Pandemic Influenza – Planning Assumptions and Key Facts and Figures

Pandemic influenza

1. An influenza pandemic differs from seasonal influenza circulating in the population and has more serious implications because significantly more people will be affected. Influenza pandemics occur when a new influenza virus emerges in the human population and spreads from person to person around the world. Because the virus is new, the entire population will be susceptible, as few people will have immunity. People in vulnerable groups may be affected by a pandemic, but it is likely that a pandemic will also affect healthy individuals.

2. An influenza pandemic is a rising tide of illness, not a single event. It is likely to occur in one or more waves, possibly weeks and months apart, with each wave lasting around 12-15 weeks. Government needs to have a full range of options prepared, so that we can respond in steps as the scale and detail of the pandemic emerges. Preparing these options will require cross-government input and support on topics ranging from social and community care (DCLG, DH) to excess deaths (CCS, DCLG, HO, MOJ, DH) to critical sector resilience (all departments).

Planning assumptions

3. Planning is based on the Reasonable Worst Case Scenario, and the scale of a serious pandemic means that it requires preparedness across the whole of government:

- **20%-40% of the workforce may be absent from work during the peak of an influenza pandemic**, testing the resilience of key sectors including energy, transport, and food (rates will vary according to sector and region, and school closures could mean absenteeism is closer to 40%);
- **up to 4% of patients with symptoms (around 1.2 million people) may require hospital care**, putting pressure on the NHS; and
- **up to 750,000 excess deaths** – these deaths would be in community settings, not hospitals, and bodies would need storage, transport and disposal.

Measure	Planning assumption	People
Number of symptomatic cases	50% of the population of the population over the course of the pandemic	30,000,000
Approx. number that may require face:face assessment by the health services	30% of symptomatic cases	9,000,000
Approx. number requiring hospital care	Between 1% and 4% of symptomatic cases	300,000 to 1,200,000
Approx. number requiring Level 3 critical care	25% of estimate for hospitalised cases	75,000 to 300,000
Approx. peak illness rate (new cases per week)	10% to 12% of the population	6,000,000 to 7,200,000

Excess deaths	A pandemic with a population mortality rate of 1.25%	750,000*

**There is an expectation on local responders to plan for up to an additional 0.525% of the population dying (c.315,000 nationally). Central government would support local capacity if the Reasonable Worst Case Scenario modelling of 750,000 was reached.*

Health response

4. The UK adopts a 'defence in depth' approach to responding to pandemic influenza to minimise the spread of infection and treat individual cases. This comprises:

- **surveillance and modelling** to detect and assess the impact of the virus, identify and quantify the groups most at risk of severe illness, hospitalisation and death;
- **reducing the risk of transmission** through good infection prevention and control practices, dissemination of hand and respiratory hygiene advice (e.g. "Catch it, bin it, kill it") and other interventions (e.g. management of places where at risk groups are in close contact such as schools) and provision of personal protective equipment (PPE) for front-line health and social care staff;
- minimising serious illness and deaths by ensuring the UK has **stockpiles of clinical countermeasures and PPE** which can be mobilised rapidly in the event of an influenza pandemic;[1]
- reducing pressure on primary care services and hospitals by **activating the National Pandemic Flu service (NPFS)**, an automated system which enables antivirals to be rapidly authorised for patients without the need to see a doctor (the service is intended to free up GP time to deal with other ill patients as well as avoiding the risk of infectious people visiting GP surgeries and spreading the virus to others);
- management of **an Advance Purchase Agreement to guarantee access to pandemic specific vaccines** when developed (only likely to be available 4- 6 months into the pandemic);
- vaccination, when possible and appropriate, to protect the public; and
- ensuring **surge plans** are in place to deal with increased demand on health and care services in hospitals and community settings.

Borders

5. There are no plans to close UK borders during an influenza pandemic**.** FCO will issue travel advice for UK citizens and overseas visitors based on clinical and scientific advice from PHE.

6. Previous studies suggest that screening measures such as thermal scanning measures are largely ineffective, impractical to implement and highly resource intensive**.** Modelling suggests that imposing a 90% restriction on all air travel to the UK at the point a pandemic emerges would only delay the peak of a pandemic wave by one to two weeks.[2,3] A 99.9% travel restriction might delay a pandemic wave by only two months. During the 2009 pandemic it became clear that the pandemic virus had

[1] The UK's stockpile includes antiviral medicines sufficient for 50% of the population, in order to be able to treat all cases of influenza in the Reasonable Worst Case Scenario. Antiviral medicines do not offer a cure, but can reduce the severity of illness and the risk of transmission.
[2] Cooper BS, Pitman RJ, Edmunds WJ, Gay NJ (2006) Delaying the International Spread of Pandemic Influenza. PLoS Med 3(6): e212. doi:10.1371/journal.pmed.0030212
[3] Ferguson NM, Cummings DAT, Fraser C, Cajka JC, Cooley PC Burke DS Strategies for mitigating an influenza pandemic. Nature 442, 448-452 (27 July 2006)

already spread widely before international authorities were alerted. This suggests that the point of pandemic emergence had been missed by several weeks.

7. The economic, political and social consequences of border closures would also be very substantial, including risks to the secure supply of food, pharmaceuticals and other supplies.

Schools

8. School closures may be effective in reducing peak rates of infection, but this will depend on the length of closure. There is a risk that social mixing of children outside school, for example at childcare provided by employers, would defeat the object of the closures.

9. School closures may have a disproportionate effect on care provision due to the demographics of the NHS and social care workforce.

10. Closures would also have important social and economic implications, which may not affect all sections of society equally; for instance, school closures may be particularly disadvantageous where free school meals are an important source of nutrition, or where parents are unable to take time off work or work from home.

11. Under some circumstances head teachers (and their Boards of Governors) may take the decision to close individual establishments temporarily. Such closures should be guided by the following planning principles:

- taking a precautionary approach in the early stages of an influenza pandemic and depending on the public health risk assessment, Directors of Public Health may advise localised closures (individual schools or catchment areas). The purpose would be to reduce the initial spread of infection locally while gathering more information about the spread of the virus; and
- closures may be needed in response to specific local business continuity challenges (e.g. staff shortages or particularly vulnerable children).

Mass gatherings

12. Some evidence suggests that restricting mass gatherings, in conjunction with other social distancing measures, may help to reduce transmission. However, the evidence is not strong enough to warrant advocating legislated restrictions.[4]

13. Large public gatherings or crowded events where people may be in close proximity are an important indicator of 'normality' and may help maintain public morale during a pandemic. The social and economic consequences of advising cancellation or postponement of large gatherings are likely to be considerable for event organisers, contributors and participants.

14. The cancelling of public events would generally only be justified in a very severe pandemic (e.g. until pandemic specific vaccine becomes available) because of the severe social impact over an extended period of time.

15. Voluntary home isolation of symptomatic cases is less disruptive and, if the public are supportive, a more easily implemented social distancing measure.

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4 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/316200/Mass_Gatherings_evidence_Review.pdf