



# Swine Flu Preparedness



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A report from Overview & Scrutiny







# Contents

<b>Preface</b>	<b>3</b>
<b>1 Our Approach and Recommendation</b>	<b>5</b>
1.1 Introduction	5
1.2 Issues Already Progressed With Agencies	6
<b>2 SUMMARY DESCRIPTIONS</b>	<b>7</b>
2.1 Swine Flu	7
2.2 The three-step response strategy	7
<b>3 Evidence</b>	<b>8</b>
3.1 Key Players in or related to Birmingham	8
3.2 Member-led Evidence-Gathering Session	9
<b>4 ISSUES ARISING FROM THE EVIDENCE</b>	<b>9</b>
4.1 Neither a big bang, nor a rising tide...	9
4.2 The first outbreaks in schools	10
4.3 Perceptions of the Government's role	12
4.4 Scenario Planning	12
4.5 Planning in Birmingham	13
<b>5 Conclusion</b>	<b>14</b>
<b>Appendix 1 Terms of reference for the swine flu review</b>	<b>16</b>
<b>Appendix 2 Flu in general</b>	<b>18</b>
<b>Appendix 3 Normal seasonal flu</b>	<b>20</b>
<b>Appendix 4 Swine Flu</b>	<b>21</b>
<b>Appendix 5 The last three flu pandemics</b>	<b>23</b>
<b>Appendix 6 Antivirals</b>	<b>24</b>
<b>Appendix 7 Vaccine</b>	<b>25</b>
<b>Appendix 8 Assessing the severity of a flu pandemic</b>	<b>28</b>
<b>Appendix 9 Groups at risk</b>	<b>31</b>
<b>Appendix 10 Birmingham Resilience Group</b>	<b>33</b>
<b>Appendix 11 Decision-making framework for school closures</b>	<b>39</b>



# Swine Flu Preparedness

Appendix 12 Long term influences tending to reduce the damage from flu; and  
airports 41

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Reports that have been submitted to Council can be downloaded from  
[www.birmingham.gov.uk/scrutiny](http://www.birmingham.gov.uk/scrutiny).



# Preface

By Councillor Deirdre Alden

Chairman, Health Overview and Scrutiny Committee



In November 2005 the Health Scrutiny Committee received a presentation on preparations for a possible avian flu pandemic which was then widely expected. In the event, that pandemic did not occur. But another epidemic – of swine flu – spread in the summer of 2009.

When the swine flu epidemic (later to be classified as a pandemic) struck in Birmingham, the Health Scrutiny Committee, on advice from Jim McManus, Joint Director of Public Health for Birmingham, quickly came to the conclusion that it would be a useful exercise to scrutinise how the various agencies had coped and what lessons could be learned from the experience.

We shared the then common belief that after the initial surge in cases, the number of people being newly-infected by the virus would drop in the summer, only to increase again and affect many more people when the normal flu season started in the autumn and winter. We were also aware of the possibility that the virus could mutate into something more serious.

In the event, the progress of the virus spread has not followed this pattern. The numbers of new cases continued to rise fairly dramatically with no summer fall off until the end of July, but thankfully there is currently no sign of the virus mutating into a more harmful form.

We are however in a very fast-moving situation, and I am conscious that the situation may have changed again before this report is made public. We cannot yet tell whether this virus will return in a mutated form, and monitoring by the HPA continues.

Unlike other Scrutiny Reviews, this report does not contain recommendations to be implemented at some stage in the future. The point of this review was to quickly work out any areas where improvements could be made and for those changes to be made quickly. Lessons learned through this review can be put into place while this virus is still spreading, and also in case of any future pandemic which could potentially be more harmful.

Therefore the suggestions which would normally form the recommendations have already been made to the relevant agencies ahead of this report coming to the Council.

On July 23 the Local Government Association held a Swine Flu conference in Birmingham. Jim McManus mentioned this Scrutiny review in the presentation which he gave to the conference. The Department of Health has also been advised about it. So far the feedback received from them has been overwhelmingly positive with the feeling that this was an important role for Scrutiny to undertake. Because Birmingham experienced one of the first large clusters of swine flu cases, we are probably one of the first scrutiny committees to investigate how it was managed. Birmingham's Health Scrutiny Committee has therefore led the way on this subject.



# Swine Flu Preparedness

Finally, I would like to thank the members who attended the evidence gathering session at very short notice, and the staff who have worked so hard on arranging the meetings, making notes of the meetings, and writing this report. Particular thanks should go to our Link Officer Richard Miles, and especially our Research Officer Tony Green who has taken the lead in this Review due to staff absence.

*Donna Adam*



# 1 Our Approach and Recommendation

## 1.1 Introduction

- 1.1.1 On 17 June 2009 the Health Overview and Scrutiny Committee approved the terms of reference for a short scrutiny review of the preparedness for a swine flu epidemic to be undertaken in late June and early July.
- 1.1.2 We initiated this review at the suggestion of the Joint Director of Public Health, because we wanted to make sure all the relevant bodies were as best placed as possible to deal with the anticipated pandemic. At the time of starting the review the conventional wisdom was that the spread of the disease would reduce over the summer period but would come back with a vengeance when schools reopened in September. Our original plan was intended to make sure we were as well prepared as possible for the autumn.
- 1.1.3 Since then, events have overtaken that plan. The response stages rapidly changed from containment, to outbreak management, to treatment, as the numbers of people infected rose faster and faster: instead of dipping soon after the schools broke up the rate of spread continued to increase until late July.
- 1.1.4 Whilst the events have accelerated there is still an important contribution we can make. Though swine flu has turned out to be a mild illness for most people who catch it, the virus could mutate and we must be prepared for that. We must also ensure that we learn all we can from our handling of this epidemic so that we can respond even better to any future flu epidemic which may be less mild.
- 1.1.5 It is normal for the findings and recommendations from scrutiny reviews to be part of the final report to the City Council. However, because the swine flu situation changed daily the terms of reference required any issues discovered during the review to be raised directly with the relevant agency as soon as possible, so the agency can address the issue and report back the action it has taken. A copy of the Terms of Reference is in Appendix 1.
- 1.1.6 We were, however, clear from the outset that because of the very changing nature of the flu pandemic we did not want to wait until the end of the review before our recommendations could be implemented: timeliness of responses is all-important here. Therefore we took the view that as an issue was identified we would ask the relevant organisation or agency to pick this up as soon as possible. In Section 2 of the report we list the main issues we have already acted on. Then, as background, the Report gives a summary of swine flu; the government's three stage strategy for coping with a flu epidemic; lists the key bodies in Birmingham concerned with epidemic response; describes the work of the Birmingham Resilience Group; then describes the Member-led evidence-gathering event and issues identified from the evidence, most of which have been raised with the



# Swine Flu Preparedness

relevant health bodies. Hopefully this has led to the issues being addressed earlier than they might otherwise have been.

## 1.2 Issues Already Progressed With Agencies

- 1.2.1 We asked the Directors of Public Health in each of the three PCTs to review the extent to which the intention of informing GPs about swine flu succeeded or otherwise, and to put plans in place by the end of 2009 on how to optimise this process in any future pandemic. [Ref. Paragraph 4.2.1]
- 1.2.2 We asked the Schools and Governors Support Co-ordinator to supply, before schools reopen in September, information to head teachers, deputy head teachers and chairs of governors on their legal rights and duties in respect of decisions to close schools, and also to provide that information to other agencies, including Primary Care Trusts, the Health Protection Agency and the Strategic Health Authority. [Ref. Paragraphs 4.2.3 to 4.2.5]
- 1.2.3 We invited PCT Directors of Communication to send information, before schools reopen, to out-of-school meeting places such as mosques and community centres and liaise with community leaders, aiming to get their agreement to close the meeting places whilst the schools are closed in order to slow the rate of disease spread, in this or any future flu epidemic. [Ref. Paragraph 4.2.11]
- 1.2.4 We asked PCTs to prepare plans by the end of March 2010 to exercise the widest possible range of means of getting information to the public during the early stage of any future epidemic. [Ref. Paragraph 4.2.1 to 4.2.3 and 4.2.7]
- 1.2.5 We discussed with senior managers at Birmingham Airport how airports could use new technology to minimise the risk of incoming passengers bringing flu into the country, in preparation for future epidemics, and how this could be pursued. [Ref. Paragraphs 4.5.3 and Appendix 12]
- 1.2.6 We requested agencies likely to know of any transient groups or any other groups or individuals that are unlikely to have received information by normal means, to do all they can to provide those groups or individuals with information about swine flu, how to minimise the risk of catching and spreading the virus, and how to get treatment if they are infected. [Ref. Appendix 9]
- 1.2.7 We asked the Strategic Director for Children, Young People and Families to ensure that suitable measures are in place in children's homes for diagnosis and treatment where necessary. [Ref. Appendix 9]
- 1.2.8 We also made a similar request to the Strategic Director for Adults and Communities in respect of care homes. [Ref. Appendix 9]
- 1.2.9 **Our RECOMMENDATION is: That the City Council receives this report and notes the actions taken.**



## 2 SUMMARY DESCRIPTIONS

### 2.1 Swine Flu

- 2.1.1 Swine Influenza ('swine flu') is a viral infection that existed in pigs in certain parts of the world but this particular variant spread to and between humans some time before April 2009. The initial outbreak was in Mexico but the infections spread quickly, reaching Birmingham in May, leading to the closure of two schools in Handsworth, and some other schools later. As the disease spread further across the world it was declared to be a pandemic on 11 June.
- 2.1.2 Further information about flu in general, normal seasonal flu and swine flu are in Appendices 2 to 5.

### 2.2 The three-step response strategy

- 2.2.1 In the event, the UK national strategy on swine flu spread has had three stages.
- 2.2.2 The Containment stage, from 27 April to 24 June 2009, was intended to slow down the spread of the virus, to allow as much time as possible for scientists to learn about it and for sufficient quantities of vaccines to be developed. It wasn't aimed at stopping the spread, because flu viruses cannot be stopped from spreading once they start passing from human to human, unless people already have a significant level of immunity to the strain involved. Under this stage the HPA arranged for a swab to be taken from everyone with suspected swine flu and once the diagnosis was confirmed by laboratory test the patient was given an antiviral drug, usually Tamiflu. All traceable recent contacts were also given Tamiflu as a prophylactic, to reduce the risk of them contracting serious disease and the risk of them infecting others. Schools were closed if staff or pupils caught the disease. Overall that stage appears to have succeeded: nationally the initial spread was much slower than was originally expected, except in three 'hot spot' areas, namely Glasgow, the West Midlands and London.
- 2.2.3 The three early 'hot spots' also went through an intermediate Outbreak Management stage (also known as the Outbreak Mitigation stage), from 25 June to 1 July 2009. Action was intensified against swine flu where containment was no longer possible. Suspected cases were no longer swabbed for laboratory testing. GP's did the diagnosis, often by phone, and people diagnosed with swine flu were given Tamiflu, but usually none of their contacts were<sup>1</sup>. Schools were no longer automatically closed, because the pupils were as likely to catch flu in the community outside the school as they were whilst attending school.

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<sup>1</sup> Close contacts of confirmed and suspected cases were offered prophylaxis if they fell within a risk group for a poor outcome from swine flu. (Source: HPA)



# Swine Flu Preparedness

- 2.2.4 The Treatment stage from 2 July onwards. The decision to change to this stage was made by the Civil Contingencies Committee. It gave Primary Care Trusts the role of providing treatment without clinical examination: the Secretary of State announced that the HPA would “step back two paces”. A Pandemic Flu Helpline can authorise callers to send a ‘flu friend’ to collect Tamiflu antiviral drug for them. Callers at particular risk are referred to their GP’s. Swabbing is only being done on a small selected proportion of sufferers, not to check if they are ill but to track any significant mutations in the swine flu virus.<sup>2</sup> Several million vaccine doses are likely to start to arrive later in the year and will be given to priority groups initially, then extended to other groups as more doses arrive.

## 3 Evidence

### 3.1 Key Players in or related to Birmingham

- 3.1.1 The UK government declared an emergency as soon as it was known that the disease was spreading. Overall direction was given by the government’s Civil Contingencies Committee (‘CCC’), chaired by Ministers. The Department of Health (‘DoH’) remained the lead strategic agency. The CCC asked the Health Protection Agency (‘HPA’) to report on the numbers of cases confirmed and to co-ordinate access to antivirals from the Primary Care Trusts (‘PCTs’) for both cases and contacts during the containment stage, which continued up to 24 June in parts of Birmingham. At first the HPA was required to do this only until 3,000 cases of infection had been confirmed, but the CCC extended that to 5,000 cases then again to 2 July by which time almost 10,000 cases had been confirmed. The UK then entered the Treatment stage where the PCTs took over responsibility for co-ordinating the response.
- 3.1.2 Birmingham’s strategies and plans have to operate within those made at national level. Agencies with active roles in Birmingham include the West Midlands Health Protection Agency, the three Primary Care Trusts, namely NHS South Birmingham (‘NHS SB’); NHS Birmingham East & North (‘NHS BEN’) and Heart of Birmingham teaching Primary Care Trust (‘HoBtPCT’) and a range of Acute Trusts including hospital trusts and the West Midlands Ambulance Service Trust. All the health trusts were overseen and guided by the West Midlands Strategic Health Authority (‘SHA’) also known as NHS West Midlands. The initial outbreaks in Birmingham affected two schools and so their Head Teachers and Chairs of Governors and officers in the Education Schools & Governors Support Team were heavily involved at first. General Practitioners were the front line contact with many of the patients. Birmingham’s multi-agency Resilience Group was responsible for planning how best to cope with a wide range of potential emergencies in the Birmingham area, including

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<sup>2</sup> The community surveillance schemes also have the purpose of monitoring the proportion of people who present with a flu-like illness who actually have swine flu (Source: HPA).



swine flu. Birmingham International Airport, together with other airports, has a potential screening role in the early stages of international spread of any future flu virus.

## **3.2 Member-led Evidence-Gathering Session**

- 3.2.1 Members of the Council's Health Overview & Scrutiny Committee held an evidence-gathering session on Thursday 2 July 2009. Witnesses from most of the key agencies in Birmingham were invited, and all attended to give evidence and answer questions.
- 3.2.2 The first of eight half-hour sessions focused on schools and included evidence from the Head Teachers of Welford and Heathfield Schools, which were the first in Birmingham to be shut, and from the Schools & Governors Support Co-ordinator.
- 3.2.3 Attending the second session concerning the Strategic Health Authority (SHA)'s roles were the SHA's Lead for Pandemic Influenza, who is also a Consultant in Public Health, and its Director of Communications.
- 3.2.4 The third session covered the West Midlands Health Protection Agency (HPA) where evidence was provided by its Regional Director and its Consultant Regional Epidemiologist.
- 3.2.5 The next session covered GP roles and evidence was provided by the Executive Secretary and Medical Secretary of the GP's Local Medical Committee.
- 3.2.6 The fifth to seventh sessions were combined to cover simultaneously all three of the Primary Care Trusts (PCT's) in Birmingham, and evidence was provided from HoBtPCT by its Chief Executive and its Head of Governance, Provider Services; from NHS BEN by its Director of Public Health and its Director of Performance & Organisational Development; and from NHS SB by its Director of Public Health.
- 3.2.7 The final eighth session covered resilience planning and evidence was provided by the Lead PCT Chief Executive on swine flu who is Chair of NHS South and co-chair of Birmingham Resilience Group, plus the Council's Service Director Resources (People) and its Head of Resilience. A copy of the minutes of the event are retained in an evidence file, together with written reports provided by witnesses.
- 3.2.8 We also had access to other sources of information including emails, Internet searches and hard copy documents.

## **4 ISSUES ARISING FROM THE EVIDENCE**

### **4.1 Neither a big bang, nor a rising tide...**

- 4.1.1 Long before the swine flu virus outbreak was first recognised in Mexico, the Birmingham Resilience Group ('BRG') and each of the bodies linked to it had plans in place to deal with either of two main



# Swine Flu Preparedness

types of emergency. One of these was a 'big bang' major emergency so urgent and unexpected that resources would be temporarily diverted without argument to address its most immediate needs until, after a short time, other agencies could be left to cope with its aftermath as part of their normal operations. The other type was a 'steadily rising tide' emergency where substantial problems were known to be coming at a largely predictable rate, but there was time to assess them and to select, negotiate and marshal resources ready to respond.

- 4.1.2 Unfortunately the swine flu outbreak was neither of these: it started as a rising tide problem type but then developed sudden local 'flash floods', where swine flu outbreaks developed and started to grow rapidly in Glasgow, then in central Birmingham and some London boroughs, several weeks before they impacted on other parts of the country. So plans in Birmingham had to be adjusted to cope with this new hybrid emergency type. We have spoken with each of the bodies linked to BRG and are satisfied that this lesson has been learned: plans have been or are being adjusted ready for future emergencies including epidemics which develop local 'hot spots'.
- 4.1.3 We recognise that good strategic planning has been done. However the outbreak occurred and has spread widely, albeit more slowly in places than it might otherwise have done.

## 4.2 The first outbreaks in schools

- 4.2.1 A great deal of the handling of the first outbreaks in Birmingham went well. But media stories alerted citizens that there was a threat, and since they could not plan how to deal with a threat until they knew its approximate shape and size, there was a public demand for information. In particular parents of children at the two schools where the outbreak first occurred, Heathfield and Welford primary schools, expected to be given comprehensive information straight away. But at that time so little was known about the virus that none of the health bodies could give full answers. The HPA was asked to set up a flu help telephone line for GP's and other health professionals. However some GP's felt unable to cope with their patients' demand for information, so gave out the help line telephone number, and the help line became jammed with calls from the public. Staff were quickly drafted in from PCTs and other health bodies to cope with the volume of calls, but consistency of advice remained an issue.
- 4.2.2 Also many of the public did not understand why diagnosis could not be done almost instantly. But the early symptoms of swine flu mimic the symptoms of several other illnesses, and until more was known about the swine flu virus the only way to find out was to await the results from the swabs analyses. At first the only laboratory set up to do the analysis was the HPA Central Laboratory at Colindale in London, so it could take up to four days to get a response back to Birmingham. Some of the delay at the outset was because the Colindale scientists were still isolating and learning how to identify the particular new virus that was affecting people here, and developing assays (tests) and assuring their quality before they could be used.
- 4.2.3 There were some misunderstandings about the power to close schools. Some Head Teachers expected to get clear unambiguous direction from the HPA to close the schools. But HPA staff



were unwilling to risk advising closure of a school unless there was good science pointing to that. It was known that closing a school unexpectedly has an effect on the children's education but also on their families, who may have to take time off work to look after the children, so affects employers as well.

- 4.2.4 Legally the HPA does not have power to close or reopen a school: only the head teacher and the governors can do that. The head teachers and governors are required to seek the HPA's advice and have a duty to give it due consideration, but they still have the final decision. If they had realised their power and seen justification to do so they could have closed the schools sooner, even against the HPA's advice. There was a misunderstanding, in that the Heads assumed the HPA would say "Close it now", but the HPA had no power to say that.
- 4.2.5 We were pleased to see that following our early discussions with the joint Director of Public Health about that misunderstanding he drafted a protocol framing the decision-making process in relation to school closures and consulted with all relevant agencies, each of which signed up to it. The protocol is shown in Appendix 11. It clarifies the role and powers of head teachers and school governors in making a decision after appropriate consultation with other bodies.
- 4.2.6 Welford School was only closed down four days after the sickness absence rates rose steeply. Many parents said that the swine flu outbreak could have been stopped if the school had been closed straight away. In reality any effect would have been marginal at most: the spread would have been in the wider community instead of in the school.
- 4.2.7 The Head Teacher witnesses advised Members that translating documents from English into other languages can be an effective way of communicating if documents in those languages are distributed to and read by families in the community. But they also advised that some languages are spoken but not written or read, so issuing leaflets in those languages achieves nothing because they won't be read. It was clear that, particularly in the early stages of the outbreak, worry made many citizens desperate for practical information on the nature and size of the danger and advice on what to do, or not do. That created a demand that was filled at first by pessimistic rumours and 'expert' press articles. The Directors of Communication in PCTs, or whichever other agencies take the lead role in any future pandemic/epidemic, should plan now for how they will get messages to as many of the population as possible as early as possible, via the widest practicable range of means, since no single means will reach all the population. The Head Teachers and the PCT witnesses all recognised the importance of local community radio, and we note that use was made of that.
- 4.2.8 Later, during the Outbreak Management/Outbreak Mitigation response phase, the HPA changed to doing a risk assessment at each school to see whether it should be wholly or partly closed or left open: the key decisions were whether any particularly vulnerable staff or children should be sent home for their own safety, or whether closing the school would significantly change the rate of spread of the disease. It usually made sense to close the school if children would be less likely to be infected in the wider community, but to keep the school open if the children were just as likely



# Swine Flu Preparedness

to catch the disease outside the school. The public found it hard to understand why a school in one community could be closed down whilst a seemingly similar school in another community stayed open: both communities could feel and allege that they had been treated worse than the other.

- 4.2.9 In the current Treatment response stage, swabbing is now only done rarely, in order to check whether the virus has mutated. The HPA regional laboratory in Heartlands Hospital in Birmingham has been equipped to analyse swabs to test for swine flu. Results can be obtained within two days, and sometimes in the same day.
- 4.2.10 The possibility of local 'hot spots' exists in any future flu epidemic, so each national agency needs to ensure its regional and local heads have power to make local decisions within national strategy to reflect circumstances on the ground.
- 4.2.11 Another lesson learned is about the need to consider out of school meeting places such as mosques and community centres, which remained open even when schools were closed, so children intermingled in them anyway.

## 4.3 Perceptions of the Government's role

- 4.3.1 We considered the public concerns that were referred to by several of the witnesses. Swine flu seemed to be a major though imprecise threat, particularly when it first broke out in the UK, and media reports said it could spread widely and kill lots of those it infected. Many members of the public said they were not given information about swine flu early enough by the government. Others said the advice they received was wrong, misleading or inconsistent, for example the advice from the DoH to pregnant women, which rapidly changed from 'stay in' to 'go out' to 'stay in if you feel concerned'. More complaints flowed from the impacts of Civil Contingency Committee decisions on health organisations which were imperfectly understood by the public.

## 4.4 Scenario Planning

- 4.4.1 The DoH has issued sets of planning assumptions to health bodies to promote business continuity, particularly during the peak rate of disease spread that the DoH expects to be reached in late September. It is not yet known whether those planning assumptions are realistic, because the peak may not have been reached in most parts of the country. However it seems likely that Birmingham will be closer to its peak than most: in mid-July Heartlands Hospital reported that the numbers of infected patients being referred for hospital inpatient treatment had halved since the week before. There may be another peak in or after September.



## 4.5 Planning in Birmingham

- 4.5.1 The Government has made it clear that the response to the pandemic must be co-ordinated at a national level under the leadership of the Department of Health (DoH). Nevertheless the Council and local health bodies need to have plans and resources ready to minimise the effects of the pandemic in Birmingham, operating together within the DOH policy framework.
- 4.5.2 Birmingham Council has acted as the focus for the Birmingham Resilience Group and its Flu Resilience Group. The Group meetings are jointly chaired by the Lead PCT Chief Executive on swine flu and the joint Director of Public Health. It co-ordinates the response plans of the Council, all three Primary Care Trusts, the Ambulance Trust, other Acute Trusts, the Health Protection Agency, the Police and Fire services and the Environment Agency.
- 4.5.3 The pandemic spread fastest and furthest via air travel, because flights carried viruses across the world in hours. Ready for future pandemics, airports need to have or introduce procedures for use when an aircraft arrives with a suspected disease case on board. It is too late to reduce the risk of swine flu viruses being brought in by air, but airports need to make plans ready for possible future pandemics. Plans need to be made as to where the plane will be parked, how passengers will be screened and their health monitored, how possibly contaminated luggage will be handled, and how to contact the other passengers that are symptom-free. A vision of how this might be developed by using an array of new technology is set out in Appendix 12 and we will continue to explore this.
- 4.5.4 The Regional Director of Public Health confirmed on 24 July that there is now a lot of work going on to assure NHS resilience in the event of a potential escalation of swine flu in the autumn or later. Capacity Planning assumptions have been sent out by the Department of Health but also by the Cabinet Office, as these apply to local authorities and other agencies as well as the NHS.
- 4.5.5 Nevertheless the Joint Director of Public Health has advised us that there are some dangers arising from separate reporting lines from Birmingham to national government for health and for social care. The government has put in place the Emergency Response Management Arrangements ('ERMA') requiring health agencies to report to it on health matters. The duty to report to the government on social care aspects of an emergency lie primarily with local authorities, which report by a parallel but different route. Effort needs to be put into forging and maintaining effective links and information exchange between the two reporting lines at Birmingham or West Midlands regional level to ensure that government gets fully-grounded information on which to base its strategies.
- 4.5.6 The National Director for NHS Flu Resilience, Ian Dalton, has told all NHS Boards to receive a statement on their organisation's state of readiness by the end of September, so it is likely that most of these will go to their Boards in September. This is seen as a governance issue for NHS bodies. In September each Strategic Health Authority will undertake an assurance exercise planned with the Department of Health and the HPA. Also in September there will be exercises



# Swine Flu Preparedness

regionally in the West Midlands to stress test the preparedness plans across the Local Resilience Forum footprint.

- 4.5.7 The National Flu Help Line and web site was set up on 23 July 2009 to take demand from GPs, although people with underlying illnesses, pregnant women and very young children are still being advised to contact their GPs. The DoH may tell us what demand has been like once a recognisable pattern has been established. The Help Line can be contacted via the Internet at website address [www.direct.gov.uk/pandemicflu](http://www.direct.gov.uk/pandemicflu) or telephoned on 0800 1 513 100 or texted on 0800 1 513 200.
- 4.5.8 A notice was received from the government on 13 August just before this Report went to print. Its full text is included in Appendix 7 Vaccine: it lists the updated priority list for groups eligible for early vaccination against swine flu, and updates the forecast of when the first vaccinations will be done in the UK, saying: "The vaccine manufacturers have advised that they expect a license for the vaccine to be granted around the end of September/beginning of October. Based on these assumptions, the vaccination programme will therefore begin a short time thereafter."
- 4.5.9 Despite no one knowing for certain how the virus will behave in the coming months, there is a lot of ongoing planning being done, but more detail will not be available until September. We are confident that all agencies have learned from their own and others' experience and adjusted their planning accordingly. The Health Overview and Scrutiny Committee will continue to monitor progress, and intends to see each of the PCTs' winter preparedness plans at its meeting on 15 September.

## 5 Conclusion

- 5.1.1 Good contingency planning had been done before the virus struck but its behaviour was unexpected, which exposed problems at first. We are pleased that the local agencies involved recognise the need to work closely together, and that, hopefully with some assistance by our input, planning and inter-agency co-operation have improved. But we must remain on alert, and the Scrutiny Committee will continue to monitor the remaining path of the pandemic as it affects Birmingham.



## **APPENDICES list**

1. **Terms of Reference**
2. **Flu in general**
3. **Normal seasonal flu**
4. **Swine flu**
5. **The last three flu pandemics**
6. **Antivirals**
7. **Vaccine**
8. **World Health Organisation paper: Assessing the Severity of an Influenza Pandemic**
9. **Groups at risk**
10. **Birmingham Resilience Team Plans and Measures in Place**
11. **Decision-making framework for school closures**
12. **Long term factors tending to reduce the damage from flu; and Airport defences**

A separate **Evidence File** is kept in the Health Scrutiny Office, Room B147, in the Council House, and is available for inspection by Members on request. It contains minutes of the oral evidence provided at the 2 July Member-led event, plus copies of the written evidence submitted, and relevant documents found via other research.



# Swine Flu Preparedness

## Appendix 1 Terms of reference for the swine flu review

<p><b>Rationale for the review</b></p>	<p>An outbreak of a new A/H1N1v influenza virus, leading to 'Swine Flu' was first detected in Mexico in April 2009. Since then the outbreak has spread to around 70 countries including the UK, which at 7 June 2008 had 557 diagnosed cases. This review is being undertaken to:</p> <p>Respond to public concerns about Swine Flu, both currently and in future.          Seek reassurance that the relevant bodies are effectively managing their duty to restrict the spread of the disease and to mitigate its adverse effect on individuals and services.          Ensure that relevant information is being communicated effectively to the wider public, particularly those with special needs.          Confirm local agency preparedness if or when a pandemic develops.          Address potential health inequalities.</p>
<p><b>Our key question:</b></p>	<p>Is there effective co-ordination amongst all relevant partners to ensure the effects of a potential pandemic are minimised in Birmingham?</p>
<p><b>1. How is O&amp;S adding value through this work?</b></p>	<p>This work will add value by contributing to the City Council's strategic outcome: " 'Be healthy' - reducing inequalities in health and mortality across Birmingham and increasing support for vulnerable people." as set out in the Sustainable Community Strategy 'Birmingham 2026 – our Vision for the Future'</p>
<p><b>2. What needs to be done?</b></p>	<p>Examine Health responsibilities and co-ordination of activities          Identify existing data collected by partner organisations          Identify the availability of supplies of anti-virals and vaccine and the protocols for their usage.          Examine public information management          Examine the provision of help for people with special needs.          Identify plans to cope with seasonal flu possibly concurrently with having to cope with Swine Flu.          Ensure each partner has participated in adequate scenario planning for potential problems.</p>
<p><b>3. What timescale do we propose to do this in?</b></p>	<p>Timescales :-          TOR approval from Health Overview and Scrutiny – 17/06/09          Evidence to be gathered during late June and early July 2009          Draft report produced by end July 2009          Report for the September 2009 meeting of full Council.</p>
<p><b>4. What outcomes are we looking to achieve?</b></p>	<p>Proposed outcomes:-          To optimise the efforts of relevant bodies in relation to Swine Flu          Assess changes to service provision which might reduce health inequalities</p>
<p><b>5. What is the best way to achieve these outcomes and</b></p>	<p>Conduct the fact finding via informal interviews and desktop searches, plus a Member-led evidence gathering event.          Because the Swine Flu situation is changing quickly, where issues are identified during the review, raise these directly with the relevant body and seek its response, rather than waiting until the review is completed.</p>



<b>what routes will we use?</b>	
<b>Lead Member</b>	Councillor Deirdre Alden
<b>Lead Officer</b>	Jenny Drew, Overview & Scrutiny Manager <i>(Note: owing to Jenny's absence throughout the review period due to an injury, Tony Green, Research &amp; Policy Officer, stood in for her)</i>
<b>Expert Link Officers</b>	Jim McManus, Director of Public Health Richard Miles, Health Link Officer



## Appendix 2 Flu in general

Influenza (flu) is a viral infection able to spread quickly between humans. Flu infection damages or destroys the cilia (fine hair-like structures) in the respiratory tract. Symptoms include any two or more of a sore throat, impaired breathing, headache, coughing, sneezing, a runny nose, pain in the limbs or joints, and a high temperature of 38°C (100.4°F) or more as the body's immune system works to generate enough antibodies to destroy the virus\*. Once this has been achieved new cilia grow and the symptoms disappear. The treatment for most types and strains of flu is for the sufferer to take a painkiller such as Paracetamol or Ibuprofen, perhaps in an 'all in one' flu medicine; drink plenty of water; and rest at home.

Flu viruses have a 'loose' genetic structure so tend to mutate often and easily. Usually the mutation involves exchanging characteristics with other flu viruses. The mutations could be adverse, neutral or favourable. Adverse changes make it harder for the virus to survive, so it will tend to die out. Neutral changes have no significant effect on the virus's survivability. Favourable changes make it easier for the virus to survive and replicate itself so it will last longer and/or become more widespread.

A long term process that reduces the danger from any particular strain of flu virus is the tendency for it to evolve to have less serious symptoms so that it can exist in the host's body for that body's natural lifespan: if the virus kills its host, the virus dies very soon after. But by enabling the host to live as long as possible, the maximum numbers of viruses exist for the maximum time. In human society what operates this trend is that all those affected by severe strains of virus will tend to stay ill in bed, so will not infect other people, but those with milder strains of the virus will continue to stay in the community and infect other people, so it is the milder strains that spread.

In some circumstances a virus can pass from one host species to another. This can mean that a strain of virus that causes no problems to the original host species may cause great problems once it jumps to another.

Humans, pigs and (particularly aquatic) birds that co-exist closely can pass flu viruses between them. Most seasonal flu epidemics start in Southeast Asia, because of current agricultural techniques where humans, pigs and aquatic birds are in close and frequent contact with each other, making it easier for viruses to spread between species and mutate. However it seems likely that the swine flu outbreak originated in the Americas.

Flu outbreaks tend to come in two or three waves, months or years apart. Typically the second and third waves are more infectious and sometimes more severe than the first, because the virus has mutated and



become resistant to the medication used to treat sufferers in the first wave. Also between waves the virus may pick up features from other flu viruses, making it more likely to infect. There are rarely more than three waves: with each one after the first, more of the population will have developed antibodies from having caught the flu in an earlier wave, or will have been vaccinated, so the number of people who are susceptible to being infected will keep shrinking and the virus will be unable to spread.

There is no carrier stage or latent infection with flu and the immune system eliminates the infection altogether. However if people with weak immune systems are infected they may shed the virus for weeks afterwards. Also flu can sometimes be associated with longer lasting bacterial infections.

\* Note: The DoH later changed its diagnosis criteria to saying that the patient will only be assumed to have swine flu if they have a high temperature of 38°C (100.4°F) and two of the other symptoms.



## Appendix 3 Normal seasonal flu

Seasonal flu waves occur annually, usually over about a two month period in winter, though occasionally they can come in autumn. Around 17% of the UK population, about 11.5 million people, are eligible to be vaccinated each September or early October against the strains of seasonal flu expected to circulate that year. If an unvaccinated person comes into contact with someone who has seasonal flu there is about 10% likelihood that they will catch it too. If they become infected they can normally use over the counter medications, usually including Paracetamol or Ibuprofen, that reduce the symptoms of the infection.

Seasonal flu can be fatal, but rarely. Out of every thousand people infected by it, on average one or two will unfortunately die, so the average mortality rate is 0.1% to 0.2%. In most years there are around 2,000 UK deaths in which seasonal flu was at least a contributory factor. However occasionally a more serious strain circulates, for example as happened in winter 1999/2000 when 22,000 people died with or from seasonal flu.



## Appendix 4 Swine Flu

The type A H1N1 virus has been around for decades and causes around half of all flu cases. Swine flu virus is a new strain of that virus, increasingly being referred to as H1N1v. It causes respiratory illness in pigs, and has at some stage been passed from pigs to humans. Humans can catch swine flu from three sources, namely infected pigs – though as at 31 July 2009 there are no reports of pigs in the UK having swine flu; or from close contact with other infected humans; or from touching surfaces where viruses are lodged, then touching their faces.

The new strain of virus was first detected in April 2009, and the first known outbreak of the illness in humans was in Mexico. It appears that the infection originated somewhere in the Americas.

So far over more than half of those in the UK who have been infected are younger than 21 years. Very few people over 58 years old have been infected, probably because they are likely to have gained immunity from having caught or been vaccinated against one or more similar strains of flu virus earlier in their life.

Most of those who catch swine flu experience the main symptoms for up to five days – or seven if they are children - during which they are most infectious because they shed viruses through coughing and sneezing. The patient starts being infectious a day before the fever starts. Once the symptoms disappear they are no longer considered to be infectious. The time taken off school or work from swine flu sickness averages around two weeks.

Most people who become infected with swine flu survive it and recover completely, with or without antiviral drugs. Their symptoms are usually milder than those they would experience from getting seasonal flu.

Compared with seasonal flu, swine flu seems statistically slightly less likely to kill sufferers in the UK. As at 17 July 2009 only 29 had unfortunately died out of several hundred thousand cases: there were 55,000 new cases in the week before alone.

However it is more likely to kill sufferers in the rest of the world: as at 30 July 2009 the worldwide mortality rate is 0.6%, so that of every thousand people infected with swine flu, on average six will unfortunately die. This world mortality rate for swine flu is thus three to six times as high as the rate for seasonal flu, though still less than the mortality rate of many other illnesses. It's no surprise that there is a difference between the world average mortality rate and that in the UK. In many countries flu sufferers can be



# Swine Flu Preparedness

untreated because infrastructure and diets are relatively poor and scarce medical resources are concentrated on more deadly diseases such as malaria, aids, or meningitis.

In July 2009 scientists found that whereas seasonal flu viruses stay in the throat area, swine flu also penetrates into the upper part of the lungs, making it potentially more harmful than seasonal flu, even though so far anyone with swine flu is less likely to die from it than if he or she were to catch seasonal flu.

It may be more infectious than seasonal flu. Early research suggested that anyone coming into contact with someone with swine flu has a 33% chance of getting it, so swine flu is more than three times as infectious as seasonal flu and thus more likely to spread. However the spread throughout most of the UK during April, May and June proved to be much slower than originally expected. This may have been due to the effectiveness of the Government's containment strategy, which was designed not to stop the spread, but to slow it down, buying time for scientists to gain more understanding of the virus's characteristics, and time to produce vaccines.

The spreading can be by any of three routes. The first is where an uninfected person is close to an infected person who coughs or sneezes, which projects virus-containing droplets for up to a metre. The second is where an uninfected person touches a surface where viruses are lodged, then touches their mouth or nose. The third, thought to occur rarely, is where certain medical procedures cause an infected person to expel viruses in a fine aerosol mist that can spread beyond a metre. So far, no other routes have been found.

Immunity, either from vaccination or from previous infection, may last for a long time. However all flu viruses tend to mutate over a period of months, years or decades. So re-exposure to the strain of virus that has now mutated may not be met with the same effectiveness of protective response.

The World Health Organisation declared on Thursday 11 June that the swine flu outbreaks across the world constitute a pandemic. That classification relates to worldwide statistics, so does not necessarily drive any particular changes in Birmingham.



## Appendix 5 The last three flu pandemics

Pandemics occur when a new virus becomes transmitted to and then between humans, then spreads widely because few have immunity to it. All of the last three flu pandemics were in the 20th century.

Pandemics are always potentially dangerous. The World Health Organisation said that “The emergence of an inherently more virulent virus during the course of a pandemic can never be ruled out.” Any flu virus can mutate quickly and randomly so it is hard to predict how or when any new virus will change.

Each pandemic built up to a peak rate of newly-infected people then the rate declined. Then, after pauses during which the virus may have mutated, one or two further waves of infection came, then peaked and declined in turn.

The first of the three last pandemics was in 1918 and involved the H1N1 avian strain virus, though it was widely known as ‘Spanish’ flu. It began mild and returned, within six months, in a much more lethal form: worldwide around 500 million people were infected, of whom 50 million to 100 million, mostly healthy young adults, died from it. Normally in any flu wave very sick people stay at home out of contact so don’t infect many others, while slightly ill people stay in the community where they infect many others, so it is usually the milder strains of the virus that are spread. But that pandemic was severe because the normal pattern was reversed. The mildly ill soldiers stayed in the trenches, and infected each other then recovered, but the seriously ill were transported in crowded troop trains to crowded field hospitals, spreading the more serious strains of the virus into the wider communities.

The next pandemic began in 1957 with Asian flu and started mild, but returned in a somewhat more severe form, bringing 2m to 4m deaths worldwide.

The last pandemic was in 1968, from Hong Kong flu. It began relatively mild, with sporadic cases before the first wave, and remained mild in its second wave in most countries: worldwide 1m died.



## Appendix 6 Antivirals

Antivirals are drugs that effectively put a coating over the cilia, which slows the flu virus from replicating itself. This makes it easier for the infected person's immune system to fight and kill the infection by producing antibodies. Antivirals shorten the duration of the illness by an average of one day and reduce both the severity of the symptoms and the risk of any complications developing.

Antivirals aren't needed for anyone who has been vaccinated or who has caught and recovered from the flu. It is not always necessary to use antivirals: most people who have been infected have recovered fully without using them.

The two main antivirals used are oseltamivir ('Tamiflu') and zanamivir ('Relenza'). Tamiflu tablets (or liquid doses for children) are taken orally, while Relenza is a powder inhaled into the throat and lungs. Both can have side effects, for example nausea is a side effect from Tamiflu in around one in ten cases. However if a course of antivirals is stopped prematurely, for example because of its side effects, it increases the likelihood that the virus will mutate so that it is more resistant in future. Tamiflu is normally used: Relenza is only used if there is a reason why Tamiflu isn't suitable for a particular user.

In the Containment stage, antivirals were used as a prophylaxis (prevention) for ten days, for those who had been in contact with someone infected within the last seven days. Antivirals don't give immunity against infection, so the protection isn't total. In the current Treatment response phase Tamiflu or Relenza are being issued to all those who become infected.

Some senior medical staff have criticised the widespread use of antivirals and said that this risks users suffering harmful effects which may not show up until years later; that because antivirals don't kill the viruses, their use increases the likelihood that the virus will evolve to become resistant to them; and that making antivirals available to many 'worried well' people who don't need them may prevent others who do need them from having them. A range of recent research reports, some by HPA medical staff, have pointed to high rates of adverse side effects in young children whilst they had been treated with Tamiflu during the early phases of response to the disease spread, particularly where the children had not been infected. The Joint Director of Public Health, Jim McManus, has the web references of the recent research reports. So far the DoH has not been swayed by these arguments.

Some of the stock of antivirals was produced three years ago ready to use with the avian flu pandemic that was expected at that time. Most medicines have a finite 'shelf life' but there is no current mention of the antivirals being ineffective.



## Appendix 7 Vaccine

A flu vaccine is a safe virus that can be injected and causes the patient's immune system to generate antibodies that will prevent infection by the real flu virus. In late May 2009 the Health Protection Agency reported that a safe version of the swine flu virus had been identified and combined with a laboratory-cultured virus that made it stable enough to use as a vaccine. Samples were sent to many other laboratories for safety testing, and once the tests were complete, production of the vaccine started. The UK is amongst the 15 countries that between them pre-ordered about 250 million doses. Around 70% of the world's vaccine production capacity is in Europe.

Production is being given high priority. It was reported in late May that the UK had pre-ordered 60m doses. The vaccine needs to be injected in two separate doses per person in order to be effective, so the ordered doses are enough to vaccinate 30m people. The target was to vaccinate priority groups such as old, young, already disabled or ill, and to frontline health and social workers, by the end of December. These groups make up about 17% of the total population, and in June 2009 Andy Burnham, the new Secretary of State for Health, said that the first supplies of vaccine will arrive in August 2009, with more to come after that.

At that time each of the first 14 people in the UK who had unfortunately died with or from swine flu had other serious underlying medical conditions, but in early July three more people who seemed otherwise healthy unfortunately died in quick succession, though one was later found to have died from a heart attack. The Government decided to order 70m more vaccine doses, which are enough, combined with the original 60m, to vaccinate the whole 65m UK population. The Government plans to arrange vaccination for at least 80% of the population by August 2010.

However in early July representatives of the World Health Organisation ('WHO') advised that swine flu vaccine dose production was slower than had been hoped, because each dose still had to be cultured in a separate egg. All attempts to culture the doses by other, faster means had failed. Their estimate was that the first supplies to the UK would arrive in September or early October 2009, not in August as the Secretary of State had announced.

On 24 July the WHO published on its website a new bulletin: Preliminary information important for understanding the evolving situation (Pandemic (H1N1) 2009 briefing note 4), which confirmed another problem, namely that the vaccine dosage cultures are growing only half as quickly as cultures for normal seasonal flu. "The development of new candidate vaccine viruses by the WHO network is continuing to improve yields (currently 25% to 50 % of the normal yields for seasonal influenza for some



# Swine Flu Preparedness

manufacturers). WHO will be able to revise its estimate of pandemic vaccine supply once it has the new yield information. Other important information will also be provided by results of ongoing and soon-to be-initiated vaccine clinical trials. These trials will give a better idea of the number of doses required for a person to be immunized, as well as of the quantity on active principle (antigen) needed in each vaccine dose. Manufacturers are expected to have vaccines for use around September. A number of companies are working on the pandemic vaccine production and have different timelines."

An article in the New Scientist Journal dated 18 July was more pessimistic and suggested these problems could "...push the dates back to...2010, by which time the virus's next, possibly worse, wave might be over."

The vaccine starts to increase the production of antibodies almost immediately but takes weeks to build up its maximum effect. It is hoped that the expected second wave of infection, if one occurs, will come as late as possible.

## **Update on 13 August 2009**

On 13 July David Nicholson sent a letter to the NHS saying:

"Dear Colleague

I am pleased to be sharing some of the specific details of the swine flu vaccination programme following an agreement by Ministers earlier today; but before I do, can I thank you all again for all your work to stand up the National Pandemic Flu Service (NPFS) at the end of July. The successful launch of the service is a credit to all your hard work. I know that many of you are going the extra mile to meet the needs of our patients and I want you to know that this is acknowledged and appreciated.

Vaccination against the swine flu virus has always been a part of our approach to managing a pandemic, and good progress has been made in developing an appropriate vaccine.

We have always said that prioritisation of different groups for vaccination will be based on the best possible scientific advice. Two independent expert scientific committees - the Joint Committee for Vaccination and Immunisation (JVCI) and the Scientific Advisory Group for Emergencies (SAGE) - have provided this advice.

Having taken this advice, Ministers across the UK have today agreed the priority 'at risk' groups to be offered the first doses of the swine flu vaccination, as well as when the vaccination programme is anticipated to start. Vaccination will only begin when the vaccines have been licensed by the European Medicines Agency (EMA).

I can confirm that once the vaccine has been licensed, the following groups should be prioritised for vaccination in the following order:

- 1.. Individuals aged six months and up to 65 years in the current seasonal flu vaccine clinical at risk groups



- 2.. Pregnant women, subject to licensing conditions on trimesters
- 3.. Household contacts of immunocompromised individuals
- 4.. People aged 65 and over in the current seasonal flu vaccine clinical at risk groups

These groups have been identified because they are at highest risk of severe illness should they contract the swine flu virus.

Frontline health and social care workers across the UK will also be offered the vaccine at the same time as the first clinical risk group, as they are at increased risk of infection and of transmitting that infection to vulnerable patients. Those staff eligible for seasonal flu vaccine, as set out in the Green Book, will be eligible for swine flu vaccination. This includes staff who have regular clinical contact with patients and who are directly involved in patient care. Examples of those groups who will be offered the vaccine include doctors, dentists, midwives and nurses, paramedics and ambulance drivers, occupational therapists, physiotherapists and radiographers. Students and trainees in these disciplines, and volunteers who are working with patients, will also be included.

I would urge all of you who are eligible for early swine flu vaccination to take up the offer at the earliest opportunity - this will protect yourselves, your family and your patients. I want to take this opportunity to remind you that the swine flu vaccination will not protect you against seasonal flu, and recommend that you take up the offer of the seasonal flu vaccine this year too.

The vaccine manufacturers have advised that they expect a license for the vaccine to be granted around the end of September/ beginning of October. Based on these assumptions, the vaccination programme will therefore begin a short time thereafter.

Further operational guidance to the NHS on the roll out of the programme will be made available in the next few weeks. The Department of Health is working with the BMA and NHS organisations to reach a comprehensive swine flu vaccine implementation plan for the first stage of the programme.

Preparations continue to be made to extend the programme beyond these initial priority groups and JCVI will consider this matter further and report back in due course.

Over the coming months you will begin to see a public facing campaign to encourage vaccine uptake among the prioritised groups. At the same time, targeted communications to those people who are normally advised to get a seasonal flu jab will continue to encourage them to make an appointment for their annual vaccination.

For those of you delivering the vaccine, there will be resources available to support the administration, coordination and delivery of the programme. These will be available on the DH website in [www.dh.gov.uk/swinefluvaccinationprogramme](http://www.dh.gov.uk/swinefluvaccinationprogramme).

David Nicholson"



## Appendix 8 Assessing the severity of a flu pandemic



**World Health  
Organization**

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### Assessing the severity of an influenza pandemic

11 May 2009

The major determinant of the severity of an influenza pandemic, as measured by the number of cases of severe illness and deaths it causes, is the inherent virulence of the virus. However, many other factors influence the overall severity of a pandemic's impact. Even a pandemic virus that initially causes mild symptoms in otherwise healthy people can be disruptive, especially under the conditions of today's highly mobile and closely interdependent societies. Moreover, the same virus that causes mild illness in one country can result in much higher morbidity and mortality in another. In addition, the inherent virulence of the virus can change over time as the pandemic goes through subsequent waves of national and international spread.

#### Properties of the virus

An influenza pandemic is caused by a virus that is either entirely new or has not circulated recently and widely in the human population. The current swine flu pandemic and all three of last century's pandemics have been zoonotic, in other words spread from animals. This creates an almost universal vulnerability to infection. While not all people ever become infected during a pandemic, nearly all people are susceptible to infection.

The occurrence of large numbers of people falling ill at or around the same time is one reason why pandemics are socially and economically disruptive, with a potential to temporarily overburden health services.

The contagiousness of the virus also influences the severity of a pandemic's impact, as it can increase the number of people falling ill and needing care within a short timeframe in a given geographical area. On the positive side, not all parts of the world, or all parts of a country, are affected at the same time.

The contagiousness of the virus will influence the speed of spread, both within countries and internationally. This, too, can influence severity, as very rapid spread can undermine the capacity of governments and health services to cope.



Pandemics usually have a concentrated adverse impact in specific age groups. Concentrated illnesses and deaths in a young, economically productive age group will be more disruptive to societies and economies than when the very young or very old are most severely affected, as seen during epidemics of seasonal influenza.

### **Population vulnerability**

The overall vulnerability of the population can play a major role. For example, people with underlying chronic conditions, such as cardiovascular disease, hypertension, asthma, diabetes, rheumatoid arthritis, and several others, are more likely to experience severe or lethal infections. The prevalence of these conditions, combined with other factors such as nutritional status, can influence the severity of a pandemic in a significant way.

### **Subsequent waves of spread**

The overall severity of a pandemic is further influenced by the tendency of pandemics to encircle the globe in at least two, sometimes three, waves. For many reasons, the severity of subsequent waves can differ dramatically in some or even most countries. A distinctive feature of influenza viruses is that mutations occur frequently and unpredictably in the eight gene segments, and especially in the haemagglutinin gene. The emergence of an inherently more virulent virus during the course of a pandemic can never be ruled out.

Different patterns of spread can also influence the severity of subsequent waves. For example, if schoolchildren are mainly affected in the first wave, the elderly can bear the brunt of illness during the second wave, with higher mortality seen because of the greater vulnerability of elderly people.

### **Capacity to respond**

Finally, the quality of health services influences the impact of any pandemic. The same virus that causes only mild symptoms in countries with strong health systems can be devastating in other countries where health systems are weak, supplies of medicines, including antibiotics, are limited or frequently interrupted, and hospitals are crowded, poorly equipped, and under-staffed.

### **Assessment of the current situation**

To date, the following observations can be made, specifically about the H1N1 virus, and more generally about the vulnerability of the world population. Observations specific to H1N1 are preliminary, based on limited data in only a few countries.

The H1N1 virus strain causing the current outbreaks is a new virus that has not been seen previously in either humans or animals. Although firm conclusions cannot be reached at present, scientists anticipate that pre-existing immunity to the virus will be low or non-existent, or largely confined to older population groups.



# Swine Flu Preparedness

H1N1 appears to be more contagious than seasonal influenza. The secondary attack rate of seasonal influenza ranges from 5% to 15%. Current estimates of the secondary attack rate of H1N1 range from 22% to 33%.

With the exception of the outbreak in Mexico, which is still not fully understood, the H1N1 virus tends to cause very mild illness in otherwise healthy people. Outside Mexico, nearly all cases of illness, and all deaths, have been detected in people with underlying chronic conditions. Almost all who have died in the UK with swine flu had other serious underlying health problems, and it isn't certain that it was the flu that caused their deaths.

In the two largest and best documented outbreaks to date, in Mexico and the USA, a younger age group has been affected than seen during seasonal epidemics of influenza. Though cases have been confirmed in all age groups, from infants to the elderly, the youth of patients with severe or lethal infections is a striking feature of these early outbreaks.



## Appendix 9 Groups at risk

There are three broad types of vulnerable groups of people. Each is vulnerable in different ways, and requires separate consideration.

The first is those most likely to die or be seriously ill if infected, such as young children, and those with other disabilities, illnesses or weak immune systems. As far as possible this group needs to be kept away from potential infection until they can be vaccinated. Old people are unlikely to be infected because of the immunity they have developed, but any who don't have immunity are likely to be seriously ill if they catch the flu, because of their relative frailty. The Government's Scientific Advisory Group for Emergencies ('SAGE') advises that the most vulnerable group includes people with the following underlying health conditions:

- Chronic lung disease
- Chronic heart disease
- Chronic kidney disease
- Chronic liver disease
- Chronic neurological disease
- Immunosuppression (whether caused by disease or treatment)
- Diabetes mellitus
- Patients who have had drug treatment for their asthma within the past three years
- Pregnant women
- People aged 65 years and older
- Young children under 5 years old

All these are on the DoH's current high priority list for vaccination at the earliest opportunity, though the DoH is currently reviewing the priority order and plans to announce its conclusions in August.

The second is those groups most likely to be infected and to infect because they are in close contact with others. This includes prisoners and prison staff, schoolchildren, students, most health workers, many social workers, hospital patients, teachers, bus drivers, dentists, refuse collectors and others. The front line health workers and social workers are in the DoH high priority list for vaccination, but the others in this group also need to be considered for vaccination as soon as possible.

The third is those least likely to receive advice and/or treatment because they are not registered with GPs, or are registered but not in contact. They will suffer the full symptoms if infected, and may be more likely



# Swine Flu Preparedness

to spread the disease because they won't know the recommended safety precautions for avoiding its spread. This may include varying proportions of groups subject to cultural or language barriers; transients such as gypsies or other travellers; some of the homeless, illegal immigrants or asylum seekers. Also those cut off from most 'normal' sources of advice or treatment, such as people with certain types of mental illness, learning disability or dementia. All professionals who have any contact or links with those groups need to do everything they can to spread awareness and facilitate access to services.



# Appendix 10 Birmingham Resilience Group

This appendix was provided by the Council's Head of Resilience.

## Actions in Place

Resilience Planning within Birmingham was based on the assumption of a global pandemic. Arrangements are in place for dealing with the short term, medium term and longer term implications of H1N1v in Birmingham. These arrangements comprise:

1. Initially the Health Protection Agency took the lead in response to suspect and confirmed cases, in conjunction with a service commissioned by the three Primary Care Trusts (PCTs) to deliver swabbing and antiviral drugs. Where there is an outbreak the HPA worked in partnership with each PCT.
2. Locations for antiviral distribution in each PCT were identified and stocked.
3. The Strategic Co-ordinating Group of the Local Resilience Forum (which covers the West Midlands conurbation), co-chaired by the Police and Moira Dummer, Lead NHS PCT Chief Executive, meets regularly to monitor the situation.
4. A multi agency co-ordinating group under the auspices of the Birmingham Resilience Group (BRG) meets weekly to plan for the management of the current situation and the planning of next steps
5. A health and social care group, set up under the authority of the Chief Executives of the three PCTs and the Strategic Director Adults and Communities for Birmingham City Council is active. This group is tasked with ensuring that immediate, short term and medium to long term issues for health and social care response are effectively addressed. This reports to the BRG Flu meeting.
6. There are internal NHS arrangements reporting to the Strategic Health Authority so that each PCT and NHS Trust is prepared for response in primary and acute care.

The City Council, with partners, has issued guidance to schools in the City on steps to take.

## Planned Developments

It is customary good practice after incidents and outbreaks to hold a debriefing session in order to enable everyone involved to capture learning and allow this to inform future response. The Health Protection Agency often holds its own debriefings and will do so in relation to outbreaks in Birmingham. As is usual Birmingham practice, there will also be a multi-agency debriefing, facilitated through the Birmingham Resilience Group. These events have always proved to be valuable in identifying learning for future application.



# Swine Flu Preparedness

Birmingham Regeneration Team ('BRT') maintains the Council Major Emergency Plan in line with CCA 2004. A range of plans and arrangements support this, including, Council Flu Plan, Business Continuity Management ('BCM') Framework, Flood Plan, Emergency Mortuary Plan, etc.

These plans are all linked to the Council's Major Emergency Plan in terms of command and control, communications, etc.

In line with usual Council Major Emergency plans and procedures, BRT facilitated a command and control structure, as summarised below:

Strategic Council Flu Group (Gold) will be chaired by Sharon Lea and will be convened when required and is briefed regularly by the Council Emergency Management Team (Silver) on a regular basis. Silver meets weekly and its members are drawn from across the directorates, including the Joint Director for Public Health (Jim McManus).

Silver maintains tactical arrangements to ensure consistency across directorates, e.g. communications internally, to public and with partners.

Directorates have received a briefing outlining Council flu preparations and have been asked to review their Business Continuity Plans held at Service/Divisional Level. To assist them with their reviews BRT provided a checklist of considerations for a flu event. This checklist is based on the list of considerations in the Council Flu Plan, which are recommended as part of preparations prior to a pandemic being declared.

The Head of BRT chairs Council Silver and is also co-chair of the Birmingham Resilience Group for Flu with the Joint Director of Public Health (Jim McManus) on behalf of Moira Dumma, Lead PCT Chief Executive on swine flu. BRG for Flu meets weekly and its members are drawn from Birmingham based emergency services, local authority and NHS. (BRG is an existing multi agency group that continues to conduct normal business and continues to meet monthly as we have joint work programmes that are ongoing).

It should be noted that a multi agency BRG Flu Plan was developed in 2008 and is currently due for revision once the West Midlands Conurbation Strategic Flu Plan is finalised. (The West Midlands Conurbation Strategic Flu Plan is being led by Sandwell)

(The BRG's Terms of Reference are attached for more information).

BRT organises or participates in a vast range of exercises for both internal officers and multi agency partners as part of a rolling programme of events. In addition to the BCM exercises summarised above, there is a comprehensive Council Major Emergency Plan role training programme, e.g., radio operators, FEC officers, message handlers, AIMS (live incident management software), documentation and legal aspects, etc.

The following gives examples of exercises led by BRT or involving BRT in exercise development and delivery.

2006 - 2009 - Due to the size and complexity of the Council the initial BC exercise programme consisted of a series of exercises utilising a flu pandemic scenario – "Exercise Aries". Exercise Aries was held 7 times for



different directorates / divisions (including one which also had representatives from the private sector (funeral directors) as the Council departments that attended were those involved in or linked to bereavement issues.

Jan 08 and Feb 08 – Exercise Primed – tabletop exercise council senior officers

Feb 08 – Exercise Bluewater – tabletop led by Environment Agency but BRT heavily involved in scenario development and exercise facilitation

Feb 08 – City Centre Evacuation Plan - workshop held as part of plan review and revision attended by internal and external organisations

Mar 08 – Flood Plan - workshop held as part of plan review and revision attended by internal and external organisations

May 08 – Satellite Phones – all local authorities in WM conurbation physically tested their satellite phones

May 08 – CBRN plan - workshop held as part of plan review and revision attended by internal and external organisations

Aug 08 – Exercise Pelkin – WM police led and BRT facilitated council attendance (exercise was in relation to planning arrangements for political party conferences)

Sep 08 – Utility seminar – BRT attended this seminar to highlight High Impact Low Probability events specifically utilising Birmingham City Centre

Oct 08 – Exercise Rocket – BRT organised a multi agency tabletop to test command and control, responsibilities, etc of the Birmingham Multi Agency Response Plan

Oct 08 – Exercise Assured – BRT organised a table top exercise involving gold and silver council command structure and emergency services input.

Nov 08 – Exercise Greenstar – BRT organised the Birmingham multi agency aspects as part of a 3 site national exercise focussing on recovery, which was led by the Cabinet Office.

2008 – F1 OCU training – these were a series of awareness raising sessions for sergeants based in F1 OCU (which is the local police command unit that covers the city centre and surrounding areas)

Jan 09 – Exercise Black Gold – BRT was involved in the development of this tabletop exercise, which focussed on strategic officers' management of a fuel shortage.

2009 – following the success of Exercise Rocket, one of the outcomes was a commitment from BRT and WM police to roll out awareness sessions on the Birmingham Multi Agency Response Plan and BRT to all police OCUs in Birmingham. These sessions are scheduled throughout 2009.

2009 - 4 Project Argus sessions are scheduled (June - Sep)

2009 - Exercise Aries special exercise using flu scenario for a Corporate audience (details being finalised)

2009 - Sep - Exercise Lighthouse (BCM exercise focusing on utility disruption)

2009 - Oct - Exercise Primed (strategic officers)



# Swine Flu Preparedness

There are also numerous exercises that council officers and/or BRT attend that are not listed here.

## **BIRMINGHAM RESILIENCE GROUP (BRG) TERMS OF REFERENCE VERSION 4, 2009.**

### **AIM**

The aim of the Birmingham Resilience Group (BRG) is to provide a forum for organisations with a responsibility for emergency preparedness to facilitate further strengthening of resilience within Birmingham. (*Note: All references to 'local' means Birmingham*).

### **OBJECTIVES**

- To consider deliberations at WMCRF and national level to inform Birmingham emergency planning arrangements.
- To encourage integration of emergency preparedness and resilience into civic society at all levels i.e. from citywide to constituencies and neighbourhoods.
- To develop and maintain a Birmingham Community Risk Register to inform and prioritise workload.
- To develop city wide emergency plans and arrangements.
- To develop and conduct local training and exercise events.
- To develop and share best practice.
- To develop and Improve communications between agencies
- To establish local working groups as appropriate.
- To ensure lessons learned from incidents and exercises are implemented and shared.

### **2009 MEETINGS**

Monthly (All meetings will commence at 9 am)

20 Jan	30 Apr	23 Jul	29 Oct
26 Feb	28 May	27 Aug	26 Nov
26 Mar	18 Jun	24 Sep	17 Dec

### **VENUE**

Mainly Birmingham City Council House – or others as agreed from time to time.

### **CHAIR**

Head of Resilience, Birmingham City Council

### **SECRETARIAT**

Provided by Birmingham City Council

### **MEMBERSHIP**

Core Membership will include representatives from:

- Birmingham City Council
- West Midlands Police
- West Midlands Fire Service
- West Midlands Ambulance Service
- Birmingham PCTs
- Health Protection Agency



- Environment Agency

The BRG will endeavour to hold a minimum of two open meetings each calendar year for all organisations with a responsibility for emergency preparedness in Birmingham.

### **REGULAR AGENDA ITEMS**

1. Risk
2. Emergency planning
3. Business continuity
4. Training, exercising & learning
5. Communicating with the public
6. Co-operation & information sharing
7. Community engagement (including voluntary and business sectors)

### **REPORTING ARRANGEMENTS**

BRG will report to the West Midlands Conurbation Local Resilience Forum on a quarterly basis.

Birmingham City Council has its own Resilience Team, encompassing its Emergency Planning staff and Resilience Partnership staff, including staff seconded from the Fire Service, Police and NHS. There is also a Birmingham Resilience Group Standby Structure ('BRG Flu') set up to operate if or when swine flu spreads too widely to be contained. BRG Flu seeks to operate within the strategic leadership and direction of the Department of Health (DoH) and support the local Birmingham health economy to deliver an effective response should there be an escalation of the current alert levels.

There will also be a number of cross-disciplinary multi-agency actions required in order to ensure that there is co-ordination of sustainable service delivery across the City. The public will not discriminate between responders and will expect a co-ordinated response. Therefore, the BRG's mission is to ensure that all work is done in the spirit of co-operation and trust. Its role will be to ensure the co-ordination and facilitation of all multi-agency effort.

Main areas to be supported and addressed will include:

- Health Advice and Delivery
- Social Care
- Emergency Services
- LA Services
- Consistent Communications and Information Sharing

Summary of key principles for moving forward:

Until further notice, the BRG will become known as BRG (FLU). *This will not preclude the necessity for the BRG to meet to progress other non flu related resilience issues.* A review of meeting schedules needs to take place but for the immediate future BRG (FLU) meets weekly on a regular date and time.

The BRT will support all meetings by the provision of venue etc.

A battle rhythm needs to be agreed, but this will be done once the WMCRF has agreed its own battle rhythm.



# Swine Flu Preparedness

Agencies will share information in accordance with the protocol agreed by the SCG. Birmingham agencies are requested to share this information with the BRT (as a multi—agency team) and with each other. Sharing information with the BRT will enable it to assess any immediate resilience implications for Birmingham and to recommend appropriate actions via the BRG (FLU).

## MULTI-AGENCY MISSION AND STRATEGIC OBJECTIVES

Mission: To enable the Birmingham Resilience Group to take appropriate stand by measures to respond to and recover from a Swine Flu event in the most effective and efficient manner possible.

In the event of escalation, the Group will work to the following strategic objectives:

1. Ensure timely medical advice and support.
2. Maintain trust and confidence in all partners' reputation for excellence in service delivery;
3. Ensure efficient and timely communications both internally and public facing;
4. Provide a robust response and recovery structure that meets the needs of the people of Birmingham.
5. Ensure co-ordination of sustainable service delivery for the duration of the response and recovery effort, ensuring the continuation of critical functions;
6. Support wider regional and national co-ordination of Swine Flu.



# Appendix 11 Decision-making framework for school closures

Prepared by Jim McManus, the Joint (Council and PCTs) Director of Public Health.

## Protocol for closure

1. The decision to close a school is made in this situation by the school in consultation with the City Council, taking into consideration HPA advice to do so based on the epidemiological decision matrix which was developed by Sue Ibbotson (Director of West Midlands Health Protection Agency) and colleagues and HPA risk assessment.
2. The HPA need to inform me even if by text that this is the advice they are going to give the school and City Council, so I can ensure that arrangements from BCC's perspective are handled and that the school knows what it needs to do and that I can notify other colleagues etc.
3. The School head needs to inform School and Governor Support so the Strategic Director's office is informed, so they can ensure that arrangements from BCC's perspective are handled and that the school knows what it needs to do. This is especially important to enable the City and the school to meet the requirements of DCSF statutory guidance on supported learning during school closure and ensure no child is disadvantaged.
4. As a principle, the City Council expects schools and other colleagues including the HPA to seek to avoid school closures unless they are absolutely necessary. Where there are children in a school who are sitting or due to sit public examinations, HPA advice on what other workable options exist would be welcomed, such as a) closing most of the school but keeping public examinations open for pupils with no symptoms [most of whom will be at home on exam leave and only attend for exams]. We need to avoid a situation where we are enacting QCA arrangements for those students who cannot sit these examinations because this may educationally disadvantage some children.

## Information flows for Strategic Director and BCC Website

1. The HPA notify schools giving date of proposed closure and date of proposed re-opening.



# Swine Flu Preparedness

2. The HPA notify me giving school name, giving date of proposed closure and date of proposed re-opening.
3. The School Head should let school and governor support know on 0121 303 2337 and consult with them giving date of proposed closure and date of proposed re-opening.
4. School and governor support and I will consult each other and ensure that Tony Howell's office is made aware.
5. School and governor support can then provide the press office with a single accurate list as in the table below so that the website can be updated daily: School Name and location; Date of closure; Date of intended re-opening; School's recorded information message to parents.



## Appendix 12 Long term influences tending to reduce the damage from flu; and airport defences

### Three long term influences

Three processes will reduce the incidence and severity of flu outbreaks. Their effects are long term, so none is likely to take effect on the current swine flu outbreak.

The first is that as agricultural techniques become more efficient in areas of the world where people, pigs and aquatic birds co-exist closely, the average size of farms will increase and more machines will be used instead of people, so that the usual sources of world wide flu outbreaks will reduce. That means flu outbreaks will gradually become less frequent.

The second is the progressive improvements in medical knowledge and in communications, which enable governments to respond more quickly and effectively than their predecessors could do in the event of a flu outbreak.

The third is improved technology. As an example viruses can survive for up to 24 hours on hard external surfaces such as aviation air filters, face masks, shopping cart handles, cash machine keys and banknotes. It has recently been found that certain uses of silicon and metal carbide ceramics as a fine-particle coating can destroy viruses much more effectively than any antiseptic, disinfectant or acid wipes. The coatings could be used on all the mentioned surfaces and greatly reduce the risk of people being infected from them. Another example is that microphones have now been designed that are sensitive enough to distinguish between a flu-like cough and a simple clearing of the throat. Heat-sensitive cameras linked to a console can show up anyone who has an abnormally large hot area round their throat and respiratory tract, indicating infection.

### Airports

Defences at airports against passengers bringing virus into the country could potentially use these technologies. By siting the microphones around passenger input areas, such as designated gates, and linking them to a central control console they can highlight any flu-like cough and also identify the location of the cougher amongst the incoming passengers. Infected people passing through can also be picked up by heat sensitive cameras. This would enable the identified cougher and their immediate companions to be taken aside and given treatment, to reduce the risk of them passing on the flu virus. Currently flu viruses spread fastest initially through infected people travelling by air so if the technology described is used at airports it will tend to reduce the speed of initial spread of any future flu pandemic outbreaks.

In late July we discussed this with two managers at Birmingham International Airport ('BIA'), namely Paul MacDonald, Airfield Technical Manager, and Robert Cooke, Head of Airfield Operations. The points agreed were that:

1. There was no likelihood that defences at one or two airports alone would be effective in slowing the spread of flu virus into the country: all airports would need to use defences simultaneously.
2. Based on these new technologies, airports could provide some effective screening and might initially slow the virus from reaching the UK, but the delay might range from just a few hours up to say two weeks, after which the disease would have got into the country by some other means.



# Swine Flu Preparedness

3. As a commercial organisation, BIA would be unable to justify investing of its own volition in defences, so government needed to provide funding, clear instructions to create defences, specifications of how those defences should be designed or what criteria they must meet; where materials such as heat sensitive cameras, cough-sensitive microphones and silicon and metal carbide ceramic coatings can be obtained; and from where medically-trained staff would be provided in the event that the defences needed to be used.
4. BIA would co-operate if the criteria in (3) were met.
5. A vision was agreed of how the defences might work at BIA. It seemed unlikely that all incoming international flights would carry the same degree of risk, so BIA would designate four gates to which all high risk incoming flights would be diverted. The microphones and cameras would be sited along the passageway from the aircraft to the gate, along which passengers go relatively slowly and usually no more than two abreast, which should make it easy to identify a cougher and their companions, and intervene to divert them into a place where they can be isolated and receive medical diagnosis, advice and treatment. The Health Protection Agency or other DoH-selected organisation would have seconded suitably trained and equipped medical staff to do the intercepting, advising and treating.
6. The capital costs are currently unknown because the technology, other than heat-sensitive cameras, is new. However once the defences are in place they would have minimal maintenance or energy costs: they would only need to be used from when the World Health Organisation announces another potential epidemic, to when it becomes clear that the disease has got past the defences. It seems likely that this period would be only a matter of weeks and even then they would only need to be on when passengers or crew are coming through the passageway to the gate. The cameras, microphones and control equipment – basically a computer and console - would need to be checked periodically, since there may be many years or decades between pandemics. The health staff would only need to be seconded for the period in which the defences are used.
7. The managers told us that collective health matters are dealt with by each airport individually but also at national level. Since all airports would need to act consistently the principles, funding and key protocols – including inter-agency protocols with the HPA or other health bodies - will need to be debated and agreed at national level.
8. Even a short delay of a pandemic virus getting into the country can potentially save lives. The number of lives saved will depend on how easily the virus spreads once it gets past the defences and into the community, and also how likely it is to kill those it infects.
9. We will continue discussions to explore how this can be progressed.