

Pandemic Influenza and the Blood Supply

Human Pandemic Flu

There has been a great deal of media attention under the headings of “Bird Flu”, “Avian Flu” and “Pandemic Flu”. Avian Flu is a disease of birds which is potentially very damaging to the poultry industry. Any new Human Pandemic Influenza virus is likely to originate in the bird population with the H5N1 virus circulating mainly in SE Asia considered a likely source. Hence the link between Avian and Human Flu.

The Department of Health, NHS and UK Blood Services are preparing their response to “Human Pandemic Flu”. To cause a human pandemic, a new influenza A virus must emerge to which there is little immunity. There were three major human influenza pandemics in the previous century. All were highly disruptive to healthcare and took many lives world-wide. Scientists and the Chief Medical Officer consider that another Human Influenza Pandemic is “highly likely” and “only a matter of time.”

Impact and Response Areas

The impact of a potential human influenza pandemic on the blood supply could be severe. Whilst blood services share much in common with other organisations, they also face some specific and unique challenges. When planning for human pandemic flu, the major impact and response areas to be considered by blood services are:

- Transmission of influenza through blood service activity
- Changing need for blood
- Maximising and managing the blood supply
- Donor availability
- Employee availability
- Supply chain resilience

At peak, a severe influenza pandemic will place enormous burdens on the whole healthcare system. The demand for blood may fall because of a reduction in elective surgery and other blood-using treatments. Overall, however, we anticipate that the available blood supply is likely to fall acutely due to a larger adverse impact on blood donation.

Strategy and Approach

The demand for blood components and services will considerably exceed capacity to meet it. Blood services, therefore, plan to maximise their ability to deliver essential activities. Their aim is to avoid a lack of components and services placing an additional constraint on a stretched health care system. Nevertheless, in pandemic influenza, blood shortages are a real possibility and blood services will therefore also work with hospitals to prepare for that eventuality so that loss of life due to lack of blood can be minimised.

Transmission of Influenza through Blood Service Activity

At present, it is considered that the risk of additional transmissions of influenza through blood itself is low, although this position is under constant expert review. Proportionate measures need to be planned for blood collection to ensure that we create an environment that is as infection free as possible. Key measures will include revised invitation processes, notices, discouraging unwell donors from attending, good hygiene practices and revised pre-donation screening and post donation advice.

Changing need for blood and services

Most international predictions of reduced red cell demand reduction range between 10 and 25%. The UK expects only a small reduction due to progress made on appropriate use of blood. Little change in the demand for platelets is expected. A long shelf life, normally healthy stocks and relative flexibility of supply of frozen components should mean fewer concerns here. Stretched NHS capacity will lead to some reduction and/or timing adjustments in the demand for some laboratory services.

Maximising and Managing the Blood Supply

Effective and timely communication with blood donors, hospital customers and suppliers will be crucial to maximising the blood supply during the pandemic. Blood services need to actively connect “influenza” with “a blood supply at risk” in the minds of the donating public. Focusing stretched resources where they can maximise platelet donation and convert a greater proportion of whole blood into platelets will be further focal points. Stocks are managed nationally and tools are being built that will help to predict near future stocks in a real pandemic. These will help give advanced warning of blood supply shortfalls, improve communications and provide an evidence base for some inevitably difficult decisions.

In the event of actual or predicted blood shortages the “Integrated Blood Shortage Plan for the National Blood Service and Hospitals” will be used to help triage available blood according to patient need.

Donor Availability

Blood donors will be infected by pandemic influenza to the same extent as the general public (25-50% symptomatic over one (worst case) wave). They will become ill; they will need to care for others; they may modify their normal social behaviour. Donors will therefore be less likely to donate blood. In addition, donor selection requirements mean that donors cannot give blood until two weeks after making a full recovery (i.e. two weeks later than they might return to work, for example). Those who have been in close contact with an infectious disease are also normally ineligible to give blood for seven days.

These donor selection criteria are being carefully reviewed and may be changed depending on pandemic severity. However, large reductions in donor availability are being anticipated. There may also be significant changes in donation patterns in advance as the WHO pandemic alert level rises. Blood services will aim to increase blood stocks in advance of the pandemic and, throughout, will seek to encourage recovered donors to come forward to donate as soon as possible after recovery.

Employee Availability

Encouraging employees who are fit and well to attend work and creating a climate of “business as usual” will be very important. Blood services will work with their staff to maximise flexibility so that limited resources can be targeted where most needed. Department managers will identify and prioritise the most essential and time critical activities and be prepared to seek help from and help out other departments. It will be essential to maintain a healthy work environment and to raise the level of hygiene and good health practice, not least by requiring all staff who feel unwell to stay home. Peak staff absence rates could be between 20% and 35%.

Supply Chain Resilience

Key suppliers are being asked about their plans to maintain services to Blood Services during a pandemic. Appropriate stock cover for identified critical consumables is held.

Emergency Planning System

The National Blood Service has a comprehensive and integrated Emergency Planning system that is regularly tried and tested. Pandemic influenza plans are being built on this foundation.

The UK Blood Services work together on Emergency Planning. These planning processes are also linked to the Pandemic Flu planning team at the Department of Health and blood services' plans are being compared internationally.

Pandemic Influenza and Blood – Check List for Hospitals

- Do you know how your hospital is planning for pandemic flu?
- Is blood transfusion support specifically identified in that planning process?
- Does your plan identify the blood supply as a pandemic flu risk?
- Has your hospital transfusion committee considered blood shortages in pandemic influenza?
- Are you up to speed with the “Integrated Blood Shortage plan for the National Blood Service and Hospitals” and your role within it?

Over the coming months, we will be firming up our plans, preparing our organisations and communicating further to ensure that everyone understands our plans and their inevitable limitations.

Richard Bedford

Chair, UK Blood Services Emergency Planning Group

Email: rbedford@btinternet.com