

**H5N1 HIGHLY PATHOGENIC AVIAN
INFLUENZA OUTBREAK**

HOLTON, SUFFOLK

FEBRUARY 2007

**LESSONS TO BE LEARNED
REPORT**

3rd AUGUST 2007

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TABLE OF CONTENTS

FOREWORD	1
1. INTRODUCTION AND OUTBREAK SUMMARY	3
2. TERMS OF REFERENCE & APPROACH	7
3. LESSONS TO BE LEARNED	9
Culling	13
Disposal	13
Procurement.....	14
Finance	15
Information Technology & Systems.....	15
4. ACTIONS.....	21
5. CONCLUSIONS	23
6. SUMMARY OF RECOMMENDATIONS	25
ANNEXES	29
ANNEX A - SUMMARY TIMELINE / CHRONOLOGY OF THE OUTBREAK.....	31
ANNEX B - HIGH LEVEL MAP SHOWING INFECTED AREA & CONTROL ZONES.....	33
ANNEX C - PROJECT METHODOLOGY	35

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FOREWORD

When I was appointed by the Prime Minister as Secretary of State for Defra in June 2007, I was aware that I was joining a department with a complex and diverse range of responsibilities. These include various challenges and threats, some of which both Ministers and officials alike hope will never become a reality. In February of this year, my predecessor David Miliband was presented with such a situation, when the Department confirmed the presence of highly pathogenic avian influenza on a major commercial poultry premises in Holton, Suffolk.

In spite of the current worldwide concern relating to avian influenza, I believe the experience of Holton to be more of a challenge than a threat. I am proud to say that as a department, working in partnership with our delivery agencies Animal Health and the Veterinary Laboratories Agency, we were able to rise to that challenge and contain and control the disease with speed and efficiency.

In December last year, we laid the current version of our Contingency Plan for Exotic Animal Diseases before Parliament, demonstrating the vast amount of work that goes into ensuring that we are fully prepared to respond when faced with circumstances such as those at Holton. The plan was successfully deployed during the outbreak and we remain committed to ensuring that it remains appropriate and relevant through a process of continual review and improvement.

With an exotic animal disease such as avian influenza, in which there are still so many unknown factors, it is critical that we make every effort to learn from our experiences, not only to improve our capability for response in the future, but to share best practice with others worldwide. This is especially relevant as we are in the midst of dealing with two outbreaks of animal disease at the moment. However, at the same time we must guard against being too prescriptive in our approach to responding to outbreaks of disease in the future. It is important to recognise that each situation will be different, presenting new challenges which will require different approaches to resolve them. Therefore, we need be wary of adopting a 'one size fits all' philosophy.

As much as this report exists to evaluate our response retrospectively, it also serves the purpose of allowing us to scan the horizon for risks which we might be presented with in the future. Perhaps the most important lesson to have learned from the experience is that successful control of avian influenza requires effective joined up working between not only Defra and its agencies, but also with other government departments, operational partners, stakeholders and industry. This particular outbreak provided an opportunity for Defra and Animal Health to strengthen their working relationships with the Food Standards Agency and the Meat Hygiene Service. I am sure that we will all continue to work together positively in order to further strengthen these relationships in the future.

Finally I would like to take this opportunity to thank all those involved for their commitment and professionalism during the outbreak itself and throughout the recovery process. I know that David Miliband was very impressed by this. I am committed to ensuring that Defra and its agencies continue to work together to maintain the high standards in emergency preparedness for exotic animal diseases which we have achieved so that we may respond positively to whatever challenges the future may hold.

HILARY BENN

Secretary of State for Environment, Food, and Rural Affairs

1. INTRODUCTION AND OUTBREAK SUMMARY

1.1. On 3 February 2007, the UK confirmed an outbreak of Highly Pathogenic Avian Influenza (H5N1) on a large commercial turkey premises in Holton, Suffolk. From the outset it was clear that this outbreak was unique and posed new challenges, differing to other recent outbreaks of disease. The sector of the industry involved, number of birds and the potential impact upon human health meant that the effects of this outbreak were complex and wide reaching. Therefore it was crucial for the subsequent disease control operation to take account of the various risks which the situation presented. A summary timeline of the outbreak is included at Annex A.

1.2. An unusually high mortality rate in one particular shed on the affected premises led a company veterinarian to suspect the presence of an avian notifiable disease. This was reported to Animal Health¹ on 1 February 2007. The farm was immediately placed under restriction and Animal Health began their investigations. Legal controls upon the movement of birds, people and equipment were imposed at this point.

1.3. The site was a meat turkey finishing unit consisting of 22 enclosed, fan ventilated houses which held at total of 159,000 birds, all of the same age. The farm was adjacent to a complex of plants under the same ownership which included a slaughterhouse, a cutting plant, a meat products plant and a cold store. Each was designated as a separate establishment and staffed by separate personnel from the farm.

1.4. Upon confirmation of disease and in accordance with the provisions set out in the Department for Environment, Food & Rural Affairs (Defra) Framework Response Plan for Exotic Animal Diseases, a National Disease Control Centre (NDCC) was established in London to provide strategic and tactical advice to the disease control operation. A Local Disease Control Centre (LDCC) was also set up at Bury St Edmunds Animal Health Divisional Office (AHDO) to coordinate disease control activity on the infected premises and in the surrounding area.

1.5. In order to develop strategy for controlling the disease, Defra's Animal Disease Policy Group met regularly alongside the Diseases of Poultry National Expert Group (NEG) and Defra's Emergency Management Board. Appropriate scientific advice was provided to the NEG. The potential implications for human health resulting from the detection of a zoonotic disease such as Avian Influenza meant that it was considered appropriate to convene a meeting of the Civil Contingencies Committee. The Civil

¹ In April 2007 the State Veterinary Service (SVS) renamed itself "Animal Health" reaffirming its commitment to delivering services to maintain and improve animal health and welfare whilst taking account of the impact of these services upon public health. The detection, control and eradication of notifiable exotic animal diseases are high priority issues for Animal Health. Throughout this report the organisation will be referred to as Animal Health even though it was known as the SVS during the main disease control phase of the avian influenza outbreak in Holton, Suffolk.

Contingencies Secretariat (CCS) were fully engaged throughout the duration of the outbreak, overseeing the cross departmental response.

1.6. A 3km Protection Zone and 10km Surveillance Zone were established by a Declaration under the provisions of the Diseases of Poultry (England) Order 2003. In consultation with ornithologists a wider Restricted Zone was imposed as an additional measure to the standard protection and surveillance zones. A map of the Protection, Surveillance and Restricted Zones is included at Annex B of this report.

1.7. Following a technical review of options for culling the birds it was decided that the most expeditious method would be to gas them on site in a neighbouring slaughterhouse using an anoxic gas mixture. In total 152,619 birds were humanely killed and the catching and killing operation was completed on 5 February 2007. The remaining birds were also humanely killed by the owner of the premises on welfare grounds. Carcasses were disposed of by rendering and all residues were incinerated.

1.8. The circumstances surrounding this outbreak were complex and there were three main hypotheses concerning how the infection might have initially been introduced. These were; introduction through live birds, wild birds, and imported meat.

1.9. All birds brought onto the farm came direct from a UK hatchery with no other movements of poultry. Movements of personnel and vehicles to and from the infected premises have been investigated but no evidence has been found to suggest this to be the cause of the outbreak.

1.10. The disease status of wild birds in the area had been monitored through targeted surveillance. In the county of Suffolk during the period October 2006 until January 2007 surveillance of wild birds found dead or shot comprised 3 swans, 19 pigeons, 6 ducks, 1 goose and 1 gull. All were tested and found to be negative for avian influenza viruses.

1.11. The third hypothesis suggested that the infection might have been introduced via imported turkey meat from Hungary.

1.12. On 19 April 2007, Defra published its final epidemiological report into the Avian Influenza outbreak in Suffolk. Its findings were that the outbreak appeared to be the outcome of a series of normally low probability events and circumstances that cumulatively led to the introduction of disease. The most likely source of infection was considered to be turkey breast meat imported from Hungary which was processed in the factory adjacent to the turkey finishing premises. A joint investigation in conjunction with the Hungarian authorities found no evidence of undisclosed infection in Hungary. The full epidemiological report can be viewed online at http://www.defra.gov.uk/animalh/diseases/notifiable/disease/ai/pdf/epid_findings050407.pdf

1.13. Disease was quickly and successfully eradicated on the Holton site, with no evidence of further spread. Measures are being taken in accordance with the relevant legislation to restore area and eventually country freedom from disease. The disease control zones around the premises were lifted on 12 March 2007.

1.14. The public and occupational health aspects of the disease control operation were managed extremely successfully through close collaboration with the Health Protection Agency (HPA). There were no cases of human infection arising from the outbreak and the HPA were extremely effective in investigating those who may potentially have come into contact with the virus and in prescribing antiviral prophylaxis.

1.15. There currently exists a heightened state of awareness concerning the risk of avian influenza worldwide. The Holton outbreak in particular demonstrates that it can be difficult to establish conclusive causes of infection and that there is still a great deal to be learnt about the way that avian influenza behaves and spreads. It is important to emphasise that the outbreak was successfully contained and controlled. Therefore this report evaluates and identifies areas of success as well as those which require attention in order to further increase our capability to respond to future outbreaks.

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2. TERMS OF REFERENCE & APPROACH

2.1. The Avian Influenza in Holton, Lessons to be Learned Project has been established in order to acknowledge the positive work that enabled disease to be contained and controlled both quickly and successfully, whilst identifying areas in which Defra and Animal Health may be able to improve their capability to respond in the future. The project was also established as part of the response to the first confirmed case of highly pathogenic H5N1 in a commercial poultry flock during the current resurgence of disease in the far east.

Project Aim

2.2. The aim of the Lessons to be Learned Project was:

“To evaluate lessons learned from the handling of the February 2007 outbreak of avian influenza in Holton, Suffolk and make any recommendations to improve Defra and Animal Health’s operational capability, processes and organisational structures for managing an outbreak of Avian Influenza or any other notifiable exotic animal disease.”

Objective of the Lessons Learned Project

2.3. The agreed objectives were:

- To collect and collate feedback from those involved in the response, both in relation to areas of success and those which require improvement.
- To produce a report for publication, to act as a record of the events which took place during the February 2007 outbreak of avian influenza in Suffolk, and to make recommendations for future action by Defra and Animal Health.
- To establish a framework for the evaluation of the implementation of the recommendations of the final report.

2.4. A separate study, outside the scope of this project, is being carried out into the roles and responsibilities of the Food Standards Agency (FSA) and Meat Hygiene Service (MHS) during an outbreak. A further review is also being carried out by the Veterinary Laboratories Agency (VLA) to examine issues relating use of laboratory services during an outbreak of exotic animal disease.

Approach and Methodology

2.5. Within days of the outbreak starting, Animal Health Contingency Planning Division circulated a proforma to all staff involved in the response. Throughout the outbreak, staff were encouraged to record any potential

lessons arising from their work. The results were collated and the major lessons learned have been incorporated during the preparation of this report.

2.6. Even though stakeholders, operational partners, and other government departments were given an opportunity to participate in this process, it is important to emphasise that the recommendations of this report relate only to actions to be carried out by those within the Defra family.

2.7. In addition to the information collected through feedback forms, a series of workshops were held to provide those involved with an opportunity to discuss their experiences and identify common issues arising from them. Further details of these workshops and the general approach can be found at Annex C of this report.

3. LESSONS TO BE LEARNED

3.1. Introduction

3.1.1. Over the past six years, contingency planning for exotic animal diseases has changed dramatically in the United Kingdom. In the wake of the Foot and Mouth Disease outbreak of 2001, it was recognised that robust contingency plans needed to be developed to manage such an outbreak, should it ever occur again, and that these plans needed to be supported by comprehensive operational arrangements providing a capability to respond to outbreaks of any size and scale.

3.1.2. In 2007, having come a long way in the development of systems and structures for response together with arrangements for the execution of a number of key operational disease control functions, Government now faces new challenges in terms of its ability to respond to the zoonotic disease now recognised as a worldwide threat - avian influenza.

3.1.3. This report identifies areas for improvement and also highlights contingency planning work which has taken place over the past six years. This planning, together with the experience of several real outbreaks of disease, were critical factors in enabling Defra and Animal Health to respond to the Holton outbreak so effectively.

3.1.4. The perception within Defra / Animal Health and externally, is that overall disease control operation was a success. The Holton outbreak was managed in accordance with measures set out in both domestic and international legislation and followed the processes laid out in Defra's Contingency Plan. The operation achieved its aim of containing and controlling the spread of disease quickly and efficiently.

3.1.5. This view was reflected both in media coverage throughout the outbreak and by stakeholders and operational partners who were also actively involved. There appeared to be an increased level of confidence in the government's contingency planning and ability to respond to an outbreak of disease

3.1.6. Animal Health Contingency Planning Division is responsible for delivering a number of projects to improve the department's level of emergency preparedness for exotic animal diseases. Many of these projects are executed under the umbrella of the Emergency Preparedness for Exotic Animal Diseases (EPEAD) Programme. These include compiling, reviewing and updating government contingency plans in line with legislative requirements. Alongside this, the division also coordinates a programme of exercises designed to test both national and local level contingency plans during peacetime. This provides those who would be involved in responding to a genuine emergency with the opportunity to receive training within a realistic environment. Most notably in April 2006, Exercise Hawthorn, the

national exercise to test Defra's avian influenza contingency plan, proved to be a valuable vehicle for exploring many of the problems which were faced during the Holton and other recent outbreaks of avian influenza.

3.1.7. Animal Health has established an operational advisory group to take forward lessons from the Holton outbreak that are directly linked to its capability to deliver an operational response. This group will review capability across all AHDOs as a means of establishing an agreed national standard of readiness across all regions.

3.2. STRUCTURES AND ORGANISATION

3.2.1. Greater clarity is needed on the point at which the FSA and the MHS should be involved. It is recognised that that they should perhaps have been engaged earlier than they were during the outbreak and FSA participation in Amber Teleconferences and MHS representation at the LDCC would have been particularly useful. Separate work is underway examining the governance and responsibilities of Defra/Animal Health/FSA/MHS in an outbreak as this also requires further clarity.

Recommendation 1: Defra's Framework Response plan should be amended to explicitly include the Food Standards Agency (FSA) as a participant in the Amber teleconference. The plan should also be amended to explain the roles of the FSA and MHS during an outbreak of disease. The Veterinary Director of the FSA will be the specific point of contact.

3.3. POLICY

3.3.1. The complexities of European legislation relating to meat controls resulted in difficulties in determining responsibility for the implementation of these controls during an outbreak of disease. These issues need to be resolved as a matter of urgency in peacetime.

Recommendation 2: Defra should review arrangements for the operation of legislation relating to meat controls during an outbreak of animal disease.

3.3.2. An independent study has been commissioned by Defra and the FSA to explore these issues in more detail. Draft conclusions are currently under consideration, including a number of practical suggestions to increase communications between the organisations and to clarify roles and responsibilities.

3.3.3. A licensing system was introduced to allow the movement of poultry and eggs from the disease control zones to designated slaughterhouses and hatcheries outside the zones. However, the complexities of the rules,

particularly in relation to the movement of poultry carried some problems in their interpretation and use.

Recommendation 3: Defra should clarify the movement restrictions and licensing requirements as far as possible before an outbreak and ensure that the Defra website contains all of the necessary information. Designation of slaughterhouses and hatcheries also needs to be taken forward.

3.3.4. There was some uncertainty amongst stakeholder groups concerning the rationale behind imposing the ban on shooting and a need for clearer communication of these reasons has been identified.

Recommendation 4: Defra should update their policy relating to shooting bans.

3.3.5. It was also considered that the approach to the response to the issue of abandoned birds needs to be consistent across all departments, agencies and Operational Partners.

Recommendation 5: Defra should review its policy and guidance available on abandoned birds, working with other departments, agencies and operational partners to ensure that a common approach is being adopted.

3.4. COMMUNICATIONS

3.4.1. Formal stakeholder communication both with a small key group and a wider group ensured good understanding of the policies being pursued and ensured that positive messages were disseminated to the poultry industry.

3.4.2. Nationally, Defra and Animal Health Communications worked very effectively and were proactive in keeping the media informed of developments. However, a need for greater attention to local communications strategy has been identified. Some questioned whether there was sufficient coordination between the local Government News Network (GNN) and national communications activity. A need for the media gathering at the infected premises (IP) to be managed and kept informed has also been identified. During the Holton outbreak, a representative from Local Authority Trading Standards briefed the media at the IP and this helped to control the messages being sent out by the media. It is the general consensus of opinion that this function should be fulfilled by a senior representative of the Animal Health Corporate Management team.

Recommendation 6: Animal Health Corporate Management Team and Defra Communications Directorate should consider options for providing an appropriate spokesperson for the media at the infected premises.

3.4.3. Text message alerts to farmers worked particularly well and this and interest in the outbreak led to an increased number of registrations on the GB Poultry Register.

Recommendation 7: Using the experience of Holton, Defra should continue to make full use of options for increasing awareness of the GB Poultry Register.

3.4.4. There was some confusion caused by key information on the disease control operation in and around the infected premises being provided to the NDCC via various sources. This led to the potential for incorrect information being passed to the media. Operational Instructions should be amended to explicitly state that all LDCC sitreps should be cleared by the Regional Operations Director.

Recommendation 8: There needs to be greater clarity concerning routes of communication from the infected premises (IP) to the Local Disease Control Centre (LDCC) and then from the LDCC to the National Disease Control Centre (NDCC).

3.4.5. The body of legislation governing the control of avian influenza is complex and this meant that the precise requirements were not easily understood and implemented, particularly under the pressure of an outbreak situation.

Recommendation 9: Defra's Emergency Preparedness Core Team should consider ways of further simplifying information on legislation relating to avian influenza on the Defra public website.

3.4.6. The dependence on secondary cleansing and disinfection for the achievement of national freedom from disease and the ability to export to third countries has caused problems for some members of the poultry and raptor rearing industry. Cleansing and disinfection of a large turkey premises, as this was, and the necessary removal of the litter before this can take place has all taken time. Secondary cleaning and disinfection is the responsibility of the owner of the premises and it may be to the benefit of the industry as a whole if they are able to plan how they would manage such activity and work together to develop the most effective methods of achieving conclusion of cleansing and disinfection. A better understanding of the requirements of the legislation governing disease control and environmental protection in these circumstances is a necessary step in this process which would be aided by the recommendation at paragraph 3.4.5 above.

3.4.7. Communications with the European Commission and cooperation with the Hungarian government and veterinary authorities was handled effectively and facilitated the investigation of the source of the disease outbreak. The importance of ensuring that the communication is kept up to date with developments was emphasised by the international implications in this outbreak

3.5. KEY DISEASE CONTROL OPERATIONS

Culling

3.5.1. The culling of the birds was one of the most efficient aspects of the disease control operation and the speed at which it was achieved exceeded both internal and public expectations. The high level of cooperation between Animal Health and the company which owns the premises was a critical factor in achieving this. The birds were gassed using an adjacent poultry slaughterhouse. This was undoubtedly the most appropriate method to use in the situation as it enabled speedy eradication of the disease. However, arising from this there is a need to manage public expectations concerning how quickly a cull may be completed during any future outbreak of disease on a large poultry establishment. It is extremely unlikely that a similar slaughter facility will be available in future outbreaks and it will be necessary to deploy other culling methods such as the use of containerised gassing units. Few other methods will be as quick since none can be operated 24/7 as was the case in the Holton outbreak. Animal Health Contingency Planning Division has undertaken an extensive programme of trials to explore the use and efficiency of various alternative methods of killing poultry. It is critical that these trials continue to take place with the results being publicised in order to manage public expectations about the manner in which the cull of a large infected premises might be completed in the future.

Recommendation 10: Animal Health Contingency Planning Division and Defra Exotic Disease Policy Programme should continue to actively review alternative methods for culling poultry and publicise the results widely both internally and externally.

Disposal

3.5.2. Disposal of carcasses was also an extremely efficient operation. There is however still a need to ensure that contractual arrangements for the use of disposal facilities are finalised at the earliest opportunity. Informal arrangements with specific companies have worked well to date but there is now a need for this to be supported by a formal contractual framework. It was also considered that it would have been beneficial to formalise the level of engagement with the police over the routes for transporting the carcasses to the disposal site. In particular to ensure that the police central incident control room was aware of the route and were briefed on the actions required in the event of an accident. This issue did not present any serious operational problems on this occasion, though increased clarity could help to avoid any potential problems.

Recommendation 11: Defra Procurement and Contracts Division should finalise formal contractual arrangements with companies providing disposal facilities during an outbreak of animal disease as a matter of high priority.

Recommendation 12: NDCC Disposal Team to liaise with the Association of Chief Police Officers to ensure that all the necessary information concerning transportation routes for disposal lorries is supplied to the correct contacts.

3.5.3. During the outbreak, the disposal of waste water from the cleaning and disinfection of the slaughterhouse presented a significant challenge due to the large quantities involved. This was however satisfactorily resolved through discussions with the various agencies involved. Options for the disposal of contaminated litter and feed was an issue during the outbreak. Although responsibility for undertaking the disposal rests with the poultry keeper, agreement for how this was to be undertaken was required from Animal Health/ Defra, the Health Protection Agency and the Environment Agency.

3.5.4. There are still a number of difficulties in obtaining safe and cost effective disposal routes for wastes arising from the disease control operation. Animal Health Contingency Planning Division continues to liaise with the Environment Agency and the Health Protection Agency to investigate practical solutions to this problem and is also proactively engaged in looking at the treatment and disposal of contaminated litter with the poultry industry. Work must continue in this area since there are wider trade implications should secondary cleansing and disinfection be delayed unduly by the treatment or disposal of litter and other wastes.

Recommendation 13: Animal Health Contingency Planning Division should continue to work closely with the poultry industry, the Environment Agency, and the Health Protection Agency and produce clear guidance on the options for the disposal of wastes arising from the disease control operation (e.g. litter, feed and washwater). This should result in the production of clear written guidance for livestock keepers.

Procurement

3.5.5. Containerised gassing units were deployed to the site along with gas supplies and could have been deployed if it had not been decided that the slaughterhouse should be used for killing. The main issue highlighted in the Holton outbreak was the need for showers, toilets and other staff facilities both at the gate and on the premises itself. These requirements need to be defined in peacetime in order to ensure that appropriate contracts are enacted quickly in an outbreak.

Recommendation 14: Animal Health Contingency Planning Division's current review of contingency contracts should take account of the requirements for essential facilities for staff on an IP, working with Defra Procurement and Contracts Division to ensure that the necessary contractual arrangements are put in place.

Finance

3.5.6. It is considered that financial processing requires attention. Defra and Animal Health staff often felt that the process for payment of overtime claims and reimbursement of out of pocket expenses was too lengthy. There is concern that if this issue is not resolved it may act as a disincentive for staff to work additional hours during future outbreaks. Defra and Animal Health Finance should consider ways to streamline financial processes relating to payments for staff.

Recommendation 15: Defra and Animal Health Finance should review their procedures for processing overtime claims and reimbursement of out of pocket expenses during an outbreak situation. They should be streamlined where possible to increase efficiency.

Information Technology & Systems

3.5.7. Overall, it was considered that Information Technology support services functioned well during the outbreak. However, some concerns have been raised about lack of access to essential systems such as Buy4Defra due to server maintenance during the first weekend of disease control operation. There is a need for contingency arrangements to be put in place to cope with such an eventuality. For the most part access to systems was good and even enabled some key personnel to be 'virtually' present in the NDCC over weekends via remote working which helped to reduce the burden upon staff.

Recommendation 16: Intelligent Customer Function should consider arrangements for server maintenance and access to essential systems during an outbreak of disease ensuring that appropriate back-up plans are in place.

3.5.8. Detached duty staff working at the LDCC experienced significant difficulties in submitting expenses claims using the iExpenses system. There is a need for staff to receive appropriate training in the use of the system.

Recommendation 17: Defra Finance should ensure that appropriate training and guidance is readily available to enable staff to submit claims for expenses correctly.

3.5.9. Many LDCC staff felt that they did not have sufficient access to the GB Poultry Register during the outbreak. Access to the register is available to LDCC staff through the Diseases of Poultry Disease Control System (DPDCS). However, it appears that many staff have limited knowledge with regards to this aspect of the system's functionality. A review of the capability of DPDCS and what is required of the system during an outbreak of disease should be carried out by Animal Health Business Development Division. Animal Health Learning and Development Team should incorporate the findings of this review into their training programmes for DPDCS,

concentrating on specific functions to be used during an outbreak of disease, including use of the GB Poultry register through DPDCS.

Recommendation 18: Animal Health Learning and Development Team should review Diseases of Poultry Disease Control System (DPDCS) (DPDCS) training and incorporate within it all aspects of DPDCS functionality.

Recommendation 19: Animal Health Business Development Division should review DPDCS requirements in the event of an outbreak balancing any proposed changes against costs, in view of the fact that it is a legacy system.

3.5.10. LDCC staff also expressed concern about the functionality of DPDCS in terms of its capability to produce reports for licensing and surveillance. Again, this should be considered by Animal Health Business Development Division as part of its review of the functionality of the system.

Recommendation 20: Animal Health Business Development Division should carry out a review of the functionality of DPDCS with regard to the production of reports for licensing and surveillance.

3.6. THE LDCC AND OPERATIONS ON THE IP

3.6.1. Prior to the Holton outbreak, Animal Health Contingency Planning Division had already established the Emergency Readiness Management Assurance Scheme (ERMAS). This scheme seeks to measure the preparedness of an AHDO to initially operate independently in response to an animal disease emergency whilst effecting the transition to the status of a functional Local Disease Control Centre (LDCC) and to sustain operations at a reinforced level thereafter. The Operational Advisory Group will work alongside ERMAS and undertake specific projects with the aim of increasing the capability of AHDOs in all of the key areas of response.

3.6.2. At the beginning of the outbreak, Bury St Edmunds AHDO established an LDCC to manage the disease control operation. The office was able to draw upon its previous experience of managing an outbreak of low pathogenic avian influenza in 2006. This experience was important in enabling them to contribute to a successful outcome. However it is clear that the operation would have benefited from more consistent implementation of operational instructions, particularly in terms of the completion of paperwork such as the field operations log and the deployment of staff to the key roles such as the gate officer to provide more effective control of entry to the site. There is a need for further work from Animal Health staff in all divisional offices to receive training in the implementation of operational instructions so that they are fully prepared for the roles which they will carry out during an outbreak. This will also ensure that the coordination of disease control activity is as consistent as possible across all AHDOs.

Recommendation 21: Animal Health Human Resources (including Learning and Development and Health & Safety) in conjunction with Animal Health Contingency Planning should coordinate a series of workshops to train Animal Health Divisional Office staff in the implementation of operational instructions during outbreaks of animal disease. This will be supported by Contingency Planning Division's programme of local exercises.

Recommendation 22: Divisional Veterinary Managers should review the provision of training for responding to a disease outbreak, taking into account local business priorities and concentration of premises holding specific types of animals.

3.6.3. Although the poultry industry and government worked well together, there is a need for greater local engagement between AHDOs and major poultry companies and premises in their areas. Agreed plans should be produced, especially for larger premises, which specify proposed arrangements for responding to an outbreak, paying attention to the premises geography and the facilities available on site. It may be helpful to use the information required by the Animal Health Field Operations Log as a model for the requirements of the basic content required of a plan.

Recommendation 23: Divisional Veterinary Managers should support and work with industry to ensure that plans are established defining proposed arrangements for responding to an outbreak of disease at every large commercial poultry premises within their area. These plans should contain key information relating to the geography and facilities available on each specific site.

3.6.4. It was considered that there is a need for the review of the management structure of the LDCC. There often appeared to be a great deal of ambiguity and in some cases duplication between the roles of the Regional Operations Director, Divisional Operations Manager and the Divisional Veterinary Manager. This needs to be reviewed as part of the work of the Animal Health Operational Advisory Group and decisions made should be reflected within the Contingency Plan.

Recommendation 24: The Animal Health Operational Advisory Group should review the management structure of an LDCC in order to define roles and responsibilities of senior managers more clearly. Decisions made by the group should be reflected within Defra's Framework Response Plan for Exotic Animal Diseases.

3.6.5. There was also considered to be a lack of command and control structure on the IP itself and many felt that the disease control operation would have benefited from the presence of a clear overall command. This also requires consideration by the Animal Health Operational Advisory Group.

Recommendation 25: The Animal Health Operational Advisory Group should review the command and control structure for staff working on infected premises.

3.6.6. The recent increased frequency of small scale outbreaks of exotic animal disease across the country inevitably results in an impact upon other areas of work carried out by Animal Health. It was recognised that there is a need to establish a point of ownership of issues relating to business continuity across the agency and alongside this a mechanism for reviewing, agreeing and communicating business priorities to staff.

Recommendation 26: Animal Health Corporate Management Team should consider arrangements for overseeing business continuity issues during an outbreak of disease.

3.6.7. It was generally considered that communication aspects of licensing require some attention. There needs to be greater clarity concerning what movements are permitted under licence.

Recommendation 27: Defra Emergency Preparedness Policy Programme and Animal Health Contingency Planning Division review the clarity of communications relating to movement licensing issues.

3.6.8. There has been concern that more attention needs to be paid to working conditions for staff on the infected premises in order to ensure that staff are not working excessive hours and that appropriate cover is available. This is particularly important when staff are working in Personal Protective Equipment. This equipment must be used for Health and Safety reasons. Appropriate staff cover must be available to ensure that individuals are not working in this equipment for periods longer than those which are both safe and comfortable. Arrangements must also be made for the provision of showers, rest facilities and refreshments to staff working on the IP.

Recommendation 28: The Animal Health Operational Advisory Group should establish a project to oversee the management of staff working conditions on an infected premises, including arrangements for rotation of staff and provision of showers, rest facilities and refreshments.

3.6.9. Policy on pay during an outbreak also needs to be reviewed. Many staff considered there to be an inconsistency between pay between the local and national levels. Many staff at the national level felt that increased responsibility was not reflected within their pay as it had been for some LDCC staff. There also needs to be a review of the point at which part time workers qualify for the award of overtime payments and this should be implemented consistently across Defra and Animal Health. It was also considered that the policy on disturbance allowances paid to staff responding to an emergency such as an outbreak of animal disease should be reviewed again.

Recommendation 29: Defra and Animal Health Human Resources should review policy on pay and award of allowances.

3.6.10. There has been some confusion surrounding issues relating to the administration of prophylaxis treatment to disease control staff working on the infected premises. Due to Bury St Edmunds AHDO being in a high density area of poultry farms, they have responded to an outbreak of low pathogenic avian influenza prior to the Holton outbreak. Concerns arose over whether or not Animal Health staff who had been involved in both the responses could continue to receive pre exposure prophylaxis treatment when attending an infected premises in the future. Animal Health has consulted with the Health Protection Agency (HPA) on this matter, who have confirmed that there is no risk associated with receiving repeated pre exposure prophylaxis treatment during consecutive outbreaks.

Recommendation 30: Animal Health to issue guidance to staff concerning the use and reuse of pre exposure prophylaxis during outbreaks of avian influenza.

3.6.11. The Holton outbreak raised many issues relating to laboratory testing. The VLA have reviewed these issues. Their major findings relate to the need for effective management of labelling of samples and the need for further consideration of various reporting requirements in relation to the database systems currently available. Defra, Animal Health, and the VLA are currently working closely on the Management of Samples System project to address these issues.

Recommendation 31: Defra, Animal Health and the Veterinary Laboratories Agency should contribute to a review of issues relating to laboratory testing as part of the current Management of Samples System Project.

3.7. HUMAN RESOURCES

3.7.1. There is a need for a review, in the light of the Holton outbreak, of realistic requirements for personnel required to assist in the response both at the LDCC and on premises where disease control operations are undertaken. This must take into account the increasing speed of response required, enabled by rapid results from laboratory analysis. This must be closely linked to the requirements of operational instructions in order to ensure that all key posts are filled quickly and that adequate cover is available for the premises, for surveillance and in the office.

Recommendation 32: Animal Health Human Resources should take part in Animal Health Contingency Planning Division's programme of local exercises engaging with Divisional Veterinary Managers on the issue of resource requirements to meet the demands of outbreaks of varying size and scale.

3.7.2. It has been suggested that there should be consideration of options and potential benefits for establishing a 'rapid response' team of designated

Animal Health staff, specifically trained for and willing to assist in the initial stages of the local response to an outbreak of animal disease.

Recommendation 33: The Animal Health Operational Advisory Group should consider the feasibility, need for and potential composition of a 'rapid response team' to assist in the initial stages of the local response to an outbreak of animal disease.

3.7.3. Concerns were raised over the levels of skill of detached duty staff deployed to the LDCC in the initial stages of the outbreak. It was considered that some staff did not have the correct skills or experience to carry out the role which they were initially asked to undertake. There is a need for specific skills to be formally defined for the roles of members of each LDCC team. Alongside this there should be an audit of the skills of Animal Health staff across the country with a register being established and maintained in order to match individual personnel with specific posts. Divisional Veterinary Managers must clearly define the skills required and ensure that all requests for staff are made through Animal Health Human Resources, who will act as a central point of coordination.

Recommendation 34: Animal Health Human Resources should work with the Animal Health Operational Advisory Group and Divisional Veterinary Managers over the next year to establish a system of auditing the skills of staff and matching them formally to specific posts in LDCC teams. This may take the form of a skills register, although the three groups will work together to produce the outcome which they consider to be most appropriate and effective.

4. ACTIONS

4.1. This section sets out the ways in which work will be taken forward to develop recommendations made in this report.

4.2. Many of the recommendations contained within this report have already been implemented following the Holton outbreak and there is already significant work underway with regard to others to ensure that our future arrangements take account of these lessons.

4.3. Following the publication of this report, each recommendation will be prioritised and assigned to a specific owner and given a clear deadline for delivery. This owner will take responsibility for the resolution of their assigned issue, in conjunction with other colleagues as appropriate. Animal Health has established an Operational Advisory Group which will oversee the implementation of recommendations relating to the operational aspects of disease control, in particular those relating to the functions of the LDCC and operations on the Infected Premises and in the surrounding area. The Operational Advisory Group may make recommendations for issues to be taken forward and specific projects to be established to enable this.

4.4. Animal Health will take responsibility for ensuring that lessons learned from the Holton outbreak are coordinated at both national and local levels.

4.5. The recommendations set out in this report have been approved by Ministers and will be considered and discussed by senior management in both Defra and Animal Health.

4.6. Animal Health Contingency Planning Division will coordinate an implementation review process that will monitor the progress of work taking place in response to each recommendation made. This will culminate in the presentation of a paper to the EPEAD, summarising progress made, in the summer of 2008.

4.7. Defra and Animal Health will continue to engage with stakeholders and operational partners to ensure that they achieve an appropriate level of understanding and input into our emergency preparedness arrangements.

4.8. Animal Health Contingency Planning Division will continue to review and update all relevant contingency plans and operational instructions to ensure that they take account of the lessons learned from this project.

4.9. In February 2008 Defra/ Animal Health will be holding its next national scale exercise, which will test the government's arrangements for responding to an outbreak of Classical Swine Fever. Many of the lessons set out in this report will also be applicable to outbreaks of other exotic animal diseases. Therefore the exercise will provide a further opportunity to test the implementation of a number of the recommendations of this report and assess whether they require any refinement.

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5. CONCLUSIONS

5.1. The February 2007 outbreak of avian influenza in Holton, Suffolk was the most challenging experience of an outbreak of exotic animal disease since the 2001 outbreak of Foot and Mouth Disease. It was the first incident of H5N1 highly pathogenic avian influenza on a large scale commercial turkey establishment. Whilst this report identifies a number of areas for improvement and further consideration, on the whole, Defra and its agencies responded to this challenge well and succeeded in containing and eradicating the disease quickly and efficiently.

5.2. The fact that no conclusive cause for the outbreak has been established means that there is a continual need for vigilance with regard to our day to day farming practices. Defra and Animal Health will continue to work with poultry keepers to promote the highest levels of biosecurity and increased awareness of the risks of exotic animal diseases.

5.3. Throughout this project it has been evident that there is a high level of commitment from those across the Defra family, stakeholders, operational partners, and industry to ensure that we are even better equipped to respond to any outbreak of disease that may occur in the future. We will continue to work together in peacetime, listening to each other's concerns and promoting best practice.

5.4. It is important to highlight that industry played a crucial role in the successful outcome which was achieved at Holton. The company which owned the infected premises cooperated fully with Defra and Animal Health and contributed extensively in terms of their own resources in order to ensure that the outbreak was contained and controlled as quickly as possible. The role of industry within disease control will become increasingly important over the coming year as we continue to explore the responsibility and cost sharing agenda and the way in which it may support our preparedness for, and response to, outbreaks of disease.

5.5. The experience also tested the role of the Defra family within the wider machinery of government. Due to the range of organisations affected, the Holton outbreak required a cross-departmental and multi- agency response. Defra provided leadership to the response in its capacity as lead government department, and also worked closely with the Department of Health, Health Protection Agency, and Civil Contingencies Secretariat to ensure that public health was fully and appropriately protected.

5.6. The Holton outbreak has demonstrated the practical value of contingency planning. Had there not been contingency plans and operational instructions in place, we would not have been equipped to respond with such speed and efficiency. Defra and Animal Health also benefited from the experience of responding to a previous outbreak of low pathogenic avian influenza prior to the Holton outbreak. These experiences, which this report

seeks to capture and record, all form part of the corporate memory and will undoubtedly enable the Department to respond with increased confidence in the future.

6. SUMMARY OF RECOMMENDATIONS

6.1. From the issues identified during the response to the Holton outbreak of Avian Influenza, 34 specific recommendations are outlined in section 3 of this report. Below is a full list of the recommendations of this report:

Recommendation 1: Defra's Framework Response plan should be amended to explicitly include the Food Standards Agency (FSA) as a participant in the Amber teleconference. The plan should also be amended to explain the roles of the FSA and MHS during an outbreak of disease. The Veterinary Director of the FSA will be the specific point of contact.

Recommendation 2: Defra should review arrangements for the operation of legislation relating to meat controls during an outbreak of animal disease.

Recommendation 3: Defra should clarify the movement restrictions and licensing requirements as far as possible before an outbreak and ensure that the Defra website contains all of the necessary information. Designation of slaughterhouses and hatcheries also needs to be taken forward.

Recommendation 4: Defra should update their policy relating to shooting bans.

Recommendation 5: Defra should review its policy and guidance available on abandoned birds, working with other departments, agencies and operational partners to ensure that a common approach is being adopted.

Recommendation 6: Animal Health Corporate Management Team and Defra Communications Directorate should consider options for providing an appropriate spokesperson for the media at the infected premises.

Recommendation 7: Using the experience of Holton, Defra should continue to make full use of options for increasing awareness of the GB Poultry Register.

Recommendation 8: There needs to be greater clarity concerning routes of communication from the infected premises (IP) to the Local Disease Control Centre (LDCC) and then from the LDCC to the National Disease Control Centre (NDCC).

Recommendation 9: Defra's Emergency Preparedness Core Team should consider ways of further simplifying information on legislation relating to avian influenza on the Defra public website.

Recommendation 10: Animal Health Contingency Planning Division and Defra Exotic Disease Policy Programme should continue to actively review alternative methods for culling poultry and publicise the results widely both internally and externally.

Recommendation 11: Defra Procurement and Contracts Division should finalise formal contractual arrangements with companies providing disposal facilities during an outbreak of animal disease as a matter of high priority.

Recommendation 12: NDCC Disposal Team to liaise with the Association of Chief Police Officers to ensure that all the necessary information concerning transportation routes for disposal lorries is supplied to the correct contacts.

Recommendation 13: Animal Health Contingency Planning Division should continue to work closely with the poultry industry, the Environment Agency, and the Health Protection Agency and produce clear guidance on the options for the disposal of wastes arising from the disease control operation (e.g. litter, feed and washwater). This should result in the production of clear written guidance for livestock keepers.

Recommendation 14: Animal Health Contingency Planning Division's current review of contingency contracts should take account of the requirements for essential facilities for staff on an IP, working with Defra Procurement and Contracts Division to ensure that the necessary contractual arrangements are put in place.

Recommendation 15: Defra and Animal Health Finance should review their procedures for processing overtime claims and reimbursement of out of pocket expenses during an outbreak situation. They should be streamlined where possible to increase efficiency.

Recommendation 16: Intelligent Customer Function should consider arrangements for server maintenance and access to essential systems during an outbreak of disease ensuring that appropriate back-up plans are in place.

Recommendation 17: Defra Finance should ensure that appropriate training and guidance is readily available to enable staff to submit claims for expenses correctly.

Recommendation 18: Animal Health Learning and Development Team should review Diseases of Poultry Disease Control System (DPDCS) training and incorporate within it all aspects of DPDCS functionality.

Recommendation 19: Animal Health Business Development Division should review DPDCS requirements in the event of an outbreak balancing any proposed changes against costs, in view of the fact that it is a legacy system.

Recommendation 20: Animal Health Business Development Division should carry out a review of the functionality of DPDCS with regard to the production of reports for licensing and surveillance.

Recommendation 21: Animal Health Human Resources (including Learning and Development and Health & Safety) in conjunction with Animal Health Contingency Planning should coordinate a series of workshops to train Animal

Health Divisional Office staff in the implementation of operational instructions during outbreaks of animal disease. This will be supported by Contingency Planning Division's programme of local exercises.

Recommendation 22: Divisional Veterinary Managers should review the provision of training for responding to a disease outbreak, taking into account local business priorities and concentration of premises holding specific types of animals.

Recommendation 23: Divisional Veterinary Managers should support and work with industry to ensure that plans are established defining proposed arrangements for responding to an outbreak of disease at every large commercial poultry premises within their area. These plans should contain key information relating to the geography and facilities available on each specific site.

Recommendation 24: The Animal Health Operational Advisory Group should review the management structure of an LDCC in order to define roles and responsibilities of senior managers more clearly. Decisions made by the group should be reflected within Defra's Framework Response Plan for Exotic Animal Diseases.

Recommendation 25: The Animal Health Operational Advisory Group should review the command and control structure for staff working on infected premises.

Recommendation 26: Animal Health Corporate Management Team should consider arrangements for overseeing business continuity issues during an outbreak of disease.

Recommendation 27: Defra Emergency Preparedness Policy Programme and Animal Health Contingency Planning Division review the clarity of communications relating to movement licensing issues.

Recommendation 28: The Animal Health Operational Advisory Group should establish a project to oversee the management of staff working conditions on an infected premises, including arrangements for rotation of staff and provision of showers, rest facilities and refreshments.

Recommendation 29: Defra and Animal Health Human Resources should review policy on pay and award of allowances.

Recommendation 30: Animal Health to issue guidance to staff concerning the use and reuse of pre exposure prophylaxis during outbreaks of avian influenza.

Recommendation 31: Defra, Animal Health and the Veterinary Laboratories Agency should contribute to a review of issues relating to laboratory testing as part of the current Management of Samples System Project.

Recommendation 32: Animal Health Human Resources should take part in Animal Health Contingency Planning Division's programme of local exercises engaging with Divisional Veterinary Managers on the issue of resource requirements to meet the demands of outbreaks of varying size and scale.

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ANNEXES

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ANNEX A – SUMMARY TIMELINE / CHRONOLOGY OF THE OUTBREAK

Defra's Contingency Plan for Exotic Animal Diseases was deployed at the start of the outbreak and followed throughout.

Suspicion Phase (Amber alert)

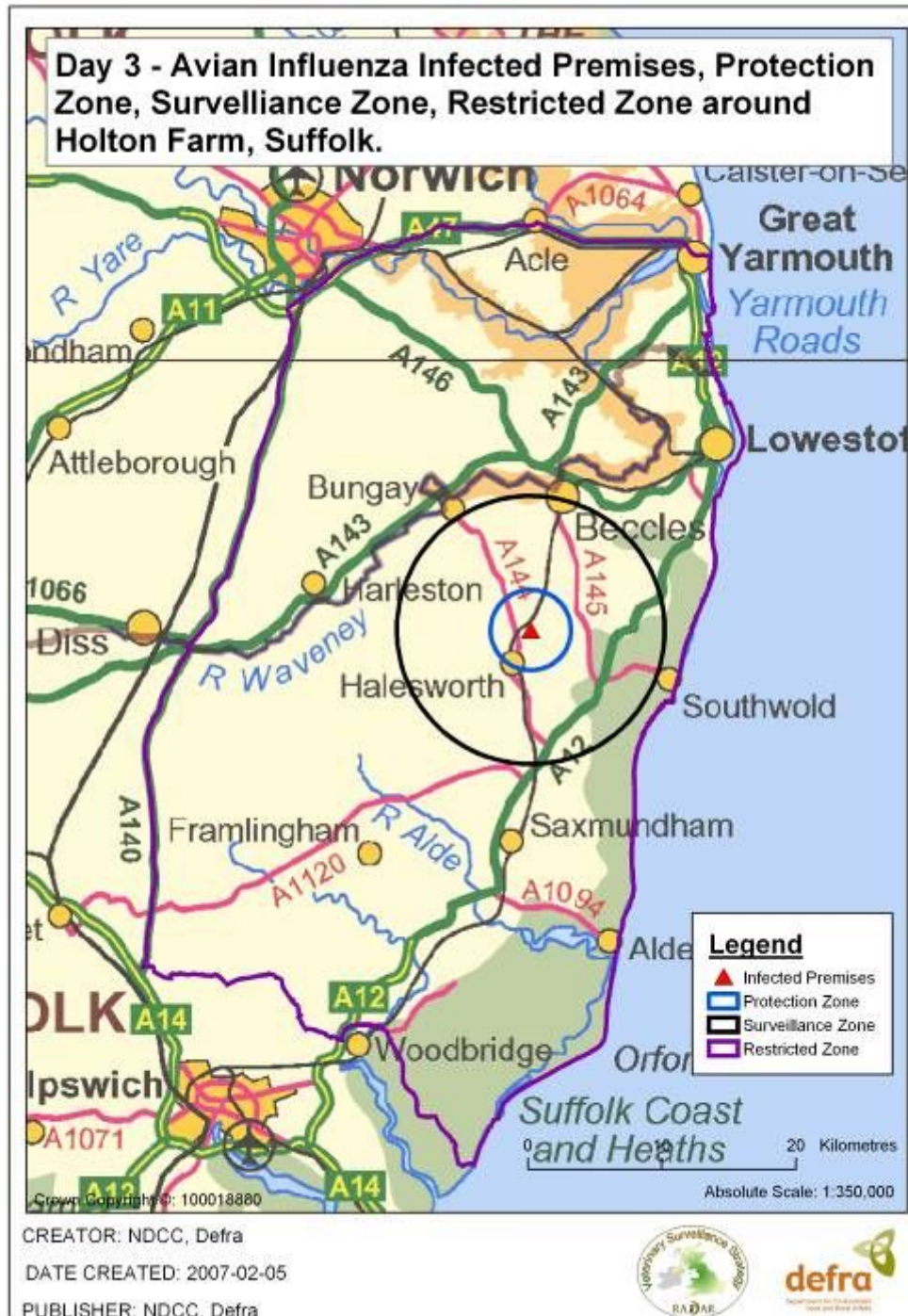
Thursday 1 February	Company veterinarian reports suspected avian notifiable disease late on Thursday evening. Premises placed under restriction.
Friday 2 February	Veterinary Inquiry begins. 1580 deaths. Influenza H5 A type positively identified and all of the remaining birds in shed 10 were culled by the company on welfare grounds.

Confirmation Phase (Red Alert)

Saturday 3 February (Day 0)	Chief Veterinary Officer confirms presence of avian influenza upon a commercial poultry premises in Holton, Suffolk. National Disease Control Centre set up in London. Local Disease Control Centre set up in Bury St Edmunds. European Commission and OIE informed of the situation. Suspension of exports of susceptible commodities to all Third Countries. Declaration defining the boundaries of the infected area issued (Protection and Surveillance Zones established). Ban on bird gathering across England imposed.
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	Culling of all birds on entire site commenced at 17.00 hours.
Sunday 4 February (Day 1)	Culling continues.
Monday 5 February (Day 2)	Culling of 152,619 birds in 22 houses on the affected site completed at 20.36 hours.
	Secretary of State for Environment, Food and Rural Affairs delivers oral statement in Parliament regarding the progress of the disease control operation.
Tuesday 6 February (Day 3)	Preliminary cleansing and disinfection of the farm commenced.
	Final cleansing and disinfection of slaughterhouse commenced.
Thursday 8 February (Day 5)	Preliminary cleansing and disinfection of farm completed.
Friday 9 February (Day 6)	Samples taken from dead wild birds (2 swans, 2 gulls) found in the restricted areas tested negative for influenza A virus.
Sunday 11 February (Day 8)	The MHS gave permission for the slaughterhouse to start slaughtering birds for human consumption again after it was satisfied that as required by EU law the premises had been cleaned and disinfected following the cull.
Monday 12 February (Day 9)	Slaughterhouse re-opened for normal production.
Friday 16 February (Day 13)	Ban on bird gatherings in the non restricted parts of England lifted.
	Shooting ban imposed in the Protection and Surveillance Zones lifted.
Monday 12 March (Day 37)	Restrictions around the infected site lifted.

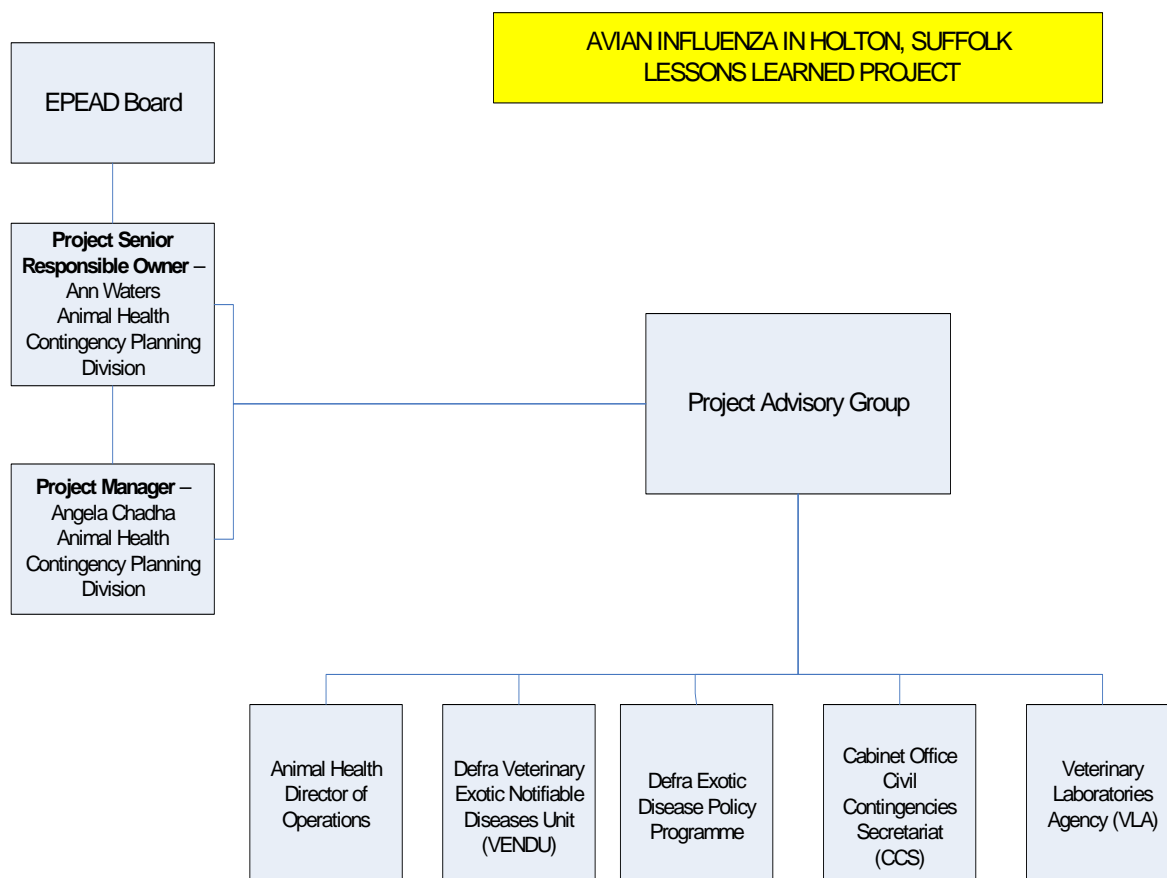
ANNEX B - HIGH LEVEL MAP SHOWING INFECTED AREA & CONTROL ZONES



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ANNEX C - PROJECT METHODOLOGY

This Lessons Learned study has been prepared by Animal Health Contingency Planning Division under the umbrella of the EPEAD Programme. The project team have received support and guidance from a project advisory group drawn from Defra, Animal Health, the VLA and the CCS.



The following is a summary of the project methodology and the approach taken by the project team in identifying the issues and lessons to be learned from the handling and management of the outbreak of avian influenza in Holton, Suffolk in February 2007.

Identification of Issues and Lessons to be Learned

i. Written Feedback

Within days of the outbreak starting, Animal Health Contingency Planning Division circulated a proforma to all staff involved in the response. Throughout the outbreak, staff were encouraged to record any potential lessons arising from their work. The results were collated

and the major lessons learned have been incorporated during the preparation of this report.

Even though stakeholders, operational partners, and other government departments were given an opportunity to participate in this process, it is important to emphasise that the recommendations of this report relate only to actions to be carried out by those within the Defra family.

It is important to emphasise that the information contained within feedback forms is representative of individual perceptions and experiences during the Holton outbreak. Animal Health Contingency Planning Division has collated this information. The findings of this report therefore reflect predominant experiences and in some cases clarify issues arising from common misconceptions identified through individual feedback.

ii. Facilitated Workshops

Following the conclusion of the main business of the disease control operation, a series of workshops was organised in order to provide an opportunity for all those involved to share and discuss their experiences and identify common emerging lessons from the outbreak. Workshops were held in both Bury St Edmunds AHDO and London.

The workshops covered the following:

a) Operational response from the perspective of the LDCC.

Staff from the Bury St Edmunds AHDO who staffed the LDCC were invited to participate in a workshop to consider how the LDCC operated during the outbreaks. They were encouraged to identify successes, areas for improvement, issues relating to continuity for business as usual and their relationship with the tactical level response.

b) Operational Partners and their interaction with Defra and Animal Health during the outbreak.

Local representatives from Operational Partner groups such as Suffolk Police, the Environment Agency, the Health Protection Agency and Suffolk Local Authority Trading Standards were invited to participate in a workshop to consider their relationships with Defra and Animal Health during the outbreak. It is important to emphasise that many of the operational partner groups will be conducting their own lessons learned exercises relating to their experiences of the Holton outbreak. The purpose of this workshop was to identify lessons to be learned for Defra/ Animal Health.

c) Key disease control functions at tactical and operational levels.

The purpose of this workshop was to consider various key functions such as culling, disposal and procurement etc. with regard to what worked well during the Holton outbreak and to identify areas for improvement in the future. This also gave detached duty staff from other AHDOs, who had worked in Bury St Edmunds during the outbreak, an opportunity to discuss their experiences in terms of the response and implications for general business continuity.

d) Strategic and Tactical response issues.

A workshop was held in London to examine issues relating to the strategic and tactical level responses. Key officials within the NDCC, together with some representatives from Operational Partners at national level identified areas of success together with those requiring improvement.

Review of Issues and Recommendations

The project team has reviewed the issues identified in written feedback and the workshop sessions and grouped them together in themes- they are discussed in section 3 of this report. A number of recommendations have been made.

A great deal of work is already underway with regard to implementing the recommendations made by this report. In particular Animal Health has established an Operational Advisory Group, which has been specifically tasked with the issue of taking forward all recommendations relating to the operational aspects of response to an outbreak of exotic animal disease.

Further details concerning how the implementation of the recommendations made by this report will be monitored are included in section 4 of this report, which relates to future actions.

There have been positive contributions made to this report from those across the Defra family and there is a strong commitment to reviewing our current plans, policies, procedures, and guidance to take account of the lessons which we have learned from the Holton outbreak.

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