



## Licensed Equine Plasma Products

### FOAL MANAGEMENT

#### Preventative Medicine Up to Six Months of Age

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It is well known that breeding healthy foals to six months of age is an art that is both time consuming and expensive (see the average costs of raising a foal below). This article details health risks for foals, the financial implications of not practising preventative medicine, and what can be done to give your foal the best start during this critical period.

##### Ill Health and Death Up to Six Months of Age

The USDA has demonstrated that<sup>1</sup>:

- The highest death rate (over time) for horses is in the first 6 months of life,
- The death rate for foals aged less than 30 days is 4.9%,
- The death rate between 30 days and six months is 1.2%,
- In total there is a 5% death rate in foals up to six months of age,
- The chief causes of foal death in this period are related to infection,
- 42.7% of horse operations reported adverse health issues in foals less than six months of age.

An American Veterinary Medical Association study has reported that the average number of veterinary visits was 0.99 per horse per year<sup>2</sup>.

If adverse health issues correlate to a veterinary visit, then the first six months of a horse's life is comparatively intensive with respect to veterinary care.

##### The Cost of Ill Health and Death

The College of Veterinary Medicine at the University of Minnesota has found that septicaemia (blood infection) is the major reason foals are referred to the intensive care unit (60-70%) and that the incidence of septicaemia is up to 5% of all foals. It is also known that the daily cost in an intensive care unit is \$300-\$500 per day, and that the median treatment price of a sick foal ranges between \$3000 and \$4000 for an approximately 70% chance of survival<sup>3</sup>.



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<sup>1</sup> Info Sheet, Veterinary Services, Animal and Plant Inspection Service, September 1998. Equine Morbidity and Mortality.

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<sup>2</sup> US Pet Ownership and Demographics Sourcebook. AVMA, 1996.

<sup>3</sup> [www.cvm.umn.edu](http://www.cvm.umn.edu) and [www.thehorse.com](http://www.thehorse.com)

The following table shows the estimated financial cost to the owner of foal death and adverse health in the first six months across a range of death rates (0 to 10%). The calculations in this table assume that a live foal is sold at breakeven price and that foal expenses to six months of age are approximately \$18,500 (see below for details of the costs of breeding and managing a foal through to sale at 12 months).

Cost of Foal Death and Health Issues \$							
	Death Rate						
	0%	1%	2%	3%	4%	5%	10%
Alive/Dead	0	-187	-374	-561	-749	-936	-1872
Sick	-1281	-1281	-1281	-1281	-1281	-1281	-1281
<b>Total</b>	<b>-1281</b>	<b>-1468</b>	<b>-1655</b>	<b>-1842</b>	<b>-2030</b>	<b>-2217</b>	<b>-3153</b>

By explanation, under “Death Rate” in the top left corner, 0% death rate means the foal is alive (circled in green) and there is no loss through an inability to sell the foal. However, live foals over many breeding seasons will incur an average of \$1281 in veterinary expenses through ill health until they are sold<sup>4</sup>. The total average annual veterinary expenses through ill health are therefore \$1281 per foal.

However, at a 5% death rate, which is average for foal establishments according to the USDA, the loss of foals over many breeding seasons equates to a \$936 cost per foal (circled in red). At this death rate, and including the average veterinary costs (\$1281), the total cost through illness and death of foals comes to \$2217. Note this is the average cost borne per foal (either over many seasons or many foals) and it does

<sup>4</sup> Assumes an adverse health event rate of 42.7% and an average cost of veterinary treatment of \$3000.

not mean that these expenses will be borne for every foal for every year.

The take-home message from this information is that your foal needs the best start possible in life and that it is best to practice preventative medicine when it comes to foal health rather than incur the costs, both financial and emotional, of treatment and potential death.

The reasons why foals are so susceptible to ill health and what can be done in the first six months of life are discussed in more detail below.

### The Foal’s Immune System

It is well known that colostrum (first milk) from the mare is essential for the survival of a foal since it contains infection-fighting immunoglobulins (also called antibodies). Foals

are born without immunoglobulins and have a very immature immune system. Foals that do not receive adequate colostrum do not have sufficient blood levels of immunoglobulins and are therefore susceptible to infection. There are degrees of this condition and it is called Failure of Passive Transfer, or Partial Failure of Passive Transfer (FPT or PFPT).

Immunoglobulins passed from the mare to the foal via colostrum have a limited half-life and by the time a foal is 3 weeks of age only approximately 50% of the mare's immunoglobulins remain. Therefore, the period when the foal's immunoglobulin levels are starting to wane, and before the foal's own immune system is fully functional, is a critical risk period for infection (birth to six months of age).

Combining the facts that infection is the primary cause of death in foals up to six months of age and the incidence of failure of passive transfer and partial failure of passive transfer has been reported to be 16% and 17% respectively, suggests that it is critically important to make sure a foal gets sufficient immunoglobulins throughout its first six months of age.

#### Preventative Medicine for PFPT and FPT

One method of guaranteeing that a foal receives sufficient immunoglobulin and providing it with the best start in life is through the use of plasma. Plasma derived from healthy adult donors contains large amounts of immunoglobulin (between 20 and 30 grams per litre) and can be stored frozen for long periods prior to use. It is therefore a convenient and safe source of guaranteed quantities of immunoglobulin. Plasvacc and leading veterinarians recommend dosing all foals with one litre (~20-30 grams of immunoglobulin) at birth and again during the critical period when the foal's immunoglobulin levels derived from the mare begin to wane (3-4 weeks of age). The cost to administer plasma twice, including a veterinarian's time, is approximately \$900. This is less than half the estimated average costs in the industry associated with death and adverse health events in foals in their first six months of life (\$2217).

**If plasma prevents or allays 50% of death or adverse health events in the first six months of a foal's life then it is well worth the investment, insurance and peace of mind. Give your foal the best start in life – make sure it gets Equiplas<sup>®</sup>.**

## Costs of Raising a Foal

A typical breakdown of the costs involved for breeding and managing a healthy foal to 12 months of age in preparation for sale are as follows<sup>5</sup>:

	Expense	Total
<b><u>Stud Fee</u></b>		
Stud Fee	\$ 5,000	
		<b>\$ 5,000</b>
<b><u>Mare Cost</u></b>		
Amortised Purchase Cost	\$ 4,286	
		<b>\$ 4,286</b>
<b><u>Mare Maintenance</u></b>		
Board	\$ 4,260	
Vet Care	\$ 195	
Farrier	\$ 270	
Insurance	\$ 1,105	
		<b>\$ 5,830</b>
<b><u>Breeding Costs</u></b>		
Semen Collection	\$ 200	
Semen Shipping	\$ 150	
Vet Fees	\$ 400	
		<b>\$ 750</b>
<b><u>Foal Maintenance</u></b>		
Board	\$ 4,379	
Farrier	\$ 360	
Insurance	\$ 600	
		<b>\$ 5,339</b>
<b><u>Sales Prep Fees</u></b>		
Transport	\$ 200	
Handling / Preparation	\$ 588	
Video Tape	\$ 250	
Advertising	\$ 250	
Entry Fee	\$ 350	
Other	\$ 150	
		<b>\$ 1,788</b>
<b><u>Breakeven point before commissions</u></b>		<b>\$ 22,993</b>

From this information the following can be deduced:

- A foal must be sold for ~\$23,000 to break even financially,
- If a foal dies at birth then the financial loss approximates \$16,000 (5000+4286+5830+750),
- If a foal dies within the first six months (and prior to sale) the financial loss approximates \$18,500 (includes foal maintenance costs to six months of age but less veterinary care).

<sup>5</sup> Derived from information obtained on the web including from horseinfo.com and from a Barents report "The Economic Impact of the Horse Industry in the United States". It is acknowledged that not all foals are this expensive to raise, nor are some this inexpensive. Note that veterinary fees in this table are for a healthy foal and do not take illness into consideration.