

Pandemic Influenza - The UK Blood Services Plan

This Management Process Description replaces
NEW

Copy Number

Approved

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Summary of Significant Changes

N/A

Policy

This policy describes the overarching response by the UK Blood Services to a Flu Pandemic

Purpose

The document describes the scale and nature of the problem and the approach that each UK Blood Service must take when planning for a flu pandemic. Each UK Blood Service will use this framework document for writing more detailed plans for their blood service.

Responsibilities

EPG – to ensure the document is reviewed regularly in light of the emerging information

UK Leads for Emergency Planning – to ensure that the individual blood service uses this document for producing more detailed, blood service specific plans

Definitions

COBR – Cabinet Office Briefing Room

DH – Department of Health

EPG - Emergency Planning Group

H5N1 – particular strain of flu virus. It could possibly be the source of the next pandemic

HPA – Health Protection Agency

HCV NAT – Hepatitis C virus Nucleic Acid Test

ICC – Infection Control Committee

MB – Methylene Blue

NEPM – National Emergency Planning Manager

Pandemic flu – a type of flu that is more severe than seasonal flu and affects most countries and regions of the world

PPE – Personal Protective Equipment

SARS – Severe Acute Respiratory Syndrome

WHO – World Health Organisation

WNV – West Nile Virus

Applicable Documents

Pandemic Flu, UK Health Departments, UK Influenza Pandemic Contingency Plan (available from DH website)

MPD/PTI/DI/002 – Emergency Planning - Command and Control

Pandemic Influenza
The UK Blood Services Plan

National Blood Service
Northern Ireland Blood Transfusion Service
Scottish National Blood Transfusion Service
Welsh Blood Service



Northern Ireland
BLOOD TRANSFUSION SERVICE



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1. Executive summary

Influenza pandemics have occurred in the past, with three in the last century. There is currently a growing concern that a new influenza pandemic with pandemic potential will emerge and spread and a further pandemic can be expected. The scale of the pandemic will only be known once the virus is here but it could have the potential to cause widespread illness, large numbers of deaths and huge societal disruption, concentrated in just a few weeks.

This UK Blood Services plan concentrates on the impact a pandemic could have on the UK Blood Services and the action necessary to mitigate the impact. As far as possible the UK Blood Services will ensure continuity of supply but preserving life-saving supplies where necessary. UK Blood Services will need to provide, where possible, a safe environment for donors to donate and for staff to come to work. However it is likely that the number of blood donors able and willing to donate will be severely reduced. Staffing numbers will also be reduced (although the key message to staff will be “business as usual”) and activity in some areas will be reduced to essential activity only with staff being redeployed in order to support this essential activity. Communication will be crucial throughout the pandemic both to internal and external stakeholders with key messages being developed for different stages of the pandemic. A comprehensive communication plan has been produced which links to the Department of Health’s communication plan.

2. Introduction

This plan has been produced by the UK Blood Services in response to the global threat of an influenza pandemic. All NHS organisations are required to produce an effective plan to address this risk. The UK Blood Services consists of the following services:

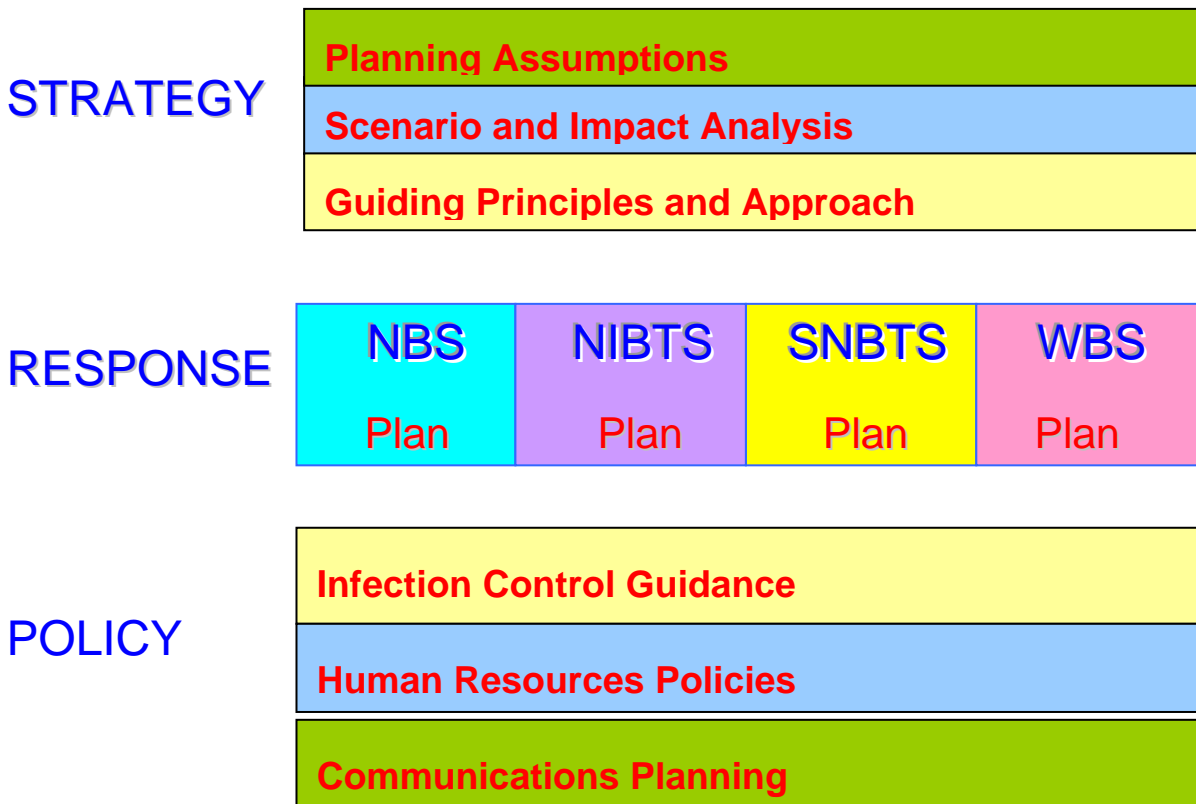
- National Blood Service (NBS) - covering England and North Wales
- Northern Ireland Blood Transfusion Service (NIBTS)
- Scottish National Blood Transfusion Service (SNBTS)
- Welsh Blood Service (WBS)

This plan should be read alongside the DH document entitled “Pandemic Flu, UK Health Departments, UK Influenza Pandemic Contingency Plan – October 2005” which provides a framework for the UK’s health system response to an influenza pandemic.

This overview plan contains the overall assessment and general strategy for dealing with a flu pandemic in relation to blood supplies. Below this overview plan, each UK Blood Service will have produced, documented and tested its own plans.

The table below summarises the approach taken within each UK Blood Service.

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Note that knowledge in this area is limited and based on historical information. Knowledge and advice will evolve and be refined in response to new events. Any plans drawn up by the UK Blood Services must be flexible in order to change and adapt as more information becomes available. The plans should be reviewed regularly in light of emerging information.

3. Scope

There has been enormous media attention regarding avian flu and the H5N1 strain of the virus. Currently the H5N1 virus is either not transmitted human to human or not easily transmitted in this way. Almost all of the human cases so far have been in people who work closely with poultry. This first pandemic is in the bird population and could have a wide impact on the farming and domestic bird industry as well as providing increased opportunities for the virus to mutate into a human form. This phase of the threat could also cause some disruption to movements of people or some disproportionate responses from the media/public which could impact blood services.

The second pandemic threat is in humans. The H5N1 virus needs to mutate in order to achieve this level of transmission. There is also a view that in undergoing a mutation that would make it easier for it to cross the species barrier the virus could become less deadly to humans than the current H5N1 strain. There is no certainty about either of these ideas.

This document is looking at the impact of a potential human flu pandemic on the UK blood supply. Equally, many of the principles contained within this plan could be applied to other contagious disease scenarios e.g. WNV, SARS.

The plan applies to all UK Blood Services. It excludes the Channel Islands and Isle of Man.

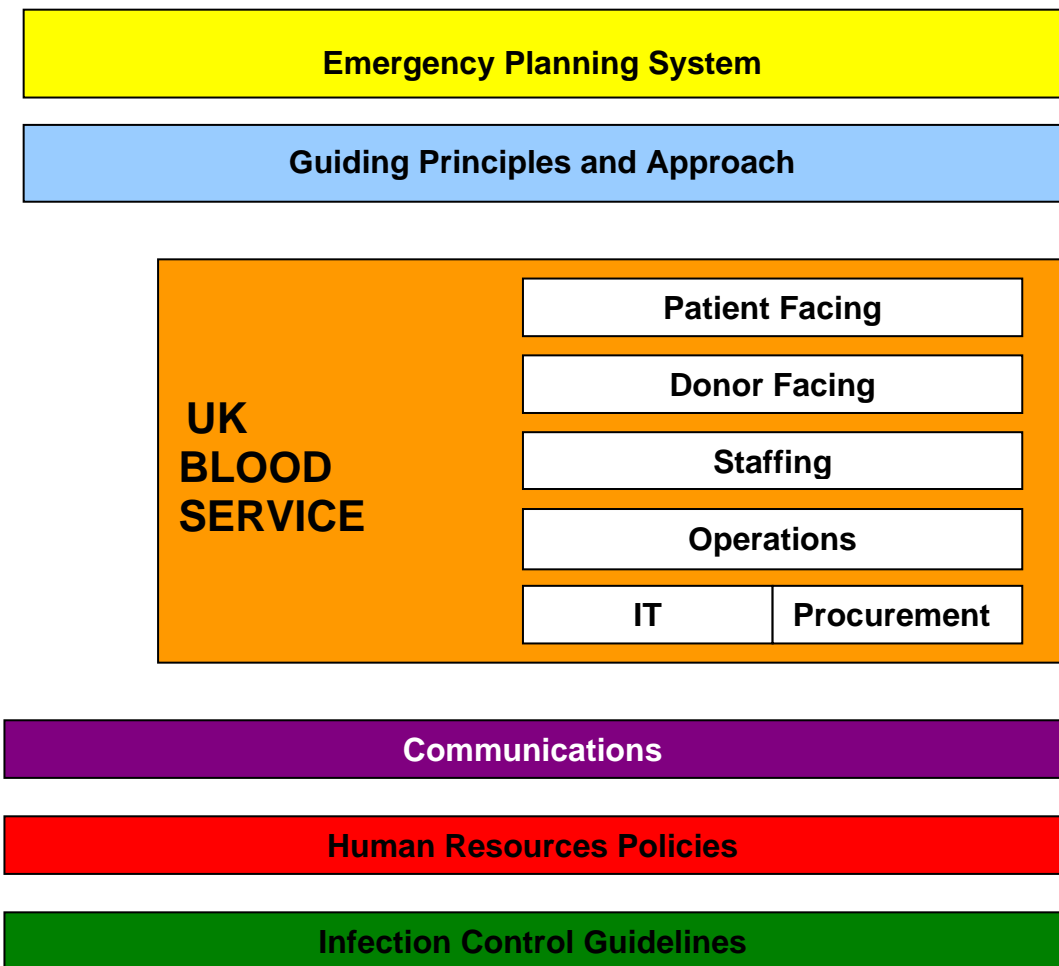
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4. Approach

This plan provides a strategic overview concentrating on the principles that would need to be applied. Each Blood Service is required to use this document as a framework for constructing more detailed plans for their own Blood Service including other areas within the Blood Service e.g. Diagnostic testing/services, IT, procurement etc or areas that are unique to individual Blood Services e.g. for NBS this would include Tissue Services.

The diagram below visualises the approach that each UK Blood Service will take in their planning. Each UK Blood Service will need to ensure their plan works within their existing emergency planning system although slight modifications may be required due to the scale of the pandemic emergency. Also overlaying this are some guiding principles that will be adopted both in the planning and during the pandemic (listed after the diagram). The boxes to the right e.g. patient facing, donor facing are examples of areas within the NBS. Each UK Blood Service will populate this according to the structure of their service.

Underpinning this are three areas; a communications plan; new and/or updated HR policies and infection control. Each Blood Service should be working to guidelines as laid out by their Infection Control Committee (ICC). The ICC should be advising each Blood Service on a number of areas including the level of PPE (personal, protective equipment) required as well as basic hygiene measures etc.



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Throughout the flu pandemic the UK Blood Service will work to the principles outlined below.

Priority and Pace

Managing our response to the pandemic once declared will be our top priority and, at peak, probably our only activity. We will pace ourselves to maximise our chances of maintaining services for the duration.

Command and Control

We will use our proven Emergency Planning system to manage our operational response to the pandemic.

Focus on Essential Activities and Services

We will make every effort to ensure a continued supply of safe, high quality, life-saving products and services. Specific contentions between essential activities must be resolved clinically. We will co-operate cross functionally to suspend all discretionary activities and services where continuing with these could increase the spread of infection and/or prevent the re-direction of resources to essential activities.

Minimal Disruption

Standards, Operating Procedures and related duties and requirements will only be varied to the minimum extent necessary to respond to the influenza pandemic in the judgment of the National Emergency Team(s). Every effort will be made to comply with legislative obligations at all times. Wherever possible, changes will be made through proven control mechanisms.

Donor Care and Availability

We will make every effort to maintain standards of donor care and to create an environment in which donors are encouraged to donate and feel safe to do so without risk of influenza infection.

Employee Care and Availability

We will support our staff so as to optimise their ability to provide critical components and services, whilst addressing their physical, emotional and psychological safety and wellbeing before, during and after the pandemic.

Transparency

We will provide regular, up-to-date and accurate information to employees, their staff side organisations and others regarding the pandemic and our related operational response with the aim of maintaining understanding, agreement and mutual commitment to our common cause.

Flexibility

Our planned response will be designed to be as responsive as possible to the evolution of the pandemic wave in real time.

Public Responsibility

As far as possible our response will not include actions that might facilitate the spread of the pandemic virus.

Mutual Aid between Blood Services

NBS will co-ordinate the UK Blood Services response from an Emergency Planning point of view and we will exchange information with, seek help from, and provide help to other Blood Services internationally where this is feasible and necessary.

5. Pandemic Influenza

5.1 History of Influenza Pandemics

There were three influenza pandemics in the last century:

- (a) **1918/9** – “Spanish” Flu; H1N1 virus. Overall UK attack rate 25-30%. First emerged in USA? Fatality rate (of those suffering from Influenza) ranging from below 1%, through 5-6%; in places 20% and up to 85-90% in certain close knit highly naïve populations. Overall 2.5-5% (0.6% in

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USA) of the total population. But by far and away the most deaths were in the 25-35 age group. This believed to be due to lack of previous exposure combined with a highly vigorous immune response.

- (b) **1957/8** – Asian Flu; H2N2 virus. Overall UK attack rate 15-20%. Fatalities 1m globally (33,000 in UK); killed mainly the young and very old.
- (c) **1968/9** – Hong Kong Flu; H3N2 virus. Overall UK attack rate c.10%. Fatalities 1-4m globally (30,000 in UK); killed mainly the elderly and infirm.

The two most recent of these were very mild relative to the 1918 pandemic. They also occurred after blood services had been developed. It seems reasonable to assume that the relative impact of a pandemic on the scale of 1957 or 1968 on blood services whilst significant, would be relatively slight. It is a pandemic that is closer to the scale and severity of the 1918 pandemic for which we should plan and prepare as much as possible. Such an approach is consistent with the “plan for the worst approach” advocated by UK Cabinet Office guidance.

5.2 The Cause of the Current Concern

The current “favourite” candidate virus for mutation into the next human influenza pandemic agent is: **H5N1** (- Avian Flu). This virus emerged in 1996 in the Far East and is currently widespread in many wild bird populations. Its lethality in wild birds is mixed. It has caused decimation of domestic poultry either through its direct pathogenicity or as a result of the widespread response of culling flocks to try to prevent spread. Its current ease of transmissibility to humans is low with all cases believed to be due to direct, intimate contact with infected birds. Human to human transmission is unknown (or at least rare and unproven). However, disease severity in humans is very high causing serious suffering and c.50% mortality amongst its c.200 victims to date.

To cause a human influenza pandemic with societal impact, a new virus has to:

- Exist and be viable in its host(s)
- Cause clinically significant illness in humans
- Spread efficiently (from person to person)
- Cause widespread disease due to lack of human immunity
- Spread rapidly enough to:
 - ⇒ Cause widespread disruption to human activity
 - ⇒ Overtake the development, manufacture and deployment of vaccine

It is widely assumed that:

- In order to cause a human pandemic the H5N1 (or another Influenza A) virus has to mutate (by “drift” and/or “shift”) and
- A pandemic virus will be new and therefore human immunity will be low and no vaccine will be available for at least six months and probably not widely available for 1 to 2 years.
- Anti-viral treatments may help save lives but only if administered rapidly after (real) infection (availability and logistics). Such treatments are not likely to prevent infection nor significantly improve population availability (e.g. for work).
- That in mutating into a human pandemic virus it may become less harmful than current H5N1.

The last of these assumptions seems to be somewhat more speculative. Influenza is not just a “heavy cold”, nor is it seasonal. It is a severely disabling illness causing severe prostration and acute illness up to two weeks even in relatively mild cases. More serious cases (e.g. extreme immune response) or complications (e.g. pneumonia) may need hospitalisation (if available) and may cause incapacity for 4-6 weeks, longer incapacity or death. Some individuals may be infected and without symptoms.

5.3. The Risk

The risk of a new human influenza pandemic is considered by the World Health Organisation (WHO) to have increased over the last two years, based largely on the risk posed by the H5N1 avian influenza virus, currently circulating in poultry in South East Asia and elsewhere.

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History shows that each influenza pandemic is different. We cannot confidently predict what the impact of the next pandemic will be. Much will depend on the characteristics of the virus, such as its clinical attack rate¹, the severity of the illness it causes and the resulting case fatality rate². These parameters will not be known until the pandemic virus emerges.

In order to assist planning, estimates of the impact of an influenza pandemic in today's circumstances have been developed drawing where appropriate on previous pandemics and by scientific modelling of a range of potential scenarios. The table below from the DH Flu Plan sets out, for clinical attack rate and case fatality rate, the range of possible outcomes during a pandemic in the UK which has one or more waves:

Overall case fatality rate	Clinical attack rate		
	10%	25%	50%
0.37%	21,500	53,700	107,500
1.00%	56,700	141,800	283,700
1.5%	85,100	212,800	425,500
2.5%	141,800	354,600	709,300

The WHO monitors influenza across the world. Once a new influenza virus has been identified and shown to have pandemic potential, the WHO will decide and inform national Governments of its view on the level of risk of an imminent pandemic, set against the phases of a pandemic listed in Appendix 1.

For planning purposes, the *base case* scenario is for:

- A cumulative clinical attack rate of 25% of the population over one or more waves, each of around 15 weeks duration, weeks or months apart. The second wave may be the more severe. This compares with a usual seasonal influenza attack rate of 5-10%.
- A case fatality rate of 0.37% (analogous to the 1957 pandemic).

This combination would give rise to an estimated 53,700 excess deaths in the UK across the whole period of the pandemic, spread across one or more waves, compared with 12,000 excess deaths per year from seasonal flu.

For planning purposes, the reasonable *worst case* scenario is for:

- A cumulative clinical attack rate of 50% of the population, again spread over one or more waves.
- A case fatality rate of 2.5% (analogous to the 1918 pandemic).

This combination would give rise to an estimated 709,300 excess deaths in the UK across the whole period of the pandemic, spread across one or more waves.

The level of staff absence from work during a pandemic will depend significantly on the nature of the pandemic virus when it emerges. The planning assumptions set out below are based on current knowledge, analysis of past pandemics, published evidence and scientific modelling. Given the inevitable uncertainties, a range of figures is given in some areas. Organisations should ensure that their business continuity plans have the flexibility to accommodate these ranges.

During a pandemic, staff will be absent from work if:

- (a) They are ill with flu. Numbers in this category will depend on the clinical attack rate. If the attack rate is 25%, a quarter of staff in total will be sick (and hence absent from work for a period) over the whole course of the pandemic. If a pandemic occurs over one wave, this level of *cumulative* absence could be experienced by employers over a period of around 3-4 months. But there may well be more than one wave, with absence from work being spread across those waves.

¹Clinical attack rate – percentage of the population who become ill.

²Case fatality rate – percentage of those who become ill who subsequently die.

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- (b) They need to care for children or other family members who are ill with flu.
- (c) They have non-flu medical problems.
- (d) Their employers have advised them to work from home.
- (e) They decide to absent themselves for other reasons.

Business continuity planning against an influenza pandemic should have at its heart an estimate, through aggregation of data in each of the categories above, of the number of staff likely to be absent from work at the peak of the pandemic. Estimates of likely levels of absence from work caused by influenza or by the need to care for family members with influenza (that is, categories (a) and (b) above) are set out in the table below against a range of assumptions on the clinical attack rate of the pandemic virus.

	<i>Clinical attack rate</i>		
	= Cumulative % total of those ill over whole period of pandemic		
	10%	25%	50%
<u>Large Organisation</u>			
% of people ill at peak	2%	5%	10%
% of people ill & carers taking time off at peak	3%	7%	15%
<u>Small Organisation or Unit</u>			
% of people ill & carers taking time off at peak	6%	14%	30%

Source: Cabinet Office Guidance
 These figures are estimates based on current knowledge and modelling.
 All figures given are percentage of total workforce
 It is expected that ill people will on average be absent for 5-8 working days
 A small organisation or unit can be defined as a group of up to 15 people.
 These figures do not include 'normal' absenteeism levels; people taking time off due to family bereavement or psychosocial impact of pandemic; people self-absenting from work.

In order to derive estimates for the total number of staff likely to be absent from work at the peak of a pandemic, employers should add data appropriate to their circumstances on:

- (a) The average number of staff 'normally' absent from work.
- (b) The proportion of staff whom they will advise to work from home.
- (c) Their judgement, based on the nature of their business and their employment practices, of the number of staff who might absent themselves from work for other reasons.

As a rough working guide, large organisations with flexibility of staff redeployment should ensure that their plans are capable of handling staff absence rates of up to 15% over the 2-3 week peak of a pandemic (in addition to usual absenteeism levels). Large organisations which have small critical teams, however, should plan for level of absence rising to 30% at peak.

Finally, employers should note that absentee rates could be higher than the estimates given here if the nature of the virus means that people take longer to recover from infection than the assumption shown above, or if some age groups of the population are affected more severely than others.

6. Impact on the Availability of People

The entire scenario and the UK Blood Services' responses to it are all, directly or indirectly, associated with the impact of human influenza on people in society:

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- The reduction on the demand for blood through loss of healthcare capacity
Offset by,
- Any possible increase in the demand for blood as a result of influenza
- The availability and willingness of donors to give blood
- The availability and willingness of staff to work
- The availability of materials and services needed to maintain the blood supply.
- The availability of infrastructure, fuel and utilities.

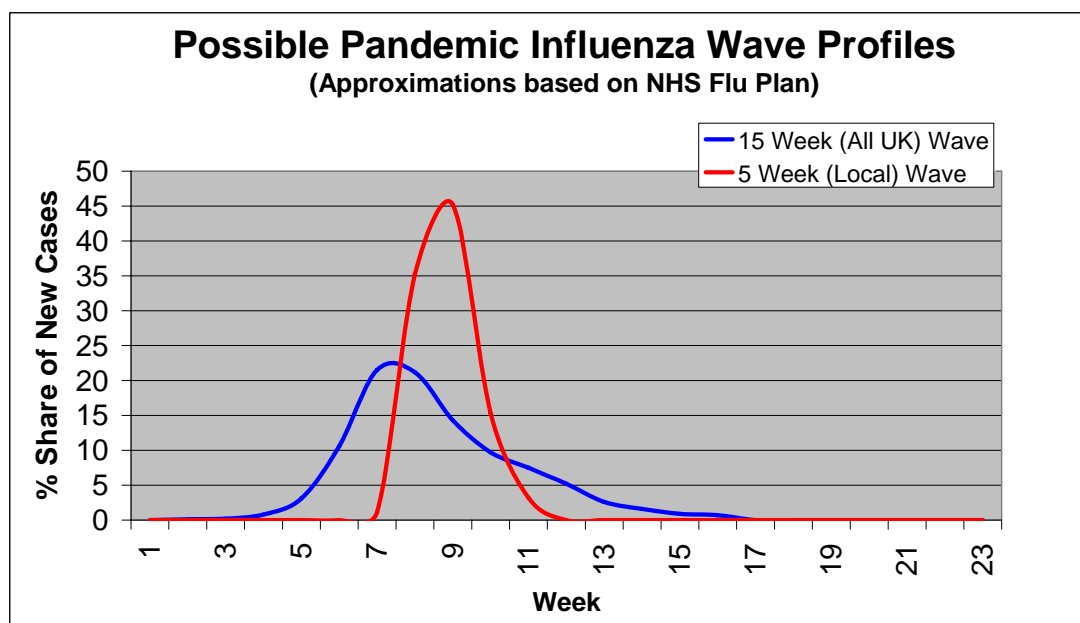


Figure 1

Figure 1 shows the overall 15 week UK profile (blue line) of new clinical cases as estimated in the current NHS Flu Contingency Plan. In addition, an approximation of a much shorter and sharper (“localised”) profile (red line) has been overlaid. This line is derived simply by compressing the 15 week profile into 5 blocks of 3. The purpose of this second profile is just to try to visualise in % terms the possible impact of pandemic influenza in tighter groups or localities and to make the point that the impact of the virus is unlikely to be uniform (i.e. the same, at the same time, everywhere). Reports from previous pandemics indicate that “locally” the wave tends to take between 4 and 6 weeks to pass through a population (e.g. Philadelphia in October 1918). For the virus, what constitutes a “local” population depends on the social inter-mixing of infected persons with non-infected ones. Interventions such as social distancing measures are likely to flatten the profile towards the blue line. A highly mobile population is likely to sharpen it toward the red line.

It is important to emphasise that there is no certain way of predicting the actual profile of the pandemic wave and that a mathematical approach to planning is unlikely to be successful. The two profiles in figure 1 are just two possible profiles. Whilst it is highly improbable that the profile in any community would be sharper than the red line (acute profile) it is perfectly possible that, with best interventions the best case scenario would give a longer flatter profile than the 15 week (all UK) wave. The point of this figure is not to predict but rather to emphasise that the real picture is likely to range and vary between and around these two profiles. It is highly unlikely that there will be a single uniform profile across a whole Country simultaneously.

7. Planning Assumptions

7.1 WHO International Phases and UK Alert levels

The table in Appendix 1 shows the relation of the UK alert levels to the WHO international phases.

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The table below shows the possible national duration of the UK alert levels as stated in the NHS plan.

UK Alert Level	Duration
One	Four weeks
Two	Two weeks
Three	One week
Four	Fifteen weeks
Recovery	Four weeks

These timings can only be viewed as approximations. Depending on a number of factors e.g. use of countermeasures, social distancing etc. the duration of each alert level could increase or decrease. Detailed plans must account for this and be flexible enough to deal with various eventualities.

Although concentrating on the first wave of a pandemic each Blood Service must plan for both the phases within the pandemic alert period i.e. phase 3, 4 and 5 as well as the recovery period in the post pandemic period.

7.2 Vaccines

A vaccine can only be produced once the strain of influenza is known. It will then take at least 4-6 months to produce the first vaccine. It is therefore assumed that there will not be a vaccine available for the first wave. Once a vaccine is available, it may or may not be available to UK Blood Service staff, depending on the quantities available and the knowledge gained from the first wave. The Department of Health (DH) will allocate vaccines according to nationally agreed priorities.

The DH is also stockpiling H5N1 vaccine (2.5 million doses). This vaccine will only be used if the risk of a pandemic arising from H5N1 increases significantly. This vaccine may also provide some immunity to a new strain depending on the degree of mutation.

The UK Blood Services Emergency Planning Group have written to the DH to ask that Blood Service staff are not over-looked when vaccine allocation to healthcare workers is determined.

7.3 Anti-virals

Anti-virals are likely to be the only major medical countermeasure available early in a pandemic. The UK is building up a stockpile of 14.6 million courses (to be complete by September 2006). These will mainly be used to treat those that are ill but some will be available for healthcare workers (expected to be those staff on the frontline dealing with patients with flu). The DH may use some anti-virals to try to prevent cases and delay spread.

7.4 Absence Rates

For planning purposes, the NHS base scenario, based on previous pandemics in the 20th century, is a cumulative clinical attack rate of 25% of the population over one or more UK-wide waves of around 15 weeks each, weeks or months apart. This compares with the usual seasonal influenza attack rate of 5-10%. The second wave may be more severe than the first.

The total cumulative attack rate over a number of waves is believed to be unlikely to exceed 50%. A reasonable worst case single wave would therefore be represented by figures double those presented for a 25% attack rate. To plan for the worst case scenario a cumulative clinical attack rate of 50% can be used.

In addition to persons being unavailable due to actual illness there will be further unavailability due to:

- "Normal" sickness absence (although some of this can be expected to be subsumed by influenza absence).
- Worried well*
- Those caring for others*
- Extended absence (e.g. following hospitalisation)

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- Enforced absence due to changes in organisational policy
- Increased compassionate leave

*The worried well and those caring for others may behave differently depending on whether the activity they are being asked to perform is “discretionary” (e.g. blood donation) or “compulsory” (e.g. fulfilling an employment contract).

7.5 Infrastructure

Although suppliers of services such as utilities, transport etc. should be putting in place detailed plans for pandemic flu, due to the unknown scale and severity a possible flu pandemic may have, it is likely there will be some disruption to some services (but not quantifiable) and Blood Services will need to be mindful of this and where possible ensure that the impact of any disruption is minimised.

7.6 Importation

It is unlikely that borders (both international and within the UK) would close, therefore UK Blood Services will be able to continue the importation of plasma (both for clinical use (MB treated plasma) and plasma for fractionation). However there could be disruption to this supply due to staff shortages in the exporting country or other unforeseen problems so Blood Services relying on imports would need to ensure they hold sufficient stocks to ensure continuity of supply in case there is disruption to available imports.

However movements both internationally and between Blood Centres and Blood Services in the UK would be kept to an absolute minimum.

In an emergency such as a pandemic flu it may be necessary to try to import red cells and platelets. Any importation is subject to both legislative restrictions and operational difficulties and these would need to be considered and overcome in advance of the emergency situation.

8. Impact on Health Services (and demand for blood and platelets)

The impact of a flu pandemic on health services is likely to be intense, sustained and nation-wide. Whilst there could be some local variations in timing and/or impact, this plan assumes UK-wide impact (UK geography is relatively compact).

- There will be an increased workload of patients with influenza and its direct complications
- Depletion of the workforce due to direct or indirect effects of flu on themselves and their families
- Logistical problems due to interruption of supply utilities and transport as part of the general disruption caused by the pandemic.

Initial work on the demand for blood and platelets throughout the pandemic indicates that demand will be relatively unaffected (as little as 10%) as reduction in activity within a hospital will be from the cessation of elective surgery which now uses less blood than was previously the case. Therefore, it could be an inability to supply blood and components that could reduce the activity within hospitals.

However, due to the large number of flu victims combined with the loss of hospital staff it is also possible that demand could reduce further than this (most blood services are working on a range between 10-25% reduction). Due to the nature of the pandemic, areas of the country may be affected at different levels at different times.

Work previously carried out by the UK Blood Services Emergency Planning Group has suggested that as little as 20% of blood usage is for absolute life-saving purposes.

The true change to demand will only be known once the country is in a pandemic or by using data obtained from countries hit by the pandemic before the UK. For the UK Blood Services it is prudent to work on the assumption that demand for blood will reduce but by an unknown amount and therefore the UK Blood Services should aim to hold healthy stock levels and aim to boost collections at the start of the pandemic (either phase 5 or alert level one depending on the situation).

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Demand for platelets is unlikely to change from current levels.

9. Impact on the Blood Supply

The impact on donors able and/or willing to donate will be felt in a number of ways:

- Donors who are unwell with flu (likely be unavailable for a minimum four weeks, two weeks with flu and on current guidelines, deferred for a two further weeks)
- Donors who have been in close contact with someone with flu are likely to be asked not to come forward to donate
- Donors who are carers (either for people with flu or for children if schools are closed)
- Donors who are not prepared to donate in the “climate” of a flu pandemic
- Donors who are unable to get to a session due to transport difficulties

Therefore, it is predicted that the number of donors coming forward to donate will be severely reduced. Efforts will be made to maximise collections from all eligible donors and collections will continue to take place in areas that are first hit by the flu pandemic. Demand is not likely to reduce by the same amount as supply could potentially be reduced by, and therefore there is likely to be a severe impact on red cell and component stocks.

Every effort will be made to mitigate the impact on the supply (through targeted collection, marketing and media messaging strategies). However if stocks reduce to such an extent that life-saving demand is predicted not to be met either immediately or in the coming weeks, then it is likely that the UK Blood Services will have to restrict usage and conserve red cells and components to life-saving transfusions only. This may be implemented even before stocks actually fall to critical levels. This will be difficult to gauge at the beginning when the precise impact of the flu pandemic is unclear and we therefore anticipate modelling the situation in real time. As more information is obtained at the start of the flu pandemic, e.g. the response from donors, impact on demand etc, it will be possible to assess the emerging impact on stocks.

10. Impact on Staff

Staff will be positively discouraged from coming to work if suffering from flu but staff will be required to come to work whenever possible (unless they are able to work from home to perform “essential” activity). A comprehensive training and education programme will be put in place to ensure staff are protected as far as possible from pandemic flu. The UK Blood Services will encourage a working climate of “business as usual”.

All discretionary leave may need to be cancelled and staff will almost certainly have to be re-deployed to areas and jobs they may not normally be familiar with. These will be areas of essential activities which have most priority to keep a basic, safe, blood supply going. Staff who are re-deployed must be given the basic training required in order for the role to be carried out to the relevant standards that are in place. Each UK Blood Service will need to document a mechanism for defining which activities must continue and which activities can stop during the pandemic.

There will be significant disruption to strategic activities, because all avoidable meetings or travel etc. would need to be cancelled.

If possible, additional staff will be recruited or the use of volunteers explored.

During and in the run up to a flu pandemic, staff may be concerned about their health and the health of their families. The primary route of information should be via their normal line management. Consideration should also be given to providing extra capacity for advice to staff e.g. intranet, internet and possibly through a 24hr helpline.

Throughout the flu pandemic the UK Blood Services will need to balance the concerns of the staff with providing blood, components and other services to patients.

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11. Operational Resilience

When planning for a flu pandemic there are a number of policies that, although relevant when in a normal situation (when blood and staff are not in shortage) will need reviewing for an emergency situation. The benefit of these policies remaining in place needs to be reviewed against the risk of not being able to supply enough blood and/or services. Each area of the business will need to decide which policies need changing and which standards can be relaxed. Some of these changes may require approval from regulators. Some examples are:

- Allowing first time donors to donate for apheresis platelets
- Extending the shelf life of red cells to 42 days (from 35 days)
- Reducing the interval between donations
- Reducing the deferral period for donors post influenza recovery
- Stopping certain testing e.g. HCV NAT or discretionary testing

If a Blood Service changes any standards it is imperative that this is only carried out with a full knowledge of any inherent risks that this may involve balanced against the benefits. The decision must be carefully documented (basis for decision, who/which group authorised the change) and a clear communication and training plan implemented. A number of these changes can be discussed ahead of the pandemic with clear guidelines as to when they should take effect but some may need to be taken during the pandemic depending on the scenario that unfolds.

Due to the probable length of the pandemic wave it will not be possible to hold sufficient red cell stocks at the beginning of the pandemic to see through the entire wave. However it is important that each UK Blood Service aims to hold healthy red cell stocks to allow each Blood Service some planning time at the beginning of the pandemic rather than immediately facing a shortage situation right at the outset.

12. Plan Overview

There are three broad action areas to mitigate the impact of a flu pandemic on those patients who are dependent on blood transfusion to conserve life.

12.1 Action Area 1 – limit the spread of infection/remain operational

Due to the highly contagious aspect of the flu pandemic, a number of measures will need to be taken to avoid unnecessary spread of the virus and to encourage staff and donors to donate or work in confidence. In order to do this the following should be considered:

- Implement a range of basic precautions (for donors and staff):
 - Revised donor invitation letters
 - Contacting donors by phone before their session/appointment to ask them if they or their immediate contacts have any symptoms
 - Triage donors on arrival at sessions for symptoms
 - Hand washing and respiratory hygiene (implemented now)
 - Those suffering from the disease should stay at home
 - ***Voluntary quarantine of contacts of known cases (donors only) still waiting for confirmation from ICC***
 - The use of PPE according to expert guidance
- Identify a front line group of essential staff who should receive vaccine at the first opportunity if Blood Services staff are given agreed priority at any stage
- Avoid crowded donor sessions by:
 - Using large venues to provide more space and segregation between donors where possible
 - Arranging the waiting area differently to minimise donor to donor and staff to donor contact.
 - Donors will be called where possible using appointments but donors will also be encouraged to donate using all options available

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- If resources permit, calling fewer donors at any one time but open the session for a longer time
- Only call local people to local sessions (i.e. to reduce travel) and be aware that work place sessions are likely to be cancelled due to staffing impact on businesses
- Reduce inter-centre stock movements to a minimum

12.2 Action Area 2 – maximising limited supplies

UK Blood Services will need to maximise marketing activity to boost collections and build stocks at certain critical times throughout the pandemic. These critical times are:

- WHO Phase 6, UK alert level 1 - research suggests that the announcement of a pandemic at alert level 1 (when the pandemic is not in the UK yet) could have a big impact on the response of the public and therefore donors
- WHO Phase 6, UK alert level 2 (pandemic has now reached the UK)

The level of marketing activity will depend on the stocks currently being held and information from countries already hit by the pandemic. This will be achieved by extending the opening of deployed sessions, use of specific communications with donors etc. and throughout the flu pandemic will deploy collection and advertising resources to endeavour to collect as much blood as possible from individuals. Wherever possible, platelets (both component donation and pooled platelets) will be collected and produced.

A number of options will need to be reviewed depending on the severity of the pandemic. These would include:

- Extending the shelf-life of platelets to 7 days (without bacterial screening if this is unavailable routinely) to provide more flexibility if platelets are in short supply
- Making recovered platelets from whole blood donors including first time donors
- Increasing the shelf life of red cells to 42 days (from 35 days currently)

Depending on the scenario, the possibility of collecting more blood from offshore populations (including Channel Islands) will be considered. There may be sub-populations who are unaffected e.g. returning visitors. All possible sources will be considered and tried. Recovered donors will also be a particularly important source of blood components.

12.3 Action Area 3 – where applicable to restrict use to conserve supplies

Our current planning assumption is that demand for blood and blood components will fall by no more than 10% and that specific actions are therefore likely to be required in order to conserve scarce blood resources due to a greater impact on available supply than on demand. However, work is still being carried out in this area and it could be that this demand estimate will require revision.

Information gained at the beginning of the flu pandemic (UK Alert Level 1) and continuing throughout the pandemic will be used to make informed decisions around the management of blood stocks and any possible restrictions that may need to be applied to hospitals. Relevant information will include:

- Total stocks at the beginning of the flu pandemic
- Clinical attack rate and clinical outcomes seen in countries first hit by flu pandemic and in the early stages in the UK (e.g. via HPA web-site)
- If possible, the impact on the demand for blood and blood components seen in countries first hit by pandemic flu.
- If possible, any immediate lessons learnt/response by donors seen in countries first hit by the flu pandemic

Links are beginning to be built internationally between Blood Services and this will increase the practicality of these options.

Depending on the options above, if it was felt that stocks of blood would not be sufficient to meet hospital demand, the UK Blood Services would be required to invoke their shortage plans at the required level. This

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could happen even if stocks appear healthy at the time but are predicted to be severely depleted later in the scenario. The aim of any shortage plan is to ensure that any patient who would die without a transfusion (red cells or platelets) at any stage during the flu pandemic receives that life-saving transfusion. This would need careful stock management both at the Blood Service level and the hospital level to ensure that these scarce resources are available to those patients who have the greatest need.

13. Issue and Stock Management of Components

Blood Services stock management will operate at UK Level with the NBS taking the lead, as agreed, in the co-ordination of stocks. Stocks will be distributed between UK countries according to need. The aim is that, wherever possible, a patient who requires blood should receive the necessary blood if there is blood available in another part of the UK.

Because of the length of the flu pandemic (perhaps 15 weeks at alert level 4) it will not be possible to hold sufficient stocks at the beginning of the pandemic to see through the entire wave. Therefore it is essential that UK Blood Services continue to collect throughout the wave in order to supply blood throughout the flu pandemic (at the reduced demand). Nevertheless, in order to buy time and to maximise the early opportunities for managing the pandemic impact, it is recommended that Blood Services aim normally to hold healthy stocks of red cells.

In the NBS, a stock monitoring and forecast model will be in place that allows stocks of both red cells and platelets to be managed and gives forward predictions of stock levels (for all blood groups) including when stocks are returning to normal and therefore allowing demand to return to normal. An example of the red cell stock model is shown in Appendix 2.

This model is available for use by all UK Blood Services.

During the flu pandemic a daily (or more frequently, depending on the situation) stock and situation report will be collated by the NBS. This will include stock levels for all of the four countries, broken down into red cells and platelets by group. It will also cover more general status information such as staffing etc.

14. Tissues

A number of the UK Blood Services also provide tissues e.g. skin, bones, tendons and heart valves. Some of these are life-saving e.g. skin whilst others are life-enhancing e.g. bone. Each UK Blood Service will need to ensure that stocks of life-saving tissues are at sufficient levels at the start of a flu pandemic as it is likely that supply during the pandemic will reduce. However Blood Services should aim to continue collecting all types of tissues throughout the pandemic where possible.

15. Return to Normality

After the first wave or if there were to be a successful vaccination campaign there will be increasing pressure from the wider NHS for the UK Blood Services to be supplying blood as normal. Therefore at the end of the first wave of the pandemic a more normal collections resume, it is important that the UK Blood Services are in a position to maximise their collections in order to boost stocks.

A clear message will need to go out to all NHS and private hospitals when normal activity using blood can resume (assuming restrictions had previously been put in place). It may be that the return to normal activity could take a number of weeks after the end of the flu pandemic. In this case, hospitals will be informed of the level of activity they can resume.

Collection activity will continue to be boosted until stocks have returned to normal levels.

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16. Communication

There are a number of stakeholders that the UK Blood Services will need to engage with including staff, the media, donors/public, Department of Health/Government and hospitals. Each stakeholder group will have different information requirements.

Rapid, clear and concise communications will be required following the declaration of a flu pandemic. As the UK Blood Services move into the peak period of the pandemic, more complex or specific targeted messages may be required and these will be developed in advance as far as possible but they will need to be modified and finalised as the scenario unfolds. Approaching and going into the recovery stage will require another set of messages and communications.

Communicating with staff is going to be equally important – it is vital that staff are aware of the changing situation and environment, what is expected of them, and changes to working practices, processes and rules. Getting the staff communications right is the first part of the communications process.

Throughout the pandemic the UK Blood Services will need to work very closely with the media to get the correct messages relayed to the public. The UK Blood Services will also need to work closely together and with the DH to ensure the consistency of messages being given out.

Some of the key themes will be around reassurance and clarification, the importance of collecting blood/platelets, any new processes/donor selection guidelines, the need to be contactable and flexible, the important role of staff, work force plans and arrangements, and health and safety.

17. Co-ordination and Command and Control

The NBS (via the National Emergency Planning Manager) will provide the overall co-ordination role for the UK Blood Services response to the flu pandemic. The UK Blood Services will meet via teleconference during the pandemic to co-ordinate the planning and response.

Each Blood Service will be operating under the remit of their own emergency planning system.

Given the extreme and high profile nature of the scenario, adjustments may need to be made to the personnel usually required under the emergency planning arrangements and this may include having more staff available i.e. more substitutes for key personnel (depending on availability).

The UK Blood Services are already working closely with Department of Health especially in the areas of communications and impact assessment (modelling). Information and data can be expected to be made available via DH/HPA. As a pandemic emerges, it can be expected that there will be regular bulletins required several times daily by COBR via the DH and instructions and direction may be received from Central Government. The NBS will move quickly to establish a communications centre (probably virtual) which will produce bulletins for the various stakeholder audiences.

It is possible that for a scenario on the scale of pandemic influenza, the NEPM will find themselves overwhelmed by operational matters (maintaining continuity). There may be a requirement for a higher level of Crisis Management required. This should be reviewed as part of the planning process.

Report prepared jointly by the UK Blood Services

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