Zoonotic Diseases: A Guide to Establishing Collaboration between Animal and Human Health Sectors at the Country Level
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INTRODUCTION

1.1 Purpose of the guide

This guide was developed to assist countries and areas in achieving sustainable and functional collaboration between animal and human health sectors, which is crucial to addressing the challenges posed by endemic, emerging and re-emerging zoonoses. It outlines step-by-step actions to develop appropriate collaborations in the following four key areas identified in the Asia Pacific Strategy for Emerging Diseases (APSED) zoonoses work plan:

- surveillance and information sharing
- coordinated response
- risk reduction
- collaborative research.

Once strong collaboration has been established in these areas, it may also be applied to specific zoonoses control programmes.

1.2 Background

In 2005, the World Health Organization’s (WHO) Western Pacific Region and the South-East Asia Region created APSED. It recognizes that “there must be close multisectoral cooperation, particularly between the health and agricultural sectors at each level” to prevent and control zoonoses. In 2006, a work plan to implement APSED was developed, including a two-phase approach zoonoses framework. The first phase of the framework focuses on developing a regional mechanism between the regional offices of WHO, the Food and Agriculture Organization (FAO) and the World Organisation for Animal Health (OIE). The regional mechanism is essential to support countries and areas in Asia Pacific that still do not have a functional mechanism for information sharing, alert and response between animal and human health sectors. The second phase aims to develop an effective animal and human health sectors coordinating mechanism at the country level.

A series of consultations then occurred in 2007 between the FAO, OIE and WHO regional offices to create a regional mechanism for collaboration. Since this is a coordinating mechanism between three organizations, the process of developing the mechanism together is important which includes the following steps:

- identification of those involved in areas for potential collaboration
- identification of priority areas for collaboration and the work to be accomplished
- identification of each sector’s roles and responsibilities
- evaluation of progress, and review of plans for collaborative activities.

The next phase in the APSED zoonoses work plan is to establish or strengthen collaboration between the animal and human health sectors at the country level, and these four steps are essential to achieving this goal.

1.3 The need for collaboration between animal and human health sectors

Over the last 30 years, new infectious agents and diseases affecting humans have emerged at a rate of more than one per year. Seventy-five per cent have been zoonoses, and some—e.g. severe
acute respiratory syndrome (SARS), avian influenza and Nipah virus—aside from causing human mortality, have had devastating effects on the populations, economies and livelihood systems of the Western Pacific Region and South-East Asia Region.

The key to detecting and controlling the emergence or re-emergence of zoonoses is coordinated action on the part of animal and human health sectors. In particular, it is crucial to detect and control early any emerging and re-emerging zoonoses at the animal source to prevent it from infecting human population. Well established and defined communication procedures (both sides: animal to public sector and public to animal sector) when outbreaks occur is also crucial for early warning and better controlling the disease. Thus it is critical to establish good collaborations between animal and human health sector to ensure synergistic actions, make rational use of available resources, improve efficiency and avoid duplication of work.

Although intersectoral collaborations are in place for avian influenza, these may not cover other zoonoses. However, by capturing the momentum generated by avian influenza, the time is ideal to prepare a guide to aid countries and areas in establishing sustainable intersectoral collaboration for the early detection and rapid control of emerging and re-emerging diseases with zoonotic potential.

1.4 Sustainable in-country coordinating mechanism

Although international organizations can support some steps set out in this guide, e.g. by helping to draw up a check-list of potential collaborative activities relating to zoonoses, the driving force for developing sustainable intersectoral collaboration must originate from countries and areas.

The capacity and infrastructure necessary to support collaboration between the animal and human health sectors may vary greatly from one country or area to another. This guide provides a framework for developing collaborations to address zoonoses, and ultimately, the differing social, economic and political structures that exist within a particular country or area will be reflected. Deep awareness of all sectors involved and political commitment—as well as stakeholder participation—will be necessary to ensure the sustained partnerships needed to deal with zoonoses.

This guide does not intend to suggest that either sector should intervene in the other’s activities, nor that a separate unit for the handling of zoonoses should be created, but an important point is that each sector identifies and nominate key person(s) who could interact and communicate with other relevant sectors. In fact, respect for the roles, mandates and expertise of each sector is critical to a successful collaboration.

1.5 How to use the guide

There are four sections in this guide. The first section outlines the process of establishing a sustainable intersectoral coordinating mechanism. This single mechanism will be used to coordinate collaborative works in the three areas described in the subsequent sections of the guide: surveillance and information sharing, coordinated response and risk reduction (including communication strategies).

Specific steps to address the fourth area identified in the APSED zoonoses work plan, collaborative research to underpin and provide evidence for policy revision, are not noted at this stage. Research needs will become clearer as collaborations in the other areas are developed and tested. Consideration should be given to include experts from other sectors, e.g. environment and wildlife, when the need for collaborative research arises.

The guide focuses on collaboration at the animal-human interface and does not intend to address the sectors’ working relationship on food safety.
I. COORDINATING MECHANISM

This section outlines steps to achieve collaboration between animal and human health sectors within a country or area. It describes the process of establishing a sustainable mechanism to develop coordination in three areas: (1) surveillance and information sharing, (2) coordinated response and (3) risk reduction.

A national committee is necessary to steer—and as needed, implement—collaborations. The strengths and weaknesses of two different committee models are listed in the annex. In one model, the committee advises on and implements policy; in the second, it acts solely in an advisory capacity.

Step 1. Setting Up a National Coordination Committee

Government officials from both sectors must work together to:

♦ Map out committees in the country or area that already deal with zoonoses. Mapping the existing set-up will inform the functions and structure of the committee(s) that will be responsible for establishing collaborative activities between the animal and human health sectors. A tool, e.g. a questionnaire or check-list, will be required to carry out this assessment, and international organizations may be approached to help develop this tool.

♦ Determine the committee and function for intersectoral coordination. In light of the existing committee(s) that deal with zoonoses, will the intersectoral committee be:
  • An existing committee with modified (extended) terms of reference?
  • A new body? If so, will it act in an advisory role to an existing committee, or will it be responsible for implementing its own advice on collaborative activities?

What functions will the intersectoral committee have?
  • Policy development
  • Implementation of policy
  • Monitoring success
  • Evaluation of policy

The Annex lists some advantages and disadvantages to having a committee that is responsible for drawing up and implementing policy, as well as those for a committee that solely has an advisory function. Several alternative approaches may also be available, e.g. a country or area may choose to have a two-tier intersectoral committee that has a policy-level body to monitor and evaluate policy, with another technical-level group to advise and implement policy.

When setting up an intersectoral committee, consideration should also be given to country-specific conditions and resources as well as the country legal framework and organizational structure.

♦ Determine the committee membership. Membership will depend on the functions assigned to the committee as well as country-specific arrangements and requirements. Although a national-level committee is suggested, the level will ultimately depend on
the functions assigned to the committee. These will reflect the organizational structures, manpower resources and the level of economic development in the animal and human health sectors.

Once identified, membership must be endorsed to ensure sustainability.

As a key factor, proper nominations from each committee member sector should be seek, in order to allow them to effectively act as contact point person (taking into account their availability, functions, position, relationship with other sectors) for liaising with other relevant sectors, as well as for following up actions within their own sectors.

Consideration should be given to outside experts to support the committee, either as members or technical experts.

♦ Agree how the committee, if newly established, will operate. For example:
  • Who will chair? Will the chair rotate between sectors, and if so, how often? How often will the committee meet? Who will provide the secretariat and funding?
  • To whom will the committee report?
  • Will additional expertise be required to support collaboration in the areas of surveillance and information sharing, coordinated response and risk reduction?

♦ Draw up the terms of reference. The terms of reference for the committee must be endorsed and documented.

Step 2: Identify Areas of Work for Collaboration

The intersectoral committee should:

♦ Identify and prioritize areas of work. Identify which of the following areas the committee will address first:
  • surveillance and information sharing
  • coordinated response
  • risk reduction (including communication strategies).

♦ Identify the priorities to be addressed within these work areas.

Step 3: Determine Roles and Responsibilities

The intersectoral committee should:

♦ Gain an understanding of the existing activities, resources and responsibilities relating to zoonoses in each sector. The aim is to create an overall picture of current activities and organizations within the animal and human health sectors and their mandated responsibilities at the local, provincial and national levels with respect to:
  • surveillance and information sharing
  • providing a coordinated response, when appropriate, in a zoonotic disease outbreak in humans or animals
  • risk reduction interventions.

♦ Identify areas in which sensitivities may arise when developing collaborations. For example, an inappropriate media message or a poorly timed news release from one sector could have a direct economic impact on the other sector.
♦ Determine the roles and responsibilities in each area of work, and agree on the activities to be carried out by each sector.
♦ Ensure that a plan of action and protocols are developed for collaboration in each area of work.

**Step 4: Evaluate and Report Progress, and Revise Plan of Action**

The intersectoral committee should, in each of the three work areas:

♦ **Agree on a practical time-frame to evaluate progress in establishing a plan of action and protocols to ensure collaboration between the animal and human health sectors.** This work should be completed in phases, with a suggested time-line for each phase. As outside factors may influence the time-line, it should be established by the country or area and serve as a guide rather than a strict structure, with evaluation being carried out at least twice a year.

♦ **List key performance indicators, and review the plan of action and protocols for collaboration.** An evaluation form or check-list is required. It should not be too extensive or complicated, but should cover the most relevant key indicators. For example:
  - quantitative (e.g. the frequency of successful collaborations)
  - qualitative (e.g. the per cent of cases that were verified by a laboratory or the number of complaints received).

♦ **Consider pilot testing the plan of action and protocols.** Progressive testing with appropriate scope for validation should be considered.

♦ **Revise the plan of action and protocols for collaboration as necessary.**
II. SURVEILLANCE AND INFORMATION SHARING

This section describes steps for timely sharing of data for alert and response, which is critical for early incident detection, identification of potential public health problems and disease control.

Step 1: Identify Contacts for Surveillance and Information Sharing in Both Sectors

♦ Each sector should map out their existing capacity and system for surveillance. Determine the relevant institutions/centres/units in the animal and human health sectors. This will facilitate the identification of posts/people who will be responsible for ensuring that information sharing exists between the two sectors and for identifying gaps in the system.
  • Is there a system for collecting rumour information and also for verifying it?
  ♦ Identify responsible officers and alternates in each sector who will be responsible for the intersectoral sharing of information and act as the contact points in tracking and verifying reports of zoonoses. Specific procedures should be established to carry out the duties of the responsible officers in each sector which may include:
    • communication and sharing information relating to prevention and control, including surveillance and response to zoonoses and events of potential public health risk
    • ensuring that relevant information is communicated to the next level within the sector, e.g. from the intermediate to the national level
    • notifying and alerting the other sector if there is an unusual zoonotic disease or event of potential public health risk.
  ♦ Both sectors should obtain endorsement for the responsible officers and document their contact details. Identify who in each sector must endorse the responsible officers. In addition, the names and contact numbers of key responsible officers must be kept up-to-date, and the mechanism for doing this must be established.

Step 2: Identify Events and Incidents Where Information Sharing Is Required

♦ Identify the events and incidents that will lead to surveillance data and information sharing. Even when these may be based on either formal or informal reports from laboratories or clinical observation, it would be desirable to establish formal procedures that may include:
  • clusters or cases of infection with a known or suspected zoonotic agent, e.g. a cluster of avian influenza in chickens or humans or Japanese encephalitis in pigs or a cluster of rabies in humans due to stray dogs
  • increasing trends in the incidence or evidence of a change in the epidemiology of an emerging or re-emerging zoonosis with the potential for a significant public health impact
  • a zoonosis of international importance, e.g. avian influenza.
Document the incidents and events in which surveillance data and information sharing is needed. The descriptions of incidents and events should be clear and understandable to all responsible for sharing information and to the informants at the local level. For example, “where there is a 3% chicken die-off in 3 days at a commercial farm” is better than the simple description “chicken die-off”.

Identify ways to ensure that responsible officers and informants can correctly detect the events and incidents in which shared information is required. Establish communication procedures, and consider training needs, particularly where literacy levels may be low.

Step 3: Determine the Roles and Responsibilities of Each Sector

Clarify the roles and responsibility of the responsible officers. The responsible officers—and their alternates—in the animal and human health sectors must understand their roles and responsibilities.

Determine frequency of routine information sharing. Routine information sharing will help establish and maintain the system required when an event or incident of public health importance is identified. Agree on:
- the means (e.g. telephone conference, meeting or e-mail)
- how often routine information sharing should occur (e.g. weekly or monthly) and at which level(s)
- how the sharing of information will be recorded (including nil returns), and who or what organization(s) must receive the record
- the action to be taken when rumours regarding zoonoses are detected.

Identify where sensitivities may arise. Consider identifying a forum for consultation on cases and incidents occurring in one sector but observed and reported by the other sector. Such a forum could alleviate the fear of ‘being shown up’, and encourage cooperation.

Develop and document the protocol for information sharing. An agreed protocol is important to ensure effective information sharing exists between the two sectors. Points for inclusion are:
- what and when information will be passed between sectors when an incident or event is reported, and by what means (e.g. by telephone, fax, meeting, e-mail or a posting on the web)
- consensual areas of data confidentiality, which may be important when economic impacts could arise through the dissemination of information.

Step 4: Evaluate and Revise the Protocol Where Necessary

Test the agreed protocol. Once an agreed protocol for information sharing has been developed and the contacts identified, a simulated event (e.g. table-top exercise) to test the protocol will identify any gaps or weaknesses in information flow, both within and between the animal and human health sectors.
♦ **Draw up a list of key performance indicators and evaluate the protocol for surveillance and information sharing according to the list.** Key performance indicators for the test may include:

- how well the responsible officers understand their roles and responsibilities and act according to the plan
- the accuracy and completeness of the list of responsible officers
- an assessment of how easily the information can be verified
- the ability to recognize areas of data sensitivity.

Key performance indicators for the protocol, once in place, may include:

- the quantity (i.e. frequency) of data sharing
- the quality of the surveillance (e.g. the percent of cases or incidents that were followed through to verification)
- the frequency of follow-up action
- the number of complaints received.

If these indicators are used, a system for receiving these is required.

♦ **Revise the protocol for sustained information sharing between the sectors.**
III. COORDINATED RESPONSE

This section outlines steps for a coordinated response in which the animal and human health sectors actively work together, when appropriate. A coordinated response enhances capability for prevention and control of zoonoses.

Activities requiring a coordinated response include:
- conducting epidemiological investigations to identify zoonotic infectious agents or route of transmission from animal to human or vice versa
- implementing biosecurity or bio-containment measures when appropriate
- carrying out risk assessments regarding the further spread of a disease
- implementing control measures, including human or animal vaccination when appropriate
- communicating and disseminating outbreak information through defined communication procedures (both sides: animal to public sector and public to animal sector
- strengthening diagnostic capacity, particularly in a situation where one sector has more capacity.

Step 1: Identify the Events, Scenarios and Locations Where Coordinated Responses Are Required

♦ The National Coordinating Committee shall determine the events, scenarios and locations where coordinated responses are required based on the outcome of a joint risk analysis conducted by experts from animal and human health. Some of these events, scenarios and locations may include:
  - outbreaks of avian influenza in birds, or the occurrence of an unknown—potentially zoonotic—disease in humans or animals
  - livestock disease control activities that require intervention from other public services (police, army, environment agency, etc.)
  - livestock disease control activities that require public health protection, e.g. the culling of animals infected with a zoonotic disease and the disposal of carcasses where advice on personal protective equipment (PPE) or occupational health is needed
  - livestock disease control activities that require emergency funds, e.g. compensation of farmers may be needed to increase notification of outbreaks and facilitate control measures
  - cross-border activities involving the legal and illegal movement of animals and humans.

♦ Identify the criteria to trigger an alert and mount appropriate response across the sectors in each priority event or scenario. Agree on a decision instrument for risk assessment.
Step 2: Identify Activities to Be Coordinated in These Events, Scenarios and Locations

Examples of coordinated activities may include, but are not limited to:

- risk assessment
- epidemiological investigations
- biosecurity or bio-containment measures when appropriate
- control measures, including vaccination when appropriate
- enhanced surveillance and event verification
- outbreak communications
- education, awareness, health promotion and training
- laboratory testing
- provision of PPE, treatments, prophylaxis, logistic support and supplies. Can international partners provide resources at a lesser cost?

Step 3: Clarify Each Sector’s Roles and Responsibilities in These Events, Scenarios and Locations

- Determine which sector has responsibility for particular actions, and identify necessary input from other sector(s). Identify and address any sensitivities as well as other sectors that must be involved through consultations, e.g. to improve waste disposal or water supplies.
- Establish a list of experts who can make risk assessments. These experts should advise on the risk of interspecies transfer and the urgency of a particular event or incident. Determine how these experts will be consulted should the need arise.
- Develop a consensual protocol for providing a coordinated response. The protocol will cover the events and incidents in which a coordinated response is needed and each sector’s roles and responsibilities.

Step 4: Evaluate Progress and Revise the Protocol Where Necessary

- Agree on a realistic time-frame for developing and reviewing the coordinated response protocol.
- Develop an evaluation form for, or check-list of, key performance indicators. The list should not be too extensive or complicated, but restricted to key indicators, such as:
  - a quantity indicator (e.g. how frequently collaborative action was taken)
  - a quality indicator (e.g. the per cent of rapid response teams that had all desired team members)
  - the number of complaints received. A system for receiving these would be required if this indicator is used.
- Consider testing the protocol. A simulated event would allow the intersectoral committee to examine where coordinated action between the animal and human health sectors is well-planned and where it can be improved.
- Revise the protocol. Update the coordinated response protocol to reflect the information obtained in the evaluation process.
IV. RISK REDUCTION

This section enumerates steps for a coordinated approach to reducing the risk of disease transmission at the animal-human health interface in the community and general public. Traditionally, risk reduction measures in the animal sector focus on improving livestock health status, animal welfare, and productivity, while the human health sector concentrates on improving human health and welfare. However, the advent of avian influenza has emphasized the need for a collaborative approach that addresses specific and mutually agreed on goals and benefits to both sectors.

**Step 1: Identify High-Risk Areas, Populations At Risk, Practices and Behaviours**

- Identify areas and practices within the country or area where there is a high risk of disease transmission at the animal-human interface. Examples may include:
  - in the food chain: farm → transport → market → transport → slaughter → market → distribution → community
  - wildlife trading
  - wildlife mortality
  - animal skin processing
  - cock fighting.

- Identify the population at risk.
  - Are there particular times that present risks (e.g. during major festivals) or places (e.g. at borders)?

- Identify people who can provide expert advice on risk reduction measures for zoonoses. Consider if experts from outside the two sectors, e.g. local government representatives, should also be consulted on risk reduction interventions.

**Step 2: Identify Measures to Reduce Risks**

- Identify the measures needed to reduce the risks in each situation and according to resource availability. Risk reduction measures may include:
  - early detection and rapid response, including control measures and rapid bio-containment of outbreaks
  - transparency and notification of cases/outbreaks, including compensation mechanisms
  - those to increase public and/or professional awareness and the uptake of safe practices, including communication strategies as a key point
  - those for biosecurity in farms and marketplaces
  - training of stakeholders
  - provision of PPE and other preventive measures
  - law enforcement measures
  - cross-border or other movement control.
Step 3: Determine Roles and Responsibilities for Risk Reduction Measures

- **Identify and agree on the roles of each sector, when each sector will lead and when outside sector involvement is needed.** It will be necessary to consider:
  - How will activities be coordinated in situations where different sectors must take risk reduction measures (e.g. in issuing PPE)?
  - Which sector has lead responsibility at a particular stage?
  - How will information sharing and communications be agreed on to ensure consistency?
  - What other sectors (e.g. local government and those involved in the supply of safe water, waste disposal or transport) and stakeholders have an important role in risk reduction?

- **Identify situations where a multisectoral group will be needed to coordinate risk reduction measures at the local level.** Decide on desirable membership, e.g. to reduce risks in a marketplace situation, which may include veterinary and public health representatives, an environmental health officer and/or a local government representative.

- **Develop a plan for coordinated action to reduce risks at the animal-human interface.**

Step 4: Evaluate and Revise the Plan for Risk Reduction Intervention Activities Where Necessary

- **Decide on a realistic time-frame for reviewing progress in developing a plan for risk reduction intervention activities.**

- **Develop an evaluation form for, or check-list of, key performance indicators.** The list should not be too extensive or complicated, but should include key indicators that will facilitate a review of the strategies on the control of zoonoses risks. For example:
  - a quantity indicator (e.g. how frequently collaborative action has been taken to reduce risks)
  - a quality indicator (e.g. of the effectiveness of a particular risk reduction measure)
  - the number of complaints received. A system for receiving these is required if this indicator is used.

- **Consider testing the protocols.** A table-top event would allow the intersectoral committee to observe where risk reduction action between sectors is well-organized and where it can be improved.

- **Revise the protocols for coordinated action to reduce risks at the animal-human interface in light of the results of the evaluation.** Update the agreed mechanism for coordinated risk reduction action to reflect the information obtained in the evaluation process.
ACKNOWLEDGEMENTS

This guide was principally written for general readership in the animal and human health sectors by Dr Bee Lee Ong and Dr Janet Rae Gibson.

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Intersectoral Coordination Committee Models

Model 1. An intersectoral coordination committee with responsibility for both determining the policy for, and the implementation of, collaborations between the sectors

Such a coordination committee would be responsible for:

• determining policy
• the implementation of that policy
• the monitoring and evaluation of the collaborative activities.

The level from which the membership is drawn (national, intermediate or local) should depend on what is most appropriate to achieve implementation in that country or area.

Model 2: An intersectoral coordination committee with a solely advisory function

Such a coordination committee should advise on the best approach to establishing collaborations and aid in the development of plans for endorsement and implementation by other groups. It would not be responsible for implementing the actions.

Membership would be composed of experts in the field of zoonoses and be drawn from both the animal and human health sectors.

Such a coordination committee would need to report either directly to the animal and human health sectors or to another committee that had responsibility for implementing the advice given.

Important Notes:

(1) The models are not exclusive to each other. A country or area could opt for both models when viewed as necessary.

(2) When establishing an intersectoral coordination committee, consideration should be given to country-specific conditions and resources.

(3) Although intersectoral collaborations are in place for avian influenza, these may not necessarily cover other zoonoses—but there may be an opportunity to broaden the scope of these to do so.

(4) The time is right to set up intersectoral collaborations for zoonoses, capturing the momentum generated by avian influenza.

(5) The intersectoral coordination committee’s main focus is to ensure sustainable coordinated activities for alert and response and risk reduction intervention for zoonoses.
### The Strengths of the Model Coordination Committees

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<th>Model 1</th>
<th>Model 2</th>
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<tr>
<td>• A faster route to implementation as functions are invested in one place</td>
<td>• May be added into an existing structure that has already been set up, e.g. a coordination committee dealing with avian influenza that has potential to expand its remit</td>
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<tr>
<td>• Potentially more convenient for a country or area with limited population or resources or a minimal animal food export market</td>
<td>• Advice is independent as there is less conflict of interest if the members are not responsible for implementation</td>
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<td>• Allows economic and funding factors to be considered</td>
<td>• Not dependent on high-level political membership, therefore fewer time constraints on how often meetings can occur</td>
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<td>• Advice benefits from a high level of expert input (assuming suitable expertise is available in both sectors)</td>
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<td>• Work less onerous for individual members and more likely to be sustainable</td>
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### The Weaknesses of the Model Coordination Committees

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<th>Model 1</th>
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<tr>
<td>• Risk of inadequate technical competency leading to poorer decisions</td>
<td>• Poor accountability for advice</td>
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<tr>
<td>• Low sustainability if decision-makers do not have time to participate</td>
<td>• Risk of inappropriate membership if too few experts available</td>
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<tr>
<td>• Relatively onerous duties of the committee compromise the advice given and decisions made</td>
<td>• Time lag introduced between advice and action</td>
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<td></td>
<td>• Advice not be taken seriously if the committee is not perceived to have authority</td>
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