



Llywodraeth Cymru
Welsh Government

Wales Health and Social Care Influenza Pandemic Preparedness & Response Guidance

**Issued by: Welsh Government Department of Health & Social
Services, Health Emergency Preparedness Unit**

February 2014

The Guidance

This guidance is specifically targeted at those engaged in pandemic preparedness planning and builds on the lessons learned from the H1N1 2009 influenza pandemic and the latest scientific evidence.

It is intended to support local pandemic preparedness and response planning in Health and Social Care organisations. Implementation of the guidance will help ensure that Wales health and social care remains well prepared for a future pandemic.

Any comments on this Guidance should be sent by email to

Name Redacted [@wales.gsi.gov.uk](mailto:Name Redacted@wales.gsi.gov.uk) or in writing to the address below.

**Health Emergency Preparedness Unit
DH&SS
Welsh Government
Cathays Park – Floor 2
CARDIFF
CN10 3NQ**

History

Version number	Date	Details of changes included in update	Author[s]
1.0	17-03-2010	Original Document Issued	Name Redacted
2.0	23-08-2013	Revised	
3.0	04-02-2014	Revised	

Navigating this Guidance in an Emergency

This guidance has been 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.

Further detail on pandemic preparedness and response can be obtained from the UK Influenza Pandemic Preparedness Strategy. This can be downloaded from the Department of Health website:

www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_130903

TABLE OF CONTENTS**Page No.**

1	<u>EXECUTIVE SUMMARY</u>	4
1.1	Introduction	5
1.2	Context	5
1.3	Planning context	6
1.4	Pandemic planning assumptions	7
1.5	Defence in depth	8

2	<u>HEALTH AND SOCIAL CARE PREPAREDNESS AND RESPONSE</u>	9
2.1	Core principles	9
2.2	Preparing to respond	9
2.3	Leadership	10
2.4	Co-ordination	11
2.5	Ethical principles	13
2.6	Communications	14
2.7	Infection Control	15
2.8	Business Continuity Management	15
2.9	Human Resources	16
2.10	Training	18

3	<u>PANDEMIC RESPONSE PHASES</u>	20
3.1	Detection and Assessment Phases	20
3.2	Treatment and Escalation Phases	26
3.3	Recovery Phase	42

4	<u>PANDEMIC COUNTERMEASURES</u>	44
4.1	Antivirals	44
4.2	National Pandemic Flu Service	48
4.3	Antibiotics	49
4.4	Facemasks and respirators	49
4.5	Consumables	51
4.6	Vaccination	51
4.7	Specialist respiratory support -ECMO	52

5	<u>SUMMARY OF ACTIONS REQUIRED BY HSC ORGANISATIONS FOR A PANDEMIC</u>	53
----------	---	-----------

6	<u>ACRONYMS AND GLOSSARY</u>	64
----------	-------------------------------------	-----------

1. EXECUTIVE SUMMARY

This guidance focuses on the operational aspects of pandemic response in the health and social care sectors and reflects on the lessons learned from the 2009 pandemic and the latest scientific evidence. The guidance is intended to support local pandemic preparedness and response planning in Health and Social Care organisations. This guidance should be read in conjunction with the **2011 UK Influenza Pandemic Preparedness Strategy**¹ which includes the following key changes in the UK Strategy:

- 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.

The requirement on Health and Social Care (HSC) organisations is to work together and with multi-agency partners to have plans in place to provide for:

- a clear definition of responsibilities;
- reporting and collation of surveillance requirements;
- contact tracing; swabbing and testing of samples;
- issue of antivirals through all phases of the response;
- 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**
- **Flexibility**

¹ www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_130903

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 health and social care (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 health and social care (HSC) pandemic preparedness and response planning. It should be read in conjunction with the UK Influenza Pandemic Preparedness Strategy 2011 ('the UK Strategy'), which sets the strategic context for planning for an influenza pandemic across wider society.

The guidance addresses the operational issues relevant to all HSC organisations, particularly Health Boards, Public Health Wales, NHS Trusts, Local Authorities and other partner agencies, including the voluntary sector and independent sector providers.

Operational responsibility for ensuring that HSC pandemic preparedness and response plans are drawn up and tested generally rests with the designated emergency planning and civil contingencies executive leads in each organisation.

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 local 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. However, it is probable that all ages will be affected and that those with underlying disease or immunocompromise will be at greater risk, as with seasonal influenza.
- 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 reasonably 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 need to 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 and antibiotics.

Excess Deaths

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 12,000 and 15,000 deaths in Wales, 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 support from central government.

1.5 Defence in depth

The primary objective of the UK 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. This defence in depth strategy adopted by the UK aims to achieve this by:

- Maintaining **surveillance** to detect the emergence of a novel virus strain or any illness attributed to it, monitoring its spread, assessing the impact of the virus and identifying the groups most at risk of severe illness and death and monitoring the uptake, effectiveness and safety of the various clinical countermeasures including vaccination;
- **Reducing the risk of transmission and infection** by applying individual and community infection control measures and assisting self support by providing public advice and information and promoting messages of good respiratory and hand hygiene;
- **Reducing illness and complications** and minimising deaths of symptomatic individuals by rapid access to health assessment, providing antiviral medicines promptly where they are needed and providing other effective treatment, including antibiotics for those suffering flu complications;
- **Protecting the public through preventing the disease** when possible and appropriate, through pandemic specific vaccination, and
- **Promoting work during the inter-pandemic period** to increase capacity and resilience in the UK.

A summary of the scientific evidence which supports this approach was published alongside the UK Strategy²

² www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_125318

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 taken at the local level, to a command and control system led at the national level that is able to co-ordinate the response. The balance between strategic actions and a locally flexible approach will be critical in ensuring an effective response. The core 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 local population; and
- **Continuity** plans are needed to underpin pandemic influenza response, 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 Health and Social Care 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. Many attributes of good local plans build on the same basics of good practice already set out in *Together for Health*³

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;

³ www.wales.gov.uk/topics/health/publications/health/reports/together/?lang=en

- **An integrated approach to planning and response** that effectively employs all of the health and social care services in a local 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 local 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) local messaging to the public and staff; and
- **Effective management of the increases in demand** resulting from the pandemic including:
 - **A graded approach** to configuring services, allowing the Wales 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 staff⁴.

2.3 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;
- Good coordination; and
- Appropriate channelling of communication to maintain public confidence.

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

⁴ [Wales NHS Guidance for the Psychosocial and Mental Health Care of People affected by emergencies](#)

2.4 Co-ordination

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 control 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, oversee and coordinate 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.

Wales Co-ordination

Co-ordination of the multi-agency response in Wales will be in accordance with the Pan-Wales Response Plan. WG's Resilience Team will implement arrangements for establishment of the ECC(W) to co-ordinate the emergency across Wales. The Wales Civil Contingencies Group (CCG) will convene to support the health response and to consider the wider social/economic effects of the outbreak.

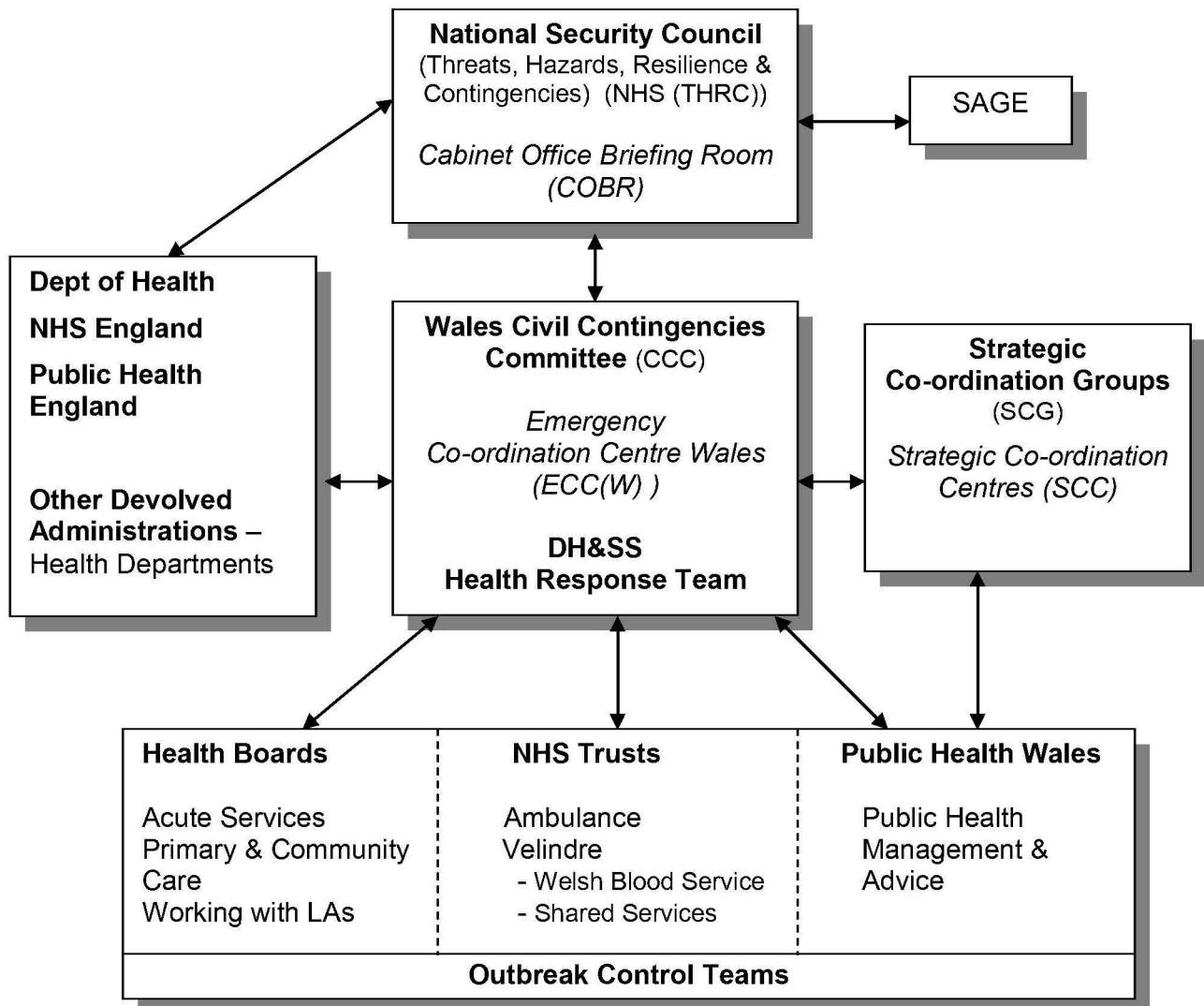
Department of Health and Social Services (DH&SS) will establish a Health Response Team within the ECC(W) to provide a focus for national co-ordination of the health response. The Team will provide a conduit for liaison with DH and other UK Health Departments and will establish arrangements for providing health briefings for Welsh Ministers and senior officials. DH&SS will put into place a structure for managing the overall health and social care response.

Public Health Wales (PHW), working closely with DH&SS, is expected to establish its Co-ordination Centre to manage the public health aspects of a pandemic and to support and advise health and social care organisations and the multi-agency response. If requested,

Public Health Wales will provide a liaison officer to be part of the Health Team based in ECC(W).

Health Boards provide the focus for co-ordination of the local health and social care response and will manage the health impacts on NHS services, work with health and social care and partner organisations and support the public health response. The Police will convene Strategic Co-ordination Group (SCG) meetings to address multi-agency response arrangements.

Figure 2: Co-ordination Arrangements for Major Infectious Disease Emergencies in Wales



2.5 Ethical principles

Ethical considerations are important in determining how to make the fairest use of resources and capacity. Decisions are more likely to be understood and the need accepted if these have been made in an open, transparent and inclusive way and based on widely held ethical values. The Committee on Ethical Aspects of Pandemic Influenza (CEAPI) developed an ethical framework that was published in 2007.⁵

CEAPI reviewed the Framework following the H1N1 influenza pandemic and concluded that it remains appropriate and fit for purpose in planning for a future pandemic. The

⁵ [Committee on Ethical Aspects of Pandemic Influenza: ethical framework](#)

routine use of these principles can support professional groups of staff in resolving ethical issues that may arise from the demands of their work.

2.6 Communications

UK Communications

The UK Pandemic Communication Strategy 2012⁶ sets out the cross-government high level objectives for communications and provision of public information during a pandemic. The national strategy will aim to instil and maintain trust and confidence by ensuring that the public and professionals know:

- what is going on, both nationally and in their local area;
- where they can find reliable answers to questions they may have, and
- how to access relevant information on self care and medical support if required

Wales Communications (Health)

An emergency on this scale needs strategic direction of public information from the outset, so co-ordination of public information will be needed from the UK Government to Welsh Government and through to the local level. Welsh Government's Department of Health and Social Services will co-ordinate the key health messages, working together with WG and PHW communications staff.

Good liaison between national and local health communications staff is essential so that both are aware of the content and changes in their respective outputs. An effective two-way communications strategy that positively engages between national and local levels before and during a pandemic is therefore a major strand of preparedness.

Local public communications plans need to be in place to include:

- Roles, responsibilities and methods (including consideration of social media) during a pandemic;
- Arrangements for accessing national information by public, health professionals, Public Health Wales and the media;
- Arrangements for communications with the public about necessary prioritisation of services;
- Information on the location of, and how to access, Antiviral Collection Points;
- Strategies to challenge incorrect information to mitigate the risk of misinformation;
- Public messages that encourage good hygiene behaviours, such as respiratory and hand hygiene; and
- Transparent and open communication of the risks and benefits of, for example vaccines and antivirals

⁶ <https://www.gov.uk/government/publications/communications-strategy-for-uk-flu-pandemics>

- Arrangements made for using local and national media channels, as appropriate

Use of social media and other modern communication channels will assist in ensuring effective communications to the public. For example, Facebook was used effectively to communicate accurate messages during the H1N1 (2009) influenza pandemic.

Local communications between health and social care providers and their partners in other agencies, will also be important in supporting a cohesive response. The aim is to ensure a clear understanding of the overall pandemic situation pressures on healthcare providers, as well as direction of movement of any change, changes in protocols, any additional clinical at risk groups and any other key information. During the H1N1 pandemic, for example, a daily blog for health staff was successfully used in one area as a means of regular local updates.

Timely, consistent and clear communication to health and social care professionals will be essential throughout any pandemic. Websites should provide both the public and healthcare professionals with current information, public health messages and specific guidance on key areas. During the H1N1 pandemic, meetings were held with professional groups and regular Chief Medical Officer letters issued to health professionals.

2.7 Infection Control

The incubation period of the influenza A virus usually ranges from one to four days. This may vary in an emerging pandemic strain. People are most infectious for the first 3-5 days after they develop symptoms, though they can continue to shed the virus, for example in coughs and sneezes, for around seven days (longer in children and immunocompromised adults). 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. Local risk assessment 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 maintained⁷.

Personal protective equipment (PPE), including 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 of PPE is available at section 4.4.

⁷ [National Infection Control Policies for Wales](#)

2.8 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. The International Standard ISO22301 (replaced BS 25999) 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 arrangements within an organisation and is the standard to which health and social care (HSC) organisations will need to 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. For providers of health and social care services, 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. Local authorities and NHS 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.

During a pandemic, the ongoing ability of commissioned services to assess and accept referrals should be closely monitored. Information on levels of infection, staffing status and other emerging issues should be regularly reviewed. Information about local services provided via independent sector providers may be sourced from the Regulators, the Care and Social Services Inspectorate Wales (CSSIW) and Healthcare Inspectorate Wales (HIW).

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? Organisations should also ensure that they have robust plans in place for dealing with sudden absences of personal assistants.

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.

Facilities, equipment, plans, protocols, and staff training must be regularly refreshed and tested to ensure that preparedness and business continuity is maintained between events.

2.9 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. 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.

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. Guidance on Psychosocial care for staff is provided in *Psychosocial care for NHS staff during an influenza pandemic*⁸ and from the Intensive Care Society⁹.

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 and nurse 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 help lines, 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
- A helpline for staff may be useful.

It may also be helpful to know further information about staff, such as:

- Whether they have dependants (as they are then more likely to need care leave);
- Whether they have underlying conditions, or are pregnant, and may therefore be at increased risk from influenza;
- Where they live and how they usually travel to work (this will help with planning if transported is disrupted), and
- Whether they may be prepared to 'live in' during the pandemic, if required.

⁸ [Guidance for Psychosocial care of NHS staff during an influenza pandemic](#)

⁹ www.ics.ac.uk

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.

Once a pandemic vaccine becomes available, encouraging uptake by frontline health and social care staff, depending upon vaccination policy at the time, will be an important factor in protecting them, their patients, clients, families and colleagues and in improving the resilience of the services they provide.

2.10 Training

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

- In mental health units, staff training in infection control and basic physical care skills may avoid the need to transfer patients with flu like symptoms to other services;
- In general ICUs, ensuring that staff have the necessary skills and confidence to enable them to stabilise and provide basic care for children will increase the flexible availability of critical care beds for patients of all ages if PICUs are under pressure. Guidance is available on the Royal College of Paediatrics and Child Health website¹⁰;
- Core training for theatre recovery staff in support of general intensive care should also be maintained on a regular basis, and
- Maintaining the skills (and numbers) of additional ambulance control staff will assist resilience of ambulance assessment and dispatch systems.

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 local staff organisations, appropriate protection, training, supervision, and indemnity for the role that they may be expected to fulfil will all be important. 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;
- Providing generic training packages that could be used as part of general surge planning to tertiary centres which support District Hospitals in order 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;

¹⁰ www.rcpch.ac.uk/child-health/medical-conditions/h1n1-influenza

-
- 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.

There are a number of professional bodies that provide training and support to members in emergency preparedness and response. Amongst them the Royal Colleges of General Practitioners, Physicians, Paediatrics and Child Health, and Obstetricians and Gynaecologists provide important information, leadership, training and support to their Members and Fellows in the professions. They, as well as the royal Colleges of Nursing and of Midwives and the Nursing and Midwifery Council, also play an important role in validating training and supporting indemnity in professional roles. The Intensive Care Society, Paediatric Intensive Care Society, Faculty of Intensive Care Medicine, and in providing protocols and training to ensure and maintain preparedness.

3. PANDEMIC PHASES – HSC RESPONSE

The *UK Influenza Pandemic Strategy 2011* outlines a new approach in the indicators for action in the UK in a future pandemic that is no longer linked to the WHO global phases. The approach takes the form of a number of phases named: **Detection, Assessment, Treatment, Escalation and Recovery**. A pre-pandemic planning and preparation period precedes these.

There are indicators for moving from one phase to another, the phases are not numbered as they are not linear and it is possible to move back and forth, overlap or jump phases.

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.

The health and social care response required for a pandemic predominantly reflects established issues 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 local 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 area may not be uniform with different geographical areas being under pressure at different times, requiring good information exchange and flexibility of local plans

However, the duration of the pandemic may be much longer than for other emergencies (up to several months) requiring resilience and a sustained response.

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 Wales 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 at national level, arrangements for implementation of measures in the initial response will be determined locally, based on the pressures being faced at the time. 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. GPs, public health services and NHS providers 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.

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. Surveillance activities are likely to be required from a mix of health organisations, 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;
- rapid monitoring of age specific excess mortality data using data from the General Registry Office on-line system;
- rapid assessment through community surveillance. e.g. 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
- cross-sectional population sero-prevalence surveys to estimate background population immunity and age-specific rates of infection.

Reporting by WHO is likely to influence national media, which will be an important factor in influencing public behaviour. Public health services will contribute data and guidance, aiming to maintain public confidence by focusing on reducing the risk of infection and assisting the local population to care for themselves and others.

National and 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. Advice on good respiratory and hand hygiene practices will be made available as part of national communications messages.

School closures

It is unlikely that widespread school closures will be required except in a very high impact pandemic and/or where the safety of children cannot be maintained. 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. However, specific local business continuity reasons (staff shortages) may lead to individual or local school closures.

Public Health Wales 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 locally whilst awaiting more information about the spread of the virus. School principals and their Boards of Governors will take the ultimate decision to close individual schools temporarily. In the event of school closures, then the welfare and educational needs of the children affected will need to be considered and addressed.

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. The use of an appropriate skill mix of NHS staff to undertake testing, may reduce

pressure in other clinical areas. The Chief Medical Officer (CMO)/Chief Pharmacist will issue a letter to health professionals advising on use of antiviral medicines.

Although there are national stockpiles of facemasks and antiviral medicines, it could take a few days for distribution of centrally held stocks to the Health Boards/Trusts and organisations should prepare to rely initially on local stocks and continuity arrangements. Normal NHS supply chain arrangements will not be used for items in the national stockpile as these items will be supplied without the usual charges and associated invoicing. Items such as swab kits are not held centrally and stocks should be obtained through usual purchasing channels.

Rapid dispersal of supplies from national stocks will depend upon having a limited number of delivery points. Local 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. Ongoing distribution to community pharmacies and other locations will need to be incorporated in local plans, taking into account the requirements for Wholesale Dealers Licences (WDLs) under the Medicines Act 1968. It will also be important to ensure that the independent sector has been included in preparation planning.

Antiviral medicines (currently oseltamivir and zanamivir) from the national stockpile will be issued in the first days probably via Health Protection Teams and then to those who have a clinical need through community pharmacies and dispensing GPs, while this remains viable. In hotspot areas there will be an increasing need for rapid distribution of antiviral medicines 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 local plans. Further detailed information on ACPs can be found in the document *Welsh Government Pandemic Influenza 'How to' guide*¹¹ on local arrangements for antiviral collection points.

Pharmacists and their teams can also 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 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, e.g. the provision of home meals for users, or alternative short-term breaks for carers.

¹¹ [Welsh Government Pandemic Influenza ACP 'How to' guide](#)

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 Wales Ambulance Service may face increased demand if local GPs and out of hours services are under pressure. However, even in a low impact pandemic there is likely 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.

In a moderate or higher impact pandemic, secondary care may see a large increase in both severely ill patients and death rates. 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.

Health and social care role in Detection and Assessment phases	
Possible HSC indicators	<ul style="list-style-type: none"> ❖ Sporadic novel influenza cases reported from the community ❖ Possible limited local outbreaks (e.g. in schools/care homes) ❖ Possible increased number of influenza cases in critical care
Key health and social care delivery modes	<ul style="list-style-type: none"> ❖ Health and social care organisations review response plans, including preparations to mobilise ACPs and for receiving and distributing antiviral medicines from the central stockpile ❖ GP diagnosis and swab testing of influenza like illness ❖ CMO and the Chief Pharmacist are likely to issue a letter to health professionals to advise prescribing of antiviral medicines as appropriate ❖ Hospital referral and assessment of severe cases ❖ In hospital-testing for influenza virus ❖ Prescribing of antibiotics for complications, by clinical judgement ❖ Community and hospital pharmacies to review stocks of influenza medicines and additional supporting medicines; ❖ more people may request advice for managing symptoms of flu
NPFS activity level	<ul style="list-style-type: none"> ❖ NPFS not yet activated ❖ Flu advice line may be operating
Public Health Services	<ul style="list-style-type: none"> ❖ Diagnosis, and development of diagnostic tests ❖ Surveillance of cases in community intensified, with particular focus on clinical features and severity, virus characteristics, antiviral sensitivity, and mutations ❖ Initial antiviral medicines supplied by local Health Protection Teams. Local arrangements operationalised for reception, delivery and issue of centrally-held antiviral medicines ❖ Planning consideration given to issuing antivirals to community pharmacies and dispensing doctors' practices ❖ Reviewing advice on PPE, fit testing, and infection control ❖ Maintaining awareness to support accelerated vaccine development as virus becomes available
Public messages	<ul style="list-style-type: none"> ❖ Advise anyone experiencing influenza-like illness and who has recently returned from an affected area/has been in contact with someone who has to: <ul style="list-style-type: none"> ➢ 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 flu-like illness 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. The decision to move to 'Treatment and Escalation' will be taken nationally, although some hotspot areas may already have moved to Treatment and Escalation phases following consultation between local NHS and public health services and those at national level.

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 local level, as not all parts of the UK will be affected at the same time or to the same extent.

All health and social care services 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 local areas 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 (see tables p 40 -43).

Public Health services

Public health services 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.

Locally, communication activities will continue. Public health staff, or other trusted professionals, will be best-placed to communicate information to the local 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 public 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, emergency departments 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, e.g. 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 local authorities in coping with the increase in deaths. This should include considering the appropriate deployment of recently retired doctors.

Local 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.

In an emergency, pharmacists are able to provide an emergency supply of 30 days of prescription-only medicines and 5 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, there is a UK 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 on usage of the stockpile.

Wales 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.

Ambulance services use a Resourcing Escalatory Action Plan (REAP) which is operational at all times. Actions within the plan are designed to increase operational resources in line with demand, to cope with periods of high pressure and maintain the highest quality patient care. The levels within the plan are indicators of increasing pressure on the service.

As pressure on both primary and secondary care services increases, ambulance services will see further increased referrals. If operational, the National Pandemic Flu Service (NDFS) and/or the pandemic influenza advice line, together with NHS Direct Wales may mitigate some pressures. It will be important to maintain good communication between services so that the protocols used 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 Act 1983, and that the Act 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 local 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, medium and high security) pose an additional management challenge in that some service users are on restriction orders imposed under mental health legislation (administered by the Ministry 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 and high 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 as set out in the Mental Capacity Act 2005 and its Code of Practice¹². Should a service user have made lasting powers of attorney (LPA) for welfare matters under the Act, the attorney would need to be consulted about the person's treatment. The consultation may be affected if the LPA is affected by flu. Contingency plans will need to be made to meet this possibility.

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 Medicines and healthcare Products Regulatory Agency (MHRA) have stated that this requirement will not change. Therefore it will be for individual Health Boards 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;

¹² <http://www.legislation.gov.uk/ukpga/2005/9/resources>

- 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, e.g. 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, i.e. 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 need¹³ May need to be revised during a moderate to high impact pandemic, for example by:

- prioritisation of referrals for assessment (according to urgency)
 - the use of telephone assessment;
 - greater use of self-assessment (e.g. Internet);
 - 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 in higher levels.
- } consider only doing home assessments for complex needs

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.

Assessments that may need to be prioritised include:

- Care Programme Approach (mandatory for compliance with Section 117 of the Mental Health Act and requiring a face to face assessment);
- assessments in hospitals that facilitate discharge;
- intermediate care assessments that facilitate hospital discharge or prevent hospital admission;
- carer breakdown, i.e. 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.

¹³ Welsh Government Circular – NAFWC 09A/2002: Creating a Unified and Fair System for Assessing and Managing Care

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.

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 and a 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.

Local Authorities, 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.

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;
- 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 local area should consider collaboration and mutual support, e.g. by forming 'clusters', to enable each to be aware of:

- local 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 website¹⁴.

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, e.g. asthma, and respiratory disease secondary to smoking. Preventing transmission of the virus in prisons and other closed communities is necessary throughout the pandemic period. Close working between prison governors, community providers and HPUs will support this. 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 use of vaccine, 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 local public communication, will be needed to ensure members of the public understand where to find advice and assistance on influenza, so that capacity still remains for non-flu patients.

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

¹⁴ www.patient.co.uk/support/UKHCA-UK-Home-Care-Association.htm

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 ambulance services to agree prioritisation across the local 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 testing¹⁵. 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. The Welsh Blood Service and NHS Blood and Transplant Services will therefore continue using health messages to encourage the public to donate blood. Care must be taken to communicate early with local blood services to ensure that facilities required for Antiviral Collection Points (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 NHS 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 relevant supporting advice.

¹⁵ www.screening.nhs.uk/getdata.php?id=9321

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.

During the H1N1 pandemic in 2009 the *Critical Care Strategy for Wales: Managing the swine flu pandemic*¹⁶ was issued. In addition, and as a result of lessons identified during the 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.

Where plans to increase capacity require the suspension of some or all high risk elective surgery, such suspension should be in line with local 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.

Local 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. The guidance is based on advice from the Intensive Care

¹⁶ www.wales.nhs.uk/sites3/docopen.cfm?orgid=753&id=144520

¹⁷ www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_117129

¹⁸ [Guidance Pandemic Flu: managing demand and capacity in health care organisations \(surge\)](#)

Society, the Paediatric Intensive Care Society and the Faculty of Intensive, as well as individual experts within the speciality. Information is updated on their web pages¹⁹.

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.

Various tools such as Sequential Organ Failure Assessment, Modified Early Warning Score, and Paediatric Modified Early Warning Scores can assign patients into approximate prognosis groups and aid decisions on required levels of care. However, they cannot reliably predict the likelihood of a poor outcome. 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 framework²⁰ outlined in section 2.5 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 local 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. In the H1N1 (2009) influenza pandemic, a series of clinical teleconferences engaged intensivists from the UK and other affected countries in sharing clinical information and best practice. This forum also provided surveillance information on case-numbers, age groups affected and localities with high numbers of cases, which greatly aided decision making and service provision.

Difficult triage decisions were not required during the H1N1 (2009) influenza pandemic. However, such a discussion forum would permit sharing of effective decision criteria and greatly increase confidence in triage decision-making. 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. Advice is contained in *Psychosocial care for NHS staff during an influenza pandemic*²¹.

Collaborative critical care networks working across geographical areas can play a key part in pandemic management in:

¹⁹ www.ficm.ac.uk www.ics.ac.uk www.ukpics.org.uk www.rcoa.ac.uk

²⁰ [Committee of Ethical Aspects of Pandemic Influenza: ethical framework](#)

²¹ [Psychosocial care for NHS staff during an influenza pandemic](#)

- 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 locally, nationally and internationally;
- facilitating mutual aid between organisations within and outside the Network, including the transfer of critically ill patients between acute hospitals, 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 NHS indicators	<ul style="list-style-type: none"> ❖ Similar numbers of cases to moderate or severe seasonal influenza outbreaks AND mild to moderate clinical features ❖ Ambulance Service 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 (e.g. 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	<ul style="list-style-type: none"> ❖ 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 ❖ Use of national protocols for the supply of antiviral medicines ❖ Preparation in case NPFS is needed ❖ 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	<ul style="list-style-type: none"> ❖ Flu advice line function active ❖ DH in liaison with RCGP on setting up GP liaison support system for NPFS call centres if needed ❖ Set up NPFS clinical Quality Assurance (QA) systems 	
Public health services	<ul style="list-style-type: none"> ❖ Diagnosis, and development of diagnostic tests ❖ Surveillance of cases in community: clinical features and severity; virus characteristics; antiviral sensitivity and mutations ❖ 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 	
Public messages	<ul style="list-style-type: none"> ❖ Advise anyone experiencing an ILI and who has recently returned from an affected area/has been in contact with someone who has to: <ul style="list-style-type: none"> ➢ stay at home if ill and use self care advice (including advice on managing symptoms from local pharmacist) ➢ phone GP/NHSD for advice on assessment ➢ 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-friendly' activities ❖ Continue to reinforce good hand and respiratory hygiene 	

Health and social care role in Treatment and Escalation phases		MODERATE IMPACT
Possible NHS indicators	<ul style="list-style-type: none"> ❖ 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 (i.e. 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	<ul style="list-style-type: none"> ❖ Local decisions to cease non-urgent primary and secondary care activities ❖ Regional support for mutual aid e.g. ITU networking, ITU and ECMO expansion ❖ 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 ❖ REAP levels increasing for ambulance services ❖ Local arrangements to support access to antivirals through ACPs if necessary ❖ Vaccination programme (when available) subject to JCVI advice 	
NPFS activity level	<ul style="list-style-type: none"> ❖ Clinical QA systems established to support NPFS if mobilised ❖ Preparing for community pharmacies/ACPs to operate using NPFS systems if mobilised ❖ 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 services	<ul style="list-style-type: none"> ❖ 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 ❖ Support for modelling of pandemic and countermeasures effectiveness ❖ Intensive support for accelerated vaccine development 	
Public messages	<ul style="list-style-type: none"> ❖ 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 (if activated) and collection of antiviral medicines (including flu friends) if NPFS operational in England and not Wales then emphasis on arrangements in Wales and reasons; ❖ 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
NHS indicators	<ul style="list-style-type: none"> ❖ 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	<ul style="list-style-type: none"> ❖ Local 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 ❖ Assessment tools deployed to manage demand for hospital admission ❖ 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 ❖ Bedded Rehabilitation Units discharge patients in order to accommodate patients discharged prematurely from hospitals ❖ Volunteer flu friend arrangements fully stretched 	
NPFS activity level	<ul style="list-style-type: none"> ❖ NPFS mobilised and working to capacity ❖ Antiviral issue processes in community pharmacies/ACPs under pressure ❖ Emphasis on maintaining supplies and staffing ❖ Medicines supplies may not be at an optimum level 	
Public health services	<ul style="list-style-type: none"> ❖ 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	<ul style="list-style-type: none"> ❖ 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 – e.g. 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 (e.g. 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 identified 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 (i.e. antiviral collection points (ACPs) and use of community pharmacies/local arrangements), and
- ensuring that there is a robust system in place to manage antiviral stock during a pandemic (i.e. stock management, storage and distribution)

There are currently two medicines recommended for the treatment of influenza in the UK²⁰, 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* (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 <http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/PandemicInfluenza/Guidelines/>

* Oseltamivir should only be given twice a day for 5 days for treatment and once a day for 10 days for prophylaxis

Oseltamivir (Tamiflu) - treatment for children under 1

Children under one year of age who have a high fever and cough or influenza-like symptoms should be seen and assessed by a GP or suitably qualified health professional/practitioner.

In a pandemic, children under one may be treated with oral oseltamivir Solution or oseltamivir Suspension. Oral oseltamivir Solution (oseltamivir 15mg in 1 ml), an unlicensed medicine, will be manufactured by designated licensed hospital pharmacies in the event that the licence product is not available.

An information leaflet for both the oseltamivir Suspension and oral oseltamivir Solution will be provided when appropriate. The solution and suspension are presented in different strengths so care must be taken when the supply is received to follow the correct dosage instructions provided with the relevant product information leaflet.

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. 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.

Zanamivir (Relenza) - doses for treatment and prophylaxis*

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.

Accessing Antiviral Medicines

Wales has a stockpile of antiviral medicines aimed 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 Detection and Assessment phase, it is expected that small quantities of antiviral stock will be available from the stockpile for use as directed by Health Protection Teams. Additional stock will also be issued to health Boards for storage and onward distribution to local points of issues, in readiness for the Treatment and Escalation phase. Initial distribution and the replenishment of Health Board stock will be controlled centrally by Welsh Government Department of Health, Social Services and Children, operating from the WG Emergency Co-ordinating Centre (ECCW).

Most Health Boards in Wales do not hold a Wholesaler Dealers Licence (WDL) and will need to consider how they will store and distribute antiviral medicines either by having a WDL of their own or as agents of an organisation with a WDL, subject to agreement with

* Zanamivir (Relenza) should be given twice a day for 5 days for treatment and once a day for 10 days for prophylaxis

MHRA. They will need to ensure that there is a named 'Responsible Person(s)' who will ensure compliance with Good Distribution Practice including safe systems of storage and distribution, with daily recording of temperature at storage points and at antiviral collection points. Arrangements will also need to be in place for maintaining records of receipt and issue of stock and for ordering replenishment, developed in conjunction with the Welsh Government's Health Emergency Preparedness Unit.

Antiviral Collection Points

Antiviral Collection Points (ACPs) are nominated locations within the community where flu friends can collect antiviral medicines on behalf of a symptomatic person, on presentation of the person's valid authorisation.

The purpose of the ACP is to facilitate rapid access to antiviral medicines and minimise the impact on health services and facilities. GPs will not have stocks of antiviral medicines and hospitals will hold stocks for inpatients only.

While pressure on primary care remains manageable, community pharmacies are expected to act as ACPs with WP10 prescription forms providing authorisation. If pressure in hot spot areas overwhelms the capacity in community pharmacies local plans need to be in place to establish alternative ACPs. National protocols authorised by Ministers are needed to allow ACPs to supply medicines.

If the pressure on primary care leads to a decision to mobilise the NPFS in Wales, Health Boards will need to ensure their ACPs are entered into the CPAS database and are prepared for operation within the context of NPFS. Systems will need to be in place to issue antiviral medicines using both WP10 prescription forms and NPFS authorisation numbers (the latter requiring internet access to the CPIS).

Legislative changes were made during the H1N1 (2009) influenza pandemic to permit flexibilities in the provision of pharmaceutical services. Pharmaceutical advice, via senior pharmacists working with local pharmaceutical committees, will be an important role of the team. Staff training in the storage and supply of medicines must be assured, as must safe systems, processes, reporting mechanisms and security of premises.

The location of ACPs and their distribution across geographic areas is a local responsibility. The decision on the number and locations will be influenced by the characteristics and transmissibility of the virus. Key requirements are good access to with extended hours of availability relevant to the needs of the local population and sufficient capacity to supply medicines to everyone who is authorised for treatment.

Below is a checklist of basic requirements for collection points. This has been designed to assist Health Boards in planning collection points.

IT requirements	Y/N
Computers with: <ul style="list-style-type: none"> • an anti-virus package with up-to-date signature and patches • Microsoft (MS) Office - minimum - MS Excel and MS Word 97 or newer 	

Internet connection* (e.g. Internet Explorer 6 or 7, Mozilla Fire Fox 1.5 & 2.0, Apple Safari 2.0 & 3.0) - Broadband, Dial up or N3	
Access to email - e.g. Windows mail or web-based mail	
Printers that can print labels	
Photocopier plus paper	
Tables and chairs for assessor, Issuer	
Telephones	
Fax	
Capacity and security	Y/N
Ability to receive a delivery from a Transit van or similar sized vehicle	
Large reception area where patients can be marshalled and registered in an orderly fashion prior to control entry	
Meet and Greet area to divert into respective queues	
Queuing for holding and issuing areas	
Separate access and exit if possible	
Overspill holding area for attendees	
Security personnel for crowd control, traffic movement, the safety of clinical staff and infrastructure protection	
Secure stock delivery points	
Lockable building	
Lockable storage for medicines and associated consumables plus temperature recording facilities	
External security of the site and building - fencing, natural barriers, defensive planting, parking area, locking devices for external doors and windows, CCTV	
Interior security of the building – windows and doors, intrusion alarms, CCTV, lighting, ability for natural surveillance by staff	
Location	Y/N
Accessible to public by public transport	
On-site parking and drop-off site for public	
Disability/ Special needs access	
Resources (with resilience for extended hours operation)	
Health Board senior pharmacist oversight with responsibility for safe systems of operation at the ACP for the safe supply of medicines and staff training	
Collection Point Manager	
Stock Manager/Controller and staff	
Security Manager	
Assessor trained to use clinical algorithm (contingency role)	
Issuers	
Meet and Greet / Queue Manager	
Command and control area	Y/N
An area from which collection point managers and the team can: <ul style="list-style-type: none"> Oversee the operation of the whole collection point including the clinical and non-clinical support activities Oversee the regular collection and collation of performance data for the 	

* JavaScript should be enabled on all browsers to make the Ajax work. Internet Explorer 8 users will need to select internet options from the browser tools menu, select the privacy tab and set the cookies level to accept all cookies. This may not be possible for users where security policy disallows changes to the privacy settings. In this instance a compatible browser must be used.

collection point(s), and provide regular Situation Reports to the health Board	
<ul style="list-style-type: none"> Communicate with the Health Board and the Police (via onsite Police Bronze Commander, if required and available). 	
Standard Primary Care Health and Safety procedures	Y/N
Fire alarms, certification and clear evacuation instructions	
Communications	Y/N
Signage and leaflets	

4.2 National Pandemic Flu Service

Any decision to make the NPFS operational will be taken at a UK level but the service may then be implemented independently by any of the UK countries based on pressure in their respective primary care system. NPFS cannot be applied to local areas and if implemented would need to operate across Wales. NPFS is therefore, unlikely to be implemented across Wales unless pressure on primary care was widespread. Prior to implementation, Health Boards will need to plan to manage hotspots locally. 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"²² 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

²¹Flu 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.

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 and Social Services with implementation in all areas across Wales. 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 local 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 NHS number. 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.

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.

4.3 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, DH&SS 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.

4.4 Facemasks and respirators

Although there are central stockpiles of facemasks and respirators, it could take time for distribution of centrally held stocks to be completed and organisations should prepare to

rely initially on local stocks and continuity arrangements. For this reason, organisations should maintain sufficient stock for seven 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 hygiene²³

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 national 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 universal 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. The Government 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.

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 OC282/28²⁴ provides guidance on conducting fit testing.

²² <http://www.wales.nhs.uk/sites3/page.cfm?orgid=379&pid=38960>

²³ <http://www.hse.gov.uk/respiratory-protective-equipment/resources.htm>

4.5 Consumables

DH&SS has stockpiled a wide range of consumable products which may become in short 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 NHS 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 local stocks might also continue to be used, or supplemented by central stocks. More detailed information on stocks held and how to access them would be made in the event of a pandemic.

4.6 Vaccination

Planning for vaccination should begin at an early stage of a pandemic. Health Boards and Public Health Wales are expected to organise and run vaccination programmes, and monitor and encourage uptake rates. Health Boards will need to plan for receiving vaccine supplies, storage of the vaccine in appropriate conditions, distribution and staffing of vaccine clinics. Distribution is expected to be via the normal channels and for reporting purposes the established systems will be used as far as possible.

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 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. Local 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. 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 should also play a role in encouraging uptake.

4.7 Specialist Respiratory Support – ECMO

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.

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 Wales, however arrangements exist through clinical networks 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 website²⁵.

²⁵ www.glenfieldheartcentre.nhs.uk

5. SUMMARY OF HEALTH & SOCIAL CARE ACTIONS TO BE UNDERTAKEN FOR A PANDEMIC

The Planning Stage

DH&SS	<ul style="list-style-type: none"> • Set policy, provide overall framework and monitor the development, testing and review of pandemic health plans • Review HSC operational guidance • Establish Advance Purchase Agreements for Pandemic Specific Vaccine at a UK level • Build stockpiles of pandemic clinical countermeasures • Maintain national storage and distribution arrangements for health countermeasures • Implement recycling initiatives for clinical countermeasures where possible • Maintain close liaison with other UK Health Departments and engage in four countries pandemic preparedness working groups • Encourage and advise WG Departments to have guidance ready to issue to their sectors • Work with WG Resilience Team and LRF structures to encourage pandemic preparedness
Health Boards	<ul style="list-style-type: none"> • Governance of NHS pandemic preparedness • Ensure business continuity, surge, winter and pandemic flu plans are up to date and reflect latest guidance/ science • Undertake regular training and exercising • 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 preparedness • Participate in relevant assurance processes • Review anticipated impact of staff absence on all ancillary services: laundry, cleaning, portering, security etc • Identify potential Antiviral Collection Points (ACPs) locations • Management of primary care planning • Collaboration and engagement in Social care planning • Ensure pandemic flu plans have been communicated to all staff • Agree and exercise command and control arrangements • Ensure arrangements are in place for storing and distributing PPE • Collaborate with PHW and LEAs to ensure public health messages are available to schools re hand washing, hygiene

	<p>measures etc.</p> <ul style="list-style-type: none"> • Clarify MHRA requirements in planning local distribution of medicines.
Public Health Wales	<ul style="list-style-type: none"> • Maintain, develop and test epidemiological and laboratory pandemic reporting and collection systems • 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 to laboratory(s)) • 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 • Work with Health Boards to secure effective influenza testing arrangements, including in primary care
Welsh Ambulance Services NHS Trust	<ul style="list-style-type: none"> • Governance of WAST pandemic preparedness • Ensure business continuity, surge, winter and pandemic flu plans are up to date and reflect latest guidance/ science • Undertake regular training and exercising
Welsh Blood Services	<ul style="list-style-type: none"> • Ensure business continuity, surge, winter and pandemic flu plans are up to date and reflect latest guidance/ science • Undertake regular training and exercising
Social Services/Social care	<ul style="list-style-type: none"> • Engage with the local authority emergency planning arrangements • Governance of social services planning • Establish support required to social services /social care from other agencies, including via Local Resilience For a • Consider mutual aid arrangements, including support to and from other local authority social services • Ensure communications are in place with independent sector providers that can be used for daily communications • Advise independent sector social care providers to plan arrangements for vaccination of their staff • Agreement within the local authority about what are 'essential' social care services that take priority over everything else • Arrangements for redeploying staff into essential social care services • Arrangements for identifying and supporting 'vulnerable' people

	<ul style="list-style-type: none">• Engage with NHS planning, including alignment with overall winter and capacity planning with local NHS
--	--

Detect / Assess Stage

DH&SS	<ul style="list-style-type: none"> • Monitor and review pandemic risk assessment • Consider set up of WG Health Response Team in Emergency Co-ordination Centre Wales • Deployment of health countermeasures, as appropriate • Provide strategic advice for NHS organisations • Establish a pandemic response network covering the 10 NHS organisations • Review planning assumptions in light of emerging information • Provide briefings for H&SS Minister and Welsh Government officials • Establish a pandemic response network with local authority Social Services Departments • Maintain close liaison with DH/UK Health Departments • Liaise with WG Education Department re advice to schools • Support Welsh Government civil contingency structure • Support implementation of Wales Response Plan, as appropriate • Collaborate with UK health departments re Ministerial/Officials meetings • Engage at UK level re activation of Advanced Purchase Agreements • Review, revise and test aspects of preparedness plans • Ensure continued participation in all relevant working groups • Promoting the readiness of continuity plans to be activated if necessary • Ensure that pandemic influenza information is available to the public –including the UK advice helpline • Engage with implementation of the UK Pandemic Influenza Communications Strategy • Activate plans for pre-pandemic vaccination if required • Support any “Sit rep” reporting to Welsh Government/ Cabinet Office
-------	---

Health Boards	<ul style="list-style-type: none"> • Activate pandemic flu plans • Engage in the DH&SS pandemic response network • Provide SITREP information to DH&SS • Review requirements for pandemic flu specific Local Enhanced Services/ Direct Enhanced Services provision • 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 • Isolate patients to slow spread • Prepare to commence storage and distribution of antivirals and PPE • Develop specific laboratory diagnostic testing (RVL) • Ensure arrangements are in place for sending influenza strains for typing (Regional Virus Laboratory)) • Confirm and set up ACP locations in pharmacies/premises if required • Refresh retired GP list • Commission vaccination programme, including cover for travellers/ homeless/ rough sleepers • Identify the impact on community support mechanisms and collaborate with key stakeholders within the community to reduce impacts • Prepare to commence local distribution of countermeasures • Monitor supply of medicines and other health countermeasures to inform access to national stockpiles
Public Health Wales	<ul style="list-style-type: none"> • Activate pandemic flu plans – to include surveillance, diagnosis, infection control and antiviral use • Ensure consistent, accurate and timely public health advice is available to responding organisations, the media and public • Implement enhanced pandemic influenza surveillance including systems to measure community transmission and severe disease and link with HSC Board • Adapt and roll out guidance on the investigation of possible cases and their contacts, clusters and outbreaks • Liaise with UK 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
Welsh Ambulance Services NHS Trust	<ul style="list-style-type: none"> • Activate pandemic flu plans • Review business continuity plans • Prepare to commence distribution of PPE to staff • Engage in DH&SS and multi-agency response structures

Welsh Blood Service	<ul style="list-style-type: none">• Review business continuity plans• Review blood shortage plans
Social Services/Social Care	<ul style="list-style-type: none">• Activate pandemic flu/emergency plans• Test communication channels to providers• Confirm mutual aid arrangements between providers• Check vulnerable persons list• Confirm arrangements for vaccination of social care staff• Set up communications for public and staff and align to NHS communications• Engage in the DH&SS pandemic response network

Treat / Escalate Stage

DH&SS	<ul style="list-style-type: none"> • Maintain services at level outlined for previous stage • Provide briefing for Ministers and Welsh Government officials • Fully implement WG Health Emergency Response Arrangements • Mobilise a WG Health Emergency Response Team to work in the Assembly's Emergency Co-ordinating Centre • Engage in UK level Health Ministerial and Officials meetings, as appropriate • 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 NHS organisations • Issue guidance on service prioritisation to NHS organisations if required • Review plans for storage, distribution and access to antiviral medicines • Liaise with DH regarding vaccine supply/ availability • Liaise with Welsh Government Departments, Resilience Structure/Response Plan as required • Activate National Pandemic Flu Service for Wales, if required • Commence regular briefs for AMs, health professionals, NHS organisations, media and the public • Monitor antiviral and other countermeasure usage • Ensure oral oseltamivir solution is available/manufactured for under 1s
Health Boards	<ul style="list-style-type: none"> • Governance of local response • Provide information to DHSS to support "sitrep" • Engage with Community pharmacies to assist response • Activate ACPs • Maintain support to community patients • Provide information and oversee vaccination campaign • Death declaration and certification • Cohort patients if necessary • Reduce minor impact services that will not put lives at risk • Maintain core services • Oversee local PPE storage, stock management and distribution • Commission additional NHS capacity (e.g. ECMO/ICU capacity) if required • Consider enacting any agreements with independent sector providers to support NHS • Discharge patients into the community where safe to do so

Public Health Wales	<ul style="list-style-type: none"> • Provide management of the public health response • Continue to engage with DH&SS/WG, Wales NHS and multi-agency response structures • Support arrangements to continue to characterise viral isolates in order to detect any changes that may affect virulence, antiviral resistance, transmission or any other characteristic - Regional Virus Laboratory (RVL) • Carry out expected increase in testing of samples (RVL) • Facilitate the 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 • 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 • To cease measures to slow transmission of the virus, if they have been commenced
Welsh Ambulance Services NHS Trust	<ul style="list-style-type: none"> • Implement business continuity/pandemic flu plans • Engage with DH&SS /WG , Wales NHS and multi-agency response structures • Manage PPE distribution to staff
Welsh Blood Service	<ul style="list-style-type: none"> • Implement business continuity/pandemic flu plans • Liaison with Health Boards on blood supplies • Undertake appropriate media campaign for donors not being treated for flu • Liaise with UK Blood Services on mutual aid arrangements
Social Services/Social Care	<ul style="list-style-type: none"> • Encourage social care staff to access vaccination programme • Support vaccination for vulnerable people including flu friends arrangements • Optimise capacity in independent sector for children and adult

	<p>social care, including mutual aid arrangements</p> <ul style="list-style-type: none">• Communication with public and staff• Implement any agreed local escalation arrangements for faster hospital discharge or admission avoidance
--	---

Recovery Stage

DH&SS	<ul style="list-style-type: none"> • Continue to monitor UK and international situation • Identify lessons learned and compile report once end of pandemic declared • Review policies and prepare pandemic/seasonal flu plans for second wave • Debrief staff • Establish financial implications of pandemic
Health Boards	<ul style="list-style-type: none"> • Complete vaccination programme • Consider rest and emotional support for staff • Identify lessons learned • Agree prioritisation of return of services • Continue to communicate with all partners • Maintain seasonal flu vaccination campaign • Review response activities and identify lessons learned for possible and subsequent waves/ other large-scale emergencies • Continue to produce/ contribute to status reports as needed • Review previously identified vulnerable groups and identify lessons learned • Contribute to replenishment programme • Undertake Stock take • Staff welfare
Public Health Wales	<ul style="list-style-type: none"> • 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 • Issue regular communication to internal/external stakeholders • Continue to produce/ contribute to status reports as needed
Welsh Ambulance Services NHS Trust	<ul style="list-style-type: none"> • Review response activities and identify lessons learned for possible and subsequent waves/ other large-scale emergencies • Staff welfare • Return to normal services
Welsh Blood Service	<ul style="list-style-type: none"> • Staff Welfare • Replenish Blood stocks • Ongoing media campaign

<p>Social Services/Social Care</p>	<ul style="list-style-type: none">• Review response activities and identify lessons learned for possible and subsequent waves/other large-scale emergencies• Encourage social care staff to access seasonal flu campaigns• Return to normal services• Staff welfare
------------------------------------	--

6. ACRONYMS

ACP	Antiviral Collection Point
CMO	Chief Medical Officer
ECMO	Extracorporeal membrane oxygenation
ED	Emergency Department
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
NPFS	National Pandemic Flu Service
WHO	World Health Organisation
RVL	Regional Virus Laboratory

6.1 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 (Attack rate) 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.
FP10SS	Standard prescription form used in England and Wales
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, e.g. 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.