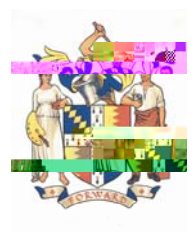


Swine Flu Preparedness



A report from Overview & Scrutiny







Swine Flu Preparedness

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

Further information regarding this report can be obtained from:



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-



Swine Flu Preparedness

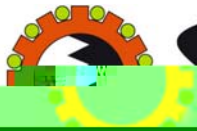
Finally, I would like to thank the members who attended the evidence gathering session at very short notice, and the staff who have worked so hard on arranging the meetings, making notes of the meetings, and writing this report. Particular thanks should go to our Link Officer Richard Miles, and especially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

Don V. Stone

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



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

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

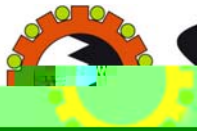




swine flu. Birmingham International Airport, together with other airports, has a potential screening role in the early stages of international spread of any future flu virus.

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




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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.

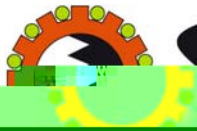
4.1.2 Unfortunately the swine flu outbreak was neither of these: it started as a rising tide problem type but then developed sudden local 'flash floods', where swine flu outbreaks developed and started to grow rapidly in Glasgow, then in central Birmingham and some London boroughs, several weeks before 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 n a m e p i d e m i d s o w u g h s



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



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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.

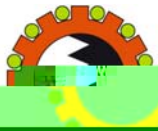
- 4.2.9 In the current Treatment response stage, swabbing is now only done rarely, in order to check whether the virus has mutated. The HPA regional laboratory in Heartlands Hospital in Birmingham has been equipped to analyse swabs to test for swine flu. Results can be obtained within two days, and sometimes 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



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 minimi



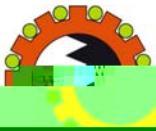
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regionally in the West Midlands to stress test the preparedness plans across the Local Resilience Forum footprint.

- 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 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 th



APPENDICES list



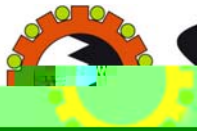
Appendix 1 Terms of reference for the swine flu review

Rationale for the review

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:

- 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.


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



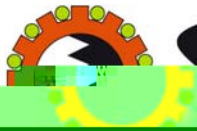
Appendix 2 Flu in general

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



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



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.

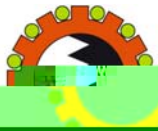
Seasonal flu can be fatal, but rarely. Out of every thousand people infected by it, on average one or two will unfortunately die, so the average mortality rate is 0.1% to 0.2%. In most years there are around 2,000 UK deaths in which seasonal flu was at least a contributory factor. However occasionally 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



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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.

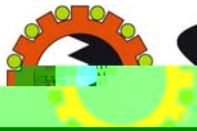


Appendix 5 The last three flu pandemics

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



Appendix 6 Antivirals

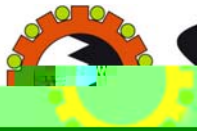
Antivirals are drugs that effectively put a coating over the cilia, which slows the flu virus from replicating itself. This makes it easier for the infected person's immune system to fight and kill the infection by producing antibodies. Antivirals shorten the duration of the illness by an average of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



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 we




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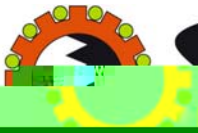
manufacturers). WHO will be able to revise its estimate of pandemic vaccine supply once it has the new yield information. Other important information will also be provided by results of ongoing and soon-to be-initiated vaccine clinical trials. These trials will give a better idea of the number of doses 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



2.. Pregnant women, subject to licensing conditions on trimesters



Appendix 8 Assessing the severity of a flu pandemic



Assessing the severity of an influenza pandemic

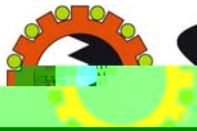
11 May 2009





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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.

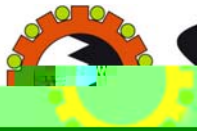
Appendix 10 Birmingham Resilience Group

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 Dumma, 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



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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



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 Enviro

- 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

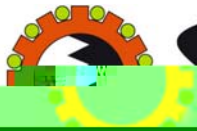
1. Risk
2. Emergency planning
3. Business continuity
4. Training, exercising & learning
5. Communicating with the public
6. Co-operation & information sharing
7. Community engagement (including voluntary and business sectors)

REPORTING ARRANGEMENTS

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

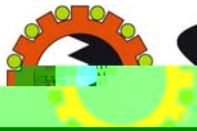
Birmingham City Council has its own Resilience Team, encompassing its Emergency Planning staff and Resilience Partnership staff, including staff seconded from the Fire Service, Police and NHS. There is also a Birmingham Resilience Group Standby Structure ('BRG Flu') set up to operate if or when swine 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



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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 appropri



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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

