health and social care response

As the pandemic becomes established, health priorities will include:

- ensuring patients have access to appropriate assessment, treatment and care, including rapid access to antiviral medicines for those with symptoms compatible with pandemic influenza
- adapting health and social care services to ensure the maximum amount of surge capacity is available in primary and secondary care in anticipation of additional demand
- implementing and maintaining staffing contingency plans
- ensuring infection control measures are strengthened in all health and social care settings

5.5.3 Public information

In addition to reinforcing previous public messages and providing advice and general information, local information and advice on service provision, or other countermeasures should be available.

5.6 UK Alert level 4 (widespread activity across the UK)

It is anticipated that activity will rise to a peak across the UK about 7 weeks from the first recognition of cases, following the pattern described. Initially, all organisations should monitor the impact on their services or business against planned expectations in order to modify responses appropriately, if necessary.

5.6.1 Planning

DHSSPS priorities are to:

- Monitor the spread and impact (including deaths), refine projections, review response effectiveness, and adapt strategies and tactics accordingly
- Maintain essential services/ supplies and critical infrastructure
- Identify unexpected impacts or problems

Many services are likely to be under increased pressure, particularly from staff absences and possibly from disruption of supplies. Health and social care organisations will experience rapidly escalating demand as the pandemic evolves.

5.6.2 Health and social services response

Health priorities include:

- surveillance – the HPA will have moved from detailed to aggregate reporting of cases by geographic region together with assessment of the efficacy of antivirals (and, if relevant, vaccine), monitoring of the cause and antimicrobial susceptibility of bacterial complications, and reviewing the clinical effectiveness of the response
- providing health and social care advice and information
- monitoring antiviral consumption against expected use and adapting policies accordingly
- monitoring and responding to pressures on health and social care, maximising the effective use of the capacity available, supplementing staffing, maintaining essential care for those who are suffering from other emergencies or illness, conserving essential supplies and maintaining services
- developing a specific vaccine and securing UK supply.

5.7 End of the first wave: preparing for subsequent waves

A ‘single wave’ pandemic profile with a sharp peak provides the most prudent basis for planning as that would put a greater strain on services than a lower level but more sustained wave or the ‘first wave’ of a multi-wave pandemic. However, second or subsequent waves have occurred in some previous pandemics, weeks or months after the first. While the first priority at the end of the first wave will be to further develop recovery plans and gradually restore supplies, services and activities depleted or curtailed during the pandemic, plans must assume that some regrouping may be necessary in anticipation of a future wave. In this respect, DHSSPS priorities should be to:

- assess the overall attack rate during the first wave, in order to assess the susceptible population and construct models of a second wave
- continue to monitor the virus for genetic variations which might affect the degree of protection afforded by previous infection or vaccination, and thus vaccine formulation
- continue to monitor antiviral susceptibility of the virus
- review the efficacy of all interventions to inform future policies
- review antiviral and other pharmaceutical needs/supplies.

Health plans should assume that heightened monitoring and surveillance will be required for some time beyond the first wave and that all plans require review and revision in the light of lessons learnt. In particular, the likelihood of ongoing constraints on supplies and services and continuing pressures on health and social care services, combined with the loss of key staff, should be taken into account.

Updated information on the epidemiology of the virus, effectiveness of treatment, availability of countermeasures and lessons learnt from the first wave will help inform and shape the response measures that plans in all sectors should recognise may need to be maintained or implemented to respond to second or subsequent waves. In addition, health plans may be required for targeted or mass vaccination programmes during this period.

5.8 Second and subsequent waves

Second and subsequent waves may be more or less severe than the first: UK Alert levels 3 and 4 will come into play again, informed by epidemiological and mathematical modelling following the first wave. DHSSPS will issue guidance to inform health response plans following review of the first wave and the availability of countermeasures.

5.9 The recovery phase – returning to normality

As the impact of the pandemic wave subsides and it is considered that there is no threat of further waves occurring, Northern Ireland will move into the recovery phase. Although the objective is to return to pre-pandemic levels of functioning as soon as possible, the pace of recovery will depend on the residual impact of the pandemic, on-going demands, backlogs, staff and organisational fatigue and continuing supply difficulties in most organisations. Therefore, a gradual return to normality should be anticipated and expectations shaped accordingly. Plans at all levels should recognise the potential need to prioritise the restoration of services and to phase the return to normal in a managed and sustainable way.

Health and social care services are likely to experience persistent secondary effects for some time with increased demand for continuing care from:

- patients whose existing illnesses has been exacerbated by influenza
- those who may continue to suffer potential medium or long term health complications (e.g. the encephalitis lethargica that may have been linked to the 1918 pandemic)
- a backlog of work resulting from the postponement of treatment for less urgent conditions.

The reintroduction of performance targets and normal care standards also needs to recognise loss of skilled staff and their experience and that most others will have been working under acute pressure for prolonged periods and are likely to require rest and continuing support and staff losses. Facilities and essential supplies may also be depleted, re-supply difficulties might persist and critical physical assets are likely to be in need of backlog maintenance, refurbishment or replacement. Impact assessments will therefore be required.

6 OPTIONS FOR MITIGATING THE IMPACT

The demands and uncertainties associated with an influenza pandemic require flexible plans based on a combination of strategies to develop an effective and sustainable response. Medical or pharmaceutical countermeasures, combined with public health and personal infection control initiatives and the possible application of measures to reduce social mixing form the basis of the UK's mitigation strategy. The Government will need to make final decisions and issue advice on the application of additional measures – or the scaling back of applied measures - as the exact nature or impact of the emerging strain of influenza virus becomes evident. Public support and compliance with infection control and other measures will be critical to the success of that strategy.

6.1 Pre-pandemic vaccination

Pre-first wave immunisation with an influenza vaccine not specific to the pandemic strain might offer some limited, but nonetheless useful, protection. Currently the UK has very limited stocks of an A/H5N1 vaccine purchased specifically for the protection of health care workers. However, further stockpiling is currently under consideration. Pre-pandemic vaccination would be initiated based on national and international expert advice and delivery would primarily be the responsibility of employers.

Given sufficient stocks, a suitable vaccine could be used to provide partial protection for other workers likely to be frequently exposed to symptomatic patients or key staff crucial to the maintenance of essential services. Pre-pandemic vaccination of those most likely to spread the disease or suffer complications could also help reduce hospitalisations and deaths in vulnerable groups. Decisions on use would need to follow assessments of the likely degree of cross-protection afforded (if any) and a balance of risks against benefits as the pandemic alert phases change.

More widespread immunisation with a pre pandemic vaccine could have a substantial effect, but would require large stocks of such a vaccine and is not currently part of UK Health Department plans. Anticipating a suitable vaccine strain also has the inherent risk of it being ineffective against the ultimate pandemic strain. Response plans should assume that arrangements for limited pre-pandemic vaccination for targeted groups might become necessary.

6.2 Isolation, voluntary quarantine and social distancing

Whilst it might be possible to isolate initial cases and quarantine their immediate contacts, such an approach will become unsustainable after the first few hundred or so cases. Geographic quarantining measures ('cordons sanitaires') have been used in an attempt to isolate affected

communities in the past, but are unlikely to be effective against pandemic influenza in the UK as infection is expected to affect all major population centres within one to two weeks of initial cases being identified.

Whilst those without symptoms will be encouraged to carry on as normal, symptomatic patients will be asked to stay at home or in their place of residence (voluntary home isolation and quarantine) whilst ill. If, in exceptional situations, staying at home becomes impossible, for example because of the need to be transferred to hospital, symptomatic patients should wear a disposable face mask to reduce transmission of infection.

Influenza is likely to spread rapidly in closed establishments such as prisons, residential homes and boarding schools where people are in close contact and may also be in higher risk groups. Such establishments may also be more vulnerable to higher levels of staff absenteeism, supply disruption or transport difficulties. As opportunities for closure, quarantine, isolation or social distancing may be limited, it is vital that resilient arrangements are developed in advance of an outbreak.

6.3 Antiviral medicines

Although the targeted and effective use of antiviral medicines or other definitive pharmaceutical interventions is an important countermeasure, they may be in scarce supply. The UK has established a stockpile of oseltamivir (Tamiflu) - a neuraminidase inhibitor which works by preventing the influenza virus from reproducing and leaving the host cell. When used to treat seasonal influenza, antiviral medicines reduce the length of symptoms (by around a day) and usually their severity, as long as they are started within two days of the onset of symptoms. Whilst it is impossible to predict whether antiviral medicines will be equally effective against a new or modified pandemic virus, it is reasonable to anticipate a similar effect and associated substantial reductions in severe morbidity.

DHSSPS has established a stockpile of oseltamivir (Tamiflu) – a neuraminidase inhibitor which works by preventing the influenza virus from reproducing and leaving the host cell. The existing stockpile allows for the treatment of all symptomatic patients at clinical attack rates of up to 25% and arrangements to make it rapidly available are a critical part of the health response. Further stockpiling is planned which will cover 50% of the population and a further 25% population coverage for household prophylaxis. This increased stockpiling will also include a proportion of zanamivir (Relenza). Although a number of alternative strategies are also being evaluated, scientific advice confirms that prompt treatment of all symptomatic patients is currently the most effective use of the antiviral stocks available. Higher clinical attack rates would require prioritisation of use but operational plans should

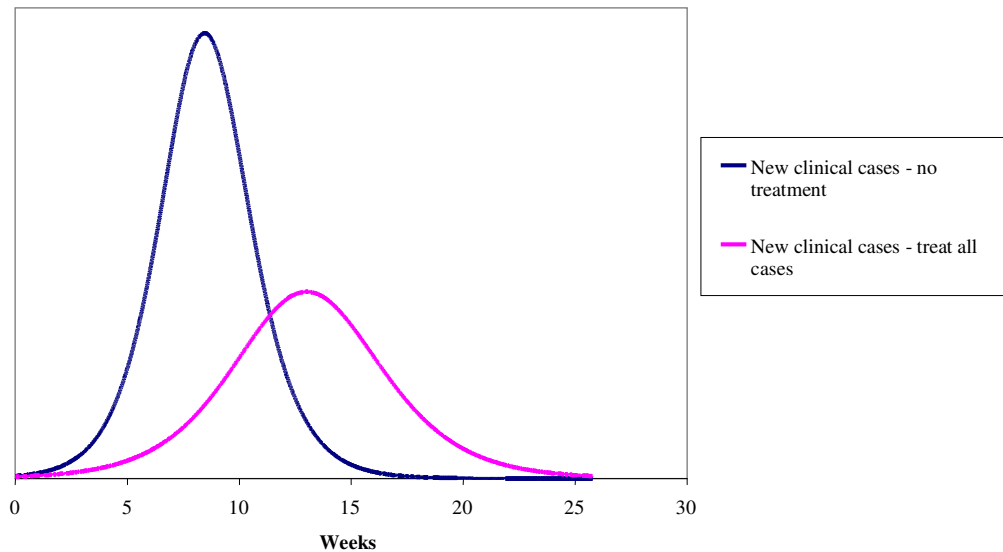
initially aim to make antiviral medicines available to all patients who have been symptomatic for less than 48 hours, preferably within 12 and not later than 24 hours from reporting symptoms indicative of influenza. UK Health Departments are working together on plans to enhance the UK stockpile of antivirals.

Adult treatment courses are stored as pre-packed capsules, but children weighing 23kg and under (about seven years old) require a weight related dose of oseltamivir. Some of the stock is therefore in powder form for re-constitution into a liquid. Unless the child is obviously under or over weight, the dose is determined by age as a proxy:

Age	Indication	Dosage
Under 1 year	Oseltamivir is not licensed for use in this age group	Any decision to use requires expert clinical judgement, with dose according to weight
1-2 years	Body weight up to and including 15kg	30mg every 12 hours for five days
3-6 years	Body weight over 15kg and up to 23 kg	45mg every 12 hours for five days
7+years	Body weight 24kg and above	75mg every 12 hours for five days

Pre-identified licensed hospital pharmacy manufacturing units have been identified to manufacture the solution when the pandemic is declared and other options for developing alternative formulations are being examined.

The prompt use of antiviral medicines will benefit individual patients and may also produce public health benefits by decreasing the overall clinical attack rate, shortening the period that individuals are able to shed virus and thus able to pass on the infection to others. Although there is considerable uncertainty over the level of reduction possible, one model suggests a relative lowering of the attack rate by up to one third over the course of a pandemic.



Indication of effects of antiviral treatment

The HPA will implement measures to monitor the susceptibility of the virus to antiviral medicines, assess their effectiveness in reducing complications and deaths and inform policy decisions. The Medicines and Healthcare Products Regulatory Agency (MHRA) will identify the incidence and patterns of any adverse reactions.

It is also possible to use antiviral medicines as a preventive measure (prophylaxis) to protect against infection. Although some prophylactic use may help contain spread from initial cases and thus slow the development of the pandemic, protecting significant numbers for its entire duration would consume large numbers of treatment courses and still leave those treated susceptible to infection as soon as they stopped taking the medicine. Therefore, apart from attempts to contain initial spread, general prophylaxis is not currently regarded as an effective or practical response strategy at this stage. An alternative may be 'household prophylaxis' which provides 'post-exposure' prophylaxis to immediate contacts at the same time as treating a symptomatic patient on the grounds that some of the contacts may already be incubating the infection. This could mitigate and delay the progress of a pandemic, particularly when combined with measures such as school closures. However, such a strategy would consume significantly greater stocks of antiviral medicines than currently available in the UK and would mean that some would need multiple treatment courses initially to prevent and then possibly to treat infection. The potential effects of countermeasure strategies on resistance to antivirals also requires further investigation and DHSSPS will continue to review the supply and optimal use of pharmaceutical countermeasures.

6.4 Infection control and personal hygiene

Once efficient person-to-person transmission is established, preventing an influenza pandemic developing is unlikely to be possible as most people are likely to be exposed to the virus at some stage during their normal activities. In order to protect others and reduce the spread of infection, anyone ill with influenza-like symptoms should stay at home, minimise social/family contact and go out only if absolutely necessary until symptoms have resolved. Those who are not symptomatic should continue normal activities for as long as, and as far as that is possible and can reduce – but not eliminate – the risk of catching or spreading influenza by avoiding unnecessary close contact with others and routinely adopting high standards of personal and respiratory hygiene.

Applying basic infection control measures and encouraging compliance with public health advice are likely to make an important contribution to the pandemic response. Simple measures will help individuals to protect themselves and others. The necessary measures include:

- staying at home when ill
- covering the nose and mouth with a tissue when coughing or sneezing
- disposing of dirty tissues promptly and carefully – bagging and binning them
- washing hands frequently with soap and warm water to reduce the spread of the virus from the hands to the face, or to other people, particularly after blowing the nose or disposing of tissues
- cleaning frequently touched hard surfaces (e.g. kitchen worktops, door handles) regularly using normal cleaning products
- avoiding crowded gatherings where possible, especially in enclosed spaces
- if suffering with influenza symptoms, wearing a disposable face mask to protect others should it become absolutely essential to go out e.g. to go to hospital.
- making sure that children follow this advice

Adopting such measures can help mitigate the overall health and wider impact of a pandemic by lowering the clinical attack rate and slowing its development thereby spreading peak demand and enabling services to respond more effectively.

6.5 The use of face masks and respirators

Surgical face masks or respirators (masks that incorporate a filter) provide a physical barrier against the influenza virus providing they are of an appropriate type, are worn correctly, changed frequently, removed properly, disposed of safely and used in combination with good universal hygiene behaviour. Face masks can be used to protect

those who may for example be at occupational risk from close or frequent contact with symptomatic patients and by those who are symptomatic to avoid contaminating others if they have no choice but to leave their home, though significant communication, supply, logistic and training aspects would need to be addressed. Disposable masks or respirators should only be worn once, for no longer than the time recommended by the manufacturer and then discarded in an appropriate receptacle.

Although the perception that wearing a face mask in public places may be beneficial is widely held, there is little actual evidence of proportionate benefit from widespread use. The Government will not therefore be stockpiling facemasks for general use. If individuals who are not symptomatic choose to purchase and wear facemasks in public places, they should be worn properly and disposed of safely to reduce infection spread. Wearing masks at all times is not practical so decisions in occupational settings must take account of the degree of risk associated with particular occupations or activities and should be based on joint risk assessments carried out by the employers and staff representatives.

Although further clarification and guidance on the use of face masks may become available in due course, the planning presumptions should be that anyone who is ill with influenza like symptoms will be advised to stay at home. The general wearing of face masks in public places by those who do not have influenza symptoms will not be recommended and the Government will not supply facemasks for that purpose. Judgements on respiratory protection in specific occupational or other settings will need to be based on joint risk assessments.

6.6 Internal travel restrictions

Modelling suggests that internal travel restrictions would have little positive impact on the total number infected by influenza over the entire course of a pandemic. Even a 60% reduction in all travel – including commuting to work – would only result in a small flattening of the profile of the pandemic across the country - reducing the national peak incidence by 5-10% and lengthening its period by a week - but also exacerbating the economic impact, increasing social disruption and adding to business/service continuity problems.

On balance, the planning presumption should be that the UK Government is unlikely to impose any restrictions on internal travel unless it becomes necessary to do so as the pandemic develops for public health reasons in which case it is likely to be on an advisory basis.

The public may be advised to minimise non-essential (leisure/social) travel as a personal precautionary measure but should continue using public transport for essential journeys, adopting good personal hygiene measures and staggering journeys where possible.

6.7 Restrictions on large public gatherings

Large public gatherings or crowded events where people are in close proximity are an important indicator of 'normality' and can help maintain public morale during a pandemic. Whilst close contact with others - especially in a crowded confined space – accelerates the spread of an influenza virus, there is little direct evidence of the benefits or effects of cancelling such gatherings or events. Individuals may benefit from reduced exposure by not attending such events, but there would be very little benefit to the overall community. Reduction in travel to such events may also reduce spread, although the benefit of even major reductions in all travel is small.

Although evidence does not suggest a blanket ban on such events, individuals might well choose to avoid the potential infection risk from attending them and parents might well choose to avoid the potential infection risk to children. If early years child care facilities are advised to close to children, information will be made available to parents and carers to enable them to assess the risks of infection associated with different out of school activities so that they can act appropriately to protect children.

For planning purposes, the presumption should be that the Government is unlikely to recommend a blanket ban on public gatherings.

6.8 Pandemic specific vaccination

Vaccination is used to offer protection against the seasonal influenza strains most likely to be circulating in any particular year. As a pandemic will result from the emergence of a new or modified strain, these routine vaccines are unlikely to offer protection and it will not be possible to develop a matching vaccine until the emerging influenza strain has been identified.

The Government has finalised advance supply contracts with manufacturers to make sufficient supplies of a matching vaccine available as soon as it is developed and is also working actively with the international community and pharmaceutical industry to speed development, testing and licensing. However, it may take 4 to 6 months before an effective vaccine is available and evaluated for safety, and considerably longer before it can be manufactured in sufficient quantities for the entire population given that international demand will be high. Realistically, it is therefore unlikely that a specific vaccine will contribute much to dealing with the initial wave of a pandemic - unless its evolution, or the effectiveness of early control measures, result in a

significantly slower developing pandemic than anticipated. However, it could be an important tool in preventing further cases, particularly if a second wave occurs.

For planning purposes, the presumption should be that a mass pandemic vaccination campaign is unlikely before or during the first pandemic wave, but vaccination may contribute to reducing the impact of subsequent waves if they occur.

7 MAINTAINING BUSINESS CONTINUITY

Contingency planning for a range of disruptive risks is a key business activity and maintaining adequate staffing levels is critical to every organisation's ability to maintain its essential functions. A major infectious disease outbreak such as an influenza pandemic will place considerable pressure on all organisations and most individuals. Although business continuity plans made for other disruptive challenges provide a solid base, contingency arrangements for an influenza pandemic need to recognise the unique nature of some of its characteristics, particularly its likely duration and the fact that higher levels of absenteeism are likely to be a major factor.

During a pandemic, the Government's overall aim will be to encourage those who are well to carry on with their daily lives for as long as and as far as that is possible, whilst taking basic precautions to protect themselves from infection and to lessen the risk of spreading influenza to others. However, absenteeism is likely to be significantly higher than normal across all sectors. Uncertainty surrounding the actual impact of the pandemic virus will continue until it emerges, so plans to mitigate the effects of absenteeism need to be capable of coping with a range of potential levels.

7.1 Factors leading to possibly high levels of staff absence

Over the course of a pandemic, staff are likely to be absent from work for a combination of reasons including personal illness, the need to look after family members who are ill, bereavement, fear of infection, the impact of public health measures, such as school closures and other factors such as possible transport difficulties. Levels of absence may vary due to the size and nature of a workplace, the kind of activity that takes place there and the composition of the workforce.

7.2 Key assumptions

The following key assumptions, based on a uniform attack rate across all age groups, should assist in impact assessments and developing contingency plans. As the attack rate may not be uniform across all age groups plans need to retain flexibility to adapt as information emerges.

- Up to 50% of the workforce may require time off at some stage over the entire period of the pandemic with individuals absent for a period of seven to ten working days. Absenteeism should follow the pandemic profile with an expectation that it will build to a peak lasting for 2-3 weeks when between 15% and 20% of staff may be absent and then decline.
- Additional staff absences are likely to result from other illnesses, taking time off to provide care for dependents, family

bereavement, other psychosocial impacts, fear of infection and/or practical difficulties in getting to work.

- The Government may advise schools and group childcare settings in an area to close in order to reduce the spread of infection among children. Initial advice would probably be to close for a few – probably 2-3 – weeks, but closures may be extended if the pandemic remains in the area.
- Modelling suggests that small organisational units (5 to 15 staff) or small teams within larger organisational units are likely to suffer higher percentages of absenteeism – up to 30-35% over a two to three week peak period.

7.3 Estimating likely absence levels in individual organisations

Each organisation needs to estimate the level of staff absence and its potential impact on its own activities in the period leading up to and during an influenza pandemic. The actual impact will depend to some extent on the composition of the workforce and the environments in which people work and the extent to which the absence of even small numbers of highly specialist staff might constitute a material risk. In order to derive estimates for the total numbers likely to be absent, employers should consider the demographics of their work teams, including the percentage who have childcare or other family care responsibilities, 'normal' absenteeism levels and options for home or remote working.

7.4 Fire and Ambulance services

The general aim will be to maintain emergency provision at near normal levels and to support the wider response to a pandemic, although there are likely to be constraints caused by loss of key or retained staff. Some routine and non emergency functions could be affected by the need to redeploy and by higher staff absence levels.

8 THE HEALTH AND SOCIAL CARE RESPONSE

An influenza pandemic will result in intense and sustained pressure on all parts of the health and social care system, limiting the scope for mutual aid and threatening to overwhelm services at its peak. Protecting human health is the primary objective of the response strategy. An effective response can reduce the proportion that may develop influenza or become critically ill; thereby saving lives, alleviating suffering and reducing the social and economic impact. To limit the spread of infection, national and local messages will emphasise that anyone with influenza-like symptoms should stay at home, and seek help by telephone rather than attending surgeries, hospitals or other healthcare facilities, unless by prior arrangement. Organisations therefore need to adapt and reorganise to provide treatment and support in a home setting whilst maintaining other essential care and critical services.

8.1 Aims

The health and social care response to an influenza pandemic should seek to reduce mortality and morbidity by:

- Maintaining surveillance to detect the emergence of a novel virus strain or any illness attributable to it, monitor its spread and health impact, describe the illness and inform the response
- Providing prompt access to rapid and reliable diagnostic tests
- Reducing the severity of illness and incidence of complications in infected individuals
- Reducing disease transmission and rates of illness by applying individual and community infection control measures
- Adjusting responses to reflect emerging epidemiological data
- Developing surge capacity to meet expected demand – recognising that this will require the reactive redefinition of boundaries between primary and secondary care
- Making targeted and effective use of potentially scarce health care skills, facilities and resources
- Reducing or ceasing non essential activity as demand increases but maintaining essential care for emergencies or patients with chronic or other illness
- Assessing all symptomatic patients rapidly and treating promptly with antiviral and other medicines if indicated
- Providing effective treatment for those suffering complications
- Educating the community and providing public advice and information
- Vaccination if and when suitable vaccines are available
- Providing data to monitor the impact and effectiveness of interventions

8.2 Principles underlying planning and response

Health and social care organisations should apply the following general principles to their planning and response:

- Response arrangements should be based on strengthening and supplementing normal delivery mechanisms as far as practicable
- Interventions will be applied where they achieve maximum health benefit, but may also be required to help maintain essential services - political decisions will be necessary if there is a conflict of interest
- Plans should be developed on an integrated multi-agency basis with risk pooling and cross cover between all organisations
- Plans should encourage pan organisational working, seeking to mobilise the capacity and skills of all public and private sector health care staff (including students and those who are retired), contractors and volunteers
- Although visiting all cases may not be possible, primary care plans should be based on avoiding influenza patients leaving home as far as possible
- Initial telephone based assessment is likely to be necessary to meet demand
- Primary care response strategies should focus the capacity and clinical skills available primarily on treating those suffering with the complications of influenza or requiring other essential clinical care and assessing young children or patients in groups identified as being at particular risk.
- Antiviral medicines should initially be available to all patients who have been symptomatic for less than 48 hours within 12-24 hours of reporting symptoms
- Response measures should maintain public confidence and 'feel fair'
- Treatment and admission criteria should remain clinically based and hospital admission criteria should be applied in a transparent, consistent and equitable way that utilises the capacity available for the seriously ill most likely to benefit.
- Plans should recognise the need to respond to psychosocial issues and concerns such as anxiety, grief and distress and for sympathetic arrangements to manage additional fatalities.

8.3 Assumptions for health and social care planning

In order to allow sufficient lead-time to finalise and implement operational response arrangements, DHSSPS will need to make decisions to reduce or change health services and, where appropriate to modify or suspend some normal performance targets at UK alert level 2.

Health and social care organisations need to ensure that their response plans include provision for enhancing, scaling down, or ceasing some services as the pandemic threat increases. They should use the following planning assumptions to ensure that response arrangements are resilient and robust, but must be prepared to modify plans should emerging information change.

8.3.1 Severity of illness

- Up to 50% of the population may show clinical symptoms of influenza over the entire period of a pandemic and up to 25% of those may develop complications.
- Up to 2.5% of those who become symptomatic may die.
- Up to 22% of influenza cases can be expected during the 'peak week' of a pandemic wave.
- Up to 28.5% of symptomatic patients (including all children under three) will require assessment and treatment by a general medical practitioner or suitably experienced nurse.
- Up to 4% of those who are symptomatic may require hospital admission if sufficient capacity were available. Average length of stay for those with complications may be six days (ten if in intensive care).

8.3.2 Health and social care demand

- A short epidemic would put greater strains on services than a lower level but more sustained one
- Hospitalisations and deaths are likely to be greatest if the highest attack rates are in older people. The lowest burden on health care might be associated with higher attack rates in adults aged 15-64.
- New healthcare contacts for influenza-like illness can be expected to exceed 11,000/100,000 population per week (50% clinical attack rate) during the peak pandemic period. Peak consultations during seasonal influenza periods in recent years have been 200 and 250 per 100,000 population per week.
- Peak demand could last for one to two weeks and local epidemic waves for 6-8 weeks.
- Most patients will be treated at home with antiviral medicines initially
- Children within the normal weight range for their age who have high fever and cough or influenza-like symptoms should

Under 1 year Or at high risk of complications (due to severe co-morbid disease)	Be seen and assessed by a GP or hospital emergency department
1-2 years	Be seen and assessed by a GP or other health professional suitably qualified and experienced in the care of children

3 years +	Be assessed by the National Flu Line service using a clinically based paediatric triage protocol and referred for antivirals or to a medical practitioner if indicated
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- Assuming a complication rate of 25%, a 50% clinical attack rate and those under three needing to see a health professional, general practice can expect to see 3135 influenza patients/100,000 population per week at the peak.
- 2000 per 100,000 population may require hospital admission for acute respiratory and related conditions at a 50% clinical attack rate – an increase of at least 50% on normal demand
- Demand for hospital admission can be expected to increase up to 440 new cases/100,000 per week at the peak given a 50% clinical attack rate and will exceed available acute hospital capacity.
- Demand for critical care beds could rise up to 110 per 100,000 per week at the peak given a 50% clinical attack rate and would exceed available capacity.
- An increase in the numbers suffering influenza and its direct complications may be accompanied by other demand caused by anxiety and bereavement and service provision challenges exacerbated by depletion of the workforce and logistical difficulties.
- The following tables estimate anticipated cases, healthcare contacts, GP consultations, A&E visits, hospital admissions and deaths based on a range of clinical attack rates and a uniform attack rate across all age groups.

Expected healthcare demand **over the course** of a pandemic, for attack rates of 25%, 35% and 50%

	25% Attack Rate		35% Attack Rate		50% Attack Rate	
	Per 100,000 population	Per GP practice	Per 100,000 population	Per GP practice	Per 100,000 population	Per GP practice
Clinical Cases	25,000	1,500	35,000	2,100	50,000	2,900
GP consultations	7,130	430	9,980	600	14,250	830
Hospital admissions (rate of 4%)	1,000	60	1,400	90	2,000	120
Deaths (fatality rate 2.5%)	625	40	875	60	1,250	80

Expected healthcare demand **during the peak** of a pandemic, for attack rates of 25%, 35% and 50%

	25% Attack Rate		35% Attack Rate		50% Attack Rate	
	Per 100,000 population	Per GP practice	Per 100,000 population	Per GP practice	Per 100,000 population	Per GP practice
Clinical Cases	5,500	330	7,700	470	11,000	640
GP consultations	1,570	95	2,200	135	3,135	185
Hospital admissions (rate of 4%)	220	15	310	20	440	30
Deaths (fatality rate 2.5%)	140	10	200	15	280	20

(Indicative demand per general practice is based on practice numbers from the Office for National Statistics)

8.3.3 Finance and performance targets

As 'core' business is traditionally focused on those activities that relate to performance and financial targets, DHSSPS recognises that decisions to modify or suspend some performance targets at UK alert levels 2/3 will be necessary. Further guidance will be issued in due course.

8.4 Health care delivery modes

Normal patient pathways and service delivery arrangements will need to be adapted in a pandemic scenario as additional demand saturates or threatens to overwhelm available capacity, staffing or other resources. Alternative arrangements and strategies need to be developed to cope with likely numbers and implemented as demand increases. These are likely to include:

- the introduction of a telephone-based initial assessment sift of all symptomatic patients and authorisation for antiviral collection or referral to general practice assessment by trained lay-operators following clinically approved algorithms
- provision of a wider range of treatments by health professionals (e.g. nurses, paramedics, pharmacists, dentists) following agreed guidelines and using 'prescription only' medicines under agreed authorisations
- care of patients who under normal circumstances would be admitted to hospital in their own home, residential setting or

temporary intermediate facilities by GPs and community-based health teams

- treatment of severely ill patients in areas of a hospital not normally used for providing acute medical care by medical and nursing teams who do not normally manage such patients
- treatment of patients in private health facilities not normally used for acute medical care by health teams who do not normally manage such patients

8.5 Clinical guidance

The British Thoracic Society, British Infection Society and Health Protection Agency have produced joint provisional guidelines for the clinical management of patients with an influenza-like illness during a pandemic. They describe the clinical features and cover assessment and treatment of adults and children in hospital or community settings once cases are identified in the UK (alert level 2). The guidelines are regularly reviewed and updated, are based on optimal or most desirable care standards and may need to be varied to reflect capacity, shortages or constraints as the pandemic develops.

Guidance on the clinical management of patients with influenza-like symptoms during a pandemic is available at:

<http://www.brit-thoracic.org.uk/ClinicalInformation/Influenza/PandemicFluGuideline/tabid/128/Default.aspx>
www.britishinfectionsociety.org and
www.hpa.org.uk/infections/topics_az/influenza/pandemic/default.htm

8.6 Dealing with initial cases

If a pandemic emerges in another country, the UK would be at a heightened state of alert and an increased demand for advice and consultations can be anticipated for all kinds of respiratory tract infections, including many that would normally be managed using 'over the counter' remedies. During any heightened alert period, it will be important to ensure that this demand is effectively managed to maintain service continuity.

The consultant responsible for communicable disease control in the relevant area will provide initial advice on patient management, containment strategies and follow up actions. At UK alert level 1 and 2 – and initially during level 3 - all patients fulfilling the case definition criteria and presenting with influenza-like symptoms should have samples taken and sent for virological and if relevant microbiological investigation.

Epidemiological information needs collection and forwarding to the HPA's central database for collation and analysis. Once activity is widespread (UK alert levels 3 and 4) treatment will be largely empirical.

Virological tests are not routinely recommended or likely to be readily available and bacteriological testing should be informed by the current clinical guidelines. The HPA will maintain a detailed database for the first several hundred cases, switching to aggregate surveillance data thereafter.

8.7 Providing care in a community setting

Most sufferers are likely to experience typical influenza symptoms that can usually be appropriately managed using a home care based approach. Developing effective arrangements that ensure a sustainable community based response providing for initial patient assessment, access to antiviral medicines, treatment of complications and access to hospital care should that become necessary is therefore pivotal in all local plans.

GPs and community health teams will continue to provide the initial health response and normal primary and social care delivery mechanisms may remain adequate and maintainable in the early and latter phases of a pandemic, although they will need to adapt significantly. Ceasing non-clinical activities and similar measures may make some additional capacity available but pressure on individual practices will be heavy, additional demand for care in the home high and single-handed or smaller practices are likely to experience disproportionate difficulties caused by the absence of key staff.

In addition to maintaining essential provision for non influenza patients, the resources and skills available in general medical practices should focus primarily on patients who:

- are suffering influenza complications
- are less than three years of age
- are pregnant
- have relevant pre-existing medical conditions
- are in identified 'at risk' groups
- are not responding to treatment
- need higher levels of care but cannot be admitted to hospital
- need terminal care
- need bereavement support

8.8 Telephone-based access arrangements (National Pandemic Flu Line Service)

Face-to-face clinical assessment for every patient will not be feasible at the peak of a pandemic, even assuming that most would be well enough to attend surgeries or other healthcare facilities. Department of Health (London) analysis suggests that general medical practices will

not be able to expand their collective telephone call-taking capacity sufficiently to meet the level of demand anticipated. Whilst patients may still choose to make contact via their GP surgery, call centres using trained call takers operating to a clinically based algorithm offer a viable and acceptable alternative.

To provide public information and advice before and during a pandemic, the Government will establish a National Pandemic Flu Line Service at WHO Phase 6. Northern Ireland is included in these plans.

From UK alert level 2 (WHO Phase 6), the service will expand to provide initial patient assessment and antiviral authorisation and both functions will then remain operational until the impact of the pandemic and the threat of further waves subside.

The key objectives of the National Pandemic Flu Line service are to:

- provide pandemic-related advice and information
- provide access to pandemic-related literature
- provide situation reports and daily updates
- provide access to mechanisms for rapidly assessing those suffering influenza-like symptoms
- authorise access to antiviral treatment (if that is indicated) and give the patient a Unique Reference Number (URN) to be used at the antiviral collection point
- give information on the nearest antiviral collection point
- refer to some other part of the health and social system if that is a more appropriate disposition
- facilitate the capture of critical surveillance information (number of people calling who are symptomatic, demographics of those accessing treatment, take-up of treatment etc) to inform the local and national pandemic response.

Initial assessment will focus on confirming that the caller has signs and symptoms of influenza, no indicators of complications, is aged three or over, has been symptomatic for less than 48 hours and antiviral treatment is not otherwise contraindicated. Suitably trained staff using a clinically based decision tree algorithm could perform these tasks and authorise the collection of antiviral medicines for the patient. Analysis suggests that, at a 50% clinical attack rate, such a service might need the capacity to handle a minimum of 11,000 influenza-related telephone calls per 100,000 population and 28 staff per 100,000 population per day to provide 24-hour cover during the peak week.

The Department of Health (London), in conjunction with the other UK Health Departments, is developing a suitable algorithm and producing model protocols/guidelines to allow the supply of oseltamivir (Tamiflu) following a telephone assessment. It also proposed to make the necessary amendments to medicines legislation to enable alternative

prescription and supply arrangements in a pandemic and will be consulting on the proposals in conjunction with DHSSPS.

8.9 Providing rapid access to antiviral medicines

In order to limit the spread of infection and maximise individual health benefit, patients should take an antiviral medicine as soon as possible after the onset of symptoms - ideally within 12 hours, but, in any case, within 48 hours. Therefore rapid antiviral provision is an important planning aim. At the initial stages of a pandemic any patient who has been symptomatic for less than two days should be offered treatment with antiviral medicines unless contra-indicated although this policy will be reviewed as information on the actual attack rate, clinical impact, optimum dosage regime, stock consumption, any resistance and timeframe within which treatment remains useful emerges.

During WHO phase 6 (UK alert level 2) initial allocations based on the anticipated clinical attack rate and resident populations will be pre-distributed to hospitals and antiviral collection points across Northern Ireland. Subsequent supplies will be adjusted to reflect the actual attack rate, transient populations and supply position.

Plans should assume that a friend or relative will be available to collect the patient's antiviral treatment course from the designated collection point on production of a URN as proof of identity and authorisation. Pre-pandemic messages will ask everyone to try to arrange such helpers (flu friends), but for the small proportion unable to do so, alternative arrangements such as a home delivery service by courier/taxi should be developed.

Collection points are Board nominated locations where antivirals can be collected on behalf of a symptomatic person, on presentation of the person's valid Unique Reference Number (URN). A 'How To Guide For Boards On Local Arrangements for Antiviral Collection Points' is currently being developed. This will provide detailed information on requirements and processes to assist Boards in planning their response specifically in terms of the number and location of collection points and local arrangements for antiviral supply.

8.10 Essential medicines

Demand for essential medicines and over the counter remedies is likely to be high in a pandemic and re-supply may be uncertain. The Department of Health, Social Services and Public Safety is reviewing available stock levels and working with the pharmaceutical sector and others to increase supply chain resilience and consider options for its enhancement. Changes to Medicines Legislation and related regulations are planned which will be enacted in the event of a pandemic to ensure that patients have adequate access to medicines.

8.11 Hospital admission

Although adults with uncomplicated influenza infection do not usually require hospital treatment, patients with worsening pre-existing medical conditions or suffering influenza-related complications such as bronchitis and pneumonia may need referral. Children with severe illness may also need referral for assessment for admission.

The expected level of additional demand, combined with increased absences and possible increases in length of stay, will make hospital overcrowding inevitable and capacity a major limiting factor.

Other limiting factors, such as shortages of medical supplies (including blood and blood components) and limited availability of diagnostic support services are likely to have an impact.

Estimates suggest that existing hospital capacity may only meet 20% to 25% of the expected demand at the peak. It is highly probable that proportionate admission thresholds based on the clinical management guidelines will need to be agreed and progressively applied. Consistency and equity in the application of such thresholds will be an important factor in gaining public understanding and maintaining confidence. Common understanding and interpretation of those guidelines by health professionals at the primary, secondary and social care interfaces are particularly important.

Therefore, local response plans should focus primarily on ways of supplementing and making the most effective use of the staffing and beds, with particular attention to factors that facilitate rapid discharge arrangements. Plans should also address establishing alternative care sites; utilising private hospital/clinic facilities; staffing, other options for increasing capacity and whether some hospitals should be designated to receive influenza cases.

Internal hospital plans should consider pharmaceutical supplies, practical changes in configuration to segregate influenza patients, flexible staffing and other changes to normal practices that may free up or improve the utilisation of beds, improve throughput and maintain infection control. Hospitals should also consider such factors as limiting the spread of infection, security of staff/supplies and the control of exit/entry.

8.12 Emergency departments

In a pandemic, all symptomatic patients will be advised to stay at home, seek help by telephone and not to attend surgeries or health facilities unless by prior arrangement, but contingency arrangements should recognise that some self-referral is inevitable. The level of self-referral is likely to be significantly higher if there are breakdowns, loss of confidence or access difficulties in provisions for assessment,

treatment or antivirals both in and out of hours. The interface between hospital and primary care arrangements, therefore, needs joint review and appropriate protocols agreed with primary care at the planning phase. Hospital pandemic plans should also ensure that measures are in place to:

- control entry
- immediately identify, assess and separate symptomatic patients prior to and during assessment and treatment
- protect staff and control contamination of emergency facilities
- provide appropriate treatment and/or self management advice
- manage patients according to agreed protocols, and
- monitor and review the effectiveness of these arrangements.

8.13 Critical care

Estimates suggest that up to 25% of the symptomatic patients who would warrant admission to hospital if sufficient capacity were available may require critical care. The indications for transfer to a High Dependency or Intensive Therapy Unit (HDU/ITU) in those infected by influenza are no different when compared to other patients and most will have influenza-related pneumonia or a severe exacerbation of underlying co-morbid illness.

Demand, particularly for ventilation, is likely to exceed available resources rapidly as the pandemic develops even where all possible local measures have been implemented to supplement and expand capacity. Prioritisation of all patients on an individual basis matched against available resources will become necessary and additional guidelines for clinical management, developed jointly with the Intensive Care Society.

8.14 Blood, Tissue and Organ Donations

Continuation of blood, tissue and organ supply will be vital to the provision of emergency healthcare. Health messages should encourage the public to continue to give blood and healthcare providers should promote and encourage tissue and organ donation. Trusts will often be contacted in emergencies by members of the public wishing to donate blood. Such callers should be referred to the Northern Ireland Blood Transfusion Service on 028 90 321414 or visit www.nibts.org.

8.15 Northern Ireland Ambulance Service

Demand on the Northern Ireland Ambulance Service is likely to increase significantly in a pandemic scenario, particularly if the capacity available in primary care proves insufficient to ensure a timely response. The primary focus of service continuity plans is the maintenance of capacity to answer all emergency and urgent calls,

although some prioritisation and reduction in normal response time standards may become unavoidable. Plans should also recognise the need to facilitate rapid discharge or transfer arrangements and explore opportunities to utilise any organisational and communication capacity that services may have available from the curtailment of non-essential activities to support the delivery of home care to influenza sufferers.

Pandemic specific pre-hospital patient assessment and treatment protocols should recognise that hospital capacity will be extremely limited; emphasising treatment at home and ensuring that only patients with life threatening conditions are actually conveyed to emergency departments. Local response plans should also consider the extent to which the field assessment and treatment skills of ambulance staff could be utilised to support the wider delivery of home care.

Detailed guidance for the ambulance service is available at the DHSSPS website: <http://www.dhsspsni.gov.uk>

8.16 Mental health

Mental health establishments will face specific challenges. Many, particularly those providing secure care, are relatively closed environments with attendant risk of rapid spread of influenza amongst both patients and staff. The welfare of patients being cared for in the community is largely dependent on staff availability for domiciliary visits and the supply of psychopharmacology agents necessary to maintain health.

Contingency plans should include infection control measures to minimise the spread of influenza in residential establishments based on the assumption that it will not be possible to move those with significantly disturbed behaviour to other settings and contain explicit agreements for utilising available staff according to greatest need. Community services should also consider how to prioritise resources to identify vulnerable individuals, help them to take appropriate precautions against infection and provide support should they develop influenza.

Detailed guidance to assist mental health services in their response to an influenza pandemic is available at: <http://www.dhsspsni.gov.uk>

8.17 Pharmacy

The comprehensive training of pharmacists on all aspects of medicines use – from formulation to applied therapeutics – makes these

professionals pivotal to the medicines' management process, ensuring the safety, efficacy and economy of drug use.

The contribution that pharmacists can make in a pandemic scenario will depend on where pharmaceutical services are being provided, either in hospital or community based settings

Modern hospital pharmacy practice encompasses all aspects of drug therapy including the procurement of medicines, their preparation and distribution as well as advising clinicians on the most appropriate selection for optimum patient care, counselling patients and prescribing.

During a pandemic, hospital pharmacists and their staff will ensure that there is the best use of available medicines including the appropriate use of patients' own medicines and facilitating the discharge of patients with adequate supplies of medicines. They will provide patients with information about their medicines and ensure that there is continuation of supplies of specialist medicines. Specialist clinical pharmacists will provide advice to clinicians on pharmaceutical and therapeutic aspects of drug use and prescribing. Where there are shortages of some medicines, medicines information pharmacists will advise on the use of alternative medicines that have a similar effect to maintain patients care.

Community pharmacies are located in the heart of communities and play an important role within the health service and community as a whole. It is known that 123,000 adults both healthy and sick visit community pharmacies in Northern Ireland every day making them a readily accessible healthcare resource.

In a pandemic scenario, community pharmacists will have a critical role to play in promoting self care through, educating the community, providing positive health messages, assessing symptoms, supplying medicines and advising patients and members of the public on medicines supply issues.

Community pharmacies will have a key role in maintaining patients' access to prescription and over the counter medicines as well as supplying medicines to vulnerable people such as residents of nursing and residential homes, those with long term conditions and maintaining medicines supplies as far as possible under contracts with other bodies such as hospices and prisons. They will also continue to provide essential core services, as defined by their HSS Board, such as domiciliary oxygen.

Community pharmacies should be integrated into the primary care response with full use made of existing medicines management services, including, Repeat Dispensing and Minor Ailments, in order to

ease pressure on GP surgeries and Accident and Emergency Departments.

During a pandemic, planned legislative changes will give new powers to community pharmacists to supply medicines and provide pharmaceutical services in a more flexible manner. Changes to legislation will be subject to Parliamentary approval.

It is important that hospital and community pharmacies have robust service continuity plans in place that will enable them to continue to deliver essential services and reduce or stop other services as the pandemic escalates. Service continuity planning guidance for community and hospital pharmacy is available at www.rpsgb.org.uk

8.18 Dentistry

Current infection control advice suggests that health professionals should avoid aerosol generating procedures on symptomatic patients as far as possible during a pandemic and must wear respirators and suitable protective equipment where that is not possible. Many dental procedures have the potential to generate aerosols and risk assessments will therefore be necessary. Local plans should ensure that emergency care remains available throughout a pandemic, but dental practitioners may find normal demand reduced because of limits on the procedures they are able to carry out on those with respiratory symptoms and patients themselves deferring treatment or facing travel difficulties. Opportunities to use the assessment and treatment skills of dental practitioners or other health professionals to support the wider delivery of health care in a pandemic should be explored in local planning.

8.19 Prison health

HM Prison Service has an established Influenza Pandemic Working Group, which reports directly to the Cabinet Office to inform planning for managing the impact upon the prison system.

8.20 General principles of containment and infection control

Specific infection control guidance is available for hospitals, primary care and some other settings but generally limiting the transmission of pandemic influenza requires the application of tried, tested and proportionate basic infection control measures such as:

- staff and public education
- local risk assessments to inform decisions on control and protective measures as required by the *Control of Substances Hazardous to Health Regulations 2002*

- documenting proportionate procedures, operational protocols and checklists
- the consistent application of basic hygiene and infection control measures
- timely recognition of symptomatic patients
- segregating (isolating) any symptomatic patient and limiting external contact
- using voluntary quarantining measures if necessary
- clustering patients who become symptomatic in specific wards/areas
- ensuring that staff are well informed about and adhere to procedures for the prevention of influenza transmission
- providing personal protective equipment if occupational risk assessments have indicated that to be necessary and ensuring that staff are trained in its correct wear, limitations and use
- implementing enhanced cleaning routines to minimise the risk from contact with hard surfaces.

8.21 Face masks/respirators in care settings

Various types of surgical face masks and respirators are available offering differing levels of protection and meeting agreed European and/or international normative standards. The World Health Organization recommends the use of the equivalent of the European FFP2 standard disposable respirators and surgical masks by healthcare workers in a pandemic. However, standard Health and Safety Executive (HSE) guidance calls for higher specification FFP3 respirators for healthcare workers in the UK whenever respiratory protection is indicated, although it recognises that this may not be sustainable in the special circumstances of an influenza pandemic. Based on available evidence and current UK pandemic influenza infection control guidance:

- Fluid-repellent surgical masks should be worn by healthcare workers who may be in close and/or frequent contact (within one metre) with symptomatic patients
- FFP3 standard disposable respirators should be worn when carrying out clinical procedures likely to generate aerosols of respiratory secretions from infected patients (e.g. dental drilling, intubations, aspiration), although such procedures should be avoided as far possible. It should be noted that fit testing and specific training are essential.

8.22 Other protective equipment

If close contact with a flu-infected patient is considered inevitable or highly likely, health and other carers should adopt sensible barrier precautions in addition to face masks. Disposable protective equipment such as aprons and gloves, provide a physical barrier and help avoid

spreading contamination. Although the ocular route of inoculation is not regarded as a major route of transmission for normal human influenza viruses, it is nevertheless biologically plausible and eye protection (preferably disposable) may be necessary when carrying out aerosol-generating procedures or if risk assessment indicates that this is necessary.

8.23 Coping with stress and bereavement

In the lead up to a pandemic, many are likely to be anxious, apprehensive, and to have a subjective perception of the degree of risk. As the pandemic develops, they may also feel fears for their own health, grief for loss of relatives or friends, concerns for family members, a sense of social isolation or other potential causes of psychological distress. Whilst most are likely to be resilient enough to cope with little or no professional or specialist intervention, local plans should consider how self-help and other explanatory material might be made available, how those experiencing particular problems can access assistance and how mental health services, voluntary organisations and social care agencies might best be organised to offer support.

8.24 Social care support

Effective contingency arrangements developed jointly by health and social care agencies will be critical to the relief of suffering and to achieving the wider public health aims of keeping symptomatic patients at home, caring for them in a community setting and reducing the burden on healthcare facilities. Social care services cover a wide range of needs such as care in residential/ nursing homes, day centre provision, meals on wheels, home helps and personal assistant schemes.

Social care providers are aware of - and are in regular contact with - many vulnerable individuals in the community and those clients might be either more vulnerable to, or more affected by, pandemic influenza. In addition to maintaining services for those who will continue to rely upon them, social care providers must also anticipate additional short term and short notice demand from influenza sufferers no longer able to cope independently or others whose normal care arrangements have been disrupted. Voluntary, private or independent sector organisations provide many of the services on contract and all forms of social care provision will need factoring into local contingency plans. Key challenges in maintaining social care services include:

- sustaining indirect care services that form an essential lifeline for some people, e.g. meals on wheels, provision of community equipment, community alarm services with reduced staff

- meeting the additional burdens on already overstretched local social care services and intermediate care services due to the additional pressures on acute hospital beds
- ensuring that the necessary two-way lines of communication exist to relay essential national, regional and local messages to the diverse range of social care services across all sectors (statutory, voluntary, independent and private)
- relieving additional pressures on caring time to support care home residents and people cared for in their own homes when they have influenza
- sustaining people with complex disabilities who are currently supported with intensive care packages in the community
- providing emergency respite care for vulnerable people looked after at home by informal carers for the period their carer is ill
- maintaining a balance between appropriate safety and infection control measures and ensuring that the quality of life of vulnerable adults is maintained as far as possible.

8.25 Staffing

The availability of sufficient human resources is critical to the maintenance of all health and social care. Therefore, planning for the optimum staffing levels should be a key focus for influenza pandemic preparedness.

DHSSPS will make guidance for human resource management during a pandemic available in due course.

An influenza pandemic will put staff under considerable pressure and there are likely to be conflicts between staff's professional and/or contractual obligations, personal or family responsibilities and concerns about risks.

The forthcoming guidance on human resource issues will have relevance to the ethical and professional obligations of staff. When this guidance is available, Trusts will need to work with staff to explain what will be considered appropriate professional practice mechanisms to support them in resolving any ethical dilemmas that may arise out of their work.

9 COMMUNICATION AND PUBLIC ENGAGEMENT

9.1 Current perceptions and understandings

Preparing for, responding to and recovering from an influenza pandemic will depend significantly on cooperation between the Government, public authorities, business, non-governmental organisations, the voluntary sector and individuals. An effective two-way communication strategy that positively engages each of these key groups prior to and during a pandemic is therefore a major strand of the Government's preparations. Any emergency on this scale also needs strong national direction of public information from the outset. Timely advice and information will help prepare the population for the potential impact of a pandemic and will be critical to its subsequent management.

Research commissioned by the Department of Health (London) suggested that the general level of awareness and understanding of influenza amongst health professionals and the public is very limited. Influenza itself is not generally regarded as a serious illness except by those within traditional 'at-risk' groups and there is general confusion between antiviral medicines and vaccines, and their availability for treatment. 'Bird flu' is frequently confused with pandemic influenza, making pandemic communications prone to misinterpretation, and it is widely assumed that effective medical countermeasures will be available. Media information is perceived as sporadic, inconsistent and not associated with communications from the Government (even when Government spokespeople are quoted).

9.2 Aims and objectives

The main aims of the Government's communication and public engagement strategy are to:

- improve general awareness and understanding of influenza amongst the population and promote good hygiene and other general precautionary measures
- prepare the country for the probable emergence of a new or re-emerging influenza virus and explain what is being done to detect any such virus and prevent its spread
- achieve public support for national response and contingency measures
- explain the uncertainties and what can be done by the government, the HSC system, other organisations and individuals to reduce the impact of a pandemic and some of the constraints that entails
- encourage discussion of pandemic response options, limitations and constraints in an inclusive and transparent way
- mobilise the population as partners at the response phase

- convey accurate, timely, consistent and credible advice and information to the public (including all hard-to-reach groups), professions and businesses at the response and recovery stages
- provide specific advice on response strategies and tactics as the actual characteristics and impact of an emerging virus are identified
- provide multilingual information on how assessment, healthcare and other support services should be accessed by symptomatic patients
- encourage the continuity of normal and essential activities as far as possible

During the inter-pandemic period, the main objectives are to provide accurate advice and information, encourage the adoption of high standards of respiratory and hand hygiene and prepare the population for the emergence of an influenza pandemic and its potential impacts. During any period of increased alert and throughout the response phase, the objectives are to promote and reinforce individual and collective actions that reduce the spread of influenza and minimise its health and wider impact on Northern Ireland.

9.3 Key elements

The key elements of the Government's communication and public engagement strategy are:

- encouraging prior public debate to explore the ethical, professional and practical implications of an influenza pandemic, condition public expectations and ensure that decisions are made in an inclusive and transparent way
- active media engagement to ensure that timely and accurate information and technical explanations are available to support informed reporting
- provision of open access to various direct sources of accurate and current information such as telephone helplines and websites
- research and pre-testing to identify communication priorities and ensure that messages are clear and effective and meet public needs
- multi-media and multilingual public information campaigns delivered directly and/or through healthcare and service providers
- specialist advice and information for particular settings and sectors
- clinical information to support healthcare professionals in primary and secondary care
- rapid information sharing within and between all sectors

9.4 Information

Information which has already been produced on pandemic flu includes:

DHSSPS website

There is a section on pandemic flu on the DHSSPS website at <http://www.dhsspsni.gov.uk/index/phealth/pandemicflu.htm>. The site includes Northern Ireland's Health Pandemic Influenza Contingency Plan and information for the public and health professionals. Travel advice, information on food safety and links to relevant organisations are all included on the site.

Pandemic flu fact sheet

The fact sheets were distributed to GP surgeries and pharmacies and are available on the DHSSPS website.

Frequently asked questions

This is also available on the DHSSPS website.

Public information leaflet

'Pandemic flu, important information for you and your family' was distributed to GP surgeries and pharmacies and HSS Boards and HSC Trusts.

Health professionals

A significant amount of information has been produced for health professionals and is available on the DHSSPS website at <http://www.dhsspsni.gov.uk/index/phealth/pandemicflu/pandemic-professional.htm>

9.5 Cascading information

In the event of a pandemic flu outbreak happening now, immediate actions would be communicated quickly and accurately to key health service workers, other organisations (other government departments, emergency services, private sector bodies and international partners) and the public. Information would be cascaded as follows:

The Secretary of State for Health, on the advice of the CMO, England, will convene the UK National Influenza Pandemic Committee, which advises all UK Health Departments. DH will inform the Devolved Administrations and the Civil Contingencies Committee.

The response to an influenza pandemic will be on a UK-wide basis. At a national level, two way strategic communications will involve central Government Departments, the Devolved Administrations and all other agencies and organisations involved in the response, including the health protection organisations and NHS at all levels and international agencies.

In Northern Ireland, an inter-agency response will be set up to ensure there is:

- Effective internal communication systems across Government Departments and agencies involved in assessing, directing and co-ordinating the response.
- Providing regular and timely information to health professionals
- Constantly updating DHSSPS website to allow 24-hour access to information (main website will be DH led pandemic flu site which will be updated constantly. DHSSPS website needs to link into this and also to focus on local needs which will be updated as required.)
- Ensure appropriate information is available for use by Northern Ireland Health Emergency helpline operators

9.6 Health communications

The primary communications source will be the Department of Health (DH). DH will work closely with the Cabinet Office, other Government Departments, devolved administrations and the Health Protection Agency to deliver a nationally co-ordinated communications plan which engages all key groups both before and after a pandemic.

The Department of Health Social Services and Public Safety will be the lead Department in Northern Ireland. The Department continues to work closely with HSS Boards and HSC Trusts, other Government Departments, the Republic of Ireland, and other relevant agencies to ensure that the local population is prepared for the impact of a pandemic flu.

All mainstream information and campaign materials need to be accessible to the widest possible audience, including hard-to-reach groups. Explanatory leaflets, a guide explaining pandemic influenza and other informative material are already available on the web. Plans for a print and broadcast advertising campaign and a public information film have also been developed and will be held on standby. A first national leaflet door drop will be activated at WHO Phase 4.

The Chief Medical Officer will have an important professional leadership role in a pandemic. In conjunction with expert groups, professional bodies and health protection agencies, they will provide multidisciplinary advice and information and may need to adapt initial guidance as the characteristics of the emerging influenza virus become more apparent or if pressures on capacity, pharmaceuticals or other supplies make tactical changes necessary.

9.7 Public information and advice (Pandemic Flu Information Line)

From WHO Phase 4, the Government will make public information, advice, access to literature and updated situation reports available through the Pandemic Flu Information Line (both telephone and web based) and the first national door drop leaflet.

9.8 Website

The pandemic flu website led by DH will include all the public information. The DHSSPS website will be updated regularly to take account of emerging information. It will include all public information which has been distributed as well as links to other relevant organisations.

10 SUMMARY OF ACTIONS REQUIRED AT EACH PHASE OF THE PANDEMIC

The following tables summarise the key actions in developing, maintaining and testing preparedness for Northern Ireland's health response to an influenza pandemic.

It should be noted that the roles of HSS Boards and HSC Trusts will alter as part of the Review of Public Administration. This is an interim Implementation Plan and will be revisited as feedback is received from Boards and Trusts and as roles and responsibilities in the health service reorganisation have been defined.

The inter-pandemic period WHO phases 1 and 2

National Assessment of risk	
<ul style="list-style-type: none"> ○ Seasonal influenza will be the major focus of attention ○ Although a new virus could first emerge in the UK this is unlikely – it is considered most likely to emerge in the Far East. This could happen at any time, but risk to the UK low. 	
National Priorities:	
<ul style="list-style-type: none"> ○ Improve knowledge, prevention and management of seasonal influenza, including vaccines and antiviral medicines ○ Maintain effective international surveillance (including animal/bird influenza surveillance) ○ Develop and maintain international and UK capability to identify a novel animal or human virus promptly ○ Develop and improve pandemic preparedness plans across all sectors ○ Maintain close liaison with animal health colleagues (especially Phase 2) ○ Maintain public engagement on seasonal influenza but start to prepare them for a possible pandemic ○ Take action to improve personal and respiratory hygiene 	
DHSSPS	<ul style="list-style-type: none"> ● Provide policy lead for management of seasonal influenza. ● Set policies, provide overall framework and monitor the development, testing and review of pandemic health plans. ● Maintain liaison with vaccine manufacturers to optimise development and supply. ● Provide specialist advice and information. ● Liaise with DARD on animal/ human health aspects.
HSS Boards	<ul style="list-style-type: none"> ● Maintain an annual influenza immunisation programme according to regional policy. ● Keep senior colleagues informed of influenza activity as required. ● Specify a pandemic co-ordinator.

	<ul style="list-style-type: none"> • Develop local contingency plan. • Run test of contingency plan, followed by debrief and validation. • Participate in regional planning as required.
HSC Trusts	<ul style="list-style-type: none"> • Determine stocks of personal protective equipment, hand hygiene products, and anti-viral drugs to be held by Trust. • Arrange training based on contingency plan. • Prepare programme for rapid rollout of training for all staff, to be capable of delivering over one week trigger at phase 5. • Ensure arrangements for fit testing of PPE with all appropriate staff are in place. • Distribute information leaflet for all staff.
CDSC (NI)	<ul style="list-style-type: none"> • Maintain close links with HPA and DHSSPS. • Ensure appropriate arrangements for influenza surveillance, including enhanced surveillance, of influenza and flu-like illnesses. • Contribute to UK and EU influenza surveillance activities. • Coordinate monitoring of seasonal influenza and pneumococcal vaccination uptake. • Ensure new data capture tools are developed and ready for implementation.
Regional Virus Laboratory	<ul style="list-style-type: none"> • Consider extended staff training to ensure reserve personnel capacity exists in the event of a pandemic arising. • Maintain capacity for virological surveillance of influenza and influenza-like infections in co-ordination with CDSC (NI). • Provide CDSC (NI) relevant virological data in an agreed format and timescale. • Ensure HPA protocols for influenza (H5) molecular detection are in place.

The Pandemic alert period (WHO phases 3-5)

WHO Phase 3	
<p>National Assessment of risk</p> <ul style="list-style-type: none"> ○ The risk to the UK will vary widely according to circumstances, which will need to be taken into account during this phase ○ A single, or even several sporadic, human case(s) of infection due to a novel virus (e.g. an avian influenza virus) outside the UK still represents a very small risk to the UK, especially if associated with an identified source (e.g. contact with sick poultry). Closer vigilance will be required if cases are associated with significant ongoing outbreaks of avian influenza in poultry, particularly if geographically close to the UK ○ The risk of mutation or re-assortment to produce a virus more adapted to humans will need to be taken into account, but may be impossible to predict ○ A single human case of influenza due to an avian or other novel virus within the UK requires full investigation, appropriate containment measures and a risk assessment <p>National Priorities</p> <ul style="list-style-type: none"> ○ Assess pandemic preparedness and identify and implement actions needed to fill gaps/weaknesses ○ Take action to improve personal and respiratory hygiene <p>Main capabilities required</p> <ul style="list-style-type: none"> ○ Diagnostic capability for the new virus ○ To recognise illness potentially due to a new strain in people in the UK, confirm it virologically and investigate the possible source 	
DHSSPS	<ul style="list-style-type: none"> • Maintain services at level outlined for previous phases. • Monitor and review pandemic risk assessment. • Review/test regional communication links and preparedness/coordination arrangements. • Liaise with Other Government Departments through CEMG/CMG over wider implications. • Issue information/advice to travellers, public and health professionals. • Provide information/briefings. • Liaise with DH in London, DoHC in Dublin and other health administrations. • Review options and develop plans for a potential pandemic (or pre-pandemic) vaccine with manufacturers. • Refine intervention strategies for Phases 4, 5 and 6. • Review pharmaceutical and other supply needs. • Review operational guidance for Boards and Trusts. • Begin to prepare the public for the possibility of an influenza pandemic.

	<ul style="list-style-type: none"> • Prepare information materials for future phases. • Review/revise /test preparedness plans for future phases. • Ensure continued participation in all relevant committees and Flu Working Groups.
HSS Boards	<ul style="list-style-type: none"> • Maintain services at level outlined for previous phases. • Continued delivery of seasonal flu vaccination campaign. • Encourage uptake of existing flu vaccine among staff. • Ensure arrangements in place to identify, investigate, report and manage any suspected case of infection with a novel virus. • Review/revise/test pandemic plans • Ensure pandemic flu plans have been communicated to all relevant staff. • Continue to participate in regional planning. • Review infection control plan. • Continually review contingency plan in light of guidance • Consider surge capacity to respond to a pandemic including training needs of those required to take on new roles.
HSC Trusts	<ul style="list-style-type: none"> • Maintain services at level outlined for previous phases. • Review/revise/test pandemic plans. • Keep CCDC and DHSSPS advised. • Ensure appropriate communication strategy in line with regional protocols. • Ensure arrangements in place for triage, cohorting and isolation to identify, investigate, report and manage any suspected case of infection with a novel virus. • If cases in Northern Ireland, manage in line with National and regional guidance. • Consider surge capacity to respond to a pandemic including training needs of those required to take on new roles. • Review anticipated impact of staff absence on all ancillary services: laundry, catering etc. • Review infection control plan.
CDSC (NI)	<ul style="list-style-type: none"> • Maintain services at level outlined for previous phase. • Liaise with HPA e.g. surveillance developments, algorithms, reporting templates, AI database. • Enhance surveillance as indicated by the circumstances of the case e.g. country of origin, other related infections connections with the UK or ROI. • Identify and recruit representative population sample for enhanced surveillance.

	<ul style="list-style-type: none"> • Develop and maintain surveillance of secondary bacterial pathogens associated with influenza. • Participate with other UK surveillance centres testing reporting arrangements and rehearsing outputs. • Increase number of samples from GP spotter practices. • Roll out AI database to Boards and RVL and facilitate appropriate training/support. • Keep DHSSPS informed of developments.
Regional Virus Laboratory	<ul style="list-style-type: none"> • Maintain services at level outlined for previous phase. • Ensure HPA protocols for influenza molecular detection are put into routine operation. • Increase surveillance capacity as required to meet CDSC (NI) needs. • Ensure a 24 hour courier service is in operation for sending influenza strains to HPA for typing. • Contribute to coordinated network approach (Cfl/HPA) to diagnosis of novel influenza subtype (currently H5N1). • Practice and maintain competence / capability for novel influenza subtype (currently H5N1) PCR diagnostics in association with HPA regional microbiology network including capability for 24 / 7 provision of novel influenza subtypes (currently H5N1) PCR diagnostics. • Maintain formal proficiency testing (HPA) for above. • Ensure staff members have access to and are trained in the use of the AI database.

WHO Phase 4

<p>National Assessment of risk</p> <ul style="list-style-type: none"> ○ Small clusters in people outside the UK are still likely to present only a small risk to the UK; the risk increases if there are many cases, there is no identifiable epidemiological link between clusters, there are strong travel links to the UK or cases are in a geographically close country. ○ Risk of further cases increases if they are associated with widespread, ongoing avian outbreaks, especially if control measures late or inadequate ○ The longer such outbreaks continue, the greater the concern <p>National Priorities</p> <ul style="list-style-type: none"> ○ Assist with identification of the virus and its characteristics ○ If associated with avian/animal influenza, close liaison with animal health colleagues ○ Review pandemic plans, including business continuity arrangements ○ Review effectiveness of antiviral medicines ○ Assess potential candidate vaccine strains

Main capabilities required	
<ul style="list-style-type: none"> ○ If in Northern Ireland: ability to identify epidemiologically linked human cases of influenza which might indicate person-to-person spread 	
DHSSPS	<ul style="list-style-type: none"> • Maintain services at level outlined for previous phase. • Review risk assessment along with National authorities risk/threat level. • Continue to review and refine regional policies and pandemic management arrangements. • Notify change in WHO Phases. • Advise on public health risk and ensure rapid reassessment if circumstances change. • Issue guidance on service prioritisation to Boards and Trusts. • Liaise, if appropriate, with DARD regarding human/animal health interface. • Advise health professionals on identification, management and reporting of any suspected case. • Update and distribute public information more widely (e.g. radio/TV). • Review plans for storage, distribution and access to antiviral medicines. • Liaise with DH regarding vaccine supply/availability. • Seek assurance all HSS Board and HSC Trust contingency plans are in place. • Review patient management protocols in line with National colleagues. • Liaise with CMG/CEMG and provide briefing as required. • Liaise with other devolved administrations and Department of Health and Children in Dublin. • Provide briefing for Minister and senior officials. • Activate automated helpline. • Confirm public communications strategy, including regular media briefings and a national pandemic leaflet door drop.
HSS Boards	<ul style="list-style-type: none"> • Maintain services at level outlined for previous phase. • Ensure arrangements in place for distribution of antivirals. • Ensure arrangements in place to identify, investigate and manage cases/clusters according to HPA guidance/protocols. • Review pandemic response plans and ensure readiness. • Continue to test plans for phases 5 and 6 and refine accordingly. • Review Trust contingency plans. • Keep staff and senior management fully informed. • Keep DHSSPS fully informed.

	<ul style="list-style-type: none"> • Ensure arrangements in place to manage symptomatic travellers returning from areas of infection. • Ensure adequate arrangements to identify new influenza like illness.
HSC Trusts	<ul style="list-style-type: none"> • Maintain services at level outlined for previous phase. • Review local contingency plans. • Ensure triage plans are in place and in line with Nationally agreed guidelines. • Have arrangements in place to deal with first few cases of pandemic flu (part of regional containment plan). • Ensure treatment of cases with antivirals is in line with regional protocols. • Refine pandemic response plans. • Continue to test plans for phases 5 and 6. • Keep staff fully informed. • Ensure arrangements in place to manage symptomatic travellers returning from areas of infection. • Ensure adequate arrangements to identify new influenza like illness.
CDSC (NI)	<ul style="list-style-type: none"> • Maintain services at level outlined for previous phase. • Report possible clusters or outbreaks of influenza like illness to DHSSPS and HPA. • Undertake analysis of antimicrobial susceptibility data on bacterial pneumonia in conjunction with HPA. • Prepare plans to enhance surveillance to identify clusters/outbreaks, particularly among communities with travel contact with site of initial identification of virus.
Regional Virus Laboratory	<ul style="list-style-type: none"> • Maintain services at level outlined for previous phase. • Ensure Category III facilities are fully functional and staff training levels up to date. • Ensure timely laboratory diagnosis available. • Establish written protocols for taking specimens from high-risk patients for viral culture and transfer to Cfl. • Report possible clusters or outbreaks of influenza-like illness to CDSCNI/CCDCs. • Undertake novel influenza subtype diagnostics to support the management of cases and clusters. • In communities with travel/family-related contact with countries affected by the novel virus, implement enhanced virological sampling or routine respiratory specimens, regardless of timing in relation to normal “influenza season”.

WHO Phase 5

<p>National Assessment of risk</p> <ul style="list-style-type: none"> ○ Risk to UK significantly increased: plans must assume progression to Phase 6. If not, arrangements can be stood down/ maintained as precaution <p>National Priorities</p> <ul style="list-style-type: none"> ○ Put all pandemic preparedness and operational response arrangements on standby for implementation ○ Vaccine development ○ Review of antiviral and other pharmaceutical supplies ○ International coordination of actions <p>Main capabilities required</p> <ul style="list-style-type: none"> ● To monitor clinical and virological spread, using emerging data to reassess planning assumptions (acknowledging that virus is still not a pandemic virus and may further evolve) 	
DHSSPS	<ul style="list-style-type: none"> ● Maintain services at level outlined for previous phase. ● Review threat assessment for Northern Ireland along with National colleagues. ● Notify change in Phase and implications for Northern Ireland. ● Assess and advise on public health risk. ● Finalise health coordination and communications structure. ● Convene Northern Ireland Pandemic Influenza Control Committee (NIPICC) to review available information and advise on the response. NIPICC will advise when to convene RHCC. ● Implement plans for any pre-pandemic vaccination if available. Issue information and advice to the health service, including any updates to operational plans. ● Keep staff fully informed. ● Liaise with other DH, other devolved administrations, DoHC, CEMG and CMG. ● Participate in national Committees. ● Provide briefing as appropriate.
HSS Boards	<ul style="list-style-type: none"> ● Maintain services at level outlined for previous phase. ● Confirm pandemic management communications and co-ordination structure. ● Keep staff and DHSSPS fully informed. ● Implement plans for any pre-pandemic vaccination as advised by NIPICC/ DHSSPS/ CMO. ● Supply data to CDSC (NI) and monitor information flows. ● Implement communications strategy.

	<ul style="list-style-type: none"> • Ensure plans in place to identify, investigate, manage and report suspect cases in the UK, according to HPA protocols and that pandemic operational plans are 'ready to go'.
HSC Trusts	<ul style="list-style-type: none"> • Maintain services at level outlined for previous phase. • Keep staff and senior management fully informed. • Ensure staff aware of infection control precautions. • Consolidate Trust wide training scheme. • Consider need for introduction of segregated waiting and treatment areas as part of overall contingency plan. • Distribute available professional guidelines to all clinicians. • Supply data to CDSC (NI) and CCDC. • Ensure plans in place to identify, investigate, manage and report suspect cases in the UK, according to HPA protocols and that pandemic operational plans are 'ready to go'.
CDSC (NI)	<ul style="list-style-type: none"> • Maintain services at level outlined for previous phase. • Keep DHSSPS aware of any developments. • Implement enhanced surveillance activity including monitoring relevant mortality data . • Ensure Boards are aware of case investigation procedures. • Assess age distribution and risk groups for severe morbidity. • Liaise with all CCDCs, microbiologists and other organisations/agencies contributing to surveillance to ensure awareness and co-ordination of all surveillance activities. • With HPA facilitate Boards in the use of the UK AI database. • With other UK centres and DHSSPS rehearse regular reporting and refinement of reporting templates.
Regional Virus Laboratory	<ul style="list-style-type: none"> • Maintain services at level outlined for previous phase. • Input to Boards as requested. • Increase surveillance effort as required by CDSC (NI). • Institute daily fax/email reporting to CDSC (NI) in addition to the routine written reports. • Alert microbiology laboratories to reassess their protocols for handling respiratory specimens from patients with influenza like illness. • Replace Viral Transport Medium with lysis buffer for handling respiratory secretions for viral diagnosis. • Ensure a rapid real-time molecular diagnostic service is maintained. • Ensure VTM is available for selected patients where influenza A infection is confirmed. • Review staffing levels and deployment to anticipate new demands. • Increase staff training to accommodate additional demands on service.

	<ul style="list-style-type: none"> • Keep in close contact with Clinical Virology Network and HPA laboratories.
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WHO Phase 6 and UK alert levels 1-4

National Assessment of risk	
<ul style="list-style-type: none"> • UK Alert level 1 may last as little as 2 weeks from declaration of the onset of the pandemic • From onset of UK Alert level 2, it may take 2-4 weeks for the virus to become widely established and 7-9 weeks for activity to reach a peak • Once UK Alert level 3 has been reached, there will be intense pressure on health and all other services locally for at least 6-8 weeks • A specific pandemic influenza vaccine is unlikely to be available during the first wave 	
National Priorities	
<ul style="list-style-type: none"> • Reduce the impact of a pandemic in the UK • At UK alert level 2, surveillance and containment of cases • At UK alert levels 3 and 4, the full strategic response: <ul style="list-style-type: none"> - use public health measures to reduce transmission/cases - provide treatment and care - maintain health and other essential services - reduce social disruption - provide up to date information and advice to maintain public confidence and morale - monitor impact on organisations and services against expectations and modify if necessary • Vaccine development - implementation of immunisation strategy when vaccine available 	
Main capabilities required	
<ul style="list-style-type: none"> • Surveillance adapted to inform treatment and planning • Interventions to reduce the impact • Health and social care capacity to treat and care for patients • Effective communications strategy 	
UK alert level 1 (actions in addition to phase 5 above)	
DHSSPS	<ul style="list-style-type: none"> • Maintain services at level outlined for previous phase. • Convene RHCC on advice of NIPICC. • Continue to assist NIPICC in role as RHCC operational support

	<ul style="list-style-type: none"> • Confirm declaration of pandemic and advise on implications for Northern Ireland. • Provide public health advice. • Implement organisational arrangements for day-to-day coordination of health response, including re-deployment of staff. • Maintain cycle of regular reporting to DH London and COBR via CEPU. • Maintain cycle of regular press briefings. • Activate public telephone help-lines. • Activate full public information campaign to prepare public for arrival of pandemic. • Seek confirmation that HSS Board and HSC Trust contingency plans have been revised and are in a state of readiness. • Be on a high state of readiness to manage initial cases and move to essential services only. • Confirmation of suspension of Priorities for Action performance management targets. • Prepare for health service management of initial cases and for imminent need to move to essential services only. • Issue reminder to HSS Board and HSC Trust regarding available guidance on: Critical Care; Community and Social Care; Ethical Framework; Primary Care Framework; Antiviral framework; Infection Control Strategy, Immunisation Strategy and all other relevant guidance.
HSS Boards	<ul style="list-style-type: none"> • Maintain services at level outlined for previous phase. • Ensure arrangements in place for identification, investigation, management and reporting of first UK cases. • CCDCs to prepare situation reports as required on activity within Board area and forward to DHSSPS. • Attend Pandemic Flu meetings as required. • HSS Boards to be ready to implement surveillance arrangements as required by CDSC(NI) and DHSSPS. • Ensure arrangements in place for maintenance of essential services and be ready to curtail elective/non-essential services.
HSC Trusts	<ul style="list-style-type: none"> • Maintain services at level outlined for previous phase. • Prepare for imminent implementation of pandemic plans, and prepare for move to essential services only. • Ensure arrangements in place for maintenance of essential services and be ready to curtail elective/non-essential services. • Initiate sampling of suspect cases and send to Regional Virus Laboratory. • Supply data on primary and secondary care services to parent HSS Board as appropriate. • Ensure all staff members are fully briefed and ready to implement plans.

CDSC (NI)	<ul style="list-style-type: none"> • Maintain services at level outlined for previous phase. • Attend regional and national meetings as required. • Advise DHSSPS on all new HPA developments, guidance and advice. • Establish surveillance of clinical conditions linked to flu. • Increase frequency of surveillance reporting to meet DHSSPS and national requirements. • Implement rapid dissemination of surveillance information to DHSSPS, Boards, Trusts and other key stakeholders. • Develop enhanced surveillance in special groups if required. • With Boards ensure pandemic database operational. • Activate business continuity plan to support influenza surveillance requirements.
Regional Virus Laboratory	<ul style="list-style-type: none"> • Maintain services at level outlined for previous phase. • Ensure appropriate tests and testing capability in place to deal with first NI cases. • Provide rapid diagnostic service for first suspected UK cases.
UK alert level 2	
DHSSPS	<ul style="list-style-type: none"> • DHSSPS continues to operate and support RHCC. • Attend National and regional planning meetings as required. • RHCC manages Health response to Pandemic. • Maintain services at level outlined for previous phase. • Update information to health professionals. • Consideration is given to instruct health service to move to essential care only, cancel elective surgery and to activate pandemic plans. • Monitor/support implementation of Pandemic Plans across the region. • Provide press briefings, and adapt public communications in response to new information and people's concerns. • Revise and analyse situation reports from HSS Boards and HSC Trusts. • Provide health intelligence to assist RHCC and NIPICC make informed decisions regarding management of pandemic. • Continue to liaise with CEMG/CMG through CEPU. • Advise Departmental Board regarding business continuity plans. • Provide briefings to Permanent Secretary, Minister and HOCS as required.
HSS Boards	<ul style="list-style-type: none"> • Maintain services at level outlined for previous phase.

	<ul style="list-style-type: none"> • Activate local contingency plans. • Continue to liaise with DHSSPS regarding public communications. • Liaise with DHSSPS regarding suspect /confirmed cases. • Boards to be prepared to implement DHSSPS instructions on hospitals. • Ensure adequate arrangements for monitoring etc • Activate pandemic preparedness plans. • Review actions for previous phases and implement/enforce as appropriate. • Ensure communication strategy is reviewed and consistent with Regional Communications Strategy. • Review availability and allocation of PPE. • Monitor access to and use of antivirals. • Monitor and report staff absence/illness. • Provide situation reports as required by DHSSPS.
HSC Trusts	<ul style="list-style-type: none"> • Maintain services at level outlined for previous phase. • Manage initial cases and contacts in line with regional/National guidance. • Co-operate with CDSC(NI) and HSS Boards to investigate, report and treat the first 100-200 cases. • Liaise with HSS Boards/DHSSPS over public communications about suspected/ confirmed cases. • Activate pandemic preparedness plans and move to essential services when advised by DHSSPS. • Produce situation reports for HSS Board as requested. • Ensure communication strategy is reviewed and consistent with Regional Communications Strategy. • Ensure infection control guidance is being adhered to. • Designate specific wards for admission of suspect/confirmed cases. • Ensure appropriate PPE is provided. • Monitor and report staff absence/illness. • Keep staff fully informed. • Ensure dissemination of guidance on clinical management, best use of antivirals and infection control measures and all other regional guidance.
CDSC (NI)	<ul style="list-style-type: none"> • Maintain services at level outlined for previous phase. • Monitor uptake and reaction to vaccinations, death rates etc and assess validity of data. • Use of the pandemic database on the first few hundred cases to provide regular reports for DHSSPS/others on the evolving epidemiology of pandemic influenza.

	<ul style="list-style-type: none"> • Collate reports of influenza activity and provide interpretations of data and regular updates to DHSSPS, Boards and Trusts on a regular basis. • Support the investigation of outbreaks and assess the efficacy of control measures. • Initiate data collection in special risk groups in helping to identify sections of the population likely to be most vulnerable. • Maintain regular liaison with other national centres and brief DHSSPS accordingly.
	UK alert levels 3 and 4
DHSSPS	<ul style="list-style-type: none"> • Maintain services at level outlined for previous phase. • Continue to operate and support RHCC in managing the health response. • Preparing health intelligence for consideration by NIPICC as support to RHCC. • Notify escalating UK Alert level and implications. • Maintain daily assessments of pandemic activity ongoing, and impact on health and social services. • Review planning assumptions/presumptions in light of emerging information. • Review response policies in the light of emerging information. • Monitor antiviral and other pharmaceutical usage and address logistical/supply issues. • Monitor adverse reactions to antivirals. • Continue to liaise with CEMG/CMG through CEPU. • Provide regular media briefings and continue public information campaign. • Provide briefings as required for Minister and senior officials. • Continue to monitor vaccine development/supply/policy options.
HSS Boards	<ul style="list-style-type: none"> • Maintain services at level outlined for previous phase. • Adapt response according to capacity. • Liaise with DHSSPS on public information regarding access to health services. • Monitor local supply and usage of antivirals. • Continue to communicate with staff. Provide situation reports. • Monitor and report staff absence/availability. • Co-ordinate staff deployment and rotas and report as required.
HSC Trusts	<ul style="list-style-type: none"> • Maintain services at level outlined for previous phase. • Monitor impact on primary and secondary care including bed and staffing availability. • Monitor access to and usage of antivirals.

	<ul style="list-style-type: none"> • Communicate with staff. • Continue to adhere to infection control guidance. • Monitor staff absence/availability. • Co-ordinate staff deployment and rotas and report as requested. • Continue to assess availability and capacity of support services (catering, laundry, mortuary arrangements, and laboratories).
CDSC (NI)	<ul style="list-style-type: none"> • Maintain services at level outlined for previous phase. • Attend meetings of RHCC and HPA. • Monitor all indices of influenza activity from all enhanced surveillance sources including anecdotal reports. • Provide interpretation of data. • Investigate and document outbreaks including efficacy or otherwise of control measures. • Ensure continuity of surveillance data flows but review and consider reduction of surveillance requirements to reduce burden on data providers. • Continue surveillance of secondary bacterial infections to inform treatment guidelines. • With HPA consider closure of the national database and substitution of aggregate reporting.

End of First Pandemic Wave

National Assessment of risk

- This phase is assumed to refer to the end of the first pandemic wave in the UK
- Pandemic virus may still be circulating both in the UK and internationally
- A further wave may occur weeks or months later

National Priorities

- Prepare systems and services for any next wave(s)
- Review all aspects of the response and regroup in light of the first wave experience
- Continue surveillance
- Review vaccination options

Main capabilities required

- Ability to pick up re-emergence (clinical illness and laboratory confirmation)
- Ability to respond to a second or subsequent wave

Actions

DHSSPS	<ul style="list-style-type: none"> • Lead regional policy regarding recovery plans.
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	<ul style="list-style-type: none"> • Prepare an in depth analysis of impact on HSS Boards and HSC Trusts, ability to manage pandemic effectively, and learning points arising. • Continue to monitor UK and international situation. • Review policies for second wave – or subsequent seasonal influenza – due to the pandemic strain – in light of experience and resources. • Review antiviral/other pharmaceutical needs/supplies. • Review vaccine suitability/supply/options. • Stand down NIPICC/RHCC. • Consider need for further meetings of RHCC, e.g. if second wave of pandemic is possible. • Update advice for health professionals. • Press briefings and briefings for Minister(s). • Continue to liaise with other UK health departments, HPA and the Department of Health and Children (Dublin). • Consider financial implications of pandemic. • Debrief staff.
HSS Boards	<ul style="list-style-type: none"> • Develop and implement recovery programme, assuming that further waves – or bad seasonal influenza – possible. • Assess ability to deliver pandemic vaccination campaign. • Evaluate local contingency plan. • Feed response information to DHSSPS/ CDSC (NI) as appropriate. • Revise local plan in light of experience in conjunction with recommendations arising from regional evaluation.
HSC Trusts	<ul style="list-style-type: none"> • Develop and implement recovery programme, assuming that further waves – or bad seasonal influenza – possible. • Consider education and training issues. • Revise plan in light of experience. • Debrief staff. • Prepare for future waves.
CDSC (NI)	<ul style="list-style-type: none"> • Undertake internal debrief to inform DHSSPS and HPA debriefs. • Review actions taken and adapt existing plans in light of lessons learned. • Continue core monitoring and surveillance of influenza activity (enhanced surveillance may need to be re-introduced at short notice). • Provide information to DHSSPS and HSS Boards and HSC Trusts on the impact of the first wave and

	<p>likelihood of a second wave.</p> <ul style="list-style-type: none"> • Provide information on immunisation uptake rates.
Regional Virus Laboratory	<ul style="list-style-type: none"> • Reassess response of the laboratory and carry out internal debrief to contribute to the overall HPA debrief Report. • Liaise with CVN laboratories regarding concerns and lessons to be drawn. • Liaise with CDSC (NI) regarding concerns and lessons to be drawn. • Rectify any deficiencies that became apparent in the laboratory response. • Ensure restocking of laboratory.

Second or Later Waves

<p>National Assessment of risk</p> <ul style="list-style-type: none"> • Pandemic virus may still be circulating internationally • UK alert levels 1-4 may be relevant • Pandemic virus may have evolved • Impact may be less or even greater than first phase • Response may be affected by level of recovery achieved following first wave <p>National Priorities</p> <ul style="list-style-type: none"> • Maintaining vigilance • Monitoring and early detection of any second wave in the UK • Providing an effective response 	
DHSSPS/ CDSC (NI)/HSS BOARDS/HSC TRUSTS	<ul style="list-style-type: none"> • Re-activate WHO Phase 6, UK Alert Level 3, informed by experience of first wave of pandemic.
Regional Virus Laboratory	<ul style="list-style-type: none"> • Re-activate WHO Phase 6, UK Alert Level 3, inclusive of changes resulting from the reassessment of the adequacy of the laboratory response to the pandemic.

Post Pandemic – The Recovery Period

National Assessment of risk

<ul style="list-style-type: none"> • This or a similar virus likely to remain in circulation • It may take months or even several years for some national services to recover to normality • Many people are likely to suffer on-going health problems • Backlog demand for health care is likely • Long term effects associated with virus may be possible • Personnel, plant and supplies likely to be exhausted <p>National Priorities</p> <ul style="list-style-type: none"> • Implementation of measures aimed at a prioritised, gradual and sustainable return towards normality • Managing public and other expectations accordingly • Provision for continuing care and treatment backlog requirements • Staff support, re-supply, refurbishment/backlog maintenance • Analysis of response • Assessment, evaluation and revision of contingency arrangements in light of lessons learnt. 	
DHSSPS	<ul style="list-style-type: none"> • Assess overall impact in Northern Ireland. • Update NI Plan in light of lessons learned. • Advise HSS Boards and HSC Trusts to revise local plans in the light of experience during the pandemic. • Stand down NIPICC/RHCC. • Communicate end of pandemic to Minister, health professionals and the public.
CDSC (NI)	<ul style="list-style-type: none"> • Provide epidemiological indices and interpretation to allow the pandemic to be declared over. • Contribute to the overall assessment of the performance of the HSS Boards and HSC Trusts to the pandemic.
Regional Virus Laboratory	<ul style="list-style-type: none"> • Carry out assessment, evaluation and revision of contingency arrangements in light of lessons learnt. • Contribute to the overall assessment of the performance of HSS Boards and HSC Trusts to the pandemic.

ACRONYMS

A&E	Accident and Emergency Department
ACDP	Advisory Committee on Dangerous Pathogens
A/H5N1	Highly pathogenic avian influenza virus endemic in SE Asia
BIS	British Infection Society
BTS	British Thoracic Society
CCA	Civil Contingencies Act 2004
CCC	Civil Contingencies Committee
CCO	Civil Contingencies Committee Officials
CCDC	Consultant in Communicable Disease Control
CCS	Civil Contingencies Secretariat
CDSC(NI)	Communicable Disease Surveillance Centre (Northern Ireland)
CEMG	Central Emergency Management Group
CMG	Crisis Management Group
CEPU	Central Emergency Planning Unit
CMO	Chief Medical Officer(s)
CO	Cabinet Office
COBR	Cabinet Office Briefing Room
COSHH	Control of Substances Hazardous to Health (Regulations) '02
DAs	Devolved Administration(s)
DARD	Department of Agriculture and Rural Development
DH	Department of Health (London)
DHSSPS	Department of health, Social Services and Public Safety
DoHC	Department of Health and Children
DPH	Director of Public Health
EC	European Commission
ECDC	European Centre for Disease Prevention and Control
EISS	European Influenza Surveillance Scheme
EMA	European Medicines Agency
EU	European Union
EWRS	Early Warning and Response System (of the European Network for Communicable Diseases)
FFP	International normative standard for respirators
FSA	Financial Services Authority
GDP	Gross Domestic Product
GHSAG	Global Health Security Action Group
GP	General Medical Practitioner
HDU	High Dependency Unit in acute hospitals
HPA	Health Protection Agency
HPAI	High Pathogenic Avian Influenza
HSSB	Health and Social Services Board
HSCT	Health and Social Care Trust
ICT	Infection Control Team
ICU	Intensive Care Unit
IHRs	International Health Regulations (2005)
ITU	Intensive Therapy Unit
LPAI	Low Pathogenic Avian Influenza
MISC	Ministerial Committee
MRC	Medical Research Council

NCL	National Collaborating Laboratory
NEPNEI	National Expert Panel on New and Emerging Infections
NIBSC	National Institute for Biological Standards and Control
NIMR	National Institute for Medical Research
NIPICC	Northern Ireland Pandemic Influenza Control Committee
NIRL	National Influenza Reference Laboratory
OFMDFM	Office of the First Minister and Deputy First Minister
OGDs	Other Government Departments
OIE	World Organisation for Animal Health
PPE	Personal Protective Equipment
RHCC	Regional Health Command Centre
ROI	Republic of Ireland
RPA	Review of Public Administration
Ro	Basic Reproduction Number
RVL	Regional Virus Laboratory
SAG	Scientific Advisory Group
SARS	Severe Acute Respiratory Syndrome
SITREP	Situation Report
UK	United Kingdom
UKNIPC	United Kingdom National Influenza Pandemic Committee
VLA	Veterinary Laboratories Agency
WHO	World Health Organization

DEFINITION OF TERMS

A/H5N1	Highly pathogenic avian influenza virus, endemic in birds in South East Asia
Antiviral medicine	Type of medicine used to treat viral infections such as influenza
Asymptomatic	Infected but not showing symptoms
Attack rate	Cumulative percentage (or proportion) of a population infected over a period of time for example during an epidemic
Asymptomatic	Infected but not showing symptoms
Case fatality rate	Proportion of individuals contracting a disease who die from it
Clinical attack rate	The cumulative proportion of people infected and showing symptoms over a specified period of time
Containment	Measures to limit the spread of infection from an affected area(s)
Countermeasures	Interventions that attempt to prevent, control or treat an illness or condition
Epidemic	The widespread occurrence of significantly more cases of a disease in a community or population than expected over a period of time
Epidemiology	The study of the patterns, causes and control of disease in groups of people
Epidemiological models	Mathematical simulations of the spread of a disease and the likely effectiveness of countermeasures
Exit/entry screening	Institution of special measures at points of exit/entry into a country to detect individuals who have - or may have – been exposed to an infection as a measure to reduce the spread of infection
FFP	International normative standard for respirators
Hand hygiene	Thorough, regular hand washing with soap and water or the use of alcohol-based products containing an emollient that do not require the use of water to remove dirt and germs at critical times e.g. after

	touching potentially infected people/objects and before eating/touching others
Incubation period	The period from entry of infection to the appearance of first symptoms
Infectivity	The extent to which a given micro-organism infects people (or animals) i.e. the ability of the organism to enter, survive and multiply in people and cause disease
Isolation	Separation of individuals infected with a communicable disease from those who are not for the period they are likely to be infectious in order to prevent further spread
Modelling (risk)	Quantitative assessment from available data of a range of possible risks and identifying those responses which are likely to be both effective and robust over the range of uncertainty
'Operational' models	Theoretical consideration of all the relevant factors and their interactions to inform implementation plans
Outbreak	Sudden appearance of, or increase in, cases of a disease in a specific geographic area or population e.g. in a village, town, or closed institution
Pandemic	Worldwide epidemic - an influenza pandemic occurs when a new or novel strain of influenza virus emerges which causes human illness and is able to spread rapidly within and between countries because people have little or no immunity to it
Pathogenic	The ability to cause disease
Prophylaxis	Administration of a medicine to prevent disease or a process that can lead to disease - with respect to pandemic influenza this usually refers to the administration of antiviral medicines to healthy individuals to prevent influenza
Quarantine	Separation of those who are thought to have been exposed to a communicable infection but are well from others who have not been exposed in order to prevent further spread
Re-assortment	The fragmentation and reassembly of the genetic material of two similar viruses infecting the same cell to produce a new virus strain

Reproductive Number (Ro)	The average number of secondary infections resulting from each individual case - the 'basic' reproductive number is the number of secondary cases in a fully susceptible population without intervention. It measures the degree of transmissibility of an infection.
Respirator	A face mask incorporating a filter. In this document it implies a particulate respirator, usually of a disposable type, often used in hospital to protect against inhaling infectious agents. Particulate respirators are 'air-purifying respirators' because they filter particles out of the air as one breathes
Segregation	Separation from others (in this case influenza cases from non-influenza cases)
Social distancing	Strategies that reduce the number, duration and/or intimacy of social contacts with the aim of limiting the opportunities for transmission of influenza
Surge capacity	The ability to expand provision beyond normal capacity to meet transient increases in demand, e.g. to provide care or services above usual capacity, or to expand manufacturing capacity to meet increased demand
Surgical mask	A disposable face mask that provides a physical barrier but no filtration
Surveillance	The continuing scrutiny of all aspects of the occurrence and spread of disease pertinent to effective control in order to inform and direct public health action
Symptomatic	Showing symptoms of disease or illness
Transmission	Any mechanisms by which an infectious agent is spread from a source or reservoir (including another person) to a person
Treatment course	The strength of a medicine, number of doses or length of treatment required to treat a disease.
Viraemia	The existence of viruses or viral particles in the bloodstream
Virulence	The degree to which a micro-organism is able to cause serious disease

Wave

The period during which an outbreak or epidemic occurs either within a community or aggregated across a larger geographical area. The disease wave includes the time during which the disease occurrence increases, peaks and declines back towards baseline.