Department of
Health, Social Services and Public Safety
www.dhsspsni.gov.uk

Northern Ireland Health and Social Care Influenza Pandemic Preparedness and Response Guidance

January 2013

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NAVIGATING THIS GUIDANCE IN AN EMERGENCY

This influenza pandemic preparedness and response guidance has been prepared by the Department of Health, Social Services and Public Safety (DHSSPS) for Health and Social Care (HSC) organisations in Northern Ireland and is designed to be easily navigated should an emergency response to an influenza pandemic be necessary.

The guidance has been divided into specific sections detailing the key elements of the pandemic response. Responders should be able to read quickly the section most appropriate to them. It is recognised that most HSC responders will not necessarily need to know about the particulars of the overall pandemic response and may wish instead to focus on their particular area of expertise.

Further detail on the UK's approach to pandemic preparedness and response can be found in the UK Influenza Pandemic Preparedness Strategy which was published in November 2011, and this document should be read in conjunction with this. This can be downloaded from the Department of Health website:
http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_130903

1. EXECUTIVE SUMMARY

This document focuses on the operational aspects of pandemic response in the health and social care sector. The document builds on the lessons learned from the 2009 H1N1 pandemic and the latest scientific evidence. The guidance is intended to support Northern Ireland's pandemic preparedness and response planning in the Health and Social Care organisations. This document supersedes the 2008 Northern Ireland Contingency Plan for the Health Response for an Influenza Pandemic. Previous DHSSPS pandemic guidance relating to specific sectors will also be reviewed and assessed in due course in light of this new guidance. This guidance should be read in conjunction with the **2011 UK Influenza Pandemic Preparedness Strategy** and reflects the key changes in the UK Strategy, which include:

- developing improved plans for the initial response to a new pandemic;
- ensuring a response that is proportionate to a range of scenarios;
- allowing for differences in the rate of spread both across the UK and internationally;
- revised UK alert phases;
- developing improved plans for managing the end of an influenza pandemic – the recovery phase.

Each Health and Social Care organisation should have pandemic plans in place which provide:

- a clear definition of responsibilities;
- reporting and collation of surveillance requirements;
- contact tracing; swabbing and testing of samples, and issue of antivirals before antiviral collection points (ACP) are set up;
- surge plans for primary, secondary and critical care;
- implementation of the National Pandemic Flu Service;
- implementation of a pandemic specific vaccination programme; and
- recovery and return to business as usual.

All plans need to be exercised and tested regularly.

A key theme is the unpredictability of any pandemic virus and the uncertainty that this presents in quantifying the response required. Given this, there are three key principles that underpin planning and response:

- Precautionary;
- Proportionality; and
- Flexibility.

The indicators for action in the UK in a future pandemic response have been revised and decoupled from those used by the World Health Organisation (WHO) to describe the global pandemic. These UK indicators are described as phases named: **Detection, Assessment, Treatment, Escalation and Recovery.** The document outlines the key objectives for the phases together with actions that will be required by organisations to respond to the capacity and capability challenges of pandemic scenarios which may range in impact on services from low to moderate or high.

The countermeasures section details the measures that can be taken to reduce, mitigate and manage the impact of a future pandemic.

The risk of an influenza pandemic occurring has not diminished and all HSC organisations must be in a state of readiness to respond should a further pandemic arise.

1.1 Introduction

This guidance is intended to support HSC preparedness and response planning. The guidance should be read in conjunction with the UK Influenza Pandemic Preparedness Strategy 2011 ('the 'UK Strategy').

Responsibility for ensuring that pandemic preparedness and response plans are drawn up and tested at HSC level rests with the designated pandemic flu lead in each organisation. HSC organisation plans should align with the guidance contained in this document, as well as the UK Strategy.

The UK Strategy sets the strategic context for planning for an influenza pandemic across wider society. This document on the other hand addresses operational issues and is therefore relevant to all HSC organisations, emergency planners, the voluntary sector and independent sector providers.

It is recognised that staff in clinical practice may wish to seek out more specific guidance. Existing sector specific guidance is also available on the DHSSPS website and this will be reviewed in due course.

1.2 Context

The key changes outlined in the UK Strategy are to:

- **Develop better plans for the initial response** to a new virus, when the focus should be on rapid and accurate assessment of the nature of the pandemic virus and its effects, both clinically and epidemiologically;
- **Put plans in place to ensure a response that is proportionate** to a range of scenarios reflecting pandemic viruses of low, moderate and high impact, rather than focusing on the "worst case" planning assumptions;

- **Take greater account of age specific, geographic and other differences in the rate and pattern of spread** of the disease across the country and internationally;
- **Further explore statistical population based surveillance**, such as serology, to measure the severity of a pandemic in its early stages;
- **Take better account of information from behavioural scientists** about how people are likely to think, feel and behave during an influenza pandemic, and;
- **Develop better plans for managing the end of an influenza pandemic** – the recovery phase and preparation for subsequent seasonal influenza outbreaks.

The UK Strategy outlines three main principles that must underpin planning and response:

- **Precautionary** – plan for an initial response that reflects the level of risk, based on information available at the time, accepting the uncertainty that will initially exist about the scale, severity or level of impact of the virus.
- **Proportionality** – plan to be able to scale up and down in response to the emerging epidemiological, clinical and virological characteristics of the virus and its impact at the time.
- **Flexibility** – plan for the capacity to adapt to Northern Ireland circumstances that may be different from the overall UK picture – for instance in hotspot areas.

1.3 Planning context

Due to the unpredictable nature of influenza pandemics, HSC response plans should be flexible, scalable and adaptable. During a pandemic, the assumptions on which to base the response will be updated in the light of emerging knowledge about the developing scenario.

Despite this unpredictability, there are some key assumptions that will help to inform planning:

- A pandemic is most likely to be caused by a new subtype of the Influenza A virus but plans could be appropriately adapted and deployed for any epidemic infectious disease.
- An influenza pandemic could emerge at any time of the year anywhere in the world, including in the UK. Regardless of where or when it emerges, it is likely to reach the UK very rapidly, and from arrival, it will probably be a further one to two weeks until sporadic cases and small clusters of cases are occurring across the country.
- The potential scale of impact, risk and severity from related secondary bacterial infection and clinical risk groups affected by the pandemic virus will not be known in advance.

- It will not be possible to stop the spread of the pandemic influenza virus in the country of origin or in the UK, as it will spread too rapidly and too widely.
- Initially, pandemic influenza activity in the UK may last for up to three to five months, depending on the season. There may be subsequent waves of the activity of the new virus weeks or months apart, even after the WHO has declared the pandemic to be over.
- Following an influenza pandemic, the new virus is likely to persist as one of a number of seasonal influenza viruses. Based on observations of previous pandemics, subsequent winters are likely to see increased seasonal flu activity compared to pre-pandemic winters.

1.4 Pandemic planning assumptions

Influenza pandemic planning in the UK has been based on an assessment of the 'reasonable worst case', derived from experience and scientific analysis of influenza pandemic and seasonal influenza in the 20th and early 21st century.

A summary of the planning assumptions in a reasonable worst case scenario is detailed below:

Up to 50% of the population could experience symptoms of pandemic influenza over one or more pandemic waves each lasting 15 weeks.
2.5% of those with symptoms could die as a result of influenza if no treatment proved effective
30% of all symptomatic people may access primary care.
1-4% of symptomatic people may require hospital treatment.
25% of hospital patients may require critical care
15-20% of staff may be absent on any given day during peak weeks. These figures could be reduced depending on the effectiveness of antivirals, antibiotics, vaccination and how quickly vaccine is available.

When planning for excess deaths local planners should prepare to extend capacity on a precautionary, but reasonably practicable, basis. Planners should aim to be able to cope with between 6,300 and 9,450 additional deaths in Northern Ireland, possibly over as little as a 15 week period, with potentially half of these over three weeks at the height of the outbreak. More extreme circumstances would require the local response to be combined with facilitation or other support at a UK level. The absolute worst case could envisage up to 22,500 additional deaths, however given the low probability of such an event,

planners are not advised to prepare for this extreme situation. The potential range of excess fatalities in Northern Ireland is shown below.

Range of possible excess fatalities in NI

Overall Case Fatality Rate (CFR) (%) -	Clinical Attack Rate (CAR)		
	25%	35%	50%
0.4	1,800	2,520	3,600
1.0	4,500	6,300	9,000
1.5	6,750	9,450	13,500
2.5	11,250	15,750	22,500

1.5 Defence in depth

The primary objective of the Influenza Pandemic Strategy is to protect health, with the aim of reducing the proportion of the population that may develop influenza or become critically ill, thereby saving lives, alleviating suffering and reducing the social and economic impact.

The defence in depth strategy adopted by the UK aims to achieve this by:

- Maintaining surveillance;
- Reducing the risk of transmission and infection;
- Reducing illness and complications; and
- Protecting the public through vaccination.

2. HEALTH AND SOCIAL CARE PREPAREDNESS AND RESPONSE

2.1 Core principles

At the start of a pandemic, there will be a transition from business as usual, where operational decisions are devolved to HSC organisation level, to a command and control system led at a regional level that is able to co-ordinate the response.

A balance between strategic UK actions and a locally flexible approach will be critical in ensuring an effective response.

The key principles in planning are set out below:

- **A future pandemic remains a threat** and may have a more severe impact than the one experienced in 2009;
- **Joint planning** between all organisations, together with a cohesive approach for every pandemic phase is essential;
- **Exercises and testing** are still needed on an ongoing basis within individual organisations and with partner organisations to test assumptions and interrelated aspects of plans;
- **Coordination** of a pandemic response is key to ensuring best use of resources and to achieve the best outcome for the Northern Ireland population; and
- **Business continuity** plans are needed to underpin pandemic influenza response to minimise business disruption and promote early recovery, in common with many other emergency response plans.

A summary of the roles and actions required by each HSC organisation is outlined at Section 5.

2.2 Preparing to respond

A unified and comprehensive response across the health and social care sector will be necessary to achieve the best outcome for all potential patient and client groups. For normal and out of hours services (including pharmacies), arrangements should be in place for collaboration, “buddying” or other support at times of increased pressure to ensure continuity of services for those that need them most.

Pivotal to all HSC plans are:

- **A sustainable community-based response** – with effective arrangements for providing initial assessment, access to antiviral medicines (and vaccines, when available), treatment of complications, home care and access to hospital care;
- **An integrated approach to planning and response** that effectively employs all of the health and social care services in a particular area, using flexible working across all agencies and making best use of potentially scarce facilities and resources, including the skills of volunteers;
- **Clear and comprehensive arrangements for admission, discharge and transfer between appropriate levels of health and social care** based on established ethical and equalities frameworks to assist in managing demand;
- **Effective monitoring and communications systems** and dialogue to permit: (i) timely exchange of essential information needed for management of the influenza pandemic and (ii) messaging to the public and staff; and
- **Effective management of the increases in demand** resulting from the pandemic including:
  - **Models of care** adapted for the prevailing circumstances;
  - **A graded approach** to configuring services, allowing the Northern Ireland response to be proportionate to the severity of the pandemic and be escalated and de-escalated as needed;
  - **Continuation of essential care** including mechanisms for recognition and management of patients with urgent non-flu medical conditions, other emergencies and individuals with long-term conditions requiring regular intervention; and
  - **Psychosocial support for staff and patients/clients** when needed, including plans to afford necessary rest time for hard-pressed staff. Guidance on "*Developing psychosocial resilience: How to cope in a crisis"* is available on the DH website[1].

2.3 Ensuring an effective response

Leadership

In an influenza pandemic, leadership challenges may include high levels of uncertainty during the initial response phase requiring flexibility and rapid adaptability of plans, and increased pressures and demand on services which may be exacerbated by staff absence. Key issues include:

- Visible director level leadership, direction, and ownership of plans;
- Engagement, motivation and support for staff;
- Pre-established and tested command and control arrangements;

1 http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_110234

- Good coordination; and
- Appropriate channelling of communication to maintain public confidence.

Timings of meetings and their memberships are critical and should be outlined in operational plans, and carefully considered when co-ordinating a battle rhythm.

UK co-ordination

Given the scale, complexity and international dimensions of a pandemic, strong cross-Government planning and Central Government coordination remains critical. The Department of Health is the lead government department for pandemic preparedness and response. It has overall responsibility for national co-ordination of response in England, maintaining liaison with international health organisations and providing information and specialist advice to Ministers, other Government departments and responding organisations.

The Devolved Administrations (DAs) and England share a common strategic approach to pandemics and the four health departments work closely together during both planning and response. Strong clinical and senior official liaison across the four countries strengthens the UK-wide coordination and cooperation.

The National Security Council (Threats, Hazards, Resilience and Contingencies) (NSC (THRC)) Committee, comprising Ministers from across Central Government Departments and the DAs, oversees and coordinates preparations for all key UK risks including pandemic influenza.

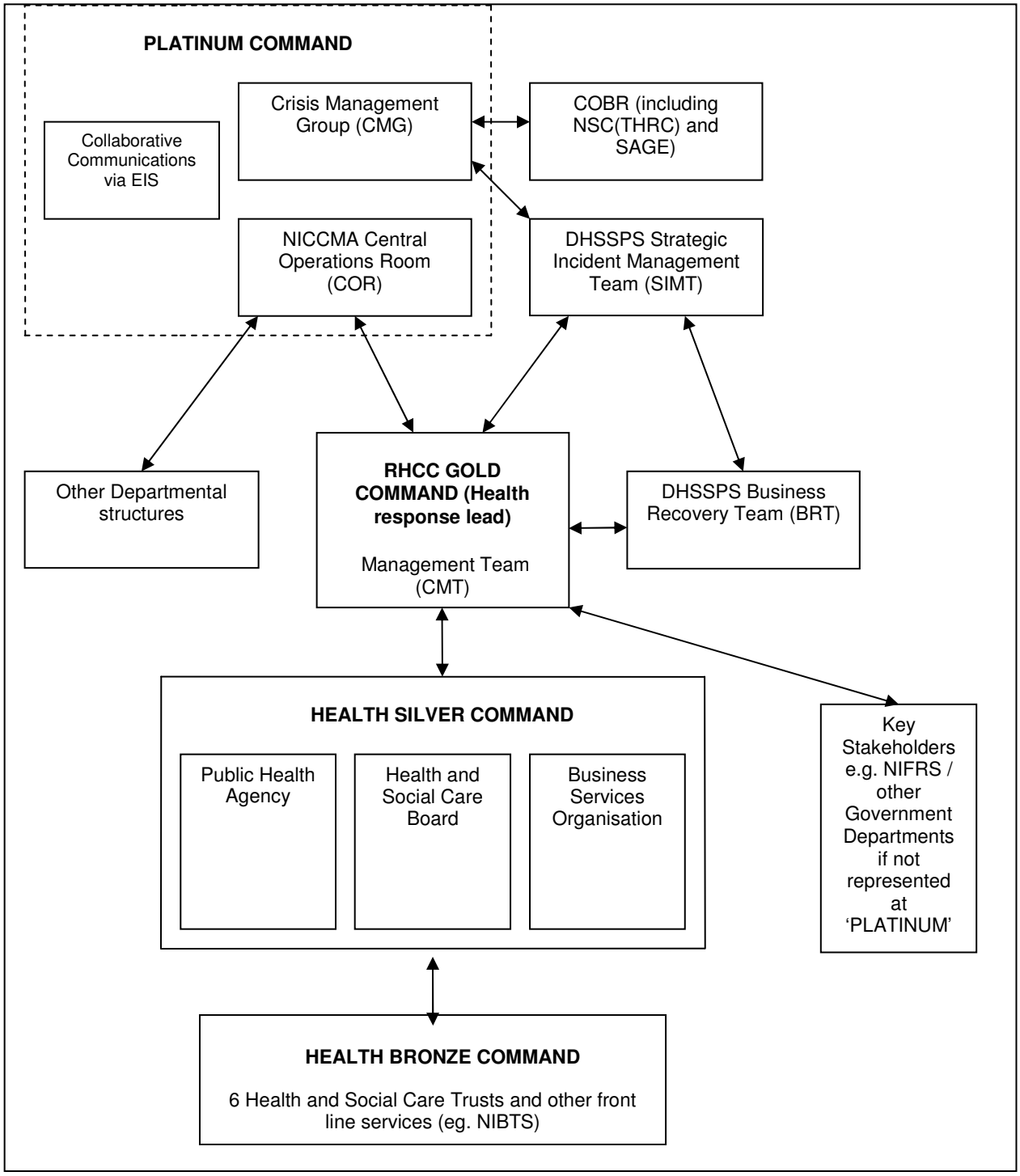
During a pandemic the NSC(THRC) will coordinate Central Government activities, make key strategic decisions, such as the countermeasures required, and determine UK priorities. It is also likely that Cabinet Office Briefing Room (COBR) will activate a Scientific Advisory Group for Emergencies (SAGE) to coordinate strategic scientific and technical advice to support UK cross-government decision making. The Department of Health, as lead Government Department, would work closely with the DAs using meetings of the four nations' Health Departments at official and ministerial level, which worked particularly well during the H1N1 (2009) influenza pandemic, to agree health specific issues ahead of NSC(THRC) discussions.

Northern Ireland co-ordination

If the situation merits it, during a moderate or high level pandemic, DHSSPS will establish its Regional Health Command Centre to provide strategic direction for the health and social care response in Northern Ireland. The RHCC Emergency Operations Centre will provide a conduit for liaison with DH and the other UK Health Departments and will establish arrangements for providing health briefings for the DHSSPS Minister. A DHSSPS Programme Board will also be established to co-ordinate and manage the overall HSC response.

Likewise, the Public Health Agency, HSC Board and BSO will establish Health Silver command in accordance with their Joint Response Emergency Plan. This will ensure the three regional HSC organisations respond in a co-ordinated and effective manner. The Silver information hub will be responsible for forwarding SITREPs and information to the RHCC GOLD EOC.

Pandemic Command and Control arrangements



Similar command and control structures should be adopted for any infectious disease on this scale. Further detail on command and control arrangements can be found in the DHSSPS Emergency Response Plan[2].

Ethical principles

The 2007 ethical framework[3] remains appropriate and fit for purpose in planning for a future influenza pandemic. This guidance will support professional groups of staff in resolving ethical issues that may arise from the demands of their work.

A Northern Ireland ethical framework paper[4] has also been prepared which summarizes best evidence sources on ethical decision making in pandemic flu escalation to assist clinical teams with difficult ethical situations.

In a pandemic surge there will be great demands placed on HSC resources. There may be competition for HSC facilities between patients with pandemic flu and patients who have other medical conditions which, in more normal times, present demands on the health and social care service, and there will be a particular need to attend to those who have both pandemic flu and other medical conditions. During the peak of a pandemic surge the availability of health and social care resources may not be sufficient for the HSC to be able to deliver the "normal" standard of care. In such a situation demand will outweigh capacity and clinicians will be faced with difficult ethical challenges.

2.4 Communications

UK Communications

A UK Communications Strategy was published in December 2012[5]. This will ensure provision of accurate, timely and consistent advice to the public across the UK in a pandemic. High level detail of the communications approach is also set out in the UK Strategy. Preparing for, responding to and recovering from an influenza pandemic will depend significantly on co-operation between DHSSPS, HSC organisations, the voluntary sector and individuals.

An effective two-way communications strategy that positively engages each of these key groups before and during a pandemic is therefore a major strand of preparedness.

NI Communications

An emergency on this scale also needs strategic direction of public information from the outset, so co-ordination from DHSSPS as the Lead Government Department for

[2] http://dhsspsextra.intranet.nigov.net/pdf_version_-_dhssps_emergency_response_plan_v2_2_-_extranet_-_29feb2012.pdf

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

[4] http://www.dhsspsni.gov.uk/microsoft_word_-_ethical_framework_paper_-_agreed_version_10_december.pdf

[5] https://www.wp.dh.gov.uk/publications/files/2012/12/UK-Pandemic-Influenza-Communications-Strategy-2012.pdf

coordinating the health consequences of the emergency will remain essential. Executive Information Service in OFMDFM will co-ordinate the key messages for the non-health sectors and support DHSSPS in line with the collaborative communications process.

Key communication channels for DHSSPS will be to:

- Other UK Health Departments, including on international issues
- Executive Information Service, OFMDFM
- HSC Organisations
- Independent and voluntary sector
- Health Professionals
- The public

Timely, consistent and clear communication to health and social care professionals will be essential throughout the pandemic. The Chief Medical Officer (CMO) will write to HSC Chief Executives to communicate changes in protocol and policy, and HSC organisations will then cascade this to relevant staff. The communications cascade will be in line with the command and control diagram outlined in section 2.3. Communications between HSC organisations and their partners will also be important in supporting a cohesive response. The aim is to ensure a clear understanding of the overall pandemic situation and pressures on HSC providers, as well as direction of movement of any change; changes in protocols; any additional clinical at risk groups; and any other key information.

DHSSPS and the PHA will prepare and arrange distribution of public health advice via the most appropriate channels (for example, through press releases, social media activity, relevant websites, information leaflets and posters). Where appropriate the DHSSPS Information Office will also liaise with DH about TV, radio and ambient advertising. Good liaison between HSC organisations and DHSSPS communications teams is essential so that both are aware of the content and changes in their respective outputs.

Public Communications

In an emerging pandemic, good, clear educational communications with the public will be required. Websites should provide the public and health professionals with current information, public health messages, specific guidance on key areas, and communications from CMO. DHSSPS will nominate key health spokespersons and the DHSSPS Information Office will ensure they are briefed on the latest media issues. All communications material will be available on NI Direct. Material specifically for HSC professionals will be available through the HSC extranet.

One of the lessons learned from the 2009 pandemic was the usefulness of CMO led weekly media briefs to update and educate journalists and the public. This will also provide an opportunity to counteract any misinformation. The timing and frequency of press releases will be dictated by the situation and severity of the virus.
Public communications plans will be drawn up by DHSSPS and the PHA to include:

- Roles, responsibilities and methods (including consideration of social media) during a pandemic;
- Arrangements for communications with the public about necessary prioritisation of services;

- Public messages that encourage good hygiene behaviours, such as respiratory and hand hygiene
- Information on the location of, and how to access, Antiviral Collection Points;
- Strategies to challenge incorrect information to mitigate the risk of misinformation; and
- Transparent and open communication of the risks and benefits of, for example vaccines and antivirals.

Use of social networking may assist in meeting these goals.

2.5 Infection Control

The incubation period of the influenza A virus ranges from one to four days. People are most infectious soon after they develop symptoms, though they can continue to shed the virus, for example in coughs and sneezes, for up to five days (longer in children). Generally, people become less infectious as their symptoms subside.

The meticulous use of infection control procedures, isolation and cohort nursing are fundamental in limiting the transmission of the virus. These processes are already in place through the Changing The Culture Strategy. High standards should be maintained. Risk assessments for required levels of infection control should be regularly performed in hospitals, dental practices, communal living environments such as residential homes, social care environments and supervised mental health residences or prisons. The highest levels of hand and respiratory hygiene should be maintained.

Surgical masks and respirators have a role in protecting healthcare workers, provided that they are used correctly in conjunction with hand hygiene and other infection control practices. Further detail on facemasks and respirators is available at section 4.3.

2.6 Business Continuity Management

Given the potential duration of an influenza pandemic, business continuity planning for all aspects of each organisation's operational activity will be important in underpinning resilience. BS25999, the British Standard for business continuity management has been developed to help minimise the risk of disruptions and to provide a basis for effective recovery. It provides a structured framework for developing and implementing business continuity within an organisation and all HSC organisations are already working towards having Business Continuity Plans in place which are in line with the British Standard. It should be noted that BS25999 has been replaced by the International Standard ISO22301 and this will become the standard to which HSC organisations will benchmark their plans.

When contracting, commissioners should require providers to have robust and tested business continuity plans in place to help ensure continuation of services, specifically addressing the potential effect of staff absenteeism. HSC organisation plans should

include mutual aid and /or shared agreements to support service delivery and to sustain an integrated response.

It is important that HSC organisations have continuity plans in place to maintain services for those who are already known to be in vulnerable groups. HSC organisations should have systems in place so that during the pandemic they are able to establish quickly and accurately which additional individuals and groups are vulnerable and the reasons for this.

Assurance of sufficient supplies requires a detailed understanding of the potential impact of a pandemic on the supply of consumables, medicines and other services that are critical to maintaining necessary services. Organisations should ensure that their suppliers have business continuity plans in place that are resilient to the potential supply chain challenges they may face in a pandemic. One of the lessons identified in the 2009 pandemic was to use, and build on, existing systems where possible.

For those in supported living or otherwise supported in the community, it is important that care plans identify a minimum level of essential support and contingency arrangements to maintain this. For example, could support worker visits be temporarily replaced by a phone call? It is important to remind and assist users to ensure that they have robust plans in place for dealing with sudden absences of personal assistants.

Facilities, equipment, plans, protocols, and staff training must be regularly reviewed and tested to ensure that preparedness and business continuity is refreshed on an ongoing basis.

2.7 Human Resources

The whole range of HSC organisations must be engaged in developing response plans to ensure adequate staffing support for the maintenance of services. During a pandemic situation, Human Resources are key to staff support; monitoring working hours; and additional payments. Planning should cover training, appropriate health protection and welfare for staff and volunteers and should take account of the specific needs of those who are pregnant or who might be in at risk groups. Multiple roles and responsibilities should be carefully reviewed to manage the risk of double counting or possible double assignments. HSC organisations should note that registered volunteers ought to be offered priority pandemic vaccination as a frontline health and social care worker. Human Resources input should be sought regarding the appropriate use of staff outside normal work.

An influenza pandemic could put staff under considerable pressure. Conflicts may arise between staff members' professional obligations and personal responsibilities. Support should be made available for individual staff and professional groups to address ethical dilemmas that may arise out of their work. Trusts should offer clear guidance and support to staff who are working outside of their normal clinical setting. Guidance from professional bodies should be followed to protect patients and staff.

Flexible planning to make best combined use of staff skills and competencies may enable better quality of services to be maintained, even if high sickness absence levels occur during moderate or severe pandemics. For example:

- Pharmacist, nurse and other non-medical prescribers could play an important role in prescribing medicines for those people who cannot access their usual prescriber;
- In hospitals, clinical pharmacists can play a role in supporting other clinicians in areas such as adult and paediatric intensive care units;
- Voluntary and community organisations offer a wide range of skills and experiences, and can offer specific contributions, including providing social support: assisting those experiencing stress, anxiety and grief; staffing helplines, or acting as 'flu friends'. Early engagement in planning with voluntary organisations is important as they will also need to plan for continuity and the sharing of their resources across organisational and geographical boundaries;
- There may also be 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; and
- HSC organisations should explore whether a staff helpline would be of assistance to address concerns.

Any changes to normal working patterns must include adequate time off work to prevent absence due to exhaustion or stress caused by pressure over a sustained period or the cumulative impact of the emergency such as bereavement, additional care responsibilities or ill health.

During a pandemic, it will be important that placement experience providers work in partnership with education providers to maintain the validity of the placement experience for the student and that adequate mentorship is available. Decisions around deployment of staff and the placement and care of patients and clients will be led by service providers and will be made in response to current and emerging circumstances.

Learning outcomes for students will be considered relevant as long as mentorship is available and original learning outcomes are reviewed to match the changed situation.

The Department has previously issued *Pandemic Influenza: Human Resources Guidance for the Health and Social Care Trusts*[6] which covers these issues in greater detail. This document will be reviewed (and refreshed if required) in due course.

2.8 Training

Ongoing staff training is an important part of routine continuity plans.

[6] http://www.dhsspsni.gov.uk/pandemic_flu_hr_guidance.pdf

Where there may be a need for staff to work outside their normal role or in unfamiliar situations, it is important that this work remains within their scope of competence. Prior discussions with staff organisations, appropriate protection, training, supervision, and indemnity for the role that they may be expected to fulfil will all be important. Training should not be designed to place an increased burden on normal services in terms of the time required to release staff. HSC organisations will wish to consider:

- Carrying out an audit of staff secondary skills that may be helpful in maintaining service capacity;
- Identifying training needs of other staff, such as pharmacists and physiotherapists, who may not be based in the unit, but without whom care may be compromised;
- Tertiary centres who give support to HSC Trusts to continue care of paediatric cases on-site;
- Providing competency based training for staff involved in vaccination to include detailed knowledge of any new vaccines;
- Liaising with voluntary organisations to identify human and training resources that may be available from them, and vice-versa; and
- Identifying those retired professionals who would be willing to work if necessary, and preparing refresher training for them as required. HR input into assurance of appropriate qualifications and revalidation should also be sought.

2.9 Advances in the management of severe respiratory failure

Patients with acute lung injury due to infection can be very challenging to manage. Experience during recent severe influenza events has demonstrated that some patients, especially those with exacerbation of chronic pulmonary disease, can benefit from non-invasive respiratory support (continuous positive airways pressure, or non-invasive ventilation with oxygen replacement). All patients with flu-related exacerbations of asthma should be treated according to national guidelines with corticosteroids and bronchodilators, as well as with antiviral medicines and antibiotics. These measures can reduce the demand for intensive care beds by reducing the numbers of patients referred for invasive ventilatory support.

For patients who require intermittent positive-pressure ventilation, it has been found that the use of ‘protective ventilation’ (utilising low inspiratory volumes, and avoiding high inflation pressures) leads to improved outcome, and can avoid the need to escalate treatment to more specialist procedures such as extracorporeal membrane oxygenation (ECMO). Avoiding very high levels of intravenous fluid loading also improves outcomes in the setting of infection-related lung injury. It is likely that these measures will increasingly be used in managing respiratory failure caused by severe infections such as influenza.

Management of the acutely ill patient outside of the critical care setting should be closely monitored to ensure timely referral to critical care if required. In Trusts where Critical Care Outreach Teams exist, it would be beneficial for these teams to be engaged in the monitoring of these patients.

Given the nature of acute respiratory cases and the potential for a systemic inflammatory response, some patients may require and benefit from Continuous Renal Replacement Therapy. The number of these pieces of equipment will be more limited than the number of mechanical ventilators.

2.10 Specialist respiratory support

The Critical Care Network Northern Ireland (CCaNNI) will be able to assist in coordinating effective use of critical care beds, and also in offering peer support in decision-making regarding referral to ECMO centres.

Some patients, particularly with severe hypoxia caused by infection, can benefit from more specialist respiratory support, such as high frequency oscillating ventilation or ECMO. ECMO is difficult to provide as an occasional activity in a busy intensive care unit, and is likely to be best provided in expert centres, where a body of expertise can be established. During the 2009 pandemic, and to a greater extent in the winter following, ECMO centres came under intense pressure as bed numbers were limited, particularly for paediatric patients. Existing units expanded their bed numbers as much as possible, depending on available facilities and staff numbers, and some additional units were established in centres with experience of, for instance, heart-lung bypass. There are no ECMO beds in Northern Ireland, however arrangements exist to transfer patients to other facilities in the UK and internationally if a clinical recommendation is made.

Accumulated clinical experience, improved respiratory support in general intensive care units, and the development of more effective transfer criteria, has led to more effective decision-making on when patients should step up from standard care to ECMO. This has reduced the inappropriate referral of patients who can benefit adequately from more routine respiratory support, or who are unlikely to benefit from ECMO, making it easier to manage increased demand for specialist respiratory support. The general use of improved referral protocols in future will ensure that ECMO is more easily available to patients who can benefit from it, and reduce the pressure on highly specialist services during severe influenza outbreaks. Advice on referral criteria, procedures for requesting ECMO services and transport of ECMO patients are available at the Glenfield Heart Centre website[7].

[7] www.glenfieldheartcentre.nhs.uk/welcome/about-the-centre/news/worlds-biggest-ecmo

3. Pandemic phases – HSC Response

The Influenza Pandemic Strategy outlines a new approach to the indicators for action in the UK in a future pandemic response that is no longer linked to the WHO global phases. Taking account of the core principles outlined in section 2, this takes the form of a number of phases named: **Detection, Assessment, Treatment, Escalation and Recovery.** A pre-pandemic planning and preparation period precedes these.

In each phase, health and social care providers may face different challenges to both capacity and capability, dependent upon the characteristics of the new virus and whether the impact on services is low, moderate or high. The tables in this section display what the response may look like in each of these theoretical scenarios. Much may also depend on other factors such as: winter pressures, co-existing viral outbreaks, public reaction and media coverage. However, it is recognised that the duration of the pandemic may be much longer than for other emergencies (up to several months) requiring resilience and a sustained response. Service areas must each plan for flexibility of services and be clear what actions they can take, according to pressures on the service at the time. It is acknowledged that HSC organisations may incur additional costs in dealing with any resultant service pressures.

The health response required for a pandemic predominantly reflects established principles in managing other adverse incidents or events, such as winter pressures or severe weather, such as:

- ***Uncertainty*** – there may be little or no information available initially so rapid gathering and sharing of reliable data will be important to inform the response;
- ***Speed*** – in particular areas the increase in demand on services can develop very rapidly, requiring an agile and coordinated response*;*
- ***Profile*** – media pressure and public demand for information will be intense, requiring frequent, consistent and coherent communications;
- ***Cross-sector*** – the response will span different sectors and organisations, requiring close working and mutual support; and
- ***Local hotspots*** – the demand in each Trust area may not be uniform with different geographical areas being under pressure at different times, requiring good information exchange and flexibility of Trust plans

3.1 Detection and assessment phases – the initial response

These phases start with the detection of a human-to-human transmission of a novel influenza virus with pandemic potential which poses a substantial risk to human health. During these initial phases the main requirement is to identify the virus and to gain an understanding of its clinical, epidemiological and virological characteristics such as risk groups for severe disease and transmissibility. The Detection and Assessment phases

therefore focus on intelligence gathering, enhanced clinical surveillance, the development of laboratory diagnostic tests, swab testing by GPs and testing in hospitals of suspect cases, presumptive treatment for affected individuals, possible prophylaxis of contacts, and good public communication.

The virus may arrive in Northern Ireland at an early stage in the global pandemic. It will not be possible to prevent the arrival or to contain a new virus, but good infection control procedures and appropriate public health advice may help to reduce the rate of transmission and limit cases.

At the outset, the eventual severity of the pandemic will not be clear, nor will its impact on health and social care provision. Initial response plans should therefore adopt a risk-based approach, but remain flexible and capable of proportionate scaling up or down. Whilst key elements of the strategic response will be determined by DHSSPS, arrangements for implementation of measures in the initial response will be determined by HSC organisations, based on the pressures being faced at the time. Early in a pandemic, all HSC organisations must establish pandemic control groups and review plans. Clear communication will be essential to ensure that the public understands any variations in approach.

The initial response will be resource intensive for public health and primary care services. HSC organisations will need locally agreed mechanisms to share tasks and collaborate, to minimise the risk of individual service failure and to sustain the response, especially in hotspot areas. This may require prioritisation of tasks in light of limited resources. Flexibility may also need to be exercised in standing down resource intensive activities such as very detailed contact tracing.

Public Health Services

Comprehensive surveillance arrangements are essential to provide information on the characteristics of the virus as it emerges, estimating severity and risk groups affected, tracking the spread and impact of the virus and measuring effectiveness, uptake and safety of various pharmaceutical countermeasures.

Pandemic influenza surveillance is based on established seasonal influenza arrangements. However, as for any infectious disease outbreak, rapid and more intensive data collection and analysis will be necessary and there will be requirements of more frequent reporting of data at the start of an influenza pandemic. A principle of collecting only information which is absolutely essential should be established from the outset. Surveillance activities are likely to be required from a mix of health sectors including GPs, community services, hospitals and independent sector and are likely to include:

- Rapid assessment of the first cases and their close contacts to provide an early insight into the clinical, virological and epidemiological features of cases;
- field investigations of the first clusters of cases and outbreaks of pandemic influenza in closed settings such as schools and residential/ nursing homes;

- regular syndromic surveillance data on consultation behaviour for patients with acute respiratory illness through telephone help-lines, in primary and secondary care;
- establishment of virological sampling schemes ensuring links with the surveillance arrangements put in place e.g. to administer antivirals or in primary care;
- collection of detailed clinical information on cases of severe disease admitted to hospital and intensive care;
- clinical, epidemiological and virological investigation of early deaths caused by the pandemic virus. However, initial epidemiological information on deaths may be limited if the deaths are coroner's cases, particularly if death occurred in a previously healthy individual. This should be explored by the PHA with the coroner as part of pre-pandemic planning;
- rapid monitoring of age specific excess mortality data;
- rapid assessment through community surveillance. eg. telephone surveys to determine the rate of illness and healthcare seeking behaviour in the population;
- monitoring the uptake, effectiveness and safety of any pandemic vaccine programme in targeted groups; and

Public health services will contribute guidance and information, aiming to maintain public confidence by focusing on reducing the risk of infection and assisting the Northern Ireland population to care for themselves and others.

All local messages will emphasise that anyone with influenza-like symptoms should stay at home, minimise close contacts and seek help via an information line rather than attending GP surgeries unless their symptoms worsen. The PHA will also make available advice on good respiratory and hand hygiene practices.

School closures

It is unlikely that widespread school closures will be required except in a very high impact pandemic. The benefit of school closure would be undermined if children mix socially outside of the school environment. In addition, the impact on other organisations caused by absence of parents from key occupations, due to child care needs may also be detrimental. In a pandemic normal business will continue for as long and as far as possible and therefore the working assumption is that schools will remain open. However, specific business continuity reasons (staff shortages) may lead to individual or school closures in a particular area.

The Director of Public Health in the PHA may advise localised closures in specific circumstances (individual schools or catchment areas, and in special schools with particularly vulnerable children) to reduce the initial spread of infection whilst awaiting more information about the spread of the virus. Decisions to advise closures will require very careful consideration in planning and the responsibility for the decision would need to be documented. School principals and their Boards of Governors will take the ultimate decision to close individual schools temporarily.

Primary and Community Care

Although this initial response will be time limited, primary care services will still come under pressure and will need to implement escalation plans where there are concentrated levels of activity or hotspots. All patients presenting with influenza like illness will need to be tested (respiratory swab) to enable rapid identification of the virus strain and spread. In later stages this resource intensive approach will not be required. It is also possible to move quickly to the treatment stage if required. The use of an appropriate skill mix of HSC staff to undertake testing, may reduce pressure in other clinical areas. The Chief Medical Officer (CMO) and Chief Pharmaceutical Officer (CPO) will issue a joint letter to health professionals advising on use of antiviral medicines.

Although there are central stockpiles of facemasks, it could take seven to ten days distribution of centrally held stocks to be completed and organisations should prepare to rely initially on HSC stocks and continuity arrangements. For this reason, organisations should maintain sufficient stock of facemasks for seven to ten days use in the initial stages[8]. **It will be important also to ensure that the independent sector has been included in preparation planning by relevant HSC organisations**. Access to antiviral medicines in the first days of a pandemic will be via community pharmacies and dispensing doctors' practices. Trust countermeasures stockpiles should consist only of those volumes required for business as usual and anticipated surge – for example during the winter season.

Plans will need to be in place for delivery points, suitable storage, record keeping and management of stocks, and for receiving deliveries at short notice, possibly outside normal working hours. Items such as swab kits will be purchased on a "just-in-time" basis if required.

Antiviral medicines (currently oseltamivir and zanamivir) from the central stockpile will be free for those who have a clinical need. In hotspot areas there will be an increasing need for rapid distribution of antiviral medicines to members of the public and this may require the early establishment of Antiviral Collection Points (ACPs). It is unlikely that the National Pandemic Flu Service (NPFS) will be activated until there is wider geographical pressure on primary care services from high numbers of patients with flu-like symptoms. The designation and setting up of the ACPs should be a key feature of Trust plans.

Pharmacists, and their teams, will support members of the public by providing positive health messages, advice on respiratory and hand hygiene measures and support for self care, including the use of over the counter medicines where appropriate.

Social Care

Social care services could experience little pressure in the initial phases of a low impact pandemic. However, public health services might advise the early closure of specific day care centres to reduce the risk of spreading infection to vulnerable individuals. Staff and

[8] http://dhsspsextra.intranet.nigov.net/pdf_-_policy_circular_for_ffp3_guidance_-_oct2011.pdf

volunteers released from duties in day care centres and those who normally transport people to them may then be a valuable redeployment resource as they possess a range of transferable skills and will have been security checked. Services will need to plan for users for whom absence of day care services would create critical risks, eg the provision of home meals for users, or alternative short-term breaks for carers.

In this phase social care services should actively promote good infection control measures amongst staff, provider agencies and service users, paying particular attention to those service users who arrange their own care. Services should also activate plans to provide 'Flu Friends' for those vulnerable people who have no one else to collect medication and provide support if they become ill.

Secondary Care

Secondary care services are less likely to be under pressure during the initial phase of a low impact pandemic, though Emergency Departments (EDs) and the Northern Ireland Ambulance Service may face increased demand if GPs and out of hours services are under pressure. However, even in a low impact pandemic there is unlikely to be a rapid increase in referral of more severely ill patients to intensive care. Critical care services have relatively limited bed numbers and traditionally run at high occupancy. Plans for increasing capacity in this area therefore need to be maintained and regularly tested. Critical care escalation plans in most Trusts have associated impacts on theatre activity and should be considered in planning.

In a moderate or higher impact pandemic, secondary care may see a large increase in both severely ill patients and death rates. Bed managers may encounter particular pressures in moderate and high impact pandemic. In circumstances where there are small numbers of hotspots and large variation in pressures between areas, mutual aid may be possible. However, the potential risk of contributing to increased transmission will require careful consideration.

It may also be necessary to temporarily redesign clinical areas to facilitate cohorting. Some adult critical care settings may have to care for children. Arrangements should be in place for support from paediatric medical and nursing teams. Consideration should also be given to the possibility of moving the older child out of paediatric intensive care units to facilitate Trusts referring critically ill younger children.[9]

[9] Trusts should refer to the current CCaNNI critical care escalation plans for adults and paediatrics.

Health and social care role in Detection and Assessment phases	**IMPACT UNKNOWN**
Possible HSC indicators	❖ Sporadic novel influenza cases reported from the community ❖ Possible limited local outbreaks (eg in specific schools/care homes) ❖ Possible increased number of influenza cases in critical care
Key health and social care delivery modes	❖ Health and social care organisations review response plans, including preparations to mobilise ACPs and obtain and distribute antiviral medicines from the central stockpile ❖ GP diagnosis and swab testing of influenza like illness ❖ CMO and the CPO are likely to issue a letter to health professionals to advise prescribing of antiviral medicines as appropriate ❖ Initial antiviral medicines supplied by community pharmacies and dispensing doctors' practices ❖ Hospital referral and assessment of severe cases ❖ In hospital-testing for influenza virus ❖ Prescribing of antibiotics for complications, by clinical judgement ❖ Development of diagnostic tests (in liaison with Public Health England – Microbiology Network) ❖ Community and hospital pharmacies to review stocks of influenza medicines; more people may request advice for managing symptoms of flu
NPFS activity level	❖ NPFS not yet activated ❖ Northern Ireland flu helpline may be operating
Public Health Agency responsibilities	❖ Assist with diagnosis ❖ Surveillance of cases in community intensified, with particular focus on clinical features and severity, virus characteristics, antiviral sensitivity, and mutations ❖ Monitoring of global and UK pandemic situation ❖ Reviewing advice on PPE, fit testing, and infection control ❖ Operationalising research protocols where possible
Public messages	❖ Advise anyone experiencing an Influenza Like Illness (ILI) and who has recently returned from an affected area/has been in contact with someone who has to: ➢ stay at home and access advice for treatment/self care from the government websites, other media, possibly the Flu Advice line, and community pharmacies ➢ phone GP for advice on assessment ➢ seek GP support if in a clinical risk group ❖ Call GP if ILI is getting worse (with confusion, breathing difficulties affecting movement or talking; worsening long-term illness) ❖ Start messaging regarding appropriate use of 999 and ambulance services ❖ Commence promotion of 'Flu Friend' ❖ Reinforce good hand and respiratory hygiene

3.2 Treatment and Escalation Phases

Once there is evidence of sustained transmission of the virus in the community, the focus will move to the treatment of Influenza Like Illnesses (ILIs). The decision to move to 'Treatment and Escalation' will be taken in Northern Ireland. Some hotspot areas may already have moved to this phase following consultation between HSC Trusts, the HSC Board, the PHA and DHSSPS.

Diagnosis will be based on clinical assessment, with antiviral treatment of clinical at risk groups and those who may be at risk of serious complications, or possibly a "treat all" strategy depending upon the behaviour of the virus. Key risk groups and best practice will be determined nationally in response to the situation at the time. Some swab testing may continue in order to survey the behaviour of the virus in a good representative sample of the population.

On moving to the Treatment and Escalation phases all services will be preparing for, or undertaking, a pre-agreed capacity expansion process and may need to consider the implementation of mutual aid arrangements or the reduction of non-urgent work. The decision to activate capacity expansion plans is likely to be made at a Northern Ireland level, as not all parts of the UK will be affected at the same time or to the same extent.

HSC Trusts and the PHA should also be undertaking vaccination planning although initial vaccine supplies may not start to be available for four to six months from the emergence of the new virus.

The impact on services will vary according to the characteristics of the virus, the number of people affected, and the severity of the illness. A high service impact pandemic causing widespread and severe illness in the population is likely to result in intense and sustained pressure on all parts of the health and social care system. Most age groups could be affected, and wider services and business sectors will be affected owing to higher levels of absence due to sickness, and deaths.

In such a scenario, there will be limited capacity for mutual aid and extraordinary measures will need to be considered. It will also be essential to consider the cumulative impact of ill health, anxiety and bereavement on services. All parties will need to work closely together and coordinate their activities in order to support essential care provision. The ability to prioritise services both geographically and throughout each 24 hour period will be critical to the ability of HSC organisations in managing a capacity crisis. This will include helping clinicians to prioritise workload, co-ordinating temporary re-provision of services, and establishing an environment that promotes cooperation whilst minimising both clinical risk and the risk of loss of confidence. Communication and the provision of up to date information to health and social care staff will be essential.

Each scenario (whether low, medium or high impact) will require different response strategies and an ability to adapt plans to cope with changing circumstances.

Public Health Agency

HSC Trusts and the PHA will continue to gather data to monitor the virus throughout the pandemic, albeit at different levels of intensity. Testing for, and of, the virus in hospitals will be important, even though these services may be under intense pressure.

Throughout Northern Ireland, communication activities will continue. Public health staff, or other trusted professionals, will be best-placed to communicate information to the community on infection control, risk, self management and referral. The ability of the media to influence public behaviour may be significant and it is important that messages provide clear information and instil pubic confidence.

Primary and Community Care

GPs, community pharmacies and community health teams will continue to be a key part of the health response. **In a low impact pandemic** it may be possible to maintain service delivery, albeit with some adaptations, dependent upon the level of impact of the pandemic.

In a pandemic of moderate impact, suspension of non-urgent clinical care and non-clinical activities, with other measures such as telephone consultations may free up additional capacity. Close working between primary care, social care, the independent and the voluntary sector will support the majority of patients requiring home care. However, pressure on individual practices may be heavy and single-handed or smaller practices are likely to experience disproportionate difficulties caused by increasing demand and reduced staffing levels. Pre-planned “buddying” arrangements between practices may assist in maintaining continuity of services.

In a high level pandemic, many services will come under pressure during the treatment and escalation phases and innovative solutions are needed to provide increased capacity and sustainability without diluting expertise. Primary care out–of-hours services are one example where increased pressure may have a disproportionate impact and a knock on effect on other services such as in-hours primary care, EDs and ambulance services. All services will need to work closely together so that they can continue to function and that no single area is overwhelmed. It is important to avoid the risk of delay in diagnosis and treatment for patients suffering from serious non–influenza illnesses.

As well as maintaining essential provision for non-influenza patients, the resources and skills available in GP practices should focus primarily on patients who:

- are suffering influenza complications;
- are less than five years of age;
- are pregnant;
- have relevant pre-existing medical conditions, eg neurological condition such as multiple sclerosis or cerebral palsy;
- are in identified influenza clinical 'at-risk' groups;
- are not responding to treatment;
- need higher levels of care but are unable to be admitted to hospital;
- require symptom control or end of life care, or
- need bereavement support.

These groups, although subject to revision as increasing knowledge about the influenza pandemic virus becomes available, include some of the population groups for whom vaccine is likely to be prioritised.

There may be tensions for primary care clinicians due to balancing the needs of sick patients with the requirement to certify the death of those who have died at home. All health providers will need to make best use of the clinical staff available, focusing appropriate resources in areas of highest demand and working closely with councils in coping with the increase in deaths. This should include considering the appropriate deployment of recently retired doctors.

HSC response plans may 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, recognising that they will also be facing additional demands.

Those who rely on medicines as part of their routine care and treatment will continue to need these medicines throughout a pandemic. Business continuity plans should allow for possible temporary closure of some community pharmacies due to staff absences and the potential for interruptions to the global distribution supply chain for medicines.

The Human Medicines Regulations (2012) enable pharmacists to provide an emergency supply of 30 days of prescription-only medicines and five days supply of certain controlled drugs. This flexibility could be used during a pandemic, if the pharmacist considers that there is an immediate need for the prescription-only medicine and that it is impracticable in the circumstances to obtain a prescription without undue delay. The pharmacist is required to satisfy certain other criteria before issuing the medicine.

Demand for essential medicines and over-the-counter remedies is likely to be high during a pandemic and re-supply may be uncertain. A buffer stock of essential medicines has been purchased centrally to help maintain UK supply in the event of temporary disruption to the supply chain during a pandemic or other

emergency. The buffer stock comprises a few weeks supply of about 240 key medicines (including both community and hospital lines).

Secondary bacterial infections are likely to be a major cause of death during an influenza pandemic. The main role of antibiotics is to reduce the severe illness and deaths, which could arise from secondary complications. To ensure there are sufficient levels of antibiotics in a pandemic, DHSSPS will maintain a stockpile of antibiotics most likely to be useful for complications arising from pandemic influenza. These would be made available if there was clear evidence of shortages in the supply chain in primary or secondary care during a pandemic. In the event of a shortage arising, advice would be issued by the CPO advising stakeholders about the usage of the stockpile.

NI Ambulance Service

Increased demand for ambulance services is often an early indicator of pressure on the health system. Even in a low impact pandemic there may be a significant increase in ambulance call rates and this demand will need to be managed.

As pressure on both primary and secondary care services increases, ambulance services will see further increased referrals. In a moderate impact pandemic the Northern Ireland flu helpline and the NPFS may both be operational and may mitigate some pressures. It will be important to maintain good communication between services to ensure that patients are appropriately transferred.

Rapid handover at hospitals will be critical in making best use of ambulance time and ensuring maximum availability of beds. The use of an integrated care system will ensure a consistent approach across all agencies.

Mental Health Services

The legal duty to provide services that protect the rights, and support the needs, of vulnerable adults and children is part of ‘core business’ and the safeguarding practices and processes should be protected by robust contingency plans.

It is important to have plans in place to enable mental health services to deal with potential increased staff shortages during a pandemic. In particular, plans need to ensure the continued ability to safeguard patients in accordance with the Mental Health (Northern Ireland) Order 1986, and that the Order can continue to be used to detain and treat people, where it is necessary.

Increasing the numbers of people cared for within mental health facilities may increase the scope for self-harm. Also, acute illness, such as influenza, can worsen depression, which can complicate the risk assessment, treatment and recovery for some service users. Thorough risk assessments for all service users, based on their clinical presentation must continue to be made.

In a moderate impact pandemic, pressures on Trust acute services may mean that mental health units cannot transfer service users who develop increased physical health needs to acute hospitals as regular practice would require. Access to primary care could also be limited, and mental health services may be required to care for service users who are suffering from influenza or its complications.

Discharging service users from general inpatient wards to the community may be difficult during a pandemic. It will be necessary to evaluate the risk of discharge to the service user, and to others, compared with the risks of catching flu if remaining as inpatients and any loss of liberty that might be involved. This assessment should include assessing the level of support at home for individuals ready to be discharged, and the capacity of community services to provide care when their workloads may have already been increased by a pandemic.

Forensic services (low to medium secure) pose an additional management challenge in that some service users are on restriction orders imposed under mental health legislation (administered by the Department of Justice). Court appearances and procedures may be affected. Services should have guidelines and protocols in place for the transfer of service users to acute medical care including the consequent impact on staffing requirements.

Refreshment of staff training in medical care, including signs and symptoms of influenza, and ensuring that good infection control measures are in place will be important in maintaining good quality holistic care to mental health patients with flu and limiting transmission of the virus within any mental health closed community.

Advice and understanding of self-care will be important for service users, carers and staff in both hospital and community based services so communication messages should include basic infection control advice. In medium secure units, one-to-one education by a staff member known to service users would be of benefit.

When service users, who may not have capacity to consent to treatment, need influenza-related medicines, usual consent procedures should be followed. The Mental Capacity Act and the Department of Health document 'Reference Guide to Consent for Treatment or Examination' do not apply in Northern Ireland, but work is underway to bring forward similar legislation incorporating mental capacity and mental health provisions. The DHSSPS guidance 'Reference Guide to Consent for Examination, Treatment or Care (2003)'[10], gives advice on determining whether a person has capacity and on what action may be taken where the person lacks capacity.

There are certain drug treatments that may require additional contingency planning. For example, Clozapine, which is used to treat schizophrenia, may reduce the white blood cell count, so clients require regular monitoring. The

[10] http://www.dhsspsni.gov.uk/consent-referenceguide.pdf

Medicines and Healthcare products Regulatory Agency (MHRA) have stated that this requirement will not change. Therefore it will be for individual Trusts to maintain monitoring requirements based on their own resources.

Social Care

Social care services, including those providing care home placements, may come under strain, particularly at the height of the pandemic, because:

- there will be a potential increase in demand, perhaps sustained for several weeks;
- people who would normally be cared for in hospital may need to be cared for at home or in the community;
- informal carers may become ill and /or may need to take on a higher level of caring responsibility, so will need to be supported;
- the demographic profile of those employed within the sector means that a higher than average proportion of the workforce has personal caring responsibilities (and schools may be closed for longer than usual), and they support people who cannot manage their daily tasks without help and/or whose safety, wellbeing and independence, without intervention, would be at risk.
- pressure will be on staff working within the sector, but the individuals requiring support will change as people become ill and then recover.

Social care providers are aware of, and are in regular contact with, many vulnerable individuals in the community. Such individuals might be either more vulnerable to, or more affected by, pandemic influenza. Other individuals, not normally perceived as vulnerable, may become so in the setting of a pandemic, eg single parents with young children, and adults living alone who may be remote from family.

Community care

As demand for hospital care increases, patients discharged home may require a greater level of care than they would do normally. Social and community care services may face particular challenges that include:

- maintaining services and pandemic response with reduced staffing capacity due to increased levels of illness;
- identifying those most at risk;
- sustaining indirect care services for example meals on wheels, community equipment and community alarm services;
- meeting additional burdens on overstretched services due to additional pressures on acute hospital beds;

- sustaining people with complex needs who are currently supported with concentrated care packages in the community;
- providing emergency care for vulnerable people looked after at home by informal carers, or personal assistants employed via direct payments, if their carer is ill;
- providing support to those discharged from hospital in light of possible reduced availability of residential places to those whose community support package is unsustainable for reasons other than influenza, ie normal admissions, and
- communicating messages of self-care, remaining at home if ill and how to access treatment may be made more difficult since known vulnerable groups encompass a wide range of individuals from differing demographic groups.

Care of individuals in the community therefore presents a diverse and complex challenge at a time when staffing capacities are likely to be reduced. Close working relationships across health and social care organisations, the independent sector and voluntary groups will be essential to sustaining services during a pandemic.

As part of business continuity plans, arrangements should be in place for responding to increased demand for assessments and support alongside reduced capacity to deal with such circumstances. Processes to sustain fair and fast access to services for those most in need may need to be revised during a moderate to high impact pandemic, for example by:[11]

- prioritisation of referrals for assessment (according to urgency)
- the use of telephone assessment;
- greater use of self-assessment (e.g. Internet);

} consider only doing home assessments for complex needs

- a one-stage referral and assessment model;
- deferral of non-urgent referrals until after the pandemic;
- redeploying staff from other tasks to delivery of actual support/care, and
- temporarily reallocating support from those with lower levels of need to those with higher levels.

A range of information may be needed to assist in making decisions about urgency and a person's likely eligibility for services during a pandemic. Those responsible for managing assessments will need to agree criteria for prioritising. The Department's Pandemic Influenza Guidance on the Provision of Healthcare

[11]Prioritising Need in the Context of Putting People First: A whole system approach to eligibility for social care. 25 February 2010. Department of Health
www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_113154

in a Primary and Community Care setting in Northern Ireland[12] may be of assistance.

Assessments that may need to be prioritised include:

- Risk Assessment and Management;
- assessments in hospital that facilitate discharge;
- intermediate care assessments that facilitate hospital discharge or prevent hospital admission;
- carer breakdown, ie where normal care arrangements have broken down and someone's safety is at risk;
- an indication that life is or will be threatened;
- an indication that significant health and social care problems have developed or will develop, and
- other urgent health and safety issues.

Assessments that may be deferred may include:

- cases where adequate care and support is already provided (at least in the short term);
- those for major adaptations to a person's home (unlikely to be carried out until after the pandemic);
- cases where community or social care support would increase an individual's quality of life (for instance, social inclusion), but it is not critical at this time, and
- those for reviews of existing care and support.

If pressure on services reduces available capacity to the extent that only the needs of those assessed as having a 'critical' need (aligned to adult social care eligibility criteria) can be met, prioritisation criteria will include where:

- life is or will be threatened;
- significant health and social care problems have developed or will develop;
- there is little or no control over vital aspects of the immediate environment;
- serious abuse or neglect has occurred or will occur, and
- there is or will be an inability to carry out vital personal care or domestic routines.

[12] http://www.dhsspsni.gov.uk/hss-md-35-2009-attachment.pdf

To reduce the length of assessment, organisations may choose not to assess against the criteria in relation to family and wider community life until after the pandemic. Any needs associated with these criteria are unlikely to be life threatening in the short term.

Carers

Many people are supported by unpaid carers. There are over 200,000 carers in Northern Ireland. Significant numbers of carers will either have flu themselves, need to provide increased care for the person they care for because of flu, or need to look after someone else who has flu in addition to the person for whom they usually care. Many more people, both adults and children, may unexpectedly become temporary carers during a pandemic.

Some carers will have to undertake tasks they have never done before and which, under normal circumstances, they might be unwilling to carry out. They may need increased support including information or training on new tasks, items of equipment to help them manage, and help to check that 'fixed' equipment is correctly installed. Short-term care home placements may also be required in order to maintain carers' own health.

HSC Trusts, primary and community care providers, carers' organisations and other third sector providers should work together to ensure that their overall resources are used to best effect, communication and key support to carers is provided, and carers are given help to assess their own needs.

Care homes and domiciliary care

Care homes may find that difficulties such as staff shortages, resident illness, death, and transport problems all coincide over a prolonged period during a pandemic. Infection rates can be particularly high in group living environments such as care homes so residents may need more help with personal care tasks and more may be in need of end of life care. Trusts must be assured that providers have appropriate pandemic flu plans in place. The nursing and residential care standards require care homes to have a contingency plan in place for dealing with an influenza pandemic[13][14].

Care homes plans will need to include:

- protocols concerning whether people with influenza should be admitted to hospital during the pandemic;
- communication to staff, residents and visitors about infection control requirements;

[13] http://www.dhsspsni.gov.uk/care_standards_-_residential_care_homes.pdf
[14] http://www.dhsspsni.gov.uk/care_standards_-_nursing_homes.pdf

- arrangements for minimising the risk of transmission and infection during the pandemic by isolation or cohort-grouping of infected clients;
- information on provision of face masks to care staff according to national guidance on their use, and
- procedures for managing additional deaths, including storage of bodies if necessary.

Care homes within the same area should consider collaboration and mutual support, eg by forming 'clusters', to enable each to be aware of:

- capacity;
- the kind of care available, and
- which care homes are taking new admissions, including those with flu.

The United Kingdom Homecare Association (UKHCA) has developed specific guidance on domiciliary care during the influenza pandemic that is available on their website[15].

Closed communities including Prison Health

Closed communities such as prisons, where large numbers of people live at close quarters, are a high-risk environment for transmission of influenza. Prisoners are more likely than many other sub-groups of the general population to have co-morbidities causing increased risk of severe or complicated influenza, eg asthma, and respiratory disease secondary to smoking. Preventing transmission of the virus in prisons and other closed communities is necessary throughout the pandemic period. Prisons should develop pandemic plans working with South Eastern HSC Trust and the PHA as required. Effective measures include isolation and cohorting of those affected, treatment with antiviral medicine for both cases and close contacts (in particular for persons in high-risk clinical groups), and vaccination, when available, for those in high risk groups.

Secondary Care

In a low impact pandemic, there may be no significant deferral of normal activities. However, some small or specialist services, such as intensive care, may still come under pressure dependent upon the disease characteristics and the emerging at risk groups. In hotspot areas, increased referrals to primary care services are likely to cause knock-on effects to Emergency Department (ED) services. Effective coordination between in and out of hours services, and clear public communication, will be needed to ensure members of the public

[15] www.ukhca.co.uk/flu/

understand where to find advice and assistance on influenza, so that capacity still remains for non-flu patients.

Where possible, hospitals will need to adopt cohort arrangements to support infection control. This will affect routine arrangements in EDs, and may reduce the flexibility of ward areas. Preparations for potential further escalation will include the review of patients with long-term conditions and planning for potential reduction in outpatients' clinics. Continuity arrangements for staff and supplies should also be confirmed in preparation for a high impact pandemic affecting non-health services. Careful consideration should be given to planning for the necessary reductions in non-critical work and expansion of capacity in other areas that will be required in a moderate or severe service impact pandemic.

In a pandemic of moderate impact, hospitals will need to respond to increasing referrals of respiratory patients requiring higher levels of care. Prioritisation of in and out patient resources may be required to enable the maximum numbers of beds to be available. As the pressure on all services increases, it will be even more important for community, hospital, social care and NIAS to agree prioritisation across the HSC Trust area, maintain close communication and make best use of available skills of staff.

In a high impact pandemic, staff absences may add to these difficulties. A key challenge in sustaining essential care will be the ability to use available staff flexibly and cooperatively when necessary between organisations. A high impact pandemic may also result in increased numbers of deaths. It will be important to plan appropriately so that death and cremation certification can be managed as effectively as possible.

Maternity care

Planning for maintenance of essential maternity services will be important and the principle of choice for women should continue as far as possible. The UK National Screening Committee has provided guidance on antenatal care which will assist in planning to maintain essential testing[16]. Antenatal classes should be maintained during a pandemic, although pregnant women and midwives should be advised not to attend classes if they are unwell with influenza-like symptoms. For women with flu symptoms who may require Caesarean section, consideration should be given to whether it is reasonable to delay. Good infection control measures will be important.

Blood services

Blood donor sessions will be expected to continue as an adequate supply of blood is critical to the provision of acute healthcare, and will be vital for the emergency care for many patients. Blood Services will therefore continue using

[16] www.screening.nhs.uk/getdata.php?id=9321

health messages to encourage the public to donate blood. Care must be taken to communicate early with blood services to ensure that facilities required for ACPs do not conflict with blood donor session venues. During and after a severe pandemic the blood supply chain may take longer to recover and rebuild stocks than supply chains in the rest of HSC organisations. Therefore, it is vitally important that blood services be consulted before resumption of business as usual activities that require blood products. As acute care will continue to be provided, tissue and organ donations to support life-saving transplantation procedures will also need to be maintained if possible. The Advisory Committee on the Safety of Blood, Tissues and Organs has issued advice which is available at www.dh.gov.uk/ab/SaBTO/index.htm.

Critical care

Critical care services are regularly utilised at a high bed occupancy rate of around 98-100% and are therefore likely to come under significant pressure even in an early stage or low-impact pandemic. This may continue throughout the pandemic, depending upon the length of stay of patients, and pressures may remain after other services in primary and secondary care have returned to normal levels of activity. Any increase in the requirement for critical care beds requires a prompt and flexible response to manage and match increased demand. Even when patients present with symptoms and are awaiting test results (not yet confirmed positive), this can have an impact on services such as critical care where isolation and escalation may be required.

As a result of lessons learned from the 2009 H1N1 pandemic, measures were developed to expand the capacity of intensive care services as set out in the Report of the Swine Flu Critical Care Clinical Advisory Group[17]. These included:

- identifying potential extra bed capacity in related areas, such as operating theatre recovery suites, step-down and high-dependency care facilities;
- maximising the use of stockpiled equipment;
- broadening the training of staff who could support these beds to increase available staff numbers;
- supporting more formal cross-training and experience between adult and paediatric services to increase the ability to provide more flexible and overlapping services;
- supporting the specialist staff who would have to manage the triage, admission and discharge of patients;
- supporting accurate and timely data on critical care capacity including adult paediatric and specialist beds, and
- supporting collaborative working to provide mutual aid – such practice in line with escalation plans of critical care networks.

[17] http://www.dhsspsni.gov.uk/sfcccg.pdf

Where plans to increase capacity require the suspension of some or all high risk elective surgery, such suspension should be in line with critical care network escalation plans and should differentiate time-critical from non time-critical surgery. During periods of high pressure in hospitals where doctors may be diverted to provide care for critically ill patients, consideration should be given to utilising the skills of other healthcare professionals including nurses and specialist clinical pharmacists for supporting the provision of some clinical services.

HSC Trust plans are necessary to make the best, most flexible adjustments to demand. Guidance is available in *Pandemic flu: managing demand and capacity in health care organisations (surge)*[18]. When demand for critical care services threatens to exceed capacity, pressure on healthcare services can be mitigated initially by careful selection of patients for hospital assessment and admission, and subsequently by a coordinated approach to patient pathways to higher levels of care. Provision should also be made for interim, respite or step-down care for patients who are less likely to benefit from critical care, or who have received critical care but now require a lower level of care.

There has been no overall agreement about relying upon a scoring system alone for triage. The Sequential Organ Failure Assessment scoring system is an important adjunct to clinical decision making when managing capacity. It can be used as part of an overall strategy but should not completely replace the need for clinical judgement. Clinical judgement therefore remains essential in making decisions on admission to, and discharge from, critical care. During care, decision support tools can aid assessment of a patient's response and likely prognosis.

The ethical framework [19] outlined in section 2.3 can support staff in addressing the ethical issues which may arise and provides a framework of the principles involved in making difficult decisions for individual situations. The availability of established clinical ethics committees or support groups at a Trust level may also be helpful.

Information on the benefits of various clinical interventions in managing a new pandemic disease may be limited, especially during the early stages of the pandemic. While laboratory and investigative test results can help, there is great benefit in sharing information and pooling experience.

Difficult triage decisions were not required during the H1N1 (2009) influenza pandemic. However, a discussion forum would permit sharing of effective decision criteria and greatly increase confidence in triage decision-making.

[18] http://www.dhsspsni.gov.uk/doh_publication_-_pandemic_flu_-_managing_demand_and_capacity_in_health_care_organisations__surge_.pdf

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

Such peer engagement is also known to be a valuable addition to more formal counselling and planned 'down time' in supporting staff who are working under severe pressure, and in aiding recovery afterwards.

The Critical Care Network Northern Ireland (CCaNNI) can play a key part in pandemic management in:

- real time data gathering to provide information on numbers of influenza cases in critical care and clinical relevance in the context of other critical care activity;
- identifying pressure points in the service and providing advice about appropriate actions to maximise capacity and minimise disruption to other users of critical care;
- collating and sharing of clinical experience within Northern Ireland, nationally and internationally;
- facilitating mutual aid between organisations including the transfer of critically ill patients between Trusts, and
- promotion and co-ordination of training to staff to give them enhanced competencies to treat adult and paediatric critically ill patients.

Health and social care role in Treatment and Escalation phases	**LOW IMPACT**
Possible HSC indicators	❖ Similar numbers of cases to moderate or severe seasonal influenza outbreaks AND mild to moderate clinical features ❖ NIAS coping with increased referrals ❖ GPs and EDs coping with increased pressures ❖ Acute hospitals managing respiratory admissions ❖ ICUs nearing or at maximum pressure - using mutual aid (eg network support and paediatrics/adult collaboration) ❖ Community pharmacies coping with increased pressures, supplying medicines and providing advice on self care ❖ Potential for increased staff absence due to sickness
Key health and social care delivery modes	❖ No significant deferral of usual activities ❖ Preparing for reduction of non-urgent work ❖ Preparing for possible 'flu clinics' and 'cohorting' of inpatients (concerns about setting aside mixed-sex policy, in the interest of patient welfare) ❖ Preparing for ICU expansion process ❖ Preparation in case NPFS is needed (possibly planning for/operating ACPs in hotspots only). Use of UK protocols for the supply and administration of antiviral medicines ❖ Preparation for vaccination programme ❖ Vaccination programme (when available) subject to JCVI advice but likely to be restricted to health and social care workers and clinical at risk groups thereafter
NPFS activity level	❖ Flu advice line function active ❖ Liaison with RCGP on setting up GP liaison support system for call-agent staffed phone-in NPFS centres if needed ❖ Set up NPFS clinical Quality Assurance systems
Public health responsibilities	❖ Diagnosis, and development of diagnostic tests ❖ Surveillance of cases in community: clinical features and severity; virus characteristics; antiviral sensitivity and mutations
Public messages	❖ Advise anyone experiencing an ILI and who has recently returned from an affected area/has been in contact with someone who has to: ➢ stay at home if ill and use self care advice (including advice on managing symptoms from community pharmacist) ➢ phone GP/NFPS for advice on assessment for antivirals ➢ seek GP support if in an influenza vaccination group (at risk) ❖ Advise patients to call GP if flu-like illness is getting worse with confusion, breathing difficulties or worsening long-term illness ❖ Advise on likely reduction in 'routine' GP clinics and hospital appointments; ❖ Advise patients to ensure they have adequate supplies of the medicines they require ❖ Reinforce promotion of 'flu-friend' activities ❖ Continue to reinforce good hand and respiratory hygiene

Health and social care role in Treatment and Escalation phases	**MODERATE IMPACT**
Possible HSC indicators	❖ No of cases higher than large seasonal epidemic; young healthy people / those in at-risk groups severely affected AND/OR more severe illness ❖ GPs cannot continue non-urgent and public health activities (ie no longer Business as Usual) ❖ GP emergency and influenza work under severe pressure ❖ Hospital non-urgent out-patient appointments and admissions no longer possible ❖ Hospitals urgent and emergency activity managed with maximum effort; ED pressure indicators high ❖ ICUs at maximum expansion and under severe pressure ❖ Community pharmacies under pressure; difficulties accessing some medicines ❖ Community health and social care services prioritising support to those most in need
Key health and social care delivery modes	❖ Decisions to cease non-urgent primary and secondary care activities ❖ Regional support for mutual aid ❖ Cessation of planned surgical procedures needing ICU admissions ❖ Preparing for private and voluntary sectors to support health and social care activities ❖ Contingency plans for supporting care at home and respite care ❖ Vaccination programme (when available) subject to JCVI advice ❖ Consider partial activation of business continuity arrangements, particularly around workforce if necessary
NPFS activity level	❖ Possible activation of NPFS ❖ ACPs operational ❖ Flu advice line active ❖ GP receptionist/GP decision pathway for review of patients with ILI not responding or worsening on antiviral treatment activated ❖ RCGP liaison service supporting staff at call centres for NPFS (if required)
Public health responsibilities	❖ Advice on when to cease measures to slow transmission of the virus, if they have been commenced ❖ Advice on prophylaxis with antivirals for at-risk individuals/groups, if appropriate ❖ Maintenance of ILI clinical features up to date ❖ Surveillance of ILI cases and outbreak investigation, including antiviral resistance monitoring ❖ Reference diagnostic work for inpatients ❖ Local analysis of the effectiveness of the pandemic response
Public messages	❖ Information on the pandemic and the clinical effects of the infection (including reinforcing good hand and respiratory hygiene) ❖ Advice from community pharmacies for managing flu symptoms and support for self-care ❖ Advice on seeking medical assessment when not improving or getting worse ❖ Information on NPFS and collection of antiviral medicines (including flu friends) ❖ Information on appropriate use of Ambulance Services; ❖ Advice on antiviral medicines - (in liaison with expert bodies and support groups) ❖ Media management (as highlighted in Hine report) around science, planning assumptions and severity/impact/likely evolution of the situation ❖ Managing expectations of the public re the Critical Care Services available and the variation from normal provision ❖ Messaging re vaccination - groups, when and why to vaccinate

Health and social care role in Treatment and Escalation phases	**HIGH IMPACT**
HSC indicators	❖ Severe pandemic AND/OR most age-groups affected AND/OR severe, debilitating illness with or without severe or frequent complications ❖ GPs, district nurses and social carers, independent sector, pharmacies, residential homes and voluntary organisations fully-stretched trying to support essential care in the community WITH consequential pressure on secondary care ❖ Hospitals can only provide emergency services; ethical framework implemented for access to critical care ❖ Transport, schools, shops affected by sickness and family care absences ❖ Pressure on some supplies ❖ Numbers of deaths putting pressure on mortuary and undertaker services
Key health and social care delivery modes	❖ Arrangements to fully employ all health and social care sectors, including pharmacists, to deliver services and advice ❖ GPs and Out of Hours services relying on telephone advice systems to support urgent and emergency calls ❖ Community assessment tools deployed to manage demand for hospital assessment ❖ Close working with voluntary and independent sector to provide mutual aid and a resilient collaborative response ❖ Non-specialist doctors and agreed volunteer doctors managing inpatients, using hospital pathways ❖ Need for triage, reverse triage and supportive triage - provision of best available alternative care in extreme surge ❖ Demand for critical care services outstrips supply ❖ Non-invasive ventilation, oxygen only or palliative care used as alternatives ❖ Community health and social care organisations coordinate activities to reduce the number of staff visiting service users ❖ Social care services prioritised for those with critical needs - staff in non-critical services deployed to support essential services ❖ Informal networks encouraged to provide basic care to isolated people ❖ Volunteer flu friend arrangements fully stretched ❖ Business continuity arrangements activated to ensure available staff deployed to support essential services
NPFS activity level	❖ NPFS working to capacity; ACPs under pressure ❖ Emphasis on maintaining supplies and staffing ❖ Medicines supplies may not be at an optimum level
Public health responsibilities	❖ Continuation of all activities as described in LOW and MODERATE ❖ Surveillance for mutations in the influenza virus and for alteration in antiviral sensitivities ❖ Surveillance of bacterial isolates (may be difficult due to specimens not being offered at height of activity and limited staff for non-virus work) ❖ Little need for widespread viral diagnostic testing, efforts targeted on emerging resistance and lab tests to support patient care
Public messages	❖ Messages about progress of the pandemic, availability of healthcare and other services, where to get help for emergencies ❖ Advice on how to minimise risks of transmission ❖ Explanation of triage systems to align demand and capacity, including NPFS ❖ Messaging re vaccination – eg on groups, when and why to vaccinate ❖ Accurate information about how services are coping and what they are doing to cope ❖ Information on how to support family members and neighbours ❖ Civil contingencies advice, including to paramedics, funeral directors, registrars, cemetery workers, police etc as appropriate

Potential for legislative changes

In a high impact pandemic consideration may be given to areas where changes in legislation may be required to enable continuation of services. This is unlikely in all but the most extreme scenarios. Given the unpredictable nature of a pandemic any possible measures would need to be selected and tailored to meet the prevailing circumstances and the needs of the response. One potential change would be:

Sickness Certification: Employers already have some flexibility at their discretion as to what evidence of sickness they can accept as an alternative to a medical certificate. This may be useful in a low impact pandemic in reducing pressure on general practitioners. In a high impact pandemic consideration may also be given to potential changes to arrangements for sickness self-certification as part of a package of measures to reduce the burden on GPs over the peak of the pandemic. For example, people were advised to retain their antiviral medicine boxes if using the NPFS rather than seeing a GP.

3.3 Recovery Phase

The Recovery phase will start once demands on services reduce to a level that there may be a gradual return to “normalisation” of services or a regrouping prior to a further wave of the pandemic. It may not be possible to predict whether there will be further pandemic waves so regrouping during this phase will be important to allow staff to rest and take periods of leave to allow some personal recovery prior to a further wave.

Recovery is the process of rebuilding, restoring and rehabilitating the community following an emergency. The retention of knowledge and incorporation of lessons identified into the pandemic plans of individual and partner organisations will be an important part of this phase. Planning for recovery should be integrated into normal planning before, during and after any pandemic as part of business continuity planning.

Actions taken during the pandemic can influence the longer-term outcomes for communities. For instance for hospitals, stopping elective surgery for a short period as part of the response may affect waiting times for many months. In a moderate or high impact pandemic many services will have been affected and the return to a more normal and sustainable level of operating may be lengthy.

There will continue to be increased demands on some services from patients whose existing illnesses have been exacerbated by influenza or from those who may continue to suffer potential medium or long-term health complications. Some key staff members may not return to work due to altered family circumstances, severe illness, or even death. Plans should therefore recognise the potential need to prioritise the restoration of services and to phase the return to normality in a managed and sustainable way.

The Recovery process comprises the following overlapping activities:

- consequence management (eg restoring essential services);
- restoration of the well-being of individuals, communities, the infrastructure which supports them and the organisation itself;
- exploiting opportunities afforded by emergencies, and
- structured debrief, identifying potential improvements and applying lessons learned in order to improve any future response.

Return to winter planning

The pandemic influenza virus is likely to persist for a number of years as one of the circulating seasonal flu viruses. Surveillance systems will be tracking its impact in other countries as they enter their winter flu season. However, experience shows that following the pandemic, the characteristics of the seasonal flu viruses that emerge in other countries may differ from that experienced in the UK or Europe.

Expectations that widespread transmission of the virus during the pandemic may lead to a low impact during the following flu season may not always be correct as demonstrated during the 2010/11 flu season which followed the H1N1 (2009) influenza pandemic. Planning for seasonal flu, including good vaccine uptake, as part of routine winter planning is prudent.

4. PANDEMIC COUNTERMEASURES

4.1 Antivirals

There are three main aspects to the use of antivirals as part of the 'Defence in Depth' strategy.

- providing rapid assessment and authorisation of antiviral medicines during an influenza pandemic. This includes the potential for using the National Pandemic Flu Service (NPFS) to enable people to stay at home and to reduce the pressures on primary care services;
- ensuring that there is a robust system in place to distribute antiviral medicines (ie antiviral collection points (ACPs) and other HSCB arrangements), and
- ensuring that there is a robust system in place to manage antiviral stock during a pandemic (ie stock management, storage and distribution).

There are currently two medicines recommended for the treatment of influenza in the UK, oseltamivir (Tamiflu) and zanamivir (Relenza), both neuraminidase inhibitors. They will mainly be used for treating symptomatic individuals. However, in certain situations, where individuals with a serious underlying condition or who are pregnant have been in close contact with an infectious case, clinical judgement may be used to offer a course of prophylaxis to protect against infection and reduce the risk of life threatening illness. In addition, prophylaxis with antiviral medicines of close contacts might be considered in the early stages of an outbreak but will not routinely be given to contacts of a case of pandemic influenza infection.

Oseltamivir (Tamiflu) is licensed for use in adults and children over 1 year old (and under 1 year for a pandemic). The Government has procured appropriate dose capsules from the manufacturer for use in children under 13 years old.

Oseltamivir (Tamiflu) - doses for treatment [20] (age 1 year and over)

- age 1 year or over but under 3 years (body weight under 15 kg) – 30 mg twice daily for five days.
- age 3 years or over but under 7 years (body weight over 15 kg to 23 kg) – 45 mg twice daily for five days.
- age 7 years or over but under 13 years (body weight over 23 kg to 40 kg and above) – 60 mg *(*two x 30 mg) twice daily for five days.
- age 13 years and over (over 40 kg) – 75 mg twice daily for five days.

[20] Oseltamivir (should be given twice a day for 5 days for treatment and once a day for 10 days for prophylaxis.

Detailed information about doses for children under 1 year will be provided in the event of a pandemic.

Oral oseltamivir Solution (oseltamivir 15mg in 1 ml), an unlicensed medicine, will be manufactured by designated licensed hospital pharmacies for supply to children under 1 year. As an ambient product this solution does not require refrigeration before the bottle is opened. Once the bottle is opened, it is recommended that the solution is stored in the fridge and used within 10 days. Consumables such as bungs and oral syringes are provided for use with these products. After manufacture unopened bottles of oral oseltamivir Solution have a limited shelf life of 90 days therefore it is important to organise stock appropriately so that the first stocks in are the first stocks out.

The manufacturer of Tamiflu plan to introduce a new formulation of Tamiflu Suspension which the Government intend to procure for the antiviral stockpile. The strength of this suspension is different to the Oral Oseltamivir Solution and care must be taken to follow the correct dosage instructions provided with the relevant product information leaflet.

Zanamivir (Relenza) - doses for treatment and prophylaxis[21]

The dose for adults and children aged 5 years and over is 2x5mg blisters to be inhaled using the 'diskhaler' twice a day for 5 days for treatment, or once a day for 10 days for prophylaxis.

Children under one year of age who have high fever and cough or influenza-like symptoms should be seen and assessed by a GP or suitably qualified health professional/practitioner. Children aged one year or over can be assessed using the NPFS using a clinically based paediatric triage protocol and referred for antiviral medicines if appropriate, although those at risk of suffering complications of influenza may be referred to a suitably qualified health professional/practitioner if needed.

As well as antiviral medicine treatment being available through the NPFS, GPs and other healthcare professionals will be able to authorise the supply of antiviral medicines without a prescription using special authorisation vouchers. Protocols for the supply and administration of oseltamivir and zanamivir have been developed with advice on how they should be used. Access to these two named prescription-only medicines without a prescription, and from premises that are not registered pharmacies under the supervision of a pharmacist, will be possible only during a pandemic. This will be notified at the time.

[21] Zanamivir (Relenza) should be given twice a day for 5 days for treatment and once a day for 10 days for prophylaxis.

Northern Ireland has a stockpile of antiviral medicines sufficient to treat up to half of the population in the event of a high impact pandemic involving a clinical attack rate of 50 per cent. For maximum treatment benefit, antiviral medicines need to be taken as soon as possible. Operational plans are built on the basis of treating all symptomatic patients within 7 days of symptom onset and ideally within 48 hours. Developing sufficient capacity in primary care to assess patients promptly is therefore critical to the effective provision of antiviral medicines.

At the beginning of the initial response phase, a quantity of the UK antiviral medicine stockpile will be distributed to points of issue identified by the HSC Board across Northern Ireland.

Antiviral Collection Points

In periods of high demand, large scale access to antivirals will be required. Antiviral Collection Points (ACPs) will be established which are HSC Board nominated locations for the issue of antivirals. The Northern Ireland operational response for the co-ordination of antiviral distribution will be managed by the HSC Board. The HSC Board must establish a robust stock management system for antivirals which considers replenishment, storage and security, governance arrangements at ACPs and monitors usage. DHSSPS will be responsible for the policy and strategic overview in relation to antiviral distribution and will retain overall control of the Northern Ireland stockpile.

Symptomatic individuals are assessed by a GP/ Healthcare Practitioner or NPFS and the correct antiviral authorised. The symptomatic individual will nominate Flu Friends to attend the ACP on their behalf.

Many of the principles of Antiviral Collection Points are similar to those of Mass Prophylaxis Centres which Trusts are developing. However, the important difference between the two is that in a moderate or high impact pandemic, ACPs are likely to be located in sites outside of the HSC.

4.2 Antibiotics

Secondary bacterial infections are likely to be a major cause of death during an influenza pandemic. The main role of antibiotics is to reduce the severe illness and deaths which could arise from such secondary complications.

To ensure sufficient levels of antibiotics would be available in a pandemic, DHSSPS will maintain a stockpile of antibiotics most likely to be useful for complications arising from pandemic influenza. These would be made available if there was clear evidence of shortages in the supply chain in primary or secondary care during a pandemic.

4.3 Facemasks and respirators

Although there are central stockpiles of facemasks and respirators, it could take seven to ten days for distribution of centrally held stocks to be completed and organisations should prepare to rely initially on HSC Trust stocks and continuity arrangements. For this reason, organisations should maintain sufficient stock for seven to ten days use in the initial stages.

Surgical facemasks and respirators have a role in providing healthcare worker protection, as long as they are used correctly and in conjunction with other infection control practices, such as appropriate hand hygiene[22]. Masks for patient visitors is not supported by scientific evidence and the incorrect application and disposal may in fact pose a greater risk.

Fluid repellent surgical masks provide a physical barrier and minimise contamination of the nose and mouth and should be worn by health and social care workers for any close contact with patients (i.e. within one metre) with symptoms of influenza. There is a regional stockpile of surgical facemasks for health and social care workers.

Respirators provide respiratory protection against the inhalation of fine or very small airborne particles, which might contain viruses and other micro organisms. This can only be achieved if the respirator is fitted correctly and there are no gaps between the face and the mask for unfiltered air to pass through. The current recommended respirator is FFP3, and this model is held in the UK stockpile in the event of a pandemic. Employers have a duty of care to ensure that anyone who might be required to wear a respirator be trained in its use and fit-tested to ensure that an adequate seal can be achieved. More than one make of respirator should be made available to help account for different face shapes. These respirators should be worn when performing procedures that have the potential to generate infectious aerosols such as intubation, extubation and bronchoscopy. Although only a relatively small group of workers will need to consider wearing respirators there is a very small possibility that this could increase if there was growing evidence that the virus was causing severe infection.

Although there may be a perception that the wearing of facemasks in the community and in households is beneficial there is in fact very little evidence of widespread benefit from their use in these settings. Facemasks must be worn correctly, changed frequently, removed properly, disposed of safely and used in combination with good standard hygiene behaviour in order for them to achieve the intended benefit. Research also shows that compliance with these recommended behaviours reduces over time when wearing facemasks for prolonged periods. DHSSPS will not be stockpiling facemasks for general use in the community. The responsibility for providing advice on the use of facemasks and respirators, as well as their provision and training, for non-health workers in the public private and voluntary sectors rests with employers.

[22] www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_125318

Employers should undertake risk assessments to determine whether the provision of facemasks or respirators is appropriate for their staff. Workers who need to wear a facemask or respirator must receive training in their safe use, removal and disposal to minimise the risk of cross contamination. Where a risk assessment indicates respirators are necessary, staff must be fit-tested. The HSE document 282/28 (http://www.hse.gov.uk/foi/internalops/fod/oc/200-299/282_28.pdf) provides guidance on conducting fit testing.

Each Trust should have a clear plan and procedure for fit testing, with a lead co-ordinator and a rolling programme, to ensure the required level of preparedness. A circular regarding FFP3 respirators and fit testing guidance for HSC organisations is available on the HSC extranet site[23].

4.4 Consumables

DHSSPS has stockpiled a wide range of consumable products which may become limited in supply during a pandemic. These include personal protective equipment such as facemasks, respirators, protective eyewear, hygiene products, gowns, aprons, gloves, and products required for the administration of vaccines and intravenous medicines.

The distribution strategy for these products would ensure that the HSC is supplied with an initial push of products which are likely to be in high demand as they are not used in the quantities which might be needed in a pandemic (including products such as facemasks and respirators) or are specific to the response (such as the vaccine consumables). Other products would be on a more demand-led basis and HSC Trust stocks might also continue to be used, or supplemented by central stocks. DHSSPS is working on a stockpile release protocol to clarify arrangements. More detailed information on stocks held and how to access them would be made in the event of an outbreak.

4.5 Vaccination

Planning for vaccination should begin at an early stage of a pandemic. The Public Health Agency will co-ordinate vaccination programmes, and monitor and encourage uptake rates. HSC Trusts will need to plan for receiving vaccine supplies, storage of the vaccine in appropriate conditions, distribution and staffing of vaccine clinics. Distribution will be via the normal channels and for reporting purposes the established systems.
Vaccine specific to the influenza pandemic can only start to be manufactured once the pandemic viral strain has been isolated. It is expected that initial supplies of

[23] http://dhsspsextra.intranet.nigov.net/pdf_-_policy_circular_for_ffp3_guidance_-_oct2011.pdf

vaccine will not be available until after the first pandemic wave. It may be four to six months from the emergence and establishment of the new virus before a population-wide vaccination campaign can commence. Initial vaccine deliveries will be in limited quantities so prioritisation will be essential. Due to the need to distribute the vaccine at the earliest opportunity, it is not possible to specify such issues as pack sizes, types of syringe etc. and this will also vary between manufacturers.

The JCVI will advise on priority groups for vaccination and it is essential to encourage vaccination uptake in these priority groups. Initial assumptions are that the usual seasonal flu clinical at risk groups will be at greatest risk but there may be rapid modifications to these priorities once more is known about the characteristics and impact of the new virus. Communication, and flexibility in delivery models to encourage vaccine uptake will be critical.

Frontline health and social care staff will be a priority group for vaccination. This will include registered volunteers working in the HSC. Encouraging vaccine uptake to become the norm in inter-pandemic years, ensuring open communication about the risks and benefits, providing opportunities for staff to access the vaccine easily both in and out of hours, and providing leadership through example, all contribute to successful uptake. Professional bodies may also play a role in encouraging uptake.

4.6 National Pandemic Flu Service

When there is evidence of sustained community transmission or a large number of de novo cases of a pandemic influenza virus, a decision will be made by the DHSSPS Minister to move from the initial response phase to a response designed to mitigate the impact of the disease on the individual, society and HSC organisations.

Any decision to make the NPFS operational will be taken at a UK level. It will be initiated if the service is required to supplement normal primary care services because of pandemic pressures. The service may be implemented by any of the UK countries based on pressures in their respective primary care system. The NPFS aims to:

- reduce pressure on primary care services;
- allow people with flu like symptoms to remain at home;
- enable rapid self-service assessment, care advice, GP referral and antiviral authorisation, and
- provide an additional source of data relating to trends in activity and profile of people assessed as suffering from pandemic symptoms.

The service will be available through the web or a dedicated call centre facility to enable members of the public to be assessed and given antiviral medicines if

appropriate. The telephony service can be accessed via Textphone and the web version is available in a number of different languages. The process is as follows:

1. A symptomatic individual, or their 'Flu Friend', will contact the NPFS and an assessment (using a clinical algorithm) will be undertaken.

2. If required, the individual will be authorised to receive antiviral medicine. The individual will then need to note down an authorisation number (12 alphanumeric characters). A "Flu Friend"[24] can do this on behalf of a symptomatic individual.

3. The "Flu Friend" (with their own identification and the symptomatic individual's) will then attend an ACP, provide the authorisation number and collect the antiviral medicines. The NPFS will also direct patients to a GP practice or other HSC service should they require any additional advice or treatment.

NPFS assessment is based on a clinical algorithm, which is subject to update, dependent on the nature of the flu pandemic. The algorithm has been developed with input from expert clinicians and contains questions which assess symptoms of flu and the need for urgent medical assessment or other actions. .

The decision to mobilise the NPFS will be taken by the Minister of Health Social Services and Public Safety with implementation in all areas across Northern Ireland. It is not possible to exclude geographical areas, even if they have limited numbers of pandemic sufferers. A key trigger is likely to be overall levels of pressure and the impact of the pandemic at the time.

The lead time for the NPFS to become operational is three weeks, during which time arrangements for implementation of ACPs in all HSC areas will need to have been completed. Addresses of ACPs that are already set up and operational must be made available to the NPFS by the HSC Board as part of the three week mobilisation process. This information will be updated on an ongoing basis so that deliveries can be scheduled and the locations of the operational collection points can be visible to both the public and call centre operatives.

It is a requirement for all ACPs to have computers with internet capability so that they can access the NPFS to validate the authorisation number presented by the "flu friend". If the ACP does not have access to the internet, or it is not available, they will be able to validate the NPFS authorisation number manually.

The NPFS will validate the identity of patients, primarily through the use of a Health and Social Care number in Northern Ireland. If this number is not available, users will still be able to use the service by providing other identification details. The ID process can also be turned off to enable users to use the NPFS. Foreign nationals will use a passport or European ID card as their identifying information.

[24] Flu friends can be relatives, neighbours, representatives of the voluntary sector and friends who can collect antiviral medicines, food and other supplies on behalf of symptomatic individuals.

While the NPFS is operating, healthcare professionals will still need to assess people with no access to the NPFS and those referred directly to primary care.

Given the absence of NHS Direct in Northern Ireland, further policy work will be undertaken to explore whether a public helpline is still required within Northern Ireland at the early stage of a pandemic. It is recognised that a single health and social care telephone number for Northern Ireland is one of the recommendations within Transforming Your Care, and this may obviate the need for a separate helpline in future.

5. SUMMARY OF ACTIONS REQUIRED BY HSC ORGANISATIONS FOR A PANDEMIC

The Planning Stage

DHSSPS	• Set policy, provide overall framework and monitor the development, testing and review of pandemic health plans • Review operational guidance for HSC • Establish Advance Purchase Agreements for Pandemic Specific Vaccine at a UK level • Build stockpiles of pandemic clinical countermeasures • Implement recycling initiatives for clinical countermeasures where possible • Maintain close liaison with other UK Health Departments, Department of Health in Dublin and attend four country working groups • Liaise with DARD on animal/ human health aspects
HSC Trusts and primary care professionals	• Ensure business continuity, surge, winter and pandemic flu plans are up to date and reflect latest guidance/ science • Undertake regular training and exercising • Participate in relevant HSC and regional fora • Engage with independent and voluntary sector re mutual aid • Maintain lists of staff contact details • Maintain lists of vulnerable patients/clients • Maintain robust seasonal flu vaccination programmes for staff and patients • Participate in Multi-agency engagement • Participate in relevant assurance processes • Ensure there is a rolling plan of assay development and updating as required, reflecting ability to detect current and potential influenza epidemic strains, linked to assay roll out and quality assurance, including planning for sample transport links. (Regional Virus Laboratory) • Review anticipated impact of staff absence on all ancillary services: laundry, cleaning, portering, security etc
HSC Board	• Governance of HSC planning and preparedness • Engagement with Local Commissioning Groups • Identify potential ACP locations • Management of primary and social care planning • Participate in Multi-agency engagement • Ensure multi-agency plans are up to date • Ensure pandemic flu plans have been communicated to all staff • Agree and exercise command and control arrangements • Maintain service contracts

PHA	• Maintain, develop and test epidemiological and laboratory pandemic reporting and collection systems • Maintain Communications planning • Ensure up to date generic guidance on the investigation and management of cases and outbreaks is available • Ensure generic information on influenza is available to the general public and health professionals
BSO	• Ensure arrangements are in place for storing and distributing PPE

Detect/ Assess Stage

DHSSPS	• Monitor and review pandemic risk assessment • Consider set up of Emergency Operations Centre and Regional Health Command Centre • Provide strategic advice for HSC organisations • Review planning assumptions in light of emerging information • Provide regular briefing for Minister and NI Assembly • Maintain close liaison with Department of Health in Dublin • Liaise with other Government Departments over wider implications of the pandemic, including DFP on appropriate funding • Prepare to activate Advanced Purchase Agreements • Review, revise and test preparedness plans • Ensure continued participation in all relevant working groups • Promoting the readiness of continuity plans to be activated if necessary • Activate helpline • Activate plans for pre-pandemic vaccination if required • Commence “Sit rep” reporting to Cabinet Office
HSC Trusts and primary care professionals	• Activate pandemic flu plans • Flu specific Local Enhanced Services/ Direct Enhanced Services • Identify and collate vulnerable persons list ensuring process in place to keep this up to date as the situation unfolds • Communication with staff and public • Swabbing and sampling of patients to support epidemiological investigation • Review pandemic plans and related plans • Isolate patients to slow spread • Set up flu ED if required • Prepare to commence storage and distribution of antivirals and PPE • Develop specific laboratory diagnostic testing (RVL) • Ensure a 24 hour courier service is in place for sending influenza strains for typing (RVL) • Identify the impact on community support mechanisms and collaborate with key stakeholders within the community to reduce impacts
HSC Board	• Activate pandemic flu plans • Provide joint HSCB/ PHA SITREPs to DHSSPS • Undertake operational planning and management information roles • Flu specific Local Enhanced Services/ Direct Enhanced Services • Confirm and set up ACP locations if required • Refresh retired GP list • Monitor and collate incidence data from GPs/ pharmacies and link with PHA surveillance • Keep staff and senior management fully informed

PHA	• Activate pandemic flu plans • Provide joint HSCB/ PHA SITREPs to DHSSPS • Issue communications to HSC organisations and public • Lead communications with multi-agency partners • Commission vaccination programme for travellers/ homeless/ rough sleepers • School outbreak teams • Use the nationally agreed FF100 systems to rapidly investigate initial pandemic cases, clusters and contacts in order to gain insights into the clinical presentation, epidemiological features including severity and other aspects of the illness associated with the new virus to inform real-time modelling • Implement enhanced pandemic influenza surveillance including systems to measure community transmission and severe disease and link with HSC Board • Active case finding • Contact tracing • Advising clinicians whether antivirals are recommended for treatment or prophylaxis • Gathering epidemiological information on cases and contacts at intervals from their last contact with a case • Arranging appropriate clinical samples from such individuals in the acute and convalescent stage • Collating this epidemiological information for transmission to the national coordination centre at HPA, and for inclusion in sitreps and briefings • Review and update guidance and information in light of emerging information and data • Provide accurate and timely information for the public and health professionals (including reinforcing social distancing messages, good hand and respiratory hygiene) • Adapt and roll out guidance on the investigation of possible cases and their contacts, clusters and outbreaks • Liaise with UK, Irish and international health protection organisations • Identify newly emerged vulnerable groups and the ways they are affected to inform prevention, control and treatment and provide support where possible
BSO	• Activate pandemic flu plans • Prepare to commence distribution of PPE • Provide critical HR function to regional organisations
NIBTS	• Review blood shortage plans

Treat/Escalate Stage

DHSSPS	• Maintain services at level outlined for previous stage • Provide briefing for Minister and NI Assembly • Review risk assessment along with Cabinet Office and other UK Health Departments • Review planning assumptions in light of emerging information • Continue to review and refine response plans and pandemic management arrangements • Notify change in UK Stages to HSC organisations • Issue guidance on service prioritisation to HSC organisations if required • Review plans for storage, distribution and access to antiviral medicines • Maintain close liaison with Department of Health in Dublin and involve NSMC as necessary • Liaise with DH regarding vaccine supply/ availability • Liaise with NI Central Crisis Management Arrangements (NICCMA)[25] • Activate National Pandemic Flu Service for Northern Ireland if required • Activate Health's strategic GOLD coordination centre, the Regional Health Command Centre, if required • Commence regular media briefs • Monitor antiviral and other countermeasure usage • Activate business continuity plans • Consider funding requirements and financial implications of the pandemic
HSC Trusts and primary care professionals	• Provide information to HSC Board/ PHA to compile a SITREP • Communication with staff and public • Maintain support to community patients • Vaccination of public • Vaccination of staff • Death declaration and certification • Manufacture of oral oseltamivir solution (designated licensed Hospital Pharmacy Manufacturing Unit) • Cohort patients if necessary • Reduce minor impact services that will not put lives at risk • Maintain core services • Set up flu ED, if required • Discharge patients into the community where safe to do so • Increase critical care capacity, if required • Set up 'flu friends' provision • Continue to characterise viral isolates in order to detect any changes that may affect virulence, antiviral resistance,

[25] See Annex D: http://www.ofmdfmni.gov.uk/a_guide_to_emergency_planning_in_northern_ireland__refreshed_september_2011_.pdf

	transmission or any other characteristic (RVL) • Carry out expected increase in testing of samples (RVL)
HSCB	• Governance of Northern Ireland response • Provide joint HSCB/ PHA SITREP to DHSSPS • Activate ACPs • ACP governance and information to DHSSPS • Engage with Community pharmacies to assist response • Commission additional HSC capacity (eg ECM O/ICU capacity) if required • Consider enacting any agreements with independent sector providers to support HSC
PHA	• Provide joint HSCB/ PHA SITREP to DHSSPS • Provide information and oversee vaccination campaign • Advise on the need for distribution of antiviral medicines to children in special schools if required • Maintain surveillance systems of ILI cases and outbreak investigation • Undertake community surveillance, sero-incidence surveillance and severe disease (hospital-based) and mortality surveillance • Measure and monitor the uptake, safety, and effectiveness of any pandemic influenza vaccination programme • Disseminate information on the progress of the pandemic • Provide timely and accurate information for the public and health professionals on the pandemic and the clinical effects of the infection • Adapt guidance on the management of cases and their contacts in light of emerging information on the virus, the clinical illness and the impact on society and services • Provide advice on when to cease measures to slow transmission of the virus, if they have been commenced • Promotion of pandemic flu publicity campaign
BSO	• Oversee PPE storage, stock management and distribution to HSC • Continue to provide critical HR function to regional organisations
NIBTS	• Business Continuity Management planning • Liaison with Trusts on blood supplies • Media campaign for donors not being treated for flu • Activation of Memorandum of Understanding

Recovery Stage

DHSSPS	• Continue to monitor UK and international situation • Identify lessons learned and compile report once end of pandemic declared • Review polices and prepare pandemic/seasonal flu plans for second wave • Stand down RHCC and EOC • Debrief staff • Consider financial implications of pandemic
HSC Trusts and GPs	• Complete vaccination programme • Identify lessons learned • Review polices and prepare pandemic/seasonal flu plans for second wave • Consider rest and emotional support for staff
HSCB	• Identify lessons learned • Review polices and prepare pandemic/seasonal flu plans for second wave • Agree prioritisation of return of services • Continue to communicate with all partners • Consider rest and emotional support for staff
PHA	• Complete vaccination programme, based on JCVI advice • Maintain seasonal flu vaccination campaign • Consider rest and emotional support for staff • Review effectiveness of pandemic preparedness plan and business continuity activities • Continue to monitor the virus and susceptibility in the population • Review response activities and identify lessons learned for possible and subsequent waves/ other large-scale emergencies • Update algorithms, pandemic preparedness plans, business continuity plans as required • Issue regular communication to internal/external stakeholders • Continue to produce/ contribute to status reports as needed • Review previously identified vulnerable groups and update list • Consider rest and emotional support for staff
BSO	• Identify lessons learned • Review polices and prepare pandemic/seasonal flu plans for second wave • Contribute to replenishment programme • Stocktake management • Consider rest and emotional support for staff
NIBTS	• Staff welfare • Replenish stocks • Ongoing media campaign

6. ACRONYMS

ACP	Antiviral Collection Point
APA	Advance Purchase Agreement
BRT	Business Recovery Team
CCaNNI	Critical Care Network Northern Ireland
CMG	Crisis Management Group
CMO	Chief Medical Officer
CPO	Chief Pharmaceutical Officer
COBR	Cabinet Office Briefing Rooms
DA	Devolved Administration
DH	Department of Health (London)
ECMO	Extracorporeal membrane oxygenation
ED	Emergency Department
EIS	Executive Information Service
GP	General Practitioner
HPA	Health Protection Agency
ICU	Intensive Care Unit
ILI	Influenza-like illness
JCVI	Joint Committee on Vaccination and Immunisation
MHRA	Medicines and Healthcare products Regulatory Authority
NICCMA	Northern Ireland Central Crisis Management Arrangements
NPFS	National Pandemic Flu Service
NSC (THRC)	National Security Committee (Threats, Hazards, Resilience Committee)
PPE	Personal Protective Equipment
RCGP	Royal College of General Practitioners
RHCC	Regional Health Command Centre
RVL	Regional Virus Laboratory
SAGE	Scientific Advisory Group for Emergencies
SIMT	Strategic Incident Management Team
UKHCA	United Kingdom Home Care Association
WHO	World Health Organisation

GLOSSARY

Aerosol A gaseous suspension of fine solid or liquid particles which remain suspended in the air for prolonged periods of time.

Antibiotic A type of drug that can prevent the growth of bacteria.

Antiviral medicines Used to describe a chemical or drug that inhibits virus replication.

'At risk' groups Groups of people who, through their immune disposition or long-term illness (e.g. diabetes, chronic heart or respiratory disease) are deemed to be especially threatened by infection.

Bronchoscopy A procedure where a flexible tube is passed into a patient's lung to view the lung and airways, while under sedation.

Clinical attack rate The cumulative proportion of people infected and showing symptoms over a specified period of time.

Community The general population, outside of a hospital or clinical environment.

Countermeasures Interventions that attempt to prevent, control or treat an illness or condition.

Critical Care Care of a patient in a life-threatening situation by staff specially trained in recognising and responding to emergencies.

Diagnosis Specific identification of the illness that is causing a disease or set of symptoms.

Epidemic The widespread occurrence of significantly more cases of a disease in a community or population than expected over a period of time.

Epidemiological Relating to the study of the patterns, causes and control of disease in groups of people.

Excess Mortality The number of deaths that occur during an outbreak and above that expected for the time of year.

Extubation The process of removing a tube from a hollow organ or passageway, often from the airway.

H1N1 (2009) The worldwide community spread of a new H1N1**Pandemic** influenza virus, originating in pigs and entering the human population in 2009.

H5N1	Highly pathogenic avian influenza virus, enzootic in birds in South East Asia.
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, eg after touching potentially infected people/objects and before touching others or eating.
Hotspot area	A geographical area experiencing a disproportionately high number of cases of pandemic flu. May occur as a result of the pandemic peak occurring at different times in different places.
Immunity	Inherited, acquired, or induced resistance to a specific type of infection.
Immunisation	Manipulation of the immune system by giving a vaccine to confer, or bolster, its ability to protect against infection.
Incubation period	The time from the point at which infection occurs until the appearance of signs or symptoms of disease.
Infection	The acquisition and active growth of a foreign microbial agent in a host, such as a human or animal, usually with a detrimental outcome.
Infectious disease	Describing a person who is carrying or transmitting an organism that can be spread to another person to cause illness.
Intubation	The insertion of a tube into an external or internal orifice of the body for the purpose of adding or removing fluids or air.
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.
Mitigation	Strategy to delay the spread, or moderate the severity or extent, of a pandemic.
Modelling	Use of the mathematical theory of disease dynamics to make a quantitative assessment from available data of the range of possible behaviours of a pandemic and the impact of various responses, most importantly those that are likely to be both effective and robust over the range of uncertainty.
Novel virus	A virus that has never previously infected humans, or has not infected humans in a long time.

Oseltamivir	Antiviral drug, marketed by Roche Pharmaceuticals under the trade name Tamiflu®, that acts by inhibiting Neuraminidase activity and thus blocking viral spread.
Outbreak	Sudden appearance of, or increase in, cases of a disease in a specific geographical area or population, e.g. in a village, town or closed institution.
Pandemic	Worldwide epidemic – an influenza pandemic occurs when a new 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.
Pandemic Specific Vaccine	Vaccine developed against the antigens of the specific viral strain responsible for the pandemic.
Pathogenic	Able to cause disease.
Pre-pandemic Vaccine	Vaccine developed, ahead of a pandemic, against antigens of a viral subtype.
Post-exposure (prophylaxis)	Use of antiviral drugs to prevent infection after prophylaxis exposure to infected contacts.
Prognosis	A prediction of the probable course and outcome of a 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.
Relenza®	See ‘Zanamivir’.
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.
Respiratory	Relating to the respiratory system (e.g. the nose, throat, trachea and lungs).
Seasonal epidemic	An epidemic that occurs at a defined time each year, typically in the autumn and winter months in the UK due to climatic or social factors (e.g. the end of school holidays).

Seasonal flu	Annual period of widespread respiratory illness, typically occurring during the autumn and winter months in the UK, caused by the circulation of a strain of influenza virus that is slightly altered from the previous season.
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.
Sero-prevalence	The overall occurrence of a disease within a defined population at one time, as measured by blood tests (includes cases who have been symptomatic, rather than those who have been asymptomatic).
Serology	The scientific study or diagnostic examination of blood serum, especially with regard to the response of the immune system to pathogens or introduced substances.
Subtype	Viral strain classified by the versions of Haemagglutinin and Neuraminidase that it possesses.
Surge	A transient increase in demand for care or services above usual capacity.
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.
Suspected cases	Cases of illness identified through symptoms but not confirmed by laboratory analysis.
Swine flu	H1N1 influenza arising in 2009 from pigs and the cause of the 2009 pandemic in humans.
Symptomatic	Showing symptoms of disease or illness.
Syndromic surveillance	The collection and analysis of health data about a clinical syndrome that has a significant impact on public health. This is then used to drive decisions on health policy.
Tamiflu®	See ‘Oseltamivir’.
Transmission	Any mechanism by which an infectious agent is spread from a source or reservoir (including another person) to a person.

Vaccine	A substance that is administered in order to generate an immune response, thereby inducing acquired immunological memory that protects against a specific disease.
Virological	Pertaining to viruses.
Virulence	The capacity of an infectious agent to infect and cause illness.
Virus	A micro-organism containing genetic material (DNA or RNA) which reproduces by invading living cells and using their constituent parts to replicate itself.
Vulnerable groups	Those groups identified as vulnerable will depend on the exact nature of the pandemic, however, they may include: children, older people; mobility impaired; sensory impaired; pregnant women; individuals supported by HSC Trusts; individuals cared for by relatives/friends; homeless people; minority language speakers; tourists; and the travelling community.
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.
Zanamivir	Antiviral drug, marketed by GSK Pharmaceuticals under the trade name Relenza® that inhibits Neuraminidase activity, thus blocking viral spread.