# Practical 1. The role of a veterinarian from an economic perspective

## Setting and objectives

The practical is meant for a class size of between 6 and a maximum of 25 students. It is linked to the material in a lecture 1, where the various clients of the veterinarian are introduced and where the notion is provided to the student that a veterinary is (mostly) operating in a small enterprise setting. The animal owners are clients that eventually pay the salary of the veterinarian.

The objective of the practical is to have the students experience the different economic notions that they might see in the veterinary practice, as an illustration to the more theoretical approach of the lecture.

It would be good that the classroom is as open as possible for discussion. Moreover, for the second part of the practical, space for the students to sit together in groups of three in the close proximity of the practical room is useful.

## Part 1 - 30 minutes

The teacher presents a number (6) of scenarios and the students brainstorm to provide an economic perspective on the situation. All students should be encouraged to participate and provide examples, more active students need to be encouraged to involve the others in the discussion and permit other time to contribute. Stimulation of reflection and comparison with a technical perspective by all students is needed. During the brainstorm of the scenarios that contain technical veterinary issues as well as economic ones, the students should articulate the economic questions that might be asked. Each scenario should take approximately 5 minutes with the flexibility of taking longer if the discussion is lively.

Question 1. A dairy farmer knows from a routine bulk tank milk test that his farm is positive for BVD, a contagious viral disease in cattle. He asks his vet for advise. You are asked to layout how to approach the problem from a technical and economic perspective.

Question 2. A vet has a dog owner in their practice for a consultation. During the examination the vet reaches a diagnosis with a clinical examination, but they know that without a x-ray there is a probability that the diagnosis may be incorrect. If you were looking at this problem from the perspective of the client what information would they require?

Question 3. A dog owner brings in a severely wounded dog that has had an accident. The dog has a number of problems including potential damage to its back. Surgery is still possible. If treated you think there is quite a good expectation that the dog will survive and have a high expectation of fully recovering. What information is required in helping the owner to reach a decision? How could an economic perspective improve the vet's judgment in this case?

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Question 4. A dairy farmer phones about a cow that has mastitis for the second time in three months. The first time the cow had mastitis the farmer treated the animal without consulting the vet. The second mastitis infection is severe and the farmer is concerned about the cow. Work through the case from the initial mastitis incident, identify points in the decision making of the farmer and overlay this with technical and economic assessment that could have helped.

Question 5. One of a vet's clients is very fond of animals and she brings in a kitten for a consultation. The kitten is a highly prized breed and is considered to have a high value. In the practice there is a brochure about an animal health insurance scheme and the cat owner asks whether she should take the insurance or not. Provide an assessment of the insurance policy from an economic, technical and emotional perspective.

Question 6. A vet is called by a farmer with an hen egg layer unit because of a problem with one of their flocks. Some of the birds in the flock are ill, and some have already died. The flock are at the end of their laying period and the vet is aware that the farmer is thinking about selling them. Your initial diagnosis is avian influenza. What are the technical, legal and economic aspects of this situation? Use this information to inform the farmer? What are the implications to society and why is the vet important in this context?

## Suggested points to explore during the presentations

### Question 1

- Losses in production due to the disease
    - Milk loss
    - Fertility loss
        - Leading to a change in herd structure
- Costs of prevention – check if they are vaccinating and testing
- Costs of control – treatment of animals that are sick
- Overall these have an impact on profit and productivity of the system
- There then needs to be an examination of the options for control and possible eradication
    - Testing alternatives – their cost and effectiveness
    - Removal of animals that are problematic
    - Protection of the herd when it become free – investments in biosecurity
- These costs have to be compared to benefit streams generated by AVOIDING LOSSES and by SAVING ON COSTS

### Question 2

- Examine the costs of different options with and without the x ray
- Discuss the outcomes of the different options in terms of the likelihood of the diagnosis being correct and therefore the impact on the welfare of the dog and the client, plus the costs that might be saved with an accurate diagnosis
- Layout the information in a the form of the costs of the options and compare them with the benefits in terms of welfare issues and cost implications


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## Question 3

- Costs of the interventions
- The value of the dog to the family
- Their ability to pay for the intervention with the greatest likelihood of saving the animal
- An economic assessment based on pricing of resources will not provide all the information, but the framework of economic assessment helps to identify the keep issues.
- An agreement on how this could be financed – financial feasibility

## Question 4

- Identify the costs of the current treatment and losses in production
- Compare these to the costs of a better intervention for the future
- Compare the losses and current treatment costs with an improved intervention to reach a conclusion on how to improve mastitis control in the future
- Also consider the longer term consequences of the need to cull animals early and potential fertility issues

## Question 5

- Explore the ability of the client to meet the costs of interventions
- Discuss the likelihood of the need for an intervention at this point in the cat's life
- Describe that insurance is available to cover large problems and largely for people who do not necessarily have the financial means to cover large bills
- However, insurance can provide "peace of mind" and an insurance document would give the owner confidence to have immediate treatments with a vet – proving you have the financial means to cover the costs of an intervention when your animal is sick can itself be traumatic.
- In short present a balanced argument of the costs and benefits of having insurance

## Question 6

- Legally the vet has to notify the presence of a disease in the flock. If the vet is unaware what these responsibilities are they need to check as they could lead to legal proceedings.
- The reason that these legal responsibilities are in place is to stop the spread of disease to other flocks and also to limit the potential that the disease spreads to humans – emphasise that avian influenza is a zoonotic
- These impacts on others are termed EXTERNALITIES in economics which are impacts that can be
    - negative in the case of when people and their animals have a contagious disease
    - positive when people control a disease in their animals
- In this situation reporting the disease and shutting down the farm is creating a positive externality to society


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## Part 2 – 30 minutes

The students are randomly divided in groups of three students to carry out a role playing game. In each game, there is a vet, a client (some of these clients do not pay directly) and an observer. The role of each person is written on a card. There are 6 different role playing games. For two groups there will be an additional role (in case you cannot exactly have three persons per game).

Instruct the students to step aside from their own opinions and try to really get in the role that they have to play. Tell them not to make the play a parody. The two role players try to understand each other and it is not a dogfight. The role playing should take no longer than 15 minutes: 5 minutes so that everyone can prepare in his/her role, 5 minutes playing the role, 5 minutes before and after organizational (go to a place to do the role play, get a drink (this part can very well be combined with a break).

After the roles have been played, the class will gather in the practical room again. The observer from each groups gets 5 minutes time to present his/her findings. Hereafter you, as teacher can ask the role players how it felt being such-and-so. Moreover, stimulate the discussion towards economic knowledge that could have been useful.

Role of observer: you observe the conversation between the vet and the client and make notes. You will report plenary about your observations:

1. Explain the roles that were played
2. What do you think of the conversation (general impression).
3. Did the vet had adequate information
4. What economic information could have helped the discussion.
5. Is that information useful for the vet or for the client

### Play 1

**Veterinarian:** You are a large animal vet who has a high visibility in the pharmaceutical company network and you do not see problems in the use of antibiotics in animals. You consider them to be relatively cheap and when treating animals where there is uncertainty in outcomes it is better just to use them.

**Human doctor:** You are a human doctor who is prudent in the use of antibiotics, based on your knowledge of antibiotic resistance. You have read that antibiotics are extensively used in animal husbandry and you totally disapprove this use.

### Play 2.

**Veterinarian:** You are a veterinarian who became a vet because you care about healthy animals. One of your farmer clients has a lameness problem, which you think could be resolved with a footbath. Your case definition of a lame cow is one that has impaired walking (not necessarily lame yet), and with your definition of lameness your estimate that annual incidence of lameness in the herd is 90%.

**Farmer:** You are a dairy farmer with a large herd and significant social status. You like this status even though this limits your free time. You know deep down that your herd has reached a size where individual care has been reduced. One of the consequences is lameness, but it is at an acceptable level in your


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opinion, and spending more money in this area would affect your profit margins. You consider a cow to be lame if she needs to be chased into the milking parlour. With your definition, there is an incidence of 20 % or so per year which is similar to what you believe is the national average.

### Play 3

**Veterinarian:** You are a specialized swine or pig health veterinarian. You earn your money by advising on health of pigs. Your standard approach to disease is to treat the herd with therapies such as antibiotics, and if they do not respond to treatment then during routine visits you will be asked to euthanize the sick animals to ensure overall herd welfare. You justify this approach as the profit the farmer makes on a pig does not allow for more individualised treatments. If you were asked you would estimate that approximately 1-2% of the pigs under your care are euthanized. You also know that this activity is a source of income for you. At a party away from work you meet a citizen.

**Citizen:** You are citizen. In a PETA initiated article in your newspaper you have learned that up to 5% of the pigs are euthanized instead of receiving individualised treatment. You think that is outrageous. You have never been on pig farms before and only know pigs from the meat that you buy. In fact you do not pay much attention to the origin of the meat you buy. At a party you meet a pig health specialist who is a veterinarian and you want to know more about this issue.

### Play 4

**Veterinarian:** You are a veterinarian in a mixed practice with a number of horse owners as clients. A proportion of the horse owners have insurance coverage for veterinary treatments. You are aware that this cover is limited both in scope (type of treatments) and scale (total amount of money that can be covered by the insurance). An owner brings a horse in that is suffering from colic. You need to check the treatment, insurance and type of cover. The horse is insured for the treatment but the amount is unlikely to cover your time, the time of the nurse and the medication. Your alternative is to euthanize the horse or send it away.

**Horse owner:** Your daughter owns a horse that is very valuable to her. She has just left for University and the horse has become sick. As you have always been concerned about veterinary costs you have taken out an insurance policy. You decide to take the sick horse to the vet on the basis that the costs will be covered by the insurance policy. You cannot afford to pay any additional costs.

### Play 5

**Veterinarian:** You are a companion animal veterinarian. You love your job and companion animal health is your passion. Therefore you have in your practice some interesting diagnostic equipment. One of your cat owning clients comes for a diagnosis and your initial diagnosis is kidney failure. This is relatively easy to deal with by providing drugs (these drugs have to be provided to the cat livelong). There is, however, a slight possibility that it is a less common but equally treatable condition that would not require any drugs, but you do not have the correct equipment to narrow down the diagnosis. To send samples away will be costly. You are concerned about the ability of the client to pay as they are normally dressed in sloppy manner and they do not live in a good neighbourhood.


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**Cat owner:** You own a cat. You are not particularly rich but you are quite well off. You do not care about clothes and since you are alone, you still live in the place where you lived 15 years ago. The house is big enough, the neighbourhood is not very good, but you do not care about it. You'd rather use the money to go for a nice trip to an exotic area now and then. You do care about your cat, but not overly so.

## Play 6

**Veterinarian:** You are a veterinarian, working at the ministry of agriculture and you are in charge of surveillance systems. It has been a number of years since there was a FMD outbreak and more and more you hear farmers complaining about the rules for surveillance and hygiene. Moreover, your ministry faces another budget cut. However, you were involved in the control during the last FMD outbreak which was costly and with significant public disturbance.

**Civil servant:** You are working at the ministry of agriculture and you are responsible for budgets. Your ministry has to cut the budget (again) and you are looking for possibilities. Besides that, your boss wants to do something good for the farmers and you know the farmers do not like some of the rules on hygiene. You decide that you can save some money on the implemented surveillance system. So you talk to a vet on your ministry about these ideas.


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## Advice for the discussion for part 2

Remember to draw people back to applying a rigorous framework on discussions with key elements being:

- Placing a value on the interventions described
- Understanding what the costs of the interventions will be
- Identifying who will benefit from an intervention and who may lose
- Comparing the additional costs and additional benefits from interventions

Do not enter into discussions that become based on opinion or conjecture (Pub Talk), your role is to remain firm in objectivity and where there are insufficient data to take a discussion forward indicate that this would require further data collection and measured approach to assess the issues.

Following specific points are raised

### Play 1

- Exam the private responsibilities of pharmaceutical use
- Who pays the vet and the doctor in their gatekeeper roles of pharmaceuticals?
    - Often societies pay doctors in this role
    - Vets are not often given any money
- What are the wider societal issues with antibiotic use and how should these be managed?
    - In livestock production – profit but also availability of meat at affordable prices
    - Resistance

### Play 2.

- Explore the need to have an agreed case definition – the outcome measure
- Explore the need to understand the economic impact of lameness
    - Production losses – including obvious issues such as milk losses, also discuss fertility and culling changes
    - Treatment costs
- Will market access be affected by lameness scores – some UK supermarkets are starting to demand this
- Interventions then need to be compared on the basis of additional costs and additional benefits

### Play 3

- What cannot be seen does not matter? – this is a major ethical issue
- What would be the costs of more individual attention
- Can these costs be effectively transferred across the food system? – yes people can buy welfare standard pig products
- Is the value the vet placing on a pig life reasonable given that the animal will be slaughtered anyway
- Is there a win-win situation – could the 1-2% of pigs slaughtered be saved with better more targeted interventions
    - What would this cost
    - What would it generate in terms of additional benefits


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## Play 4

- Present the costs of the options and what is covered
- Could these costs be spread over time by the vet practice and how important is this for the general business – remembering that a disgruntled client can be bad business
- Did the horse owner receive clear advice on the insurance cover and what was the different in cost of a more comprehensive coverage package

## Play 5

- Costs of the tests
- Value a more accurate diagnosis would bring to the cat's welfare and hence the client
- Costs saved by more accurate diagnosis
- The presentation of the additional costs and additional benefits – money and welfare – of the different options

## Play 6

- Estimate the costs of a future epidemic
- Use the word "when" not "if" as food systems are so well connected the spread of disease is possible, plus climate changes would indicate different patterns of vector borne disease problems
- Understand who will lose with a disease outbreak – farmers, society and in extreme cases top civil servants and politicians will lose their jobs
- Combine the costs with the likelihood of the event and how these impacts could be modified with faster detection – better surveillance
- Place this into a context of additional costs and additional benefits with a range of outcomes
- Let the civil servant decide based on available evidence


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## Additional suggestions

An alternative for this roleplaying can be that you, as teacher, search for movies (e.g., on youtube) or copies of television programs that show different viewpoints on the same topic. An example is the badger discussion in England. For the Netherlands it will be possible to find material on the Q fever outbreak. You start with a rational explanation about the disease, the consequences (in production terminology as well as the externalities such as public health and animal welfare) and the interventions that are possible. All based on objective material. Then you show the various viewpoints and in a classroom discussion you can try to find out how economics might play a role here.


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