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M.SC. Thesis

Cost price calculation within veterinary practices

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Preface

Presented is the visible product of my master thesis. Several years of study in various fields have led to this product in which most of the study fields come together. My interest for animals and every aspect around them can be seen as the origin of this product. During my professional bachelor, 'Dier- en Veehouderij', I got the opportunity to become a registered veterinary nurse. During a 500 hour internship at the local veterinary clinic I had the chance to see how a veterinary clinic is organised. After my professional bachelor I started the master 'Management, Innovation and Life Science' at Wageningen University. This master made it possible to use previous obtained knowledge and combine this with new study fields like communication, management, marketing and agricultural business economics. I started this major thesis with the idea that the 'innovation' part of this master had not been fulfilled. Working practically on the start of something new and combining different study fields was my main goal. I found a subject presented on the website of the chair group business economics, which perfectly matched with my goal: 'Development of a tool to calculate the cost-price of services in Dutch veterinary practices' in collaboration with the KNMvD and Universiteit Utrecht.

The Royal Dutch Society for Veterinary Medicine (KNMvD) is the professional organization of veterinarians in the Netherlands who unites various disciplined employed veterinarians. The KNMvD is working on the professional development and the social position of the veterinarians. They bear responsibility for national and international interests and representation of the profession. Administrators and office staff maintain close contact with government, businesses and other organizations in the Netherlands and abroad. The KNMvD is represented in many advisory organisations whereby promotion of veterinary medicine and the interests of veterinarians is their priority. A professional body as the KNMvD can only function with support of a large and broad constituency. The more members, the more influence they have on both internal and external issues (KNMvD, 2010).

A few years ago the KNMvD introduced the workgroup 'practice management'. They actively work on the awareness and increasing the knowledge of veterinarians on several management issues. They provide veterinarians with useful information by writing articles in the Dutch journal of veterinary medicine (Tvd) and by organising seminars and education days. Within the whole organisation rises the awareness that management accounting is of increasing importance for every veterinary practice. It would be a good idea to provide their members some eye-openers related to this issue. Thereby the KNMvD considers introducing a model for calculating cost prices of services in veterinary practices. Before setting up such a model it's wise

to analyse older models and investigate what should be included in such a model. This research whereby cost prices calculation within veterinary practices is the main topic could serve as a handle to further future model development.

Without good advises and support, this project would not have been possible. Therefore I would like to thank all the people involved in the workgroup practice management of the KNMvD. With special attention to: Henk Wessels (chairman), IJmert de Vries (secretary), Henk Vaarkamp, Gerda Broos en Merijn Jansen. Secondly, I would like to thank Henk Hogeweegen for being my supervisor throughout the project. I appreciate his patience and all the good advices given during the feedback sessions. Finally, I would like to thank my parents, brother, boyfriend and friends for supporting me during my entire study and this final study project.

Olst, January 2010

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Abstract

Key words: cost price, veterinary practice, calculation model, services, benchmarking.

In 1998 the Dutch Competition Authority banned the central price setting activities for veterinary practices to stimulate the market. Since those days the prices of services are set by the veterinary practices themselves. Before it is possible to calculate a well considered price for single services, it is important to be able calculate the cost price of each service and understand the background of the costs. This thesis described aspects around cost price calculation within veterinary practices.

The main objective of this research is to describe aspects around cost price calculation within veterinary practices. To fulfil this objective the following main actions will be leading in this research:

- Analysing the existing calculation models for calculating cost price in veterinary practices
- Design a generic model which makes it possible to calculate the cost price of different services within veterinary practices

It is concluded that no real cost price calculation models exist in the Netherlands. Therefore a new model is designed which makes it possible to calculate the cost price. In the model information from the annual report plus some additional information can be entered. The model makes it possible calculate the cost price of very single service based on the following seven cost categories: time vet, time assistant, material, medication, equipment, amount of kilometres and overhead cost.

This model can be used as a starting point towards an integrated cost price calculation tool in the daily practice management software. More research is needed how such a model can become operational. In the future cost price information could be used as benchmarks to compare different practices.

Chapter 1: Introduction

1.1 Background of the problem

Before 1998 the KNMvD was involved in making central agreements about price setting in veterinary practices. Although these price agreements were not binding, most of the veterinary practices used these. In 1998 the Dutch Competition Authority banned these central price setting activities to stimulate the market. Nowadays the prices of services are set by the veterinary practices themselves which can differ for each veterinary practice. For a good price setting process, cost price is an important factor. Basically the cost price depends on the location, employees, material, equipment and medicines used. Many veterinary practices still calculate their prices with the priority being able to pay all their bills and take into account prices of competitive practices. Due to the increasing price consciousness of the today's consumer and the growing competition between veterinary practices, cost price calculation and cost management within veterinary practices becomes an important issue. In the past a few organisations have tried to introduce a model which makes it possible to calculate the cost price of different services of a veterinary practice. However none of these models are used on a broad scale for the daily decision making process.

1.2 Research Objectives

The overall goal of this research is to give solid background on the importance of the today's management issues of veterinary practices with the focus on calculating cost price. By analysing existing models and new approaches for such a model this research can increase the acceleration of the future process towards a steady working model.

The main objective of this research is to describe important aspects around cost price calculation within veterinary practices. To fulfil this objective the following actions and research questions will be leading in this project:

- 1) Describe the basics around management accounting in veterinary practices and specific issues around cost price calculation.
- 2) Analysing the existing calculation models.
- 3) Design a generic model which makes it possible to calculate the cost prices of different services or products within veterinary practices.

Several sub-questions will be answered in this research:

- Which cost categories should be included in the model to keep a basic general structure without losing accuracy?
- Which cost categories show difficulties and need more attention when designing a future model?
- What other issues affect the cost price that are hard to tackle in a model?

1.3 Scope and Limitations

In the literature review of this research the basics of management accounting will be described. Those basics will be extended with special aspects that are important in veterinary practices. Thereby different models who are introduced in the past will be analysed. Based on the advantages and disadvantages of those models a new model which will make it possible to calculate cost prices in veterinary practices will be introduced and discussed. This research will not result in a model which is working for the hundred percent. The main aim is to give a broad inside on what a good working model should include. Therefore this research can be a good basis for future development towards a good integrated management solution for veterinary practices.

Chapter 2: Literature review

2.1 Basics of management accounting in veterinary practices

Results of Vos *et al* (2000) show that 77% of the veterinarians have the feeling that their education into veterinary medicine is insufficient to fulfil the new job requirements which are needed today. They highlighted that extra attention is needed to subjects like: management, communication, marketing and social skills. McCormick and Goebel (2009) argue in their article that many practice managers and owners tend to focus on the overt elements of practice health. This frequently includes: a solid client base, a good reputation, providing great service, having an effective team that enjoys working together, and so on. These are important elements but the financial health of the practice is often overlooked. In this research, attention is given to one aspect of management namely calculating cost prices. Cost prices can be calculated with help of a suitable accounting system. Therefore it's important to understand the theory behind different accounting principles.

Accounting

Accounting can be described as 'the process of identifying, measuring and communicating economic information to permit informed judgements and decisions by users of the information' or in other words 'accounting is concerned with providing both financial and non-financial information that will help decision-makers to make good decisions' (Drury, 2007).

From research of Vos *et al* (2000) it can be presumed that veterinary practices for years only have taken financial accounting as a tool for analyzing their practices. Drury (2007) explains that financial accounting matches costs with revenues to calculate profit in a certain period. The business therefore is analyzed as a whole. The information from financial accounting is mainly used for external information towards banks and accountancy firms. Whereas, presumed that most veterinary practices are mostly interested in the liquidity and the final profit, no other reports than the year report (financial accounting) is used as a management tool. Barry *et al* (2000) describes liquidity as: 'the ability to generate cash in order to meet cash demands as they occur and to provide for both anticipated and unanticipated events'. In contrast, management accounting could provide more relevant information about the financial statement of the practice. Management accounting first appeared in the United States when business organizations, instead of relying on external markets to direct economic exchange, began conducting economic exchange internally (Johnson and Kaplan, 1987). These could give insights related to different segments within the business like products, services, client and suppliers. Accurate cost information of the different segments gives a much better overview than just the financial statement of the whole practice. Therefore, management accounting is much more important for

a business than just financial accounting. It can provide information for planning, control, performance measurement and continuous improvement.

Cost management

One aspect of management accounting is cost management. To be able to optimize cost management within veterinary practices, the development of a uniform system for calculating cost prices would be a major improvement. The development of such a system can be a solution to improve cost management in veterinary practices on the long term. Thereby up to date information about costs in the veterinary practice can be used as benchmarks. Drury (2007) explains benchmarking as a technique that is increasingly being adopted as a mechanism for achieving continuous improvement. It is a continuous process of measuring a firm's products, services or activities against the other (best) performing organizations, either internal or external to the firm. Becoming aware of the strengths and weaknesses of the veterinary practice makes it possible to improve their veterinary practices on their critical points.

Cost price calculation

Analysing the cost price of several products and services and using these as a benchmark technique can be described as a management accounting technique. Before creating a model for cost price calculation different definitions which are used within cost price calculation should be explained. The first definition is 'cost objects'. Those are any activity for which a separate measurement of costs is desired (Drury, 2007). In many businesses those cost objects are a fixed amount of deliverable products. However, in veterinary practices those cost objects are every 'unique service' or 'product' the practise can offer. To the costs objects several cost will be assigned. Those different costs can be described as cost categories. The set-up of such a system is called a 'cost collection system'. Such collection systems exist of two stages where the costs categories and the cost objects come together:

- 1) It accumulates costs by classifying them into certain categories such as labour, materials and overhead costs. Hereby the distinction will be made in the behaviour of the costs such as fixed and variable.
- 2) It then assigns these costs to cost objects. Costs that are assigned to cost objects can be divided into two categories: direct and indirect costs. Direct costs are exclusively identified with a particular cost object whereas indirect costs cannot be identified specifically and exclusively with a given cost object. Indirect costs are sometimes described as overhead costs.

Throughout the years, people have tried to develop the optimal cost accounting systems. Nowadays three main principles can be distinguished; direct costing system, the traditional absorption costing system and activity-based-costing system (ABC). The direct costing system only assigns direct costs to cost objects. Direct costing can provide valuable information to management about changes in costs that will arise as a result of some management action. Whereas only the direct costs are analysed, the system can be classified as a partial costing system. Cooper and Kaplan (1991) explained the difference between the traditional absorption costing and the ABC-system as following; 'Traditional cost accounting systems use bases like direct labour and machine hours to assign to products the expenses of indirect and support activities, including engineering changes, setups, and parts maintenance. In contrast, ABC-system segregates the expenses of indirect and support resources by activities. It then assigns those expenses based on the drivers of the activities.' Johnson and Kaplan quoted in Roztocki *et al.* (year unknown) that traditional costing systems tend to distort product costs and lead to poor strategic decision making. The ABC-system is designed to deal with the deficiencies of a traditional costing system. Although the literature has reported numerous implantations of ABC-systems in large manufacturing firms, there has been limited accounting of ABC-systems being embraced by small businesses (less than 100 employees). It appears that several factors preventing small businesses from implementing an ABC-system including lack of data, technical resources, financial resources, and adequate computerization (Roztocki *et al.*, year unknown). Small businesses operate uniquely, a condition described as 'resource poverty' that requires specialized cost management approaches (Welsh and White, 1981). This basically means that smaller businesses need a special methodology that will enable them to obtain accurate product and/or service cost information. Implementing the ABC-system is not the desired solution for veterinary practices. Such a highly sophisticated system will be very difficult to implement and expensive to operate. Thereby is the lack of data will be disastrous for operating such a system. A simplified traditional costing system will be a better solution for veterinary practices.

According to Drury (2007) the traditional cost accounting systems accumulate product costs as follows:

- Direct materials
- Direct labour
- Prime costs
- Manufacturing overhead
- Total manufacturing cost

A cost price calculating system for veterinary practices does not have to reach a high accuracy, but must be able to give the veterinarians some feeling about the costs in their practice and how these affect their services.

2.2 Cost price calculation within veterinary practices

2.2.1 Basics of cost price calculation

In the previous paragraphs the term 'cost price calculation' is mentioned several times. Although cost price calculation seems to be a quite straight forward procedure, in practice this concept appears in several forms. It is important to understand the definition of cost price how it is interpreted in this research. In dictionaries an encyclopaedia different definitions of cost price comes across. For this research the following definition seems most appropriate;

- The price of something that is sold for what it cost to produce, without any profit for the producer (Longman Business English Dictionary, 2010)

On daily basis the term 'cost' can be interpreted differently and be used in several forms. The terms 'Actual Cost' or 'Landed Cost In' are used to express all expenses made for acquiring an item. Extra costs are added to establish what the goods actually cost. The extra costs added exist of all costs which have been made, but are usually not directly related with the product. Examples of some 'not directly related costs' are freight, taxes and overhead costs. 'Net realizable' value is a term which indicated the average value of an item in the marketplace. This term and definition is comparable with the term 'replacement cost' (Answers Corporation, 2010). These last terms are not very suitable for veterinary practices because most products are unique services and are hard to analyse as replaceable goods.

Basically the cost price of veterinary products or services depends on the location, employees, material, equipment and medicines used. Introducing cost price calculation in veterinary practices has several advantages and disadvantages on the short- and long term. On short term it will give a good inside of the actual costs made for every individual service or product. This knowledge can be used for fee-setting. On the long term the cost prices of several standard activities can become benchmarks in a broader prospective. Benchmarks can be used to compare different veterinary practices with each other. On the long term this can help the veterinary practices to analyse their practice on several financial aspects. With such analyses new focus points can be setup to achieve new financial goals. Benchmarks based on cost price of different services will not be the only information which is needed to analyse practices with each other. When comparing practices it is important to analyse practices that are slightly similar to

each other. Think about amount of clients, amount of veterinarians and assistant, type of practice and the region of the practise.

2.2.2 Hour registration

The definition ‘the price of something that is sold for what it costs to produce’ mentioned in de Longman Business English Dictionary (2010) looks quite straightforward. However, regularly it’s forgotten that all costs of the business should finally be paid by the customer. Cost price in veterinary practices does not only exist of time spend with the client plus some used material and medicines. There is a big difference between billable time and chargeable time. In the most ideal situation the total working hours can be directly allocated to the different clients. In practice this is never the case. Although there are no studies known about the actual time spend with the client versus total time it can be presumed that around 50%-60% of the total working time is spend with client. Another 20%-30% are direct costs like travel time and preparation time. The other 40%-50% are indirectly related to clients. Think about administration, study, cleaning, meetings and other general practice activities. Also these indirect hours should also finally be paid by the clients. In a cost price calculation model some attention is needed towards this problem.

Where the time registration for veterinarians it developed to a certain point that they know the billable minutes/hours for a certain clients, the hour registration for assistants is still a grey area. In an accurate cost price calculation system also the assistants should register the time spend on clients.

2.2.3 Investment of equipment

The way of analysing machinery or special equipment in veterinary practices is different in comparison with an average production firm. In production firms most often only large investments will be made when such an investment is needed for the daily operation of the firm. The calculation for such machinery is relatively easy. For example; they calculate all costs involved in purchasing, maintaining and operating the machine and divided these costs by the expected produced products. In the cost price calculation of this product a fixed amount for using the machinery can be calculated. In contrast, veterinary practices often invest in diagnostic equipment which will not be used on a daily basis. A veterinary practise has the reputation, and clients do expects, that for basic diagnostics they can visit the local veterinarian. However when it becomes to more advances equipment, the cost price calculation becomes a difficult issue. Most often such advanced equipment is relatively expensive in relation to the amount that they will be used. Thereby is the simple calculation method in the previous example not realistic. Especially when equipment is purchased for introducing new activities, it is much more difficult to calculate the expected amount of clients who will make use of the new equipment. Also the lifetime of

such machinery is harder to predict. In some veterinary practices second-hand equipment from human practitioners or hospitals are purchased to lower the investment cost. Hereby the problem with second-hand equipment appears that it is harder to predict what the actual lifetime and the maintenance costs of the equipment will be. Those aspects make it difficult to calculate a very accurate rate for a single service. Most often such special machinery is not purchased for a profit goal. Some of these investments can be seen as part of the marketing strategies. A professional character of the practice can be a method in attracting new clients. Thereby introducing new services can work positively on the loyalty building of existing clients.

2.3 Different cost price calculating models in veterinary science

Till now some basics on cost prices calculation have been discussed. The concept of cost price calculation in veterinary practices is not commonly used as a tool for analysing practice costs or benchmarking. A few projects have been dealing with aspects like cost price calculation.

2.3.1 Beijer model

The model of Beijer is used for analysing and calculating fees for the top 200 most performed activities in the practice. The model uses input from the practice management software Daisy. This software normally is used to organise clients, patients, medicines and activities within the practice. From the software information of top 200 activities which generate the highest gross margin is extracted (see an example in table 1). By hand the fees for the different activities should be checked and total spend time of the vet and assistant should be included together with the costs of medication and disposals and costs for equipment (all the larger vet numbers in table 1).

Code	Omschrijving	Aantal	Winst	tarief	omzet	min. DA	min. DA	kosten . Assist.	kosten med/disp.	expertise appar.	tarief factor	nieuw	verschil %
kon	konsult	2.241	55452	24,74	55.452	12,0	5,0	0,50	0,25	1,0	31,08	31,08	26%
mino	minuten dierenarts O.K. tarief	14.281	40772	2,85	40.772	1,1			0,51	1,1	3,28	3,28	15%
kone	konsult enting+evt jaarl.check-up	1.931	35704	18,49	35.704	8,0	5,0	0,50	3,75	0,9	23,03	23,03	25%

Table 1: Example from the Beijer-Model

To calculate the costs of equipment more accurate, some extra calculation models have been attached (see appendix I). Secondly, the available time of veterinarians and assistants should be entered in the model. In the model it is presumed that veterinarians and assistants are working 46 weeks per year. The total working hours are divided by the total costs for veterinarians and assistants. This results in costs per hour veterinarian and assistants (see an example of Beijer

model in appendix I). Thereafter, the total overhead costs are calculated as an hourly fee which is added to the costs per hour veterinarian.

For example: the standard consult take about 12 minutes veterinarian time and 5 minutes assistant time. As can be seen in appendix I, the total costs for veterinarians is calculated to be €137,73 per hour and for an assistant €42,89. Those costs are entered in the model's first calculation sheet as €135,- and €40,01. The costs for a consult therefore can be calculated as:

Time vet = 12*(135/60)	=	€27
Time ass = 5*(40/60)	=	€3.30
Medi/disp	=	€0,50
<u>Equipment</u>	=	<u>€0,25</u>
Total	=	€31,08

As can be seen in table 1, an expertise factor can be included in the model. This factor is not as such described in the model, but it can be presumed that additionally to the calculation the expertise factor can be included to give more or less influence to the final fee related to the difficulty of the activity.

An advantage of this model is that some information can be extracted from the management software. The problem is that different practise management software is used in the Netherlands. This model is in the first place designed for using the program Daisy. Still, it can be presumed that other software have similar options for extracting this information.

As can be seen in appendix I, the rate for veterinarians per hour is the sum of several sub-costs. The first part is the actual costs of veterinarians divided by the available time. The ($€195.000/6210 = €31.40$) same is done for the assistants ($€137.000/8280 = €16.55$). To this basic rate the overhead costs are added. The general costs and costs for medication and materials are added up. The already calculated costs for medication and materials in the top 200 activities are extracted ($€100.000 + €175.000 - €237.847 = €37.153$). The rest of the costs are described as overhead costs. These overhead costs are calculated per minute.

$$\text{Vet} = 135*46 = 6210 \quad €37.153/14490 = €2.56$$

$$\underline{\text{Ass}} = 180*46 = 8280$$

$$\text{Total available hours:} = 14490$$

The overhead costs do include a desired profit on own capital distributed over the total available hours. In the example this results in:

$$€106.000 * 20\% = €21.200$$

$$€21.200 / 14490 = €1.46 \text{ per hour}$$

Finally the model calculates the total billable time of all veterinarians and assistants by multiplying time per activity with the total times the activity is performed and adding up the total time for every activity in the model. Vet's billable hours are calculated in the example to be 2760 hours. Total available hours are 6210. Therefore in the example of Beijer 44% of the total available time are direct related to patients and clients. This results that 100% of the costs and time should be paid by clients who are responsible for 44% of the total time.

total hourly fee veterinarian:		total hourly fee assistant:			
fee per hour	=	€31.40	fee per hour	=	€16.55
overhead	=	€ 2.56	overhead	=	€2.56
<u>profit rate</u>	=	<u>€ 1.46</u>	<u>profit rate</u>	=	<u>€1.46</u>
total	=	€35.43	total	=	€20.57
plus 44% +19% tax	=	€94.84	plus 29% + 19% tax	=	€85.77

As can be seen, the fee for veterinarians and assistant do not differ a lot. This can be explained by the billable time which is relatively low for assistants. To overcome the problem that the fee for veterinarians are relatively low and for assistant high, Beijer transfers 50% of the fee for assistants towards fee for veterinarians. Therefore the final fee for veterinarians becomes: €94.84 + (0.5*€85.77) = €137.73 and for assistants 0.5*€85.77 = €42.89.

When analysing the calculation methods from Beijer some aspects are questionable. The total billable hours and fees for medication are included in the model bases on the top 200 activities in the practise. The sum of the total billable minutes and costs for medication and disposals will be used as information for further calculation in the model. The problem however is that the top 200 activities do not present all activities in the practise. It is not known what the effect of the missing activities and costs for medication and disposals will be on the final calculations. Another problem in this model is that profit issues are calculated in the model. On several places some desired profit is calculated in the cost price. For example: in the calculation for equipment some 'profit on investment' is calculated. In the overhead costs some 'profit on own capital' is calculated. Also it can be presumed that the prices for activities and medication imported from Daisy are including a certain profit margin. As described before profit issues do not belong in cost price calculations. Therefore this model is not directly a cost price calculation model, but more a fee-setting tool. Another aspect is that the overhead is not equally divided by the total hours. As can be seen in the model, the overhead costs plus the profit on own capital is the same for both veterinarians and assistants. Basically the overhead costs are included twice. For a more

accurate calculation the overhead should be calculated in relation with the total hours for veterinarians or assistants, or should just be added up once. Finally transferring assistant fees towards veterinarian fees does not represent a correct cost price calculation. This better can be explained as strategies for fee-setting to satisfy customers.

2.3.2 Nucleus

Nucleus is a management program for veterinary practices. Nucleus is one of the advisory programs from de AUV (a veterinary cooperation). The program is a total management package whereby for the calculation and the usage of the program structural changes have to be made in the daily management of the practice. One of the first aspects is an analyses of the today's administration and advises will be given how to improve the system. They support veterinarians by developing a good system for registering true costs of purchased goods. Thereby they help to develop an accurate time registration system. For this program it is important that all participating veterinary practices deliver their information in exact the same way so that benchmarks can be made (AUV Advies, 2010).

Although the exact calculations from the nucleus program are not available, it can be presumed that this program is very accurate. The management reports show lots of detailed information about the turnover development in relation to previous years. Thereby specific information about turnover per animal cluster and veterinarian is given. Also a list of purchased medication and materials which have a lower turnover than the cost price is given. In this way the veterinary practise can directly see if they have made any mistakes on the calculation of fees of these particular goods.

The advantage of the nucleus program is the accuracy and the detailed information which can be giving about the practise. Thereby benchmarks are presented based on all involved practices. In this way it is possible to compare the practices with other practices. A disadvantage of nucleus is the complexity. New systems or time registration and purchased goods are necessary. It will take time of all veterinarians within the practice to be able to work with the system. Finally they do not calculate cost prices of single services. This program is a good tool for analysing the practise, but does not give information per single activity or service.

The conclusion of those two methods which have be designed for Dutch veterinary practices is that both methods does not make it possible to calculate real cost price of the single services within veterinary practices. Whereas the Beijer model comes close to cost price calculation of different services, it finally should be seen as a fee-setting method. The Nucleus project give very details information, but not on the level of single activities and services.

Chapter 3: Conceptual model

In the previous chapter different aspects of cost management and some calculation models have been discussed. Before a new model can be developed it must be clear which theories will be leading throughout the design phase. Thereby, it's very important to understand the limitations and boundaries which come across when designing a cost price calculation model especially for veterinarians. It is important to understand the underlying relationships between the theories that will be used, target group and available inputs.

3.1 The target group

Veterinary practices are on the one hand comparable with normal businesses but there are some special aspects which have to be taken into account. Veterinary practices can be viewed as businesses in which the daily operations are managed by the veterinarians themselves. Veterinarians basically have very little knowledge and experience in subjects like management and financial issues. The education program into veterinary medicine includes no compulsory courses towards these subjects. Some knowledge can be obtained by following the course 'economische beginselen in de diergeeskunde' as part of the free choice in bachelor year 2 (see appendix II). In the Master the compulsory course 'management en maatschappelijk verantwoordelijkheid van de dierenarts' is included in the study program. However, from the goals of this course can be understood that the main focus is towards managing the pharmacy in the veterinary practice. The 10 weeks reserved for free choice in the Master makes it possible to choose courses inside and outside the university. However this period can also be reserved for an extension of the research internship. Whereas it can be presumed that few veterinary medicine students are interested in business economics, the changes that students will choose for specific courses into that direction can be considered relatively small.

Based on the knowledge that few veterinary students have followed specific courses about business economics, the model should be easy to understand and to use. Thereby it should be taken into account that veterinarians do not have much time to spend on other activities than their actual work. Therefore the constructed model should contain parts which can be filled by veterinary assistants. Whereas veterinary assistants normally do not have insights in the financial figures of the practice, this should be minimized by transporting numbers from the veterinary management software into the model.

3.2 Available inputs

Most veterinary practices do not work with advanced software or management tools to calculate the financial health of the practice. This results in very limited documentation which could be of any help as input for a new model. The model therefore, should make it possible to calculate the

cost price of different services with help of the annual report and some additional information. Using the annual report as a starting point for a model has advantages and disadvantages. One advantage is that the overall content of an annual report for most veterinary practices are similar. Thereby is the annual report for most veterinary practises the only visible concrete management tool for analysing some financial aspects in the practise. One of the disadvantages of using annual reports for such model is the general interpretation of such financial reports. These are specially made for giving very general information about the practice as a whole. It will be difficult to subtract information from such a report which can be used to give detailed information about many different services in a veterinary practice. The model will only give reliable and accurate results when some extra information will be entered in the model. Think about information like: investments of equipment and workable hours. The difficulty with such additional information lies in the fact that the information often is not available. Therefore in some cases estimations have to be made. Hereby the danger of the decreasing reliability and the accuracy comes forward. Still when the estimations are well considered and calculated in the same way for different years, the outcomes will still be usable for internal analysis.

3.3 Accounting principles

The definition of cost price gives a good starting point for the model. 'Cost price is the price of something that is sold for what it cost to produce, without any profit for the producer' (Longman Business English Dictionary, 2010). The last words indicate the crucial aspect of cost price; 'without any profit for the producer'. Basically, cost price is the actual costs of the production of a product. Therefore cost price is calculated without additional profit margins for which the product is sold to the consumer.

As described before the term 'cost' can be interpreted differently. In this research costs will be analysed as actual costs (direct costs) plus the extra costs (like overhead). In this way the calculation will present most accurate values for several products and services in veterinary practices.

There are many accounting systems available for managing costs in businesses. As described, the ABC-system the most accurate system available, but due to the limitation of available products and knowledge of veterinarians this is not the desired system. For the model which will be designed, the concept of a traditional costing system will be used. Several cost categories have been chosen which seems most appropriate for veterinary practices. The idea behind the chosen cost categories is that every single service should be able to build up with help of the presented cost categories. The Beijer-model has been a good example for analysing these cost categories. In the article of Beijer and Woudstra (2010) they present a list of most common practice costs namely; price equipment, price medication/diet feed/disposables, salary, cost for

fuel and car, insurance, taxes, rent/mortgage and advertising costs. For this new designed model it's important that all costs can be accommodated into one of the cost categories. The following categories will be used in the model to calculate the cost price of the different services:

- Time Vet	- Medication	- Overhead
- Time Assistant	- Equipment	
- Materials	- Car	

Table 2: Categories of costs

To be able to calculate the cost price of several services some information from the annual report has to be entered in the model. Those costs are:

- Total costs veterinarians
- Total costs assistants
- Housing costs (rent/mortgage/energy/tax/depreciation buildings)
- Car costs
- General expenditures
- Other costs

The calculation in the model includes direct and indirect costs. Direct costs of different services are for example; time of the veterinarian and the materials. Also indirect costs like general expenditures and housing costs have to be assigned to the particular activities within the practice. Those indirect costs are called overhead costs.

3.4 Cost objects

Cost objects can be described as: any activity for which a separate measurement of costs is desired. Or in other words, if the users of accounting information want to know the costs of something, this something is called a cost object (Drury, 2007). In veterinary practices the amount of cost objects are major. Every service or activity requires different actions, material and medication. This means that a practice can consist for example over hundred activities.

For example:

- vaccination cat	- Horse treatment
- caesarean section cow	- advisory work

This makes the design of a very basic model in which the different cost objects are defined difficult. To be able to calculate the cost price of single activities, the structure of the model must be very general. The problem which has to be tackled is that every cost object can exist of

different cost categories. When the final product only exists of farm advisory work, the main input will be time of the veterinarian. No input like medication or what so ever is needed. On the other hand when a client comes to the practise to pick-up the monthly medication for a dog, hardly no time of the veterinarian have to be calculated, but the input will exists time of the assistant and the medication itself. The model therefore have to be designed is such a way that all possible scenarios can be calculated.

3.5 Relationships influencing the model design and output

It can be concluded that many aspects have to be considered before and during the design phase of the model. All aspects directly influence the design of the model. Some aspects also have indirect impact. In figure 1 the relationships have been situated.

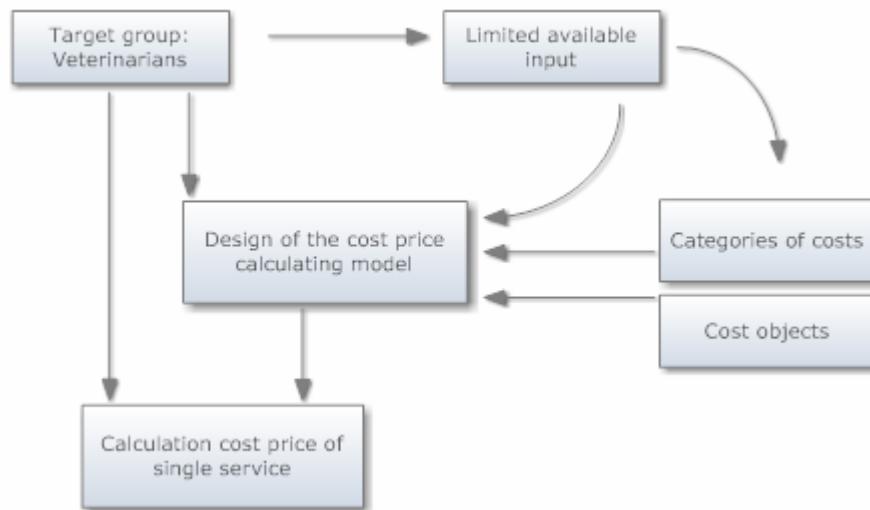


Figure 1: Relationships influencing model design and output

The target group influences the process in several stages. The target group directly influence the design of the model based on the fact that the model should be simple and understandable. It must be taken in mind that even veterinary assistants should be able to work with the model. The target group indirectly influence the model design by the fact that they have limited available inputs to offer. The limited available inputs also influence the design of the categories of costs. Those have been chosen based on the available information. When in every practice more detailed information would be available, think about amount of clients, amount of patients and time distribution, the calculation behind the different cost categories could become more accurate. In many businesses the amount of cost objects are fixed. However, in veterinary practices those are unlimited. The model has to be designed in such a way that all possible combinations of services can be calculated. Finally the target group will have a direct influence on

the output due to the fact that every veterinarian will use the model slightly different. The interpretation of the different cost categories and accurate way of using the model will influence the output of the model.

Chapter 4: Cost price calculating model

In this chapter a newly developed model for calculating cost prices within veterinary practices will be introduced and explained. Different practical examples will be used for clarifying the model. In this chapter sometimes refer to different sheets in the model. Those different sheets can be found in Appendix III. To this thesis a CD is attached which includes the digital model.

4.1 Time Vet

The amount of time the veterinary is spending attention to a particular patient or client is the one of the most important aspect in calculating the cost price of a particular service.

The basis calculation for cost of time vet:

$$\text{Costs vet per minute} = \text{basic costs per minute vet} + \text{overhead per minute vet}$$

Step 1: basic costs per minute vet.

$$\text{Basic costs per minute} = \text{total costs veterinarians} / \text{total billable hours} / 60 \text{ minutes}$$

In the model the costs of veterinarians which are presented in the annual report should be entered. However it depends on the type of annual report if this number is sufficient. When all labour costs of all veterinarians are included in the annual report this amount will be accurate. Often the veterinarians who operate as partnership in a firm are not included in the costs for employees. The income of partners does not consist of monthly salary, but consist of three main parts: a monthly fee, interest for own capital and profit.

In the sheet 'annual report', the total costs of veterinarians on the payroll and partners should be entered. In the time sheet the total amount of working hours for all veterinarians should be included. The model will calculate, based on the total costs and the total amount of working hours, costs per minute.

Example:

Costs veterinarians:

1 veterinarian on pay rolling	-	€80.000
2 partners	-	(2*€149.000)
Total costs:		€378.000

$$\begin{array}{rclclcl} \text{Total working hours} & = & \text{veterinarians} & * & \text{hours per week} & * & \text{week per year} \\ 4050 & = & 3 & * & 30 & * & 45 \end{array}$$

$$\begin{array}{lclclcl}
 \text{Cost per minute} & = & \text{total costs} & / & \text{total hours} & / & 60 \text{ minutes} \\
 \text{€1,56} & = & 378.000 & / & 4050 & / & 60
 \end{array}$$

The costs per minute in this example results in €1,56 per minute, or in other words €93,33 per hour. As can be seen, the amount of hours per week is set on 30 hours. Fulltime veterinarians will work around 40 up to 60 hours a week. However the total time specifically assigned to patients and clients are much lower. This is due to the fact that some activities can not be assigned to one particular client. For example: managing the pharmacy, maintenance on equipment and education days. Although this time can not specifically be assigned to one patient or client, all patients and clients together should finally pay for the total costs made on salaries and monthly fees etc. Therefore, it is important to make an estimation how much hours per week actually is spent on patients and clients. In the cost price calculation sheet the total minutes spent on a particular patient can be entered. It should be taken into account that not only the time spent with the patient is entered, but the actual time including preparation time, time on the phone, travel time and administration etc.

Step 2: overhead per minute vet:

Costs overhead per minute vet = general overhead per minute vet + specific cluster overhead per minute vet

Indirect costs cannot be assigned directly to a cost object. Indirect costs are therefore assigned to cost objects using costs allocation. A cost allocation is the process of assigning costs when a direct measure does not exist for the quantity of resource consumed by a particular cost object. Cost allocations involve the use of surrogate rather than direct measures (Drury 2007). Examples of overhead costs in veterinary practices are housing costs, accountant costs, education costs and purchased small inventory. In the model the following items will be calculated as overhead: Housing costs, general expenditures and other costs. The allocation of those costs to a patient or client will be based on the total time the veterinarian is spending on the particular patient or client. Thereby a distinction is made between 'general overhead costs' and 'specific cluster overhead costs'.

General overhead per minute vet:

The general overhead that can be allocated to every client in the practice are: general housing, general expenditures and other costs. With general housing we mean costs for shared space for

which every client has to pay his part. The following examples of shared space can be found (see appendix IV for some practice examples)

Shared space:

- entrance
- canteen
- desk
- toilet
- offices
- kitchen
- pharmacy
- others: laundry and storage

In the model a rough percentage should be entered how the practice building is set-up. The space is divided in: general space, companion animals, hospital large animals and storage material for large animals. With storage material for large animals we mean equipment and materials which are mainly used for farm animals during visits.

The general overhead costs are calculated at €61.250,- for which general expenditures are 35.000,-, general housing 25% of the total €65.000,- is €16.250,- and other costs of €10.000,-. In the paragraph about time it has already been calculated that total working hours in this example is 4050 hours. In the model the total costs are divided by the total working minutes. So in this example: 4050 hours = 243.000 minutes. $\text{€}61.250 / 243.000 = \text{€}0.25$ overhead per minute veterinarian.

Specific cluster overhead per minute vet:

The specific cluster overhead involves housing costs which have to be assigned to a particular cluster of animals. Think about companion animals, farm animals and in some cases the practice has a special horse hospital. The following specific spaces can be seen as an example:

Specific space:

- consult room
- operation room/sterilization room
- dentistry
- X-ray room
- small animal day-care
- large animal hospital
- laboratory

The total housing costs has been calculated at 65.000,-. From this €48.750,- have to be assigned to specific animal clusters. In the example 70% of the space is assigned to companion animals (€45.500,-) and 5% to store material for large farm animals (€3.250,-). Those two specific animal cluster costs have to be assigned to the client per minute vet. Therefore we need the time

distribution of the veterinarians. In this example of 3 veterinarians 35% of the total time is spent on companion animals and 65% to visit large (farm) animals. Then the following calculation is found:

$\text{€45.500,-} / (243.000 * 0.35) = \text{€}0.54$ overhead companion animal per minute vet.

$(\text{€}3.250,-) / (243.000 * 0.65) = \text{€}0.02$ overhead visit large (farm) animals per minute vet.

4.2 Time Assistant

The calculation around the costs of veterinary assistants is similar to veterinarians.

The basis calculation for cost of time assistant:

Costs assistant per minute = total costs assistants / total billable hours / 60 minutes

For example:

Costs assistants:

2 assistants on pay rolling - €40.000

Total costs: €40.000

Total working hours = assistants * hours per week * week per year
 1880 = 2 * 20 * 47

Cost per minute = total costs / total hours / 60 minutes
 €0.35 = 40.000 / 1880 / 60

The costs per minute assistant in this example is €0,35 per minute or €21,28 per hour. Assistants are all employees working in and around the veterinary practice who do not have the education into veterinary medicine. The difficulty occurs that for assistants it is even harder to estimate how much time actually is spent on patients and clients. In general assistants do not have to register their time as specific as veterinarians. Thereby assistants have relatively more general activities which are not assignable to a particular patient or client. Examples are: unpacking new deliveries like medication, materials and diet food, cleaning, laundry and administration. In most practices the assistants have a special degree in veterinary nursing, but in some cases some employees are hired for special activities like cleaning or for (financial) administration. These employees will have no direct contact with patients, but also these costs have to be paid by the clients. Therefore it is important to analyse all the costs for employed assistants and investigate how much time actually can be assigned weekly to patients and clients.

4.3 Medication

The costs of medication are difficult to calculate with only numbers the annual report. Although the total costs of medication can be found in the annual report, it is not accurate to divide this amount equally over the total clients. The costs of medication should be calculated and analysed per case.

The basis calculation medication:

Costs for medication = purchase costs of medication used per client + interest costs

The costs of a particular medication should be found in the purchase list of the wholesaler. In the model the prices of the AUV (2010) are included as an example. It is important to remember that one bottle of medication is often used for more clients. Therefore we have to calculate the medication based on its usage. This means that some medications can be included per bottle, but some have to be included per millilitre or decilitre.

For every medication used or sold should be calculated a small portion of interest costs. This due to the fact the already costs have been made for purchasing the medication and it has been in stock for a few weeks. For example: one bottle of medication is purchased for €20,- and has been in stock for 8 weeks, using an interest rate of 5%. Therefore this bottle after 8 weeks has a cost price of: $\text{€}20, - * (1 + ((0,05/52) * 8)) = \text{€}20,15$.

In practice it can be concluded that the cost price of medication is very low. This is due to the fact that no veterinarian time is included in these costs. Nevertheless, always some time is involved in ordering medication or finding information about new types of medication. When costs for medication are considered relatively low, it could be an option to add one minute vet to for every single sold medication. Especially when medication is sold at the desk by an assistant without any veterinarian interference, this could be a good solution.

4.4 Material

The calculation of material is comparable with the calculation of medication. In an ideal situation a list should be created whereby all different materials can be chosen from the list.

The basic calculation for material:

Costs for material = purchase costs of material used per client + interest costs

In this situation the model had included four categories of material:

- 1 to 3 items for €2,50
- 3 to 6 items for €5,-

- 6 to 10 items for €10,-
- several advanced materials for €15,-
- many advanced materials for €20,-

Of course it is possible to include the exact costs from the wholesalers list.

4.5 Equipment

In a veterinary practice many advanced equipment or machinery can be found. Such equipment and machinery are often relatively expensive and should be analysed as investments for the veterinary practice. In the model, the cost price of using such equipment and machinery should be calculated for every item in the veterinary practice. The model calculates the cost price for a one time use of the equipment. In this calculation is no distinction made for the time the particular equipment is used.

To investigate whether or not an investment is profitable different calculations can be made. Often these calculations are made with knowledge about the future cash flows related to the investment. In this situation knowledge about cash flows is not available. To investigate the cost price per single use of the equipment, the total costs over the years should be calculated. Different depreciation methods can be used. Basically, the depreciation should be comparable with the productivity of the equipment. For this model the annuity principle is chosen. The investments are analysed as 'capital recovery problems'. The annuity principle makes it possible to depreciate an equal amount over the years. In theory in the first years a little amount will be depreciated but will be balanced with a relative high interest. In the following years a higher amount will be depreciated but here the amount for interest will be decreasing. The annuity principle works with help of the present value of uniform series of payment (USPV value) (Barry *et al*, 2000).

The USPV is calculated with the following formula:

$$\text{USPV} = \frac{(1 - (1 + i)^{-y})}{i} \quad \text{whereby } i = \text{interest and } y = \text{amount of years.}$$

For the example above the USPV value will be:

$$\text{USPV} = \frac{(1 - (1 + 0.055)^{-15})}{0.055} \quad \text{USPV} = 10,0376$$

The total costs per year for this investment therefore will be:

$$€50.000 - €1.028 \text{ (salvage value)} / 10,0376 = €4.878,85 \text{ per year}$$

The total costs of the equipment including the maintenance will be:
 $(€4.878,85 \times 15) + (€50 \times 20) = €74.182,69$

The frequency of using the equipment is assumed at 20 times per month for the following 20 years. This means that $20 \times 12 \times 20 = 4800$ clients will make use of this equipment. $€74.182,69 / 4800 = €15,45$ per single use. The cost prices of single use should be saved in a special list in the model. This makes it possible to access the cost price of different equipment with a dropdown box in the final calculation sheet.

4.6 Car/travel costs

The car costs are extracted from the annual report. It must be sure that those costs include maintenance and fuel. In the model some additional information about the total amount of kilometres travelled per year should be entered.

The basis calculation car cost

Cost per kilometre = total car cost / total amount of kilometres

In the final calculation sheet the total amount of travelled kilometres per clients can be entered.

4.7 Comparing different situations

Some veterinary practices use price indications for often occurring activities, especially concerning activities around companion animals. For designing the model it is interesting to calculate the cost price of activities which are sold for a standard price to see if these are realistic, or that they are more set for competition matters.

Two well considered example practices are taken with the following characteristics:

Example practise I:

3 fte partner
2 fte veterinarians employed
4 fte assistants

Time distribution vets

companion animals	0,3
farm animals	0,7

Space distribution

Companion animals	0,65
Hospital large animals	0
Storage material for larger animals	0,05
General space	0,3

Total billable hours vet per week	100
Total billable hours assistant week	40

Kilometres per year	27000
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Practice costs

costs partners	468000
employees costs vets	170000
employees costs assistants	72000
depreciation buildings	25000
housing costs	32000
car costs	17000
general costs	65000
other costs	12000

Example practise II:

3 fte partners
3 fte veterinarians employed
6 fte assistants

Time distribution vets

companion animals	0,25
horse hospital	0,4
farm animals	0,35

Space distribution

Companion animals	0,15
Hospital large animals	0,7
Storage material for larger animals	0,05
General space	0,1

Total billable hours vet per week	180
Total billable hours assistant week	120

Kilometres per year	21000
---------------------	-------

Practice costs

costs partners	441000
employees costs vets	246000
employees costs assistants	126000
depreciation buildings	75000
housing costs	80000
car costs	12000
general costs	50000
other costs	21000

Table 3: Financial figures practice I

Table 4: Financial figures practice II

The results for a simple cat vaccination are the following for the two practices:

Activities:	Amount:	Rate:	Total:
Minutes Vet	10	2,36	23,63
Minutes Assistant	5	0,64	3,19
Material	0	0,00	0,00
1 to 3 items	1	2,50	2,50
Medication (or choose from list)	0	0,00	0,00
Nobivac Ducat + solvens	1	4,44	4,44
Medication	0	0,00	0,00
Medication	0	0,00	0,00
Medication	0	0,00	0,00
Equipment (or choose from list)	0	0,00	0,00
List of equipment:	0	0,00	0,00
KM per client	0	0,63	0,00
Companion animals	10	0,46	4,57
Overhead costs	10	0,35	3,49
Total cost price:			41,82

Table 5: Cat vaccination practice I

Activities:	Amount:	Rate:	Total:
Minutes Vet	10	1,41	14,14
Minutes Assistant	5	0,37	1,86
Material	0	0,00	0,00
1 to 3 items	1	2,50	2,50
Medication (or choose from list)	0	0,00	0,00
Nobivac Ducat + solvens	1	4,44	4,44
Medication	0	0,00	0,00
Medication	0	0,00	0,00
Medication	0	0,00	0,00
Equipment (or choose from list)	0	0,00	0,00
List of equipment:	0	0,00	0,00
KM per client	0	0,57	0,00
Companion animals	10	0,19	1,91
Overhead costs	10	0,18	1,78
Total cost price:			26,63

Table 6: Cat vaccination practice II

As can be seen is the cost price of a cat vaccination for practice I is calculated at €41,82 and for practice II at €26,63. The main difference can be found in the cost of minute vet and assistant and overhead costs. The origin of these differences lies in two major practice differences. Practice I entered a billable time of 20 hours per vet per week. This is only 50% of the total working time which is actually directly be assigned to clients. The total costs of veterinarian are spread out over these hours. Therefore the cost per minute vet is relatively higher in relation to practice II where 30 hours per week are billable. Another issue which affects the cost per minute vet is that the veterinarians in practice I get a higher salary than in practice II. Together with the lower billable time this results in a relatively higher cost per minute.

Another difference can be in costs for overhead. Basically, the whole practise building is assigned to companion animals. Therefore the total overhead costs will also be assigned to the companion animals. In practice II a large part of the practise is assigned to the horse hospital. The companion animal relatively needs a low amount of space. Therefore the overhead costs for companion animals are much lower.

When the same time is reserved for any horse activity for practice II, it can be seen that the overhead costs rise drastically. From €1,91 for 10 minutes companion animal into €5,58 for a horse activity (see table: 7)

Cost price calculation within veterinary practices

Activities:	Amount:	Rate:	Total:
Minutes Vet	10	1,41	14,14
Minutes Assistant	5	0,37	1,86
Material	0	0,00	0,00
1 to 3 items	1	2,50	2,50
Medication (or choose from list)	1	4,44	4,44
Medication	0	0,00	0,00
Medication	0	0,00	0,00
Medication	0	0,00	0,00
Medication	0	0,00	0,00
Equipment (or choose from list)	0	0,00	0,00
List of equipment:	0	0,00	0,00
KM per client	0	0,57	0,00
Hospitalized large animals	10	0,56	5,58
Overhead costs	10	0,18	1,78
Total cost price:			30,30

Table 7: Horse treatment practice II

When a caesarean section cow is calculated for both practices again the cost per minute vet and the general overhead costs play an important role (see table 8 and table 9). The medication used in this example is based on information from Bakker (2011).

Activities:	Amount:	Rate:	Total:
Minutes Vet	75	2,36	177,22
Minutes Assistant	0	0,64	0,00
Material	0	0,00	0,00
6 to 10 items	1	10,00	10,00
Nageboorte capsules + 2,5ml lido	1	7,00	7,00
Duphaspasmin 1 ml	20	0,23	4,51
Rimadyl injectievloeistof 1ml	2	1,18	2,35
Lidocaine 2% + adrenaline 1ml	100	0,04	3,58
Neopen 1ml	250	0,07	18,59
Equipment (or choose from list)	0	0,00	0,00
List of equipment:	0	0,00	0,00
KM per client	5	0,63	3,15
Visit large animals	75	0,02	1,13
Overhead costs	75	0,35	26,14
Total cost price:			253,67

Table 8: Caesarean section cow practice I

Activities:	Amount:	Rate:	Total:
Minutes Vet	75	1,41	106,02
Minutes Assistant	0	0,37	0,00
Material	0	0,00	0,00
6 to 10 items	1	10,00	10,00
Nageboorte capsules + 2,5ml lido	1	7,00	7,00
Duphaspasmin 1 ml	20	0,23	4,51
Rimadyl injectievloeistof 1ml	2	1,18	2,35
Lidocaine 2% + adrenaline 1ml	100	0,04	3,58
Neopen 1ml	250	0,07	18,59
Equipment (or choose from list)	0	0,00	0,00
List of equipment:	0	0,00	0,00
KM per client	5	0,57	2,86
Visit large animals	75	0,05	3,42
Overhead costs	75	0,18	13,35
Total cost price:			171,67

Table 9: Caesarean section cow practice II

It can be seen that the model gives directly a nice inside on how the different costs are build-up. More examples could be given but would not show any more significant differences. It is highly

recommended that veterinarians learn to play with the model. They know the best how their practice is situated and how the time distribution is organised. Thereby they know the best what fee is asked for a particular activity and can compare their bill details with the model results.

Chapter 5. Discussion

Veterinary practises are unique businesses that are hard to compare with other industries. The variety of services and the different inputs those services need, makes it complex to design a model which includes all aspects around cost price calculation. Although this never has been the goal of this research, it is important to understand which aspects of cost price have been included in the model and which, for good reasons, are ignored. In the first part of the discussion specific model based aspects will be discussed. In the second part of this chapter some specific management issues related to veterinary practises will be discussed.

5.1 Model discussion

The calculated cost per minute vet is the first discussion point. For this model it is presumed veterinarians have some insights on their time distribution. The model needs some information about the total 'billable time' of the veterinarians. The billable time can be a discussion point. For this model billable time is every minute spent on one patient. This means actual time with the patients including preparation time, after case and some administration. It must be considered that the entered 'total billable time' in the model correspond with the 'minutes vet' which is finally selected to calculate the cost price. Or in other words, those numbers should have the same calculation approach. Different calculation approaches will affect the accuracy of the model.

Overhead costs in this model are calculated as a portion of the cost per minute vet. Some extra distinction is made for different animal clusters. A problem comes across concerning clients who only buy medication from the desk. In such situation only the assistant has direct contact with the client. This time can be entered in the model and can be seen as direct costs. However, no overhead costs are calculated in that situation because no veterinarian interference is calculated. This means no overhead costs are calculated for such clients. A solution for this shortcoming in the model is entering at least one minute vet. It has to be taken in mind that solution will have some little effects on the total accuracy of the model.

In the calculation of overhead, some space distribution is made towards the 3 different animal clusters + general space. In the model an estimation of the space distribution have to be entered. In this model, every companion animal pays for the total companion animal space, including operation room and animal day care. Even when the client only comes for a consult it has to pay for these facilities. In a more sophisticated model it would be better to make an exact calculation per m^2 per animal cluster. Thereby the total m^2 used per client per activity should give the most accurate result.

In the model 'billable time' of assistants is asked. It can be presumed that most veterinary practises do not have a specific time registration program for assistants. Therefore the 'billable time' for assistants will be hard to define. When 'billable time' is not known, a well considered estimation of actual time on patients should be made. For assistants the same rule applies as for veterinarians. The total time should be considered in the same way as the minutes that will be entered per single activity in the final sheet. For example, when preparation time is not calculated in the 'total billable time' the preparation time also should be excluded in the entered 'minute assistant'.

As can be seen the model needs a lots of estimations. It will depend on the skills of the veterinarians how accurate the model will calculate the cost price.

5.2 Discussion on management issues in veterinary practices

Client supporting

Dealing with ethical issues is part of the daily work of a veterinarian. The choices between life and death of sick animals have to be made often. When clients respect and trust the decisions of the veterinarian not much discussion will take place on the chosen treatment. However, in some cases clients are not able to afford, or not willing to pay for chosen treatment. On this point ethical reasoning and financial statements can get in conflict. For example; an operation in combination with a lifelong diet for the patient will result in a relatively healthy patient without pain. The costs for the client after the operation will be structural higher due to the lifelong medical diet which is needed. When in such cases the clients are not able or not willing to pay for the medical costs of their animal, veterinarians have difficulties in reacting ethically toward the patient and securing the financial aspects. There are cases where special agreements are made with clients about the financial aspects of the treatment. Whatever the agreement may be, it will result in an income loss for the practise. However dealing ethically may feel as the best solution, the practice should take into account the financial aspects of such patients in the practice. Well considered decisions should be made internally about what kind of clients will be offered some extra financial help. Also internal discussions should be made about how these financial losses will be managed. Will the practice choose for a structural loss of income due to these clients and therefore indirectly pay for these clients themselves, or is increasing the fees for other clients and in such way saving some extra budget for special clients a better method? Unfortunately there is not a right answer to this question. Anyhow, it is important to think about such financial losses and how they will be managed. Thereby it is necessary to consider what is fair towards the paying clients in relation to the few who are not able to pay the bills.

Collection agencies

Another issue around financial losses in the practice are clients who do not pay their bills. Especially when it concerns smaller amounts the time and energy dealing with such clients is relatively high. According to Vahl (2004) lots of practices will finally assign these small amounts as 'not cashable'. Such not cashable amounts can on yearly basis rise to quite high financial losses. A regularly given reason by clients of not paying bills is the fact that their animal is still sick. From juridical point of view veterinarians in the Netherlands only have 'actions-based-duty' and not a 'result-based-duty'. This means that clients are not in their rights when arguing that their animal is still sick. According to Vahl (2004), is the use of a collection agency is a good option for managing such problems. In the past the cost of such agencies could turn out to be higher than the final gathered fees. Some of today's agencies working on a no cure no pay policy.

Price elasticity in veterinary practices

Price elasticity is another important issue when it comes to fee-setting in the veterinary practice. When prices of a service or product will increase, normally three scenarios are possible to situate how the demand will respond. With a relatively inelastic demand, the situation will occur that some of the clients will switch to competitive alternatives but still the overall gross margin of the service or product will grow. In a relative elastic demand situation, many clients will search for alternatives and thereby the gross margin will decrease. An ideal situation is a totally inelastic demand. This means that the demand toward the service or product will not decrease when a certain price increase is applied.

Price elasticity = % changes in demand / % changes in price

Price elasticity has been researched in the Netherlands. It appears that price elasticity in companion practices is around -0.4 (Woudstra and Beijer, 2010). This means that when the prices will increase with 1% the demand will decrease with 0,4%. This concept also works the other way around.

As long a veterinary practice does not sell one product, the price elasticity's are difficult to calculate for all services. Goebel (2009) argues in relation with price elasticity that some products or services are 'shoppable' and are therefore competitively priced. Increasing the price those shoppable products will have a stronger impact on the demand than products that are less shoppable. Goebel suggests registering question about fees from clients. In this way a better overview can be obtained. Such information can be an important factor for the final choices about price setting.

Value of a service

The article of Lane (2010) describes different types of clients. According to Lane veterinarians' clients can be divided into four categories. Consumers who are looking for a commodity, animal caretakers looking for high-quality veterinary care, animal owners who seek care sporadically or as needed and finally animal keepers who seek care as a last resort. In an ideal situation those different clients should be recognized within the practise to serve them in the way they want. Robertson and Calloway (2008) describe related issues in law firms. Figure 2 gives a nice overview how the price sensitivity is related to the different kind of services in the law firm. It can be presumed that the same concepts can be applied for veterinary practices.

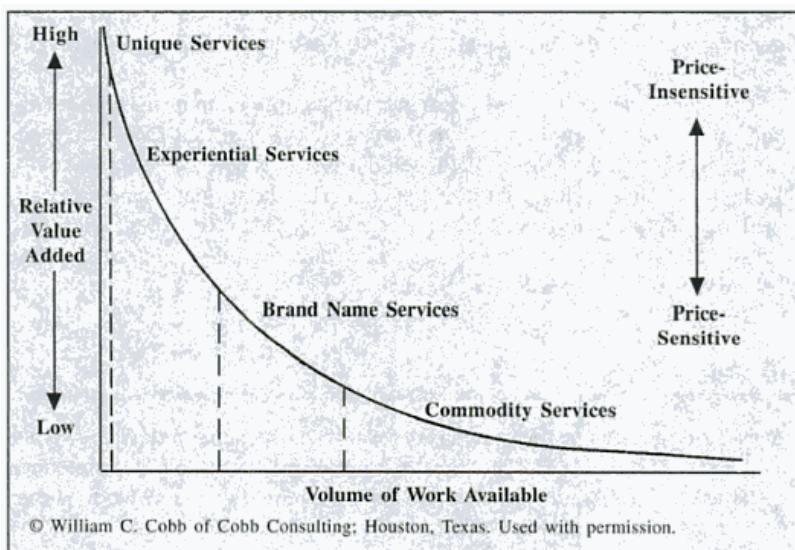


Figure 2: Value Curve (Competitive Position Profile)

It can be presumed when a patient concerns a real sick animal which needs help immediately, the owner is pleased when the veterinarian is directly available. When in some cases urgent operations are needed the final billing will be relatively high. According to Robertson and Calloway (2008) it appears that most of the clients will less argue about the high bill because they see the service as an 'experiential service' or in some cases as a 'unique service'. When a patient visits the practice for yearly vaccination the billing is relatively low, but the clients will see such activities as 'commodity services'. When it becomes to commodity services, clients are much more critical about price for the service and quality they get.

Related to this point, Brush and Kendall (1999) investigated some of these issues. Literature on information asymmetry draws on the idea that services or products can be divided into three types; *search*, *experience* and *credence* qualities. Those types will be evaluated by clients in different ways to determine whether to purchase a product or not. Those three types are slightly similar to the previous example from the law firm where they are called; *unique service/experiential*

service, brand name service and commodity service. Search qualities can be described as attributes that can be known before the purchasing the product. Experience qualities are attributes which only can be determined after purchasing. Credence qualities are services which are often expensive and difficult to analyse, even after purchasing the service. Brush and Kendall have divided the different services within veterinary practices towards those three types which can be found in the table 10.

Generic services	Activities with credence characteristics	Activities with experience characteristics	Activities with search characteristics
Routine care			Blood tests Vaccinations
Retailing			Medical products Prescription drugs Over-the-counter drugs
Client relations		Client education by staff and doctor Quality of customer service Speed of customer service Flexibility responding to clients Promoting quality reputation	
Core medical	Testing patient Diagnosing problems Performing specialized treatment Recommending ongoing treatment		
Preventive care	Knowledge of preventive medicine	Annual physicals Immunization programs Maintaining patient history	
Ancillary service		Behavior training Animal grooming	Efficient boarding facilities
Drivers of competitive advantage	PROFESSIONAL RESOURCES Knowledge of medicine School granting veterinary degree Professional norms, associations	PRACTICE CAPABILITIES Relationship with client Education of clients	MARKET SCALE Low prices Product range

Table 10: Type of services in veterinary practices

In the production industry competitive advantages can be obtained by focussing on one particular strategy or target group (clients). However, in veterinary practices all those clients come together in one business. Think about retailing who includes mainly search qualities. Other activities include experience qualities, such as client education about pet needs and vaccination programs. Thereby, some activities can be described as credence qualities such as major surgeries. Therefore it is difficult for veterinary practices to focus on one particular competitive strategy or target group. Therefore it is important to recognize different kind of clients. As can be seen in table 10, they make use of several categories whereto the different services in veterinary practices

are divided. They have selected the categories; routine care, retailing, client relations, core medical, preventive care and ancillary services. When clients can be classified to one of the particular categories this can be an advantage for the practice. Clients therefore can be treated towards their needs. In this way some extra attention to loyal clients can be given to secure that such a client will come back. And less attention can be given to people who are just looking for the lowest price in the market.

Towards the future

For more dedicated analyses in the future it not possible to analyse over hundred different activities as benchmarks. In a later stage all the different activities could be structured to a more general structure of cost objects. For such a structure different activities which are related should be categorised. A good example of such categories is the different services explained by Brush and Kendall (1999). The categories of Brush and Kendall can be simplified to six cost objects whereto all the activities in the practice can be assigned which can be seen in table 11.

Consult	Visit	OR	Delivery	Diagnostic	Advisory
---------	-------	----	----------	------------	----------

Table 11: Structured cost objects

The interpretation of the cost objects can differ. Therefore it is important to give a good description of the content of each cost object. When such a structure is totally described benchmarks can be made for those particular aspects in the practice. On the longer term this can give more interesting information than calculating the cost price of single activities.

Chapter 6: Conclusion

Several conclusions can be made based on this research. Basically, it can be concluded that no real cost price calculation models exists for veterinary practices in the Netherlands. The existing models and programs deal with financial aspects but not on the level of single activities or services. Veterinary science has always been focussed on specific animal care rather than managing a veterinary practise. Today's changes in competition and customer support push the industry to start to focus on these aspects. Before veterinarians are willing to work with a new program, they need to be informed and triggered by the fact that their current cost management is not optimal. They have to become aware that working with benchmarks is a good way of comparing their veterinary practice with others and finding the weak point of their practise. When such a system would be operational within veterinary practices they can work more efficient on their cost management.

The cost categories which influence the cost price most are 'cost per minute vet' and issues around 'overhead costs'. Time registration should become an important aspect in the daily operation of veterinary practices. Thereby the distribution of overhead costs should be calculated as reliable and accurate as possible. This means the practise should not be analysed as one business but should start focussing on the distribution of different animal clusters. Hereby also the time registration of the assistants should become more important.

Other issues which are hard to tackle in a model are unpredictable income losses. Especially when it becomes to client who can not, or will not, pay their bills. Every practise should consider how to handle these losses.

6.1 Recommendations

Before the results of the model really mean something to veterinarians a major change in mind-setting is needed. Thereby new research is needed to improve the model. In an ideal case it should be tested in many veterinary practises on the financial outcomes and the workability of the model. Especially when results of the model are used as benchmarks it is important that every practice uses the model in the same way. Integrating a cost price calculating model into the today's practise management software should be a major innovation. Advisory bodies like the KNMvd and the AUV have already picked up these topics and should keep up the good work. Also more attention is needed towards the awareness towards management problems. The KNMvd and the AUV can help to inform the veterinarians about management issues by writing articles in the *Tijdschrift voor diergeneeskunde* or during symposia. An example article about this topic has been written by myself and can be found in appendix V. Already special courses and symposia are given on financial topics for veterinarians but it should be investigated how to reach

a broader target group. Also the study veterinary medicine should take more attention to financial aspects in the study program. All those actions together could lead to a mind change and towards a better financial management system in veterinary practices.

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Appendix I: Calculation model Beijer

Personnel	
totaal aantal uren dierenartsen beschikbaar/week:	135
totaal aantal uren assistentes beschikbaar/week:	180
aantal openinguren/week	57
Totaalpost loon dierenartsen	€ 195.000,00
Totaalpost loon assistentes	€ 137.000,00
Werkelijke loonkosten per uur dierenarts	€ 31,40
Werkelijke loonkosten per uur assistente	€ 16,55
Overhead costs	
Post Algemene praktijkkosten	€ 100.000,00
Post Inkoop medicijnen/dieetvoeders	€ 175.000,00
Reeds in rekening gebrachte med./disp/app.	€ 237.847,39
Totaal eigen vermogen balans	€ 106.000
Gewenst winst % eigen vermogen	20%
Loonkosten per uur dierenarts incl overhead etc.	€ 35,43
Loonkosten per uur assistente incl overhead etc.	€ 20,57
Declaratie efficientie dierenarts	44%
declaratie efficientie assistente	29%
Aan de klant te declareren uurloon incl. btw	94,84 incl. btw zonder overheveling 85,77
Dierenarts per uur met overheveling	€ 137,73
Assistente per uur met overheveling	€ 42,89
Dierenarts per minuut	€ 2,30
Assistente per minuut	€ 0,71

Berekening apparaat kosten integraal

betreft:

aanschafprijs totaal

afschrijving in jaren

rente financiering %

aantal minuten/keren gebruik per maand

onderhoud en reparatiekosten/ jaar

Kosten apparaatgebruik per min/keer :

winst % op investering

Prijs vaste kosten per keer/minuut incl. Btw

progesteron app.

€ 36.000

5

5,0%

323

€ 200,00

€ 2,19

15%

€ 3,00

Variabele kosten per keer

Strips disposables (verkoopprijs!)

Overige variabele kosten

Minuten assistente tijd

Minuten dierenarts tijd

Totaal variabele kosten incl Btw:

€ 0,00

€ 0,00

0

0

€ 0,00

Totaalprijs incl. Btw

€ 3,00

Berekening apparaat kosten kaal

betreft:

aanschafprijs totaal

afschrijving in jaren

rente financiering %

aantal minuten/keren gebruik per maand

onderhoud en reparatiekosten/ jaar

Kosten apparaatgebruik per min/keer :

winst % op investering

Prijs vaste kosten per keer/minuut incl. Btw

rontgenapparaat

€ 60.000

10

5,5%

58

€ 11,40

15%

€ 15,60

Totaalprijs incl. Btw

€ 15,60

Appendix II: Bachelor scheme

Schematisch overzicht Bachelor Diergeneeskunde

1 ^{ste} periode		2 ^{de} periode		3 ^{de} periode		4 ^{de} periode	
van Organisme tot Weefsel	van Cel tot Weefsel	van Genoom tot Populatie	Externe beïnvloeding van de Celfunctie	Infectie & Afweer	Bloed & Bloedvormende Organen	Huid en Huidderivaten	
	van Cel tot Molecuul						
Lijn 1: Inleiding in de Diergeneeskunde en de wetenschap				Lijn 2: Inleiding in de Diagnostiek			

2 ^{de} jaar							
1 ^{ste} periode		2 ^{de} periode		3 ^{de} periode		4 ^{de} periode	
Digestie	Circulatie	Respiratie	Stofwisseling & Endocrinologie	Nieren en urinewegen	Neurologie, zintuigen en anaesthesiologie	Hepato-biliaire systeem	Adaptatie & Welzijn
Lijn 3: Klinische Lessen				Vrije keuzevakken			

3 ^{de} jaar							
1 ^{ste} periode		2 ^{de} periode		3 ^{de} periode		4 ^{de} periode	
Voortplanting	Klinische Epidemiologie en Populatiegenetica	Veterinaire Volksgezondheid en voedselveiligheid	Beweging (Locomotie)	Scriptie		Integratie en orgaanoverschrijdende ziekten	Integratie: Diagnostiek & Klinisch Redeneren
Lijn 4: Ethisch / wetgeving / milieukunde en Klinische Lessen				Vrije keuzevakken			
				Lijn 5: Vervolg Ethisch / wetgeving / milieukunde			

Voorbeeld van een rooster van een masterstudent.

		JAAR 4	JAAR 5	JAAR 6
1.	management en maatschappelijke verantwoordelijkheid voor de dierenarts			
2.	verantwoord proefdiergebruik			
3.	hygiëne en microbiologische en pathologische diagnostische technieken			
4.	a basis coschap LH/VV b basis coschap Paard c basis coschap Gezelschapsdieren			
5.	onderzoeksstage			
6.	vrije keuze			
7.	gedifferentieerd coschap / theoretisch onderwijs			
8.	extern onderwijs			
9.	gedifferentieerd verdiepend onderwijs			

De lichtpaarse vlakken geven aan waar in de master het programmaonderdeel volgens de blauwdruk gevolgd zou kunnen worden. De donkerpaarse vlakken geven de weken aan waarin in dit voorbeeldrooster het programmaonderdeel daadwerkelijk wordt geprogrammeerd.

Appendix III: Model overview



Universiteit Utrecht



KNMvD



Introduction

This model can be used for calculating cost price of several services within your practice. With help of numbers from a recent annual report plus some extra information, this calculation scheme will guide you step by step through this tool which finally can be used to calculate cost price for many activities.

Starting

When using this model for the first time it will take quite some time finding and including the right numbers in this model. However, once the setup has taken place, the model can be used over and over again for calculating different services and activities.

With a yearly update from the annual report a good inside can be gathered about the overall cost prices throughout the years.

Cost price

Cost price can be used as a good benchmark. When introducing this model in the practice this can be used as an internal benchmarking system to calculate differences between years. Whereas every practice will use the model slightly different it will be hard to use the results as a tool for analysing the practice with other practices. Nevertheless, hopefully this model will be a start towards a wider discussion about benchmarking in veterinary practices.

Towards the future

The best solution for such calculation models is a total integration of such calculation within today's practice management software. Such integration will increase the usability of such models and will make it easier to use results for external usage as research and national benchmarking.

Start



Previous

Annual Report

In this section information from a recent annual report can be entered.

(Change the yellow fields specifically for your veterinary practice)

Total costs veterinarians	378.000
Total costs assistant	40.000
Housing:	
Rent/Mortgage/Energy/Tax/ Depreciation buildings	55.000
Cost price of the gross margin:	
Car costs (including fuel and maintenance)	17.000
General expenditures	20.000
Other costs	10.000

Next

Housing

How much space is reserved for the following animals
in the practice building:

Companion animals	70%
Hospital large animals	0%
Storage material for larger animals	5%
General space	25%
total	100%



Previous

Time

In this sheet extra information about time will be asked. This information will be used to calculate an accurate price per minute for veterinarians as well for assistants.

(Change the yellow fields specifically for your veterinary practice)

Total hours per week veterinarians:	90
Total hours per week assistant:	40
Amount of work weeks veterinarians:	45
Amount of work week assistant:	47

rough percentage of the time spend on animal cluster

Companion animals	35%
Hospitalized large animals	0%
Visits (Large) farm animals	65%
total:	100%

Next



Previous

Medication

In the table some medication which is often used for companion animals are listed. Such information can be extracted from practices management software. The problem with the calculated client rates is that often the costs of material is included + a certain profit margin.

When accurate rates will be filled in for every type of medication than also a special list of material should be introduced

Click here to create a special materials list:

[Create material list](#)

Average weeks of storage	8
Interest rate	5%

Medication	Purchase cost	Cost Price
Nobivac Bb voor katten	5,50	5,54
Nobivac Ducat + solvens	4,40	4,44
Nobivac Forcat	5,12	5,16
Nobivac Tricat Trio	4,76	4,80
Nobivac DHP	2,88	2,90
Nobivac DHPI	2,99	3,01
Nobivac KC	10,32	10,40
Nobivac L + DHPI	4,47	4,50
Nobivac Lepto	1,48	1,49
Nobivac Parvo-C	2,69	2,71
Nobivac Pi	2,69	2,71
Nobivac Puppy DP + solvens	4,86	4,90

Next



Material

For an accurate cost price calculation the material often used in the practice should be listed. However when in the sheet of medication used material is already included this will be double.

List of material	Calculated cost price
1 to 3 items	2,5
3 to 6 items	5
6 to 10 items	10
many items	15
more items	20

Car

Insert the total amount of kilometres:

Amount of kilometres per year:	27000
--------------------------------	-------

Next



Previous

Equipment

This model can be used for calculating cost price of several advanced equipment in the practice.
For the calculation the depreciation will be calculated based on the annuity system.

Calculate the cost price of individual equipment

Total Investment:	50.000
Interest:	5,5%
Depreciated in years:	15
Salvage value:	3000
Equipment used per month:	20
Lifetime of the equipment in years:	20
Cost of maintenance per year:	50
Rate per client	15,45

List of equipment: Calculated cost price:

X-ray	41,02
Microscope	4,4
Echo	16,41
Endoscope	8

Next

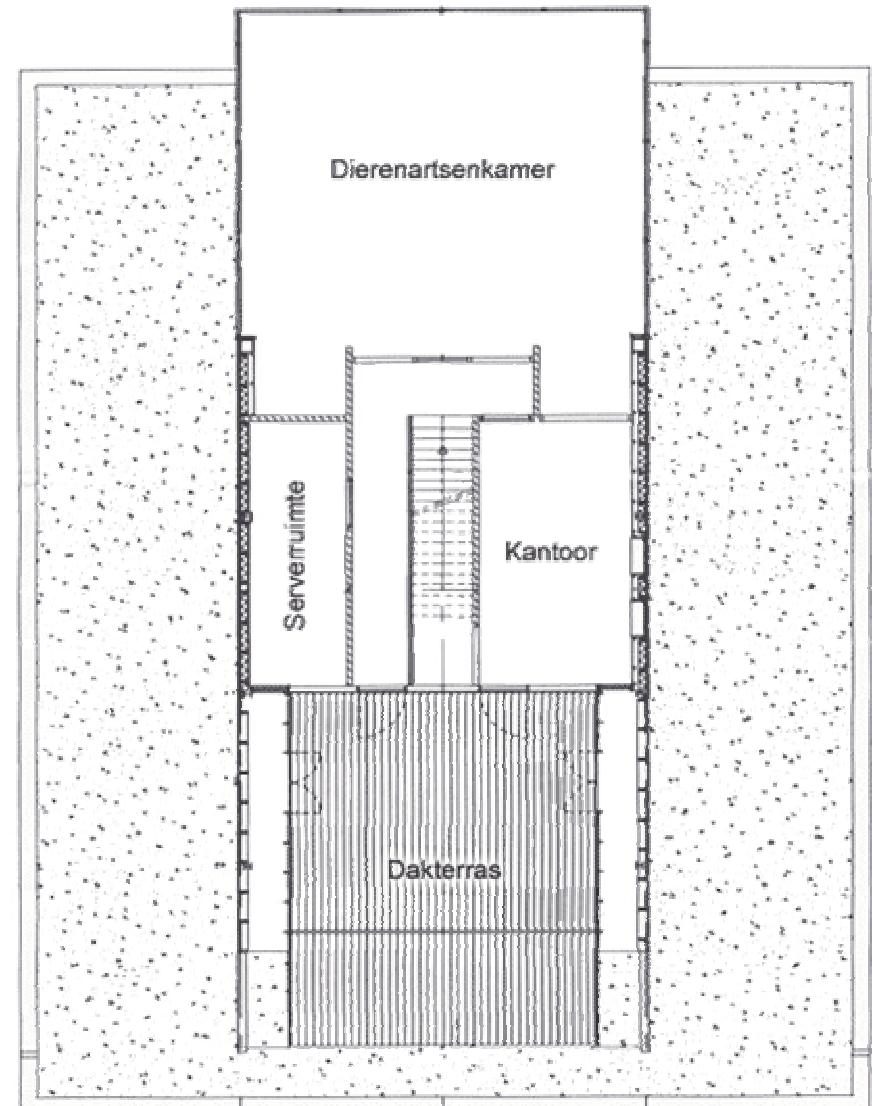
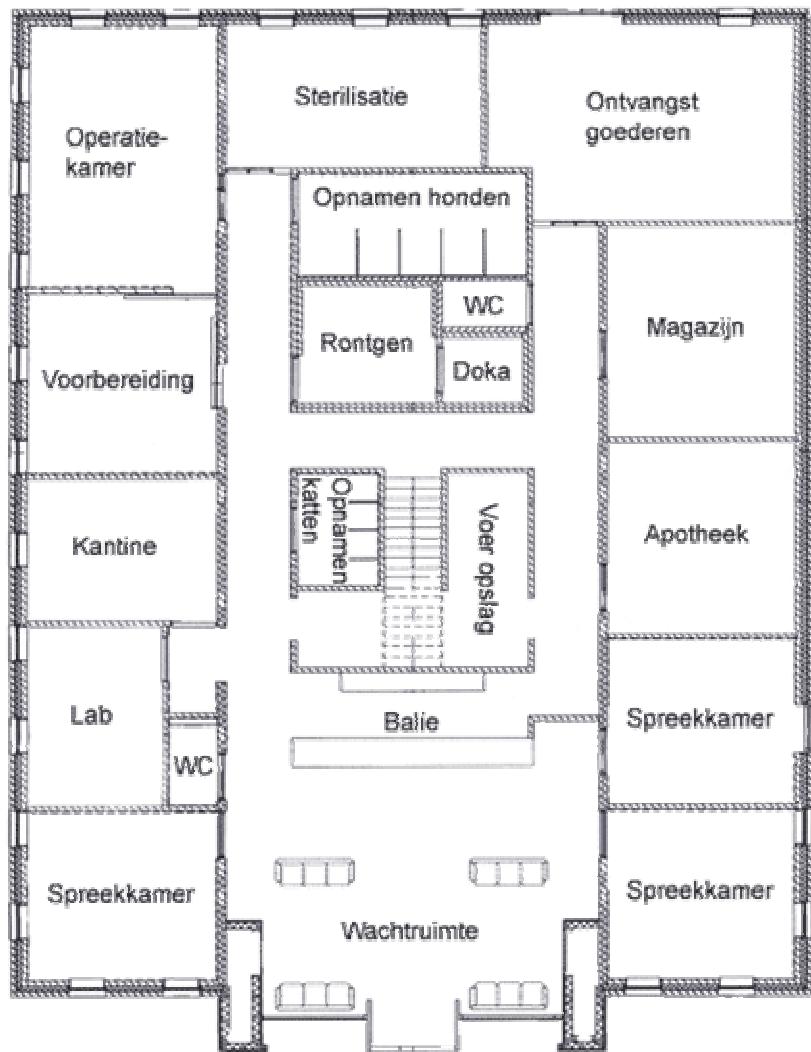
[Previous](#)**Cost price calculation**

Activities:	Amount:	Rate:	Total:
Minutes Vet	12	1,56	18,67
Minutes Assistant	5	0,35	1,77
Material	0	0,00	0,00
List of material ▼	1	0,00	0,00
Medication (or choose from list)	0	0,00	0,00
Medication ▼	1	0,00	0,00
Medication ▼	1	0,00	0,00
Medication ▼	1	0,00	0,00
Medication ▼	1	0,00	0,00
Equipment (or choose from list)	0	0,00	0,00
List of equipment: ▼	0	0,00	0,00
KM per client	0	0,63	0,00
Overhead per animal cluster ▼	12	0,00	0,00
Overhead costs	12	0,18	2,16
Total cost price:			22,60

Appendix IV: Veterinary practices layout

Hospital	Hugen	Papendrecht	Maaspoort	Woldberg
Rooms	first floor	first floor	first floor	first floor
Entrance	Entrance	Entrance	Entrance	Entrance
Waiting room	waiting room	Waiting room	Waiting room	Waiting room
Desk	Pharmacy	Desk	Desk	Desk
Consulting room	Consulting room	Consulting room	Consulting room	Consulting room
Stock/Pharmacy	Consulting room	Consulting room	Consulting room	Consulting room
second floor	Operation room	Laboratory	Consulting room	
Consulting/preparation room	laundry	X-ray room	Pharmacy	
Operation room	Dentistry	Office/canteen	Laboratory	
Animal day care	X-ray room	Pharmacy/stock	Canteen	
Office/canteen	Office	kitchen	Preparation room	
	Storage room	Animal day care	Operation room	
	canteen	Preparation room	Sterilization room	
	Animal day care	Operation room	X-ray room	
	Stock room	laundry	Animal day care	
	Toilet	Toilet	Delivery room	
			Stock room	
			second floor	
			canteen	
			Toilet	
			office	

Example: Animal hospital 'De Woldberg', Steenwijk



(Source: <http://www.dierenkliniekdewoldberg.nl/5/plattegrond.html>)

Appendix V: Wanneer zegt u ‘nee’ tegen klanten?

Klanten worden steeds kritischer. Het moet beter, sneller, makkelijker en natuurlijk goedkoper. Even zoeken op internet en ze zien dat dezelfde dienst één dorp verder goedkoper is. Daarbij wordt er uiteraard wel verwacht dat de arts 100% aandacht heeft voor zowel patiënt als eigenaar. “Oh en dokter, ik krijg hier toch óók wel een aantal van die proefzakjes gebitskoekjes mee? Dat vond ik altijd zo aardig van de vorige dierenarts”.



Management, marketing, bedrijfseconomie, vaak horen we deze termen langskomen. Het dringt langzaam door dat deze aspecten steeds belangrijker worden voor een goede bedrijfsvoering van de praktijk. Maar op welke punten kunnen we hier nu concreet mee aan het werk? In dit artikel zal een aantal aspecten aan het licht komen. Wanneer u de theorie weer onder ogen ziet zal deze hoogstwaarschijnlijk niet nieuw zijn. Maar bedenk dat ze alleen nut hebben wanneer er ook daadwerkelijk iets mee gedaan wordt. Dit is voor veel praktijken een moeilijke en tijdrovende beslissing. Toch zal dit op de langere termijn zijn vruchten afwerpen.

Kunt u de vraag beantwoorden: Wanneer zegt u ‘nee’ tegen een klant? Waarschijnlijk weet u het antwoord wel, maar kunt u niet concreet met cijfers komen wanneer dit ook daadwerkelijk nodig is. Natuurlijk wordt er niet van u verwacht dat u uw klanten de deur gaat wijzen. Echter is het wel van belang dat u de ‘gezondheid’ van uw bedrijf goed voor ogen heeft. Keuzes over prijsdalingen om de

concurrentie op afstand te houden zijn soms best een goede optie. Het is daarbij wel van belang dat u hierbij goed voor ogen houdt welke consequenties dit heeft op de bedrijfsvoering. De eerste vraag die u moet kunnen beantwoorden is: ‘wat is de kostprijs van deze dienst’. Bij het beantwoorden van deze vraag lopen veel praktijken vast. Dit is logisch want in veel praktijken wordt de omzet als geheel of per arts bekeken, maar niet per dienst. Hierbij wordt nog vaak alleen gebruik gemaakt van het jaarlijkse accountantsrapport. Echter zou er veel vaker een toets moment moeten zijn.

Kostprijsberekening

Bij het berekenen van de kostprijs is het belangrijk dat alle kosten van de praktijk uiteindelijk worden toegerekend aan de klant. Het is hierbij belangrijk om onderscheid te maken tussen verschillende diensten. U zult zich verschillende vragen moeten stellen. Bijvoorbeeld: wilt u de gemaakte kosten van de operatieruimte of röntgen toekennen aan een klant die alleen jaarlijks voor zijn enting komt? In een eerste reactie zult u dit een raar idee vinden. Toch zal dit uiteindelijk resulteren in hoge kosten voor klanten die wel gebruik maken van de operatiekamer of röntgenruimte. Daarbij zal in veel gevallen de daadwerkelijk kosten niet geheel worden toegekend aan deze klanten omdat u ook hier prijstechnisch concurrerend wilt zijn met de omgeving.

Prijsstrategie

Het is niet per definitie verkeerd om aan tarieven te gaan schaven van diensten die extreem hoog uitvallen. Echter zullen deze overige kosten moeten worden toegerekend aan andere klanten. Voordat u een duidelijke prijsstrategie kunt maken is het van belang dat u de kostprijs van de verschillende diensten goed voor ogen heeft. Pas wanneer dit concreet op papier staat is het mogelijk om te gaan schaven en herplaatsen van kosten en het veranderen van de tarieven.

Bij het maken van deze strategische keuzes zullen weer nieuwe vragen van na boven komen. Hierbij is de prijselasticiteit van uw diensten erg van belang. Bij de prijselasticiteit van de vraag gaat het om de mate waarin de vraag naar uw dienst reageert op een prijsverandering van uw dienst. Het beantwoorden van deze vragen zijn niet gemakkelijk. In verschillende andere sectoren zoals de voeding- en elektronica branche wordt veel onderzoek gedaan naar prijselasticiteit van de producten. Hierbij komt aan het licht dat vaak de prijs niet het enige belangrijke aspect is waarom klanten bij een bepaald product kiezen. Vooral deze andere aspecten zijn vaal erg van belang wanneer we dierenartspraktijken gaan analyseren. De locatie en het aantal 'trouwe' klanten is erg belangrijk. Tijden waarbij klanten voor jaren bij dezelfde praktijk bleven heeft zijn langste tijd wel gehad. Waar de diensten van een praktijk jaren geleden omschreven konden worden als een 'merktrouw' product zullen de diensten nu moeten worden gezien als 'herhalingsaankoop'. Bij herhalingsaankoop zal de klant keer op keer het product beoordelen op zijn prijs/kwaliteit verhouding. Omdat de kwaliteit van een praktijk bij een eerste indruk moeilijk in te schatten is zal de keus vooral op prijs zijn gebaseerd.

U zult zelf moeten schatten hoe hoog de concurrentie in de omgeving is voordat u aan de uw tarieven gaat sleutelen. U zult echter in eerste instantie misschien denken aan een prijsverlaging om meer klanten te trekken. Dit is vaak niet de beste optie. In veel gevallen zien we vaak de lastige klanten gemakkelijk overstappen omdat ze vaak niet tevreden zijn en financiën bij deze groep een kwestie is. U krijgt hierdoor dus wel extra klandizie, maar hoogstwaarschijnlijk ook relatief meer 'probleem dossiers'. Het verhogen van de tarieven daarentegen zal u misschien klanten kosten maar zal u wel een klantenkring opleveren die vertrouwen heeft in uw diensten en praktijk.

Samen op weg naar kostprijsberekening

Voor 1998 leverde de KNMvD zijn leden gestandaardiseerde tarieven. Om de natuurlijke marktwerking te stimuleren heeft de overheid vooraf afgesproken gestandaardiseerde tarieven verboden. De KNMvD wil echter zijn leden blijven adviseren op gebied tarieven. Nu dit niet meer kan in de vorm van concrete bedragen, onderzoeken zij nu andere mogelijkheden. Het introduceren van een model waarmee kostprijzen berekend kunnen worden is hiervan een optie. Momenteel zijn er al enkele kostprijs modellen in gebruik genomen. Deze modellen zijn veelal erg ingewikkeld en uitgebreid. Een eenvoudig te gebruiken model speciaal voor dierenartspraktijken is nog niet ontwikkeld. De KNMvD onderzoekt momenteel welke aspecten belangrijk zijn voor een dergelijk model. Deze resultaten zullen worden meegegenomen bij verdere ontwikkeling van een kostprijs model. Hoewel het nog even kan duren voordat een dergelijk model in gebruik genomen kan worden, kunnen de praktijken wel alvast voorbereidend werk verrichten. Het gaat hierbij

vooral om het overzichtelijk maken van activiteiten en arbeidsverdeling binnen de praktijk. U kunt waarschijnlijk wel terugvinden in uw systeem hoeveel uren de arts heeft gefactureerd naar de klant, maar kunt u ook concreet aangeven hoe de gemiddelde 50-urige werkweek precies wordt

besteed? Daarbij is het ook belangrijk om bij te houden welke ruimten er binnen de praktijk worden gebruikt voor welke activiteiten en hoelang deze duren. Pas wanneer u zelf u praktijk redelijk kunt analyseren zult u straks eenvoudig een dergelijk model kunnen gaan gebruiken.

Prijselasticiteit van de vraag

Hoe zat het ook alweer met die prijselasticiteit. Wanneer de prijzen van producten zullen stijgen zijn er doorgaans drie scenario's hoe de vraag hierop zal reageren. In de situatie van een 'volkomen inelastische vraag' zal de vraag naar een dienst niet afnemen wanneer er een prijsstijging wordt doorgevoerd. Bij een 'relatief inelastische vraag' zal bij een prijsverhoging wel een aantal klanten naar de concurrent gaan, maar zal de totale omzet van de dienst nog wel groeien. Bij een 'relatief elastische vraag' zullen er veel klanten vertrekken en zal de omzet dalen¹. Prijselasticiteit kan worden weergegeven met de volgende formule:

$$\text{Prijselasticiteit} = \frac{\text{Procentuele verandering gevraagde hoeveelheid}}{\text{Procentuele verandering prijs}}$$

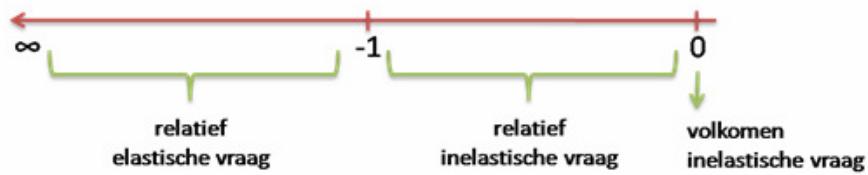
Een rekenvoorbeeld:

De prijs van een consult stijgt van €25 naar €30,- (+20%), daardoor daalt het aantal consulten met -10%. De prijselasticiteit wordt dan:

$$\frac{\text{Procentuele verandering gevraagde hoeveelheid}}{\text{Procentuele verandering prijs}} = \frac{-10\%}{20\%} = -0.5$$

Het gaat om relatieve veranderingen om de uitkomst onafhankelijk te maken van de gekozen eenheid. Deze uitkomst van -0.5 betekent dat een prijsdaling van 1% zal leiden tot een stijging naar gevraagde diensten met $0.5 \times 1\% = 0.5\%$ of een prijsstijging van bijvoorbeeld 2% zal leiden tot een daling naar gevraagde diensten van $-0.5 \times 2 = -1\%$. In dit voorbeeld is de elasticiteit dus -0.5. Dit is groter dan -1 en we zien dus dat het hier gaat om een relatief inelastische vraag. Dit betekent in dit geval dat een prijsverhoging best tot de opties zou kunnen horen².

Prijselasticiteit van de vraag



¹ Bron: website: www.economielokaal.nl

² Bron: eboek: *Principes van bedrijfseconomie* van C. van der Putte & F. Rienstra