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Veterinary Introduction to Business and Enterprise

Pricing of Animal Health Items

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Vibe Learning Guide

Pricing of Animal Health Items - the Mark-Up Method.

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Overview

The pricing and management of animal health items is covered in these topic notes. This includes the mark-up method which is commonly used to arrive at the final price for animal health related items, and the basics of inventory management. Further information about the charging and invoicing procedures is presented in the topic notes titled How to Charge.

Learning Outcomes

On completion of this topic students should be able to:

- Describe the two components of a typical veterinary business
- Discuss the need for effective animal health product management
- Be able to apply the mark-up method of inventory pricing
- Know the difference between margin and mark-up

Understanding costs and pricing of animal health items

Veterinarians need to understand inventory management and pricing. Although the core business of veterinary practice is the sale of knowledge in the form of professional services, sales of animal health items are necessary for a majority of veterinary businesses. Both employed and owner veterinarians need to understand the rationale and aims of effective inventory management and pricing, so they can contribute to the strength and success of a veterinary business.

Veterinary care involves professional services and usually includes the provision of laboratory services, prescription drugs and non-prescription materials. As supply of drugs and non-prescription items is an important contributor to veterinary business income, it is important to have a working knowledge of accounting methodologies for arriving at pricing of veterinary supplied items. Effective inventory pricing and management is an area that offers significant positive impact in the areas of cost containment and profitability (Ackermann, 2007).

Veterinarians are commonly asked, 'Why are animal medications so expensive?' In response to this question, it is worth pointing out that there is no Pharmaceutical Benefits Scheme (PBS) for veterinary medications, so without government subsidy the full cost must be passed on to the client. Nonetheless, some drugs are cheaper for animals than the equivalent or similar for humans. Understanding how prices are derived will help you be confident in the value of the cost to the client, and also help you understand that a general attitude of conservation and non-waste among staff of the practice is extremely important (Ackermann, 2007).

These topic notes do not intend to teach deeply into accounting methodologies, rather they provide an introduction to the basic of methods of pricing externally sourced items, using the mark up method of pricing. Once the basic method of mark-up pricing of veterinary items is understood, then informed adjustments to pricing of veterinary items can be made.

Introduction

Veterinary businesses have two main components:

- sale of professional services
- sale of animal health items

While the sale of veterinary knowledge in the form of professional services is the core business for a veterinary business, the supply of animal health items also contributes to veterinary business income. Both parts of the veterinary business, professional services and animal health items, should contribute significantly to the profit margin of the business. In fact, practices that rely on sales of animal health items for a higher proportion of profit are vulnerable to larger suppliers with increased purchasing capacity taking the market share.

Recent examples of this include:

- dairy farms in New Zealand are now able to request a prescription from their veterinarian and have the drugs supplied by a pharmacy, so veterinarians are not able to gain as much of income from product sales.
- supermarkets, pet barns and on-line suppliers of pet food, flea control products and wormers are significant suppliers of these items to the animal owner; on-line suppliers of preventative animal health care items often deliver to your door.

In veterinary practice, clinical services are provided to clients for acute and ongoing health management, and these services require the business to stock and supply prescription only and non-prescription animal health items. In addition, veterinary clinical practices, and animal health consultancy practices, utilise pathology tests or the attendance of visiting specialists as required for monitoring or diagnosis of animal health status. For the purpose of simplicity, prescription and non-prescription medications, and external services, are all termed animal health items, and examples of these include:

- prescription only medicines and prescription pet foods
- pathology panels for in-house diagnostics
- pathology tests performed by external laboratories
- non-prescription goods e.g. general pet foods, wormers and dental care
- attending specialist visits e.g. ultrasonographer, behaviouralist, orthopaedic surgeon

Demand for these items can be variable. Variability in need for animal health items can be related to:

- normal or abnormal seasonal variability, for example summer vs winter, drought years or floods
- economic variability, such as local employment levels in suburban areas, national or global economic effects (recessions), or sector economics of production (e.g. high Australian dollar depressing beef export demand and value of stock)

Due to variability in demand, animal health goods, visiting specialists or laboratory tests are known as *variable cost items* as these are costs for which the veterinary business orders in on a *just in time* or *as needed* basis.

The Mark-Up Method of Pricing

A veterinary business orders, records, stores and labels, and communicates with the client about appropriate use of a product or the results of the test performed. Furthermore, the veterinary business is responsible to pay for ordered items. Thus, when an animal health item is provided to a client, the client should pay for it, otherwise the veterinary business is losing money.

On occasion, animal health items may be damaged or the use by date may expire before an item is sold, these items are classified as wastage. To generate a margin, and cover the cost of wastage and staff time involved in handling stock, items are charged to the client at a higher price than the purchase price to the business. Thus, the item is marked-up before sale. The formula for determining the sale price of a product is to multiply the cost by a factor to increase product price to higher than cost. The mark-up factor is always a figure greater than 1.0, unless the product is designated as a loss-leader product and is priced below cost. For example, a \$1 item with a mark-up factor of 1.5 will have a selling price of \$1.50. Mark-up is also commonly referred to as an amount or a percentage. To illustrate, a \$1 item that sells for \$1.50 is marked up the amount of 50c and has a 50% mark-up. See Table 1 below for illustration of different mark-ups.

The mark-up equation is represented as:

$$\text{cost} \times \text{mark-up factor} = \text{selling price}$$

Calculation of mark-up percentage:

$$\text{mark-up \%} = (\text{mark-up amount}/\text{cost}) \times 100$$

Difference between margin and mark-up

Mark-up and margin are related, but different, concepts in regard to determination of selling price. Selling price for an item is determined by **multiplying** cost by the mark-up factor, whereas margin is the difference between the selling price and the cost. Thus, selling price is determined either by multiplication by a mark-up factor, or by **adding** a required amount of margin to the cost. The equation for margin is:

$$\text{cost} + \text{margin} = \text{selling price}$$

When considered as an amount mark-up and margin are the same, but when expressed as a percentage they have different values. As shown above, mark-up percentage is calculated as:

$$\text{mark-up \%} = (\text{mark-up amount}/\text{cost}) \times 100$$

and, margin percentage is calculated as:

$$\text{margin \%} = (\text{margin amount}/\text{selling price}) \times 100$$

For example, a \$1.00 item that sells for \$1.50 has a mark-up percentage of 50% and a margin percentage of 33%.

Table 1 below provides examples of mark-up and margins, illustrating how the mark-up factor is usually $> 1.0^*$ x the cost price and the margin is always < 1.0 and $< 100\%$ of the selling price.

* Note: for loss leaders, the mark-up factor can be < 1.0 . For a more detailed discussion of margins and loss leaders see the topic notes: Fee Setting.

Table 1: Examples of mark-up and margins

Cost of product	Mark-up factor	Mark-up \$	Mark-up %	Selling price	Margin equation	Margin %
\$1	2.0	\$1	100%	\$2	\$1/\$2	50%
\$1	1.5	\$0.50	50%	\$1.50	\$0.50/\$1.50	33%
\$1	1.25	\$0.25	25%	\$1.25	\$0.25/\$1.25	20%

Optimal mark-up and sale price

The optimal mark-up, and sale price, on an item is arrived at by balancing the following:

- the cost of holding the items prior to sale, as opposed to the monies being invested elsewhere
- the cost of storage – infrastructure and legal requirements
- typical wastage/loss associated with unsold stock - non-prescription medical items (e.g. dressings, pins, plates) have a high wastage factor or holding cost so need a high mark up (e.g. 300%).
- prices set by competing businesses, including non-veterinary businesses, such as the large pet barns and supermarkets who have high purchasing power and therefore lower costs
- the value delivered to the customer
- demand for the product; where demand is high a premium can be charged

Many animal health items also have a legal requirement to be ordered, prescribed and dispensed by a veterinarian and full records kept, so the final price shown to the client also incorporates a professional fee. Table 2 shows examples of final pricing of various non-prescription and veterinary prescribed items. Non-prescription goods are also known as over the counter (OTC) items.

Table 2. Example of mark-up pricing for different types of animal health items

Product	Wholesale cost	Mark-up factor	Mark-up %	Selling price	Professional service fee*	Selling price
Dog play toy	\$20	1.5	50%	\$30	n/a	\$30
Premium dog food	\$30	1.33	33%	\$40	n/a	\$40
Vet only dog food	\$40	1.5	50%	\$60	n/a	\$60
Penicillin, 100 ml bottle*	\$20	2.0	100%	\$40	\$20 dispensing fee	\$60
Methadone, Controlled Substance*	\$0.50 per 0.1 ml	4.0	300%	\$2.0 per 0.1 ml	\$20 injection fee	\$22
Multiple Biochemical Analysis (MBA), external laboratory service*	\$60	1.5	50%	\$90	\$20 sample collection and package fee	\$110
Pre-anaesthetic blood profile, performed in-house*	\$30	1.5	50%	\$45	\$20 sample collection/processing fee	\$65
Cremation with return of ashes, external service, medium sized dog**	\$200	1.6	60%	\$320	n/a	\$320
Full abdominal ultrasound by visiting ultrasonographer**	\$300	1.33	33%	\$400	n/a	\$400

* dispensing, injection or sampling fees, all of which are professional fees, are incorporated into the final price of prescribed items

**these items are usually accompanied by professional fees such as consultations, or euthanasia fees, which are shown as separate items on the invoice

Lower mark-ups for large quantities

A mixed practice or production animal veterinary business is likely to apply lower mark-ups for higher quantities and full boxes of animal health items. Table 3 shows examples of quantity breaks for veterinary prescription only and non-prescription items.

Table 3: Examples of prescription drugs and laboratory tests with quantity breaks

Product	Wholesale cost	Mark-up factor	Selling price
Orbenin Dry Cow 1 tube	\$1.00 per tube	4.00	\$4.00 each for purchase of less than 20 tubes
Orbenin Dry Cow Box of 20	\$20.00 per box	2.00	\$40.00 per box of 20
Orbenin Dry Cow Box of 100	\$80.00 per box	1.75	\$140.00 per box of 100
Ovine Brucellosis CFT test, 1 only	\$25.00	2.00	\$50.00
Ovine Brucellosis CFT test, 20 to 30 tests	\$10.00 each	2.00	\$20.00 each
Ovine Brucellosis CFT test, 31 to 100 tests	\$8.00 each	2.00	\$16.00 each

Inventory management

The inventory includes all animal health items held in stock for anticipated usage. This is in contrast to animal health items that are ordered as needed, such as laboratory tests, special order drugs or non-prescription items for a particular patient or client's situation. Inventory level optimisation and minimisation of wastage can have a large impact on cash flow and overall margin generated by this part of the veterinary business. Therefore, the more effective inventory management and inventory pricing is, the more this part of the veterinary business can contribute to the overall profit margin. The better the profit margin, the greater the ability of the business to increase remuneration to employees, to invest in further development of practice facilities, or provide support for continuing education.

The pictures below show a typical small animal practice prescription medicines area which is away from the public and lockable, and also a typical small animal practice merchandising display area in the waiting room area.



Inventory levels

Effective inventory management strikes a balance between maintaining the minimum amount of inventory needed without sacrificing the level of client service the business aims to provide (Ackermann, 2007). Consider the amount of money in stock to enable supply for the next six months as opposed to the next one to two months. Carrying less stock can allow the veterinary business to put this money to better use, such as minimising interest paid on loans. See Table 4, below, which examines the amount of stock held by the case study practice Lamone and Yackaville, and the opportunity associated with reducing stock levels.

Table 4. Example of Lamone and Yackaville average stock level and calculation of the value of a proposed reduction of \$20,000

Lamone and Yackaville Veterinary Practice			
Inventory @ June 30 2013	Proposed target inventory by June 30 2014	Difference	Financial benefit of reducing stock level at current overdraft interest rates of 7.5%
112,085	\$70,000	\$42,000	$\$42,000 \times 7.5\% = \$3,150$

Inventory turnover

Inventory turnover is measured in two related ways, as presented in the topic notes: KPIs for Veterinary Business:

- Inventory Turnover (IT) = total expenditure on inventory in a year/average inventory level
- Days in Stock = 365/IT (i.e. the number of days on average taken for the inventory from purchase to sale)

Overall inventory turnover is important, as is individual inventory item turnover. Items slow to turnover are more likely to go out of date. As a rule of thumb items should be turned over every 30 – 45 days (Ackermann, 2007).

Inventory controls

By law, prescription drugs, and in particular Controlled Substances (S8 drugs), require higher levels of management than general merchandise goods. All prescription-only drugs must be securely stored away from public access. The rooms or cupboards in which the drugs are kept must be locked unless a veterinarian is on site. The higher scheduled drugs, such as drugs of addiction and dangerous drugs, are required by law, to have higher levels of operational controls. Table 5 below lists typical required operational controls for stocking Controlled Substances by a veterinary business. Failure to meet these control measures will result in legal and/or logistical implications.

Table 5. Operational controls in management of Controlled Substances – typical legislation as per the local legislation (e.g. Controlled Substances Act) or equivalent.

Wholesalers are legally required to keep signed documentation of poisons and drugs of dependence that are received by their business and then sold to a veterinary practice
Poisons and drugs of dependence (Schedule 8) drugs need to be ordered a staff member, usually a nurse, who has a good understanding of inventory control.
Wholesalers generally engage external couriers to deliver goods to a practice.
The drugs are received by the business from the courier. It is important for delivery dockets to be kept and filed.
Veterinarians are legally required to sight and sign for drugs of dependence or scheduled drugs received from the courier by the business (Controlled Substances Act) and wholesalers are required to keep this signed documentation.
Drugs of dependence received at a veterinary practice are signed into a Dangerous Drug recording book which must be sighted and signed by a veterinarian.
When drugs of dependence are used they must be signed out by the prescribing veterinarian and the administration supervised or conducted by the prescribing vet.
Clients must be invoiced for drugs used, in line with accurate inventory charging.
Audits of drug books must be conducted each week and discrepancies reported to the practice owner or manager. Spot check audits by other veterinarians or delegated highly qualified nurses must be carried out regularly.

Effect of wastage and missed charges on mark-up and margin

Inventory items that are damaged, used but not charged to the client, or that remain in stock until out of date are a financial loss to the business. In such instances the planned or potential margin of total inventory is reduced to a lesser margin. The more wastage, the less likely the planned margin will be attained, placing downward pressure on the overall profit margin of the business. Flow-on effects of excessive wastage may include upward pressure on prices and cost cutting measures. Some product lines are more prone to missed charges, going out of date, breakage, damage or being incorrectly sold as a cheaper product.

The picture below is an example of the types of medications that are commonly opened for use on an animal in the hospital, accidentally left on the bench and then a new one is then sent home with the animal.



Table 6 illustrates the effect missed charges and stock losses this for a single line of inventory. Table 7 illustrates this for overall inventory, showing how to calculate overall margin achieved after adjusting for wastage.

Table 6. Example of missed charges and stock losses effect on actual margin achieved for a particular product line

Paraguard worm tablets 1 per 10 kg										
Cost price	Mark-up	Margin	Selling Price	Units on hand at year start	Units purchased per year	Units sold per year	Units on hand at year end	Wastage e.g. lost, missed charge, out of date, stolen or damaged	Actual mark-up achieved	Actual margin achieved
\$2.00	1.5 or 50%	\$1.00 or 33%	\$3.00	1000	10,000	9,500	1000	500	\$28,500/20,000	\$28,500 - \$20,000
					cost = \$20,000)	income = \$28500			= 1.42 or 42%	= \$8,500
										\$8,500/\$28,500 x 100 = 29.8%

Table 7. Example calculation of the overall margin achieved for all product lines, showing the actual margin achieved.

	Inventory on hand at year start (opening stock)	Stock purchased in one year	Inventory on hand at year end (closing stock)	Cost of goods sold	Total product sales	Actual margin achieved
Allansville Veterinary Clinic	\$47,534	\$172,745	\$49,060	\$171,219	\$274,612	(\$274,612 - \$171,219)/\$274,612 =0.40 or 40%
Lamone and Yackaville Veterinary Practice	\$111,387	\$368,866	\$112,085	\$368,168	\$523,177	(\$523,177 - \$368,168)/\$523,177 = 0.30 or 30%

Problems for self-study

- Describe and demonstrate the difference between mark-up and margins.
- Discuss the effect of missed charges, breakages, out of date items on the cost of goods sold, and thus the actual margin obtained as compared to the planned margin. What are possible flow-on effects of wastage?
- List and discuss the flow-on effects of holding too much inventory.

References and further reading

ACKERMANN, L. 2007. *Blackwell's Five-Minute Veterinary Practice Management Consult*, USA, Blackwell Publishing.

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