



# Science Advisory Council

## SAC Epidemic Diseases sub-group

# Summary of first meeting

26<sup>th</sup> May 2004, 12 pm - 4 pm

**Paper: SAC-ED (04) 2**

**Author: SAC Secretariat**

**Confidentiality status: for information**

For members' use only- do not show to or discuss with anyone else  
Not for publication- may be discussed with colleagues on a confidential basis  
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### **Attendees**

Jeffrey Waage (*Chair*)  
Roy Anderson  
Philip Lowe  
Mark Woolhouse  
David Black  
Matt Keeling  
Laura Green  
Tim Bradshaw (*Secretariat*)  
Jo Wallace (*Secretariat*)

### Apologies from

Thomas Meagher  
Roger Eddy

The sub-group was joined by a number of senior Defra experts:

Fred Landeg	Veterinary Exotic Diseases Division
Ann Waters	State Veterinary Service
John Wilesmith	Animal Health and Welfare Directorate General
David Paton	Institute of Animal Health- Pirbright
Nick Coulson	Veterinary Research Directorate

## INTRODUCTION

1. Attendees were welcomed to the first meeting of the SAC Epidemic Diseases sub-group.
2. Terms of Reference for the sub-group were agreed as:
  - To review the scientific, including veterinary and social science, aspects of Defra's Foot and Mouth Disease contingency plan and to report back to the Science Advisory Council.
3. The sub-group will work and deliberate in private and will report back to the SAC before its advice is passed on to the Chief Scientific Adviser.

## GENERAL

4. The Sub-Group identified a number of areas where it felt it could assist Defra with improving scientific aspects of the Plan. Given the broad experience of the Sub-Group, and particularly the involvement of some members in the last outbreak, it also agreed to provide some comments on operational aspects of the Plan.
5. Preliminary outputs are presented below with action points. The Sub-Group agreed to submit further ideas, following reflection and consideration of information provided by Dr. Fred Landeg and other Defra staff at the meeting.
6. The Sub-Group agreed to re-convene on 8 June when the agenda would include a meeting with Defra communications experts on the social science issues of public engagement, and to attempt to link up by conference call on that date with those unable to attend. Other meetings and conference calls may be necessary in between.

**Action: Secretariat**

## GENERAL SCIENTIFIC ISSUES

7. The Sub-Group suggested that the scientific community would want to know whether and how Defra was using the evidence base from the previous epidemic in developing its Plan, and how it was doing this. Specific applications included the 3 and 10k areas for protection and surveillance, the refinement of levels of suspicion (e.g. based on their frequency and consequences since 2002), determination of stand still times, value of cleansing/disinfection and identification of hot-spot areas or situations for pro-active rather than passive surveillance.
8. The Plan, perhaps for good reason, does not contain a lot of technical detail on collection and use of local information, e.g. the way in which information on wind patterns, recent movements of animals and terrain will be analysed and used for decisions on area restrictions. Reading the Plan, the scientific community may wrongly conclude that this analysis will not be done or used,

and Defra needs to make sure that the community is directed to the detail, e.g. in VIPER Chapter 3.

9. Specifically, data capture deserves special attention. What is being done, or could be done to collect and use data on land ownership, animal movement and other relevant information. To what extent could this be “real time”, so as to monitor movements in affected areas during an outbreak. What advances in portable electronic data logging and monitoring systems could be applied to improve data capture and use now and in a future outbreak?

**Action: John Wilesmith**

## **PRE-OUTBREAK SCIENTIFIC ISSUES**

10. Dr. Landeg raised issues of prevention, outside the Contingency Plan, and the Sub-Group agreed that it was important to consider these, as prevention measures could substantially reduce the risk and scale of outbreaks. Farmers are able to reduce personal risks through biosecurity measures, and Defra has research ongoing relevant to best practice. However, in an outbreak farmers may lose livestock independent of measures that they take themselves. This is not a strong incentive for implementing time-consuming biosecurity measures, nor is the “carrot” of contributing to the reducing the overall national or regional risk of outbreak. “Sticks” may not be particularly effective or a means towards collective ownership of the problem and its solutions. Other incentive systems deserve consideration and would be informed by social science research. Dutch experiences may be relevant.
11. The Sub-Group considered that the standstill policy, of 6 days for cattle, was different from the optimal time, 13 days, predicted by modelling (and identified in the Royal Society report). Defra may be challenged to justify on scientific and economic grounds the variance of policy from predicted optima.
12. The Sub-Group suggested that research might reveal the value of pro-active, as distinct from passive, surveillance systems involving e.g. farmers, abattoirs, markets and identification of high risk groups and areas.

**Fred Landeg, Ann Waters, John Wilesmith are invited to comment on points 10 – 12 at the next meeting**

## **OUTBREAK-RELATED SCIENTIFIC ISSUES**

13. Vaccination was regarded by the Sub-Group as one of the key issues for consideration. The way in which vaccination was included in the Plan indicated a readiness and commitment to this tool that might exaggerate its current technical potential. Specifically,
  - Speed and scale of response - is five days to distribution a sufficiently short period to use vaccines as planned? How quickly could distribution be achieved in different scales and scenarios?

- Would there be longer delays for virus strains not in stock and what is the risk of one of these being required?
  - Do clinical data indicate that vaccines are sufficiently effective to be used protectively, particularly with respect to the time from vaccination to protection? The long control periods experienced with vaccination campaigns in Uruguay and Argentina were noted.
  - If vaccines were only to be used for suppressive purposes, i.e. to improve the efficacy of a culling effort, would this be a politically viable policy?
  - What specific and strategic approaches might be used for vaccination – e.g. from the inside out, outside in, vaccination firebreaks. What species would be vaccinated?
  - Are methods and procedures to detect virus incidence in vaccinated cattle sufficient to allow an effective exit strategy and rapid return to freedom of trade?
  - There is an ambiguity in the Plan, in the event of rapid spread or risk of spread of FMD beyond a surveillance zone, as to whether proactive culling or proactive protective vaccination would be the desired strategy.
14. Were vaccination not to be as useful as suggested in the Plan, the Sub-Group was concerned that a commitment to vaccination might result in a misallocation of resources away from, e.g. surveillance or culling. The Sub-Group welcomed the Vaccination Scenarios paper prepared by Fred Landeg, which it will consider in light of these questions.
15. The group requested details on the availability, type and level of effectiveness of available vaccines. David Paton and Mark Woolhouse agreed to discuss the available and required evidence on the efficacy of vaccines and report back to the sub-group. It was noted that existing models could be used to explore the impact of vaccines of different effectiveness on a Contingency Plan.  
**Action: David Paton, Mark Woolhouse**
16. The group raised questions related to culling options:
- What is the strategic culling policy? Is there a blanket policy or potentially open to discussion?
  - Will highest risk animals/farms be targeted first (and on what criteria is highest risk determined), or largest farms first?
- Action: Fred Landeg**
17. The group asked John Wilesmith to develop a series of questions and protocols that could be analysed using the epidemiological models developed by Matt Keeling. DW would circulate these to members. Members to suggest which scenarios should be run (e.g. different levels of vaccine effectiveness and/or different degrees of vaccine mis-match).  
**Active: John Wilesmith**
18. The Sub-Group requested further information on the speed and scale on which vaccination could be undertaken:
- How many animals could be vaccinated
  - How quickly (logistics)
  - Breakdowns for pigs, sheep and cattle

- How many doses of each vaccine are stockpiled and how long to make more?
- What is the extra time delay if the EU vaccine stock has to be called upon?

**Action: Ann Waters**

19. We appreciated that there may be a strong political reason to include vaccination as a key tool in future contingency. We need to understand policy better – for instance, if vaccines could only be used confidently for suppressive means, to address delays in culling and disposal, would this be politically acceptable? Therefore, the Sub-Group **asked** that Defra policy makers consider the following questions, to help with the Sub-Group's scientific considerations. Does government policy prioritise minimizing:

- The number of cases (= affected farms)?
- The number of animals killed?
- The duration of the outbreak?
- The period to freedom to trade?
- The cost to the economy?
- Some other factor?

**Action: Fred Landeg**

20. Beyond vaccination, the Sub-Group also discussed possible delays in diagnosis, and noted that the rapid development of methods, including pen-side tests, would require that Defra be prepared to trial methods quickly as they emerge, even as useful adjuncts to, if not replacements for, laboratory tests.

## **RISK COMMUNICATION**

21. A key concern was that the bulk of costs / economic damage associated with the 2001 outbreak actually fell on the rural and wider UK economy outside of farming: e.g. impacts on tourism and other parts of rural life. A major part of the problem was due to how risk was communicated to the public and then how they responded—typically staying away from the countryside, which then had wider knock-on effects.
22. Communication strategy internally within Defra and externally to key stakeholders (in particular the veterinary and farming communities) should be discussed further.
23. The group suggested that a Defra Communications representative, and a risk communications expert, should be invited to attend the next sub-group meeting. Philip Lowe to draft questions.

**Action: Philip Lowe, Secretariat**

## **OPERATIONAL ISSUES**

24. The Sub-Group noted that, while stakeholders were mentioned on numerous occasions in the document, farmers and veterinarians were not identified as

stakeholders (although institutions representing them were, e.g. NFU), and there was no specific plan for their involvement.

**Action: Ann Waters**

25. The Sub-Group was concerned about internal communication, noting particularly that the graphical plan on p.19, seemed to create opportunities for parallel activity and competition, rather than well linked and coordinated effort. [also the regional structure for disease control did not map out the regional structure for govt]

## **CLOSE**

26. Defra staff were thanked profusely for their good will and help. Fred Landeg was thanked specifically for his insightful presentation and background information.
27. **Next Meeting: 8<sup>th</sup> June 2004** at Defra's offices in Nobel House (entrance off Smith Square), room 806, from 12 noon to approx 4pm. Members not able to attend in person may be linked in by telephone.
  - Prior to that meeting, members are asked to look through the VIPER chapter 3 information and the papers tabled today by Fred Landeg (in particular the vaccine scenarios paper).
  - VIPER website: <http://www.defra.gov.uk/animalh/viper/default.htm>

## Annex A

### **In order to maximise input in to the 29<sup>th</sup> June 2004 'Live' FMD exercise the secretariat suggests the following deadlines**

#### **Phase One**

(First meeting already held)

- Initial feedback on this summary paper by **1<sup>st</sup> June**.
- Papers/ information being prepared by Defra experts must be circulated to sub-group members on 4<sup>th</sup> June (please ensure they are with the Secretariat by **3pm on 4<sup>th</sup> June** with any necessary clearance already approved).
- Second meeting: **8<sup>th</sup> June**. Address substantive points and discuss. Produce first draft advice to be submitted to the SAC.
- E-mail and telephone discussions to continue on remaining points and on drafts of the paper for SAC until **14<sup>th</sup> June**.
- Final version of paper for SAC signed off by sub-group Chair by **16<sup>th</sup> June**. Immediate circulation to SAC for comment.
- Deadline for comments **21<sup>st</sup> June**.
- Final version of paper agreed by SAC Chair and passed to CSA by **23<sup>rd</sup> June**.

#### **Phase two**

- **29-30<sup>th</sup> June**: Defra live test of the FMD contingency plan. Professor Roy Anderson will represent the SAC in this test.
- **Early-mid July**: suggested follow-up meeting and/or e-mail discussion in light of the live test experience. Also need to discuss the extent to which the FMD plan is likely to be applicable to other potential disease outbreaks.
- **19<sup>th</sup> July**: next full meeting of the SAC. The sub-group will report back as required and plan the next piece of work.

**SAC Secretariat**