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CHAPTER

11

Drugs and Performance

Thomas Tobin & Richard Galley

THE MEDICATION PROBLEM

Technical Difficulties

The roots of the medication problem are twofold. They reflect the technical complexity of the problem and the varying philosophic approaches to this problem around the world. The technical complexity is remarkable. At least 400 drugs are in common use, and probably about ten times that number of agents have been developed in laboratories and tested in laboratory animals. Beyond this group are 63,000 chemicals in use, which makes for an enormous number of substances likely to turn up in a racehorse. The sheer number of agents likely to be detected in horse urine is remarkable.

Each agent administered to a horse is given at a specific dose, and is metabolized by that horse in a specific way. The doses of drugs given to a horse can vary up to one millionfold, from a few micrograms (millionth of a gram) of very potent substances such as etorphine to 8 g of a drug such as naproxen. (Etorphine is the generic term for "elephant juice," a potent narcotic and stimulant.) This large difference in dosage accounts for large differences in the ease with which a drug is detected, and also for the time required until the drug no longer is detected in the horse's system.

Once a drug is given to a horse, it is easy to show that a relatively constant number of half-lives for the drug are required to "clear" (be completely eliminated from) a horse's system—usually about 70 half-lives. By this we mean that this amount of time must pass until no drug molecules whatsoever are left in the horse. This time is that required for a drug to "clear" a horse. The time that passes until the analyst can no longer detect the drug, a much shorter time, is the "detection time" for that drug in the horse.

The half-lives of drugs in the horse vary about 300-fold, from about 30 minutes for certain drugs that are rapidly metabolized and elminated, to several days for drugs that are slowly eliminated. The estimated time for drugs to clear completely varies from between 2 and 5 days for some rapidly excreted drugs, to very long periods, approaching years, for drugs such as reserpine.

The ability to detect a drug in a horse usually depends on the amount of the drug administered to a horse. If the drug is administered in gram amounts, such as with phenylbutazone or naproxen, and it has a long plasma half-life, then it, or its metabolites, are detectable in

blood or urine for relatively long periods. On the other hand, if the drug is given in small amounts (1 mg or so), and if it tends to be rapidly excreted, then that drug may only be detectable for relatively short periods in the urine, or it may not be detectable at all. For many years, fentanyl, which was administered in total mounts of 1 mg or less to horses, was virtually undetectable. Now, however, fentanyl is easily detected in horse urine and its use in racing horses is well controlled.

Another factor that affects the detectability of drugs in horse urine is the sensitivity of the available tests. If the analyst has relatively sensitive tests for a drug, or if the drug has characteristics that make it easily detectable in biologic samples, then the drug is one that tends to be easily called, and may commonly be called positive. On the other hand, if the drug is one that is not easy to detect, it tends to slip past testers, and is less likely to be called. For example, phenylbutazone is not difficult to detect, and as such, readily gives rise to positive test results. On the other hand, Banamine (flunixin) is a drug that is given at a lower dose than phenylbutazone, is cleared more rapidly from the blood, and is inherently a more difficult drug to detect than phenylbutazone. For these reasons, Banamine is called less often than phenylbutazone, in part because of differences in its chemical and pharmacologic characteristics.

Beyond these large differences in the drugs themselves, the doses, and the speed of elimination of individual drugs, is the problem of the variability between horses in how they handle drugs. For example, studies with phenylbutazone have shown that if the same dose of phenylbutazone is given to 49 horses for 4 days, and the horses are tested on the fifth day, the difference in the concentrations of phenylbutazone in the blood of these horses 24 hours after the last dose of drug is about 30-fold. By extrapolating these figures to the range expected in 1000 horses, the range is closer to 100-fold. These variations are due to the differences in the way each individual horse handles the same drug—in essence, to the difference between horses.

Although we do not know the extent of the variation in drug concentrations in urine, we do know they are higher than those in blood. For example, the acidity of horse urine can vary about 500,000-fold between horses, and these differences can have marked effects on the amounts of drug found in the urine. In studies conducted in Kentucky, we showed that in horses given identical doses of phenylbutazone, concentrations in the urine can vary as much as 300-fold, depending principally on the pH of the urine. This variation is added to the 50- to 100-fold variation in plasma levels. All in all, therefore, large variations in the urinary concentrations of drug occur, dependent only on the acidity of the individual horse's urine.

In summary, at least 400 drugs are in common use in horses and may be found in horse urine. The amounts of these drugs administered to horses to produce a pharmacologic effect can vary up to one million-fold. The rate at which individual drugs are metabolized by the average horse can vary up to 300-fold. The difference in plasma or urinary levels of these drugs after administration of identical doses can likely vary up to 100-fold in plasma, and likely much more in urine. Because of these huge variations, setting up a coherent framework within which one can effectively regulate and administer medication rules is difficult. Beyond this difficulty, the problem arises of differing perceptions of authorities as to what constitutes an acceptable medication rule.

Philosophic Difficulties

The most conservative approach to the use of medication in racing horses is that taken by the English Jockey Club; in essence, horses shall not run in a racing event with any detectable level of any medication in their systems. Horses that run in violation of the rules are disqualified. This position on medication is enforced by excellent post-race urine testing.

The basic philosophy behind this rule goes far beyond the thought that horses should not run "under the influence" of medications. This rule holds that racing horses should have no detectable trace of any contaminating medication. The position is virtually the same as that with regard to carcinogens in foodstuffs, i.e., all human foodstuffs shall be as "clean" as possible, with no trace of any carcinogen.

Given the huge uncertainties with regard to the required time for medications to clear a horse's system, a rule of the English Jockey Club type is extremely conservative. The English authorities "suggest" that if 10 days are allowed, all but the most slowly cleared drugs should no longer be detectable. As always, this information is offered as advice only, and consultation with a veterinary surgeon is recom-

mended for definitive information. Where one's veterinary surgeon, however, will learn this definitive information, however, is not at all clear.

Despite the restrictive nature of this rule, it appears to work well in England, perhaps because racing is still the sport of kings and aristocrats in that country. In England, racing horses abound, they run on turf, English tracks have fewer bends when compared with the oval North American tracks, and the horses make fewer starts per year. Beyond these points, a strong bias apparently exists against the use of stimulant or narcotic medications in horses, as virtually no medications of this type have ever been reported in English racing. All in all, a rule that would be considered very strict virtually anywhere else in the world works quite well in England.

In both Canada and Australia, the same basic English racing rule is used, but its implementation is substantially less strict and a genuine effort is made to assist the horseman and veterinarian in the area of detection times. Because the Canadian work in this area has been published, and is readily available for inspection, the Canadian position is discussed as an example of this approach.

The Canadian authorities are, to my knowledge, the only regulatory body to make any systematic effort to determine "detection times" for drugs and to publish the results. Although their approach was problematic, the effort is vigorous, unique, and genuine. A typical page from the Canadian pamphlet, one of about 40 such pages, is presented in Figure 11–1. Despite a sincere effort to enlighten horsemen and veterinarians, there are several problems associated with their drug pamphlet. Concentration is shown on the vertical axis, but no units of concentration are given, and no information is offered as to what the concentration is, or even as to whether it is blood or urine. The drawn curve is impressive, but it must be fictional because exactly the same shape curve is used for other drugs. The detection limit is a line that crosses the concentration axis at a definite level, but this concentration is identified. If the detection work is qualitative, this concentration is not known, even by the authors of this booklet. All in all, these apparently fictional curves and unreported and perhaps unrecorded concentrations boil down to one "solid" piece of information. In a very small number of horses each drug was detected in either blood or urine for x hours after y dose by route z. This is a nice, helpful, genuine, if wildly over-presented effort; a guideline that is much better than nothing.

A problem with the Canadian data is that the amount of variation that an experienced observer can expect between horses is not in any way indicated. Presented with this same problem, we, at the University of Kentucky (in drug level studies), are careful to ensure that the experiment involves large numbers of horses, because the type of data derived from experiments such as these indicates only approximately where the average horse will lie. Everybody is interested, however, in the 1 horse in 1000, which is found positive. The only way to acquire information on this horse is to conduct the experiment using at least 50 horses, to determine the population distribution, and then to calculate the probability of 1 horse in 100 being above a certain blood or urine level. This research is not easy, but it is the only way to get an accurate answer to the questions that the Canadian authorities set themselves. With this kind of information, one can say that after dose x, by route y, 1 horse in 100 or 1 in 1000 will have a blood or urine concentration above a certain level at time z after dosing. This definitive, scientific statement can be applied with some confidence to the racing situation. In contrast, the type of data presented in Figure 11–1 and similar data used in other jurisdictions only allows "seat of the pants" guesses.

These comments are meant as constructive criticism. I must emphasize again that the Canadian effort, although limited in scope, overly simplistic, and presented in a misleading way to those who do not understand the complexity of the problem, is a substantial and good-faith effort to offer some guidelines of drug detection times to horsemen; they are some of the best data available in the world today.

The state of New York has an approach to the problem of medications and their use in racehorses that is in some ways similar to the Canadian approach. Under the current New York rule, the administration of certain drugs is allowed within certain times of post (Spring 1985). For example, therapeutic drugs are allowed until 24 hours of post time, and antihistamines and sulfa drugs are allowed until 48 hours of post time. These rules are reportedly enforced by testing that is calibrated in such a way that the detection of a drug does not occur unless these time rules are violated. Quite how these levels were determined or what they

DRUG: Phenylbutazone

TRADE AND OTHER NAMES:

Bute, Butazolidin, Dinz, Butazone, Equipalazone, Azrabute, Centrabute

TYPE OF DRUG:

Analgesic/Anti-Inflammatory (NSAID)

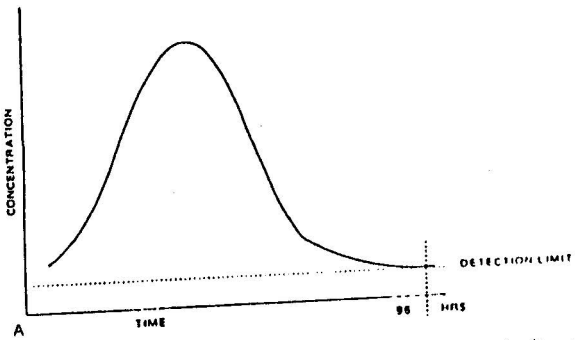
ROUTE OF ADMINISTRATION:

Oral

DOSAGE REGIMEN:

2 horses	Bute 3 g	(single administration)
2 horses	Bute 3 g	(once daily, 3 days)

DETECTION LIMIT:



DRUG: Furosemide

TRADE AND OTHER NAMES:

Lasix, Frusemide

TYPE OF DRUG:

Diuretic; Antihypertensive

ROUTE OF ADMINISTRATION:

IV

DOSAGE REGIMEN:

2 horses	Lasix 200 mg	(single administration)
2 horses	Lasix 200 mg	(once daily, 3 days)

DETECTION LIMIT:

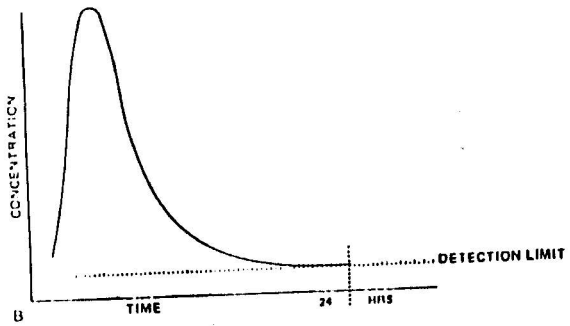


Fig. 11–1. A sample of two drug charts from Agriculture Canada's Race Track Division *Schedule of Drugs*. Based on these experiments, drug or metabolite may be detected throughout a 96- (A) and 24-hour (B) period after final administration in the urine or blood of horses, using current methodology. It is stressed that these results are presented as guidelines only and should not be construed as absolute for every horse to which this drug is administered.

are has never been clear, although such information must be available for these rules to be scientifically verifiable. In the absence of information to the contrary, the New York rules, like the Canadian rules, are probably based on small numbers of horses, with the actual "quantitation" of the levels of drugs on which the regulations are based being, like the Canadian data, at best an approximation.

Other states have rules that involve a blood level or concentration limit for phenylbutazone. Such a technically clear-cut rule allows the chemist to measure a blood level of phenylbutazone with a minimum of ambiguity ($\pm$ about 40% or less) and a very small variance. This blood level is usually about 2 to 5 μg/ml, which is almost a subtherapeutic level of this drug. Because this determination reflects a blood level, it relates reasonably well to the pharmacologic activity of the drug, better than to urinary levels of the drug. In general, therefore, the best way to frame a medication rule is with a clear-cut blood level of the drug, rather than to state a time and assume that the data are available to translate the time restriction to concentration information with accuracy.

A typical rule framed in terms of concentration is that of the state of California. In the California rule, the permissible blood levels of nonsteroidal anti-inflammatory drugs (NSAIDs) are stated, and no statements about time are made. This rule is equivalent to that of the permissible blood alcohol level in humans. The police are not interested in when you had your last drink. They want to know whether the blood level of alcohol is sufficient to influence your driving. Similarly, a well-drafted medication rule says that certain concentrations of a medication shall not be exceeded, period. The time of the last administration of drug is a concern of the horseman dosing the horse, and not of the regulator or of the analyst doing the analysis.

The state of Kentucky has a rule that is simple in its expression and is easy to enforce (Spring 1985). Horses cannot run on stimulants, depressants, local anesthetics, narcotic analgesics, or tranquilizers. All other medi-

cations are viewed as therapeutic medication, and their use is allowed at the veterinarian's discretion. Thus, phenylbutazone use is permitted, as are other NSAID and furosemide. All in all, this process works well in Kentucky, and good control of medication is maintained.

INFLUENCING HORSES WITH MEDICATION

The ways in which medication can be used to affect the performance of horses vary. Tobin distinguishes several major patterns of medication use (Table 11–1). First among these methods is the use of medication to win. Acute medication to win classically involves the use of short-acting stimulant drugs, such as the amphetamines, fentanyl or other narcotic analgesics, or cocaine. These drugs must be given to the horse within 1 hour of post time to produce an effect. Use of these drugs, however, requires considerable skill, because the response of different horses to stimulant drugs can vary considerably. For this reason, if these drugs are to be used successfully, the person administering the drug will generally have access to the horse as well as knowledge of how the horse responds to the drug to ensure that the horse is getting an effective dose. In addition, the owners and trainers or those associated with the running of the horse stand to benefit if the drug achieves its desired effects on the horse. Therefore, stimulant doping of this type is usually considered an "inside job," and discovery of such usage of medication in a racing horse usually results in disciplinary action against the owner or trainer, under the trainer insurer rule.

Just how effective the use of short-acting stimulant medication is in improving the performance of horses is not clear. With this type of medication, you are asking a horse that is running as fast as he can to put in a supra-maximal performance, based on the effect of the drug. The likelihood of such an event is not clear. Any of the studies performed in an attempt to identify supra-maximal effects of stimulant medications have failed to show any evidence that stimulant drugs can improve the performance of a racing horse. It is also fair to say, however, that small numbers of horses were involved in these studies, and for this reason, the drugs would have had to produce relatively large improvements in performance for the effect to be detectable.

Other forms of medication to win include chronic medication to win, in which the horse is dosed repeatedly with agents such as anabolic steroids or vitamins. The dosing of horses with vitamins usually makes little difference in performance relative to animals receiving normal and ordinary care and feeding. The same is not true with anabolic steroid medication. Because of the clear-cut actions of these agents

TABLE 11–1. *Various Categories of Medication in Performance Horses*

Medication to win
Acute: short-acting stimulants—amphetamine, cocaine, narcotics
Chronic: repeated dosing for weeks, such as with vitamins or anabolic steroids
"Washy Horses": dosing with a very small dose of a depressant or tranquilizer to "take the edge off" of an excitable horse
Always illegal and usually considered to be an "inside job"
Medication to lose
Depressants: large doses of a tranquilizer, sedative, or depressant
Always illegal and usually considered to be an "outside job"
Medication to restore normal performance
Nonsteroidal anti-inflammatory drugs, such as phenylbutazone and its congeners; often permitted under controlled medication rules
Corticosteroids: sometimes administered intra-articularly to control joint pain; occasionally permissible
Local anesthesia: nerve or joint blocks to numb or freeze an area; always illegal
Fluids and electrolytes: often permissible
Accidental or inadvertent or technical doping; accidental occurrence of a positive
Procaine from procaine penicillin
Caffeine from coca husks in food pellets
"Robaxin" from glyceryl-guaiacolate
Botanical positives or false positives
Medication to "mask" other drugs
Administration of dipyrone and thiamine, thought to interfere with the detection of illegal medication
Medication to "dilute" other drugs
Diuretics: furosemide, ethacrynic acid, hydrochlorothiazide
Miscellaneous mechanisms
"Blood doping"
"Bicarbonate doping"

on the hematocrit, muscle, and bone, they must be listed among the agents with the potential to improve the performance of horses. Although anabolic steroids are not routinely tested for in North America, they are tested for in English and European racing. A study by David Snow in Scotland failed to show any improvement in a small number of performances of horses treated with an anabolic steroid. As noted previously, however, the number of horses in this study was small, and the effect of the steroid would have had to produce about a 5% improvement to be detectable in Snow's experimental model. Such an effect has yet to be scientifically demonstrated.

Another form of medication to win is the treatment of "washy" horses with small doses of a tranquilizer just before post time. A "washy" horse tends to run its race in the paddock rather than on the track, and turns in a poor performance in the actual race. One of the great illegal challenges in racing pharmacology is to administer the right dose of a tranquilizer to such a horse so that it remains calm in the paddock and runs its race on the track. The use of such tranquilizers is usually considered an inside job, and results in the imposition of sanctions against the owners or trainers involved.

Medication to lose tends to be a less sophisticated practice than medication to win. It is less likely to lead to penalties against the trainer, because there are many ways in which the trainer or owner can influence the outcome of a race without resorting to medication. In general, medication to lose is usually considered an outside job, undertaken by outsiders seeking to influence the outcome of a race. Sometimes these individuals pursue this effort to the extent of medicating most of the horses in a race. Occasionally, therefore, the racing public is treated to the spectacle of favorites and other horses in a race running poorly, sometimes with their penises extended, a common sign of tranquilization, while a rank outsider runs his usually slow race and wins hands down. Therefore, although this form of medication is illegal, it is usually considered an outside job, and no action is taken against the trainer.

The third form of medication is medication to restore normal performance. The most controversial form of drug use in racehorses, this form of medication involves the administration of drugs to restore normal function, generally of wind or limb. These drugs are not considered stimulants, depressants, or agents that affect normal performance other than with respect to their specific effects on the area. For example, phenylbutazone is not thought of as increasing the performance of horses, but rather as "restoring" normal performance. These agents are thought to enable the animal to perform at peak form, but not to improve the animal's natural ability to race. In much the same way, furosemide is thought to allow an animal with respiratory problems to run to his best ability, but again, not to run beyond his natural ability. Horsemen consider these agents a substantial aid when fielding racing sound horses, enabling horses to run well and more consistently.

Medication to restore normal performance has its counterpart in the use of medication in the Olympic games, where many drugs and medications are permitted. For example, it would be an infraction of the conservative English rules of racing to try to adjust a filly's heat period, so that it could run a better race. The probability is, however, that most of the women competing in the Olympic games use similar hormones, in the form of the pill, to control their own menstrual cycles and fertility. In many other areas also, medications that would be illegal in horse racing are legal in human athletics. The use of NSAID such as phenylbutazone, caffeine (to certain levels), medication for blood pressure regulation, and some antiasthmatic medications is permitted in human athletics. The thought that if it is not a stimulant, a narcotic analgesic, or an anabolic steroid, its use in human athletics is permissible is far more liberal than those rules pertaining to any racing jurisdiction in the world.

The major difference between the rules of racing in a liberal racing jurisdiction and Olympic games medication rules is that use of local anesthetics is not permitted in horse racing. A horse is considered more likely to do damage to itself and to a jockey if a limb is "blocked out" as can be done with local anesthetics.

The use of another medication—corticosteroids—to restore normal performance is permissible in equine medicine. The corticosteroids are a sort of super phenylbutazone, effectively suppressing the inflammatory response and in this way readily normalizing inflamed tissue. These agents can be injected systemically, for an effect similar to that of phenylbutazone, or locally, as into a joint. Both of these actions are useful in a horse and can enable a horse to run soundly for a period. The corticosteroids can, however, have marked adverse effects, particularly on the structure of a joint when they are given intra-articularly. The analytic procedures on which effective

regulation of the corticosteroids depends, however, are still being developed, and not all states effectively control their use.

Other medications that may restore normal performance are vitamins and minerals. Whatever may be thought about the use of these agents, their ability to improve the performance of a well-fed and cared for horse is minimal. To determine whether blood or urine levels of these agents are due to normal and ordinary feeding or to "improper" administration of these agents is impossible. For this reason, the administration of vitamins and minerals is, in general, a sign of good horse care.

Evidence suggests that the use of specific drugs to restore normal performance is likely to be more successful than the use of stimulants in an attempt to induce a supra-normal performance. Phenylbutazone improved the performance of horses that were considered clinically sound, presumably because they were in fact subclinically lame. Local anesthetic blocks are so effective in reducing specific types of lameness that they are used in the diagnosis of lameness. Intra-articular corticosteroids are widely used in both human and equine athletes to restore normal joint function. In all of these cases, the medication is used in a very specific way, to restore a performance that had been substandard for that animal. Such usage of medications seems to be a more successful manuever, and is intuitively on a sounder basis than across-the-board attempts to produce a supra-normal performance with stimulant drugs.

Other forms of medication that may be attempted include use of diuretics to dilute out other drugs in the urine and the administration of agents to mask the detection of other drugs. Although the use of diuretics can reduce the concentration of some drugs and drug metabolites in urine, no problem should arise if precautions are taken. The effects of most diuretics are relatively transient; for example, although furosemide affects the detection of water-soluble drugs and drug metabolites in urine, the effect is over within 3 hours, if it is given under the guidelines suggested by the American Association of Equine Practitioners (AAEP). These guidelines are 4 hours before post time and at a dose of 0.5 mg/kg, under which circumstances its diluting effect on the detection of other drugs is minimal. Other drugs given in an attempt to mask the presence of other drugs are dipyrone and thiamine. Neither of these drugs, however, presents a significant challenge to a capable analytic chemist, and their ability to "mask" in the face of modern analytic methods is minimal.

Another mechanism of doping that has gained prominence recently is the concept of blood doping. Blood is drawn from horses 2 weeks before an event, and the red cells are extracted from the blood and stored. About 2 days before the competitive event, the stored cells are injected into the horse, enabling the horse to run in the race with an unusually high proportion of red cells in its blood. How effective this mechanism of doping may be is not clear. Of note, however, is the fact that the horse has its own natural "doping" mechanism: exercise or excitement makes a horse's hematocrit increased markedly, thereby increasing the amount of oxygen the blood can carry. Although this mechanism must be of considerable benefit to the horse, just how effective is the provision of extra red cells over and above the normal complement of cells is unclear. This form of doping must therefore be listed as a potential mechanism of increasing performance, the actual effectiveness of which, however, remaining unknown.

The final form of doping is accidental or technical doping, in which the agent either gets into the horse or is found in the horse's urine accidentally. Two major forms of this type of doping are described. One is medication with procaine penicillin, which can give rise to levels of procaine in the urine of horses for as many as 3 weeks. The other form is the administration of caffeine or other methylxanthines in feed or in small oral doses, which can give rise to levels of caffeine or its metabolites in the urine for as many as 2 weeks. For these reasons, the appearance of these two agents in the urine of racing horses is a considerable problem. The detection of these agents is the most common form of medication violations with stimulant drugs, and by and large these "doping" events are inadvertent.

T. Tobin

CONTROLLED MEDICATION

The use of drugs to improve a horse's performance has been a part of horse racing for at least 100 years. The history of medicating the equine athlete was well chronicled by Dr. Tom Tobin in his excellent text, *Drug and the Performance Horse*. More substances are now available, and more individuals, both professional and nonprofessional, are knowledgable with regard to the use and actions of these compounds. Thus, those of us involved with

the equine athlete realize certain rules must be set down concerning the use of these products.

Some people advocate that horses race in a "no medication" world. The more knowledgeable and experienced individuals engaged in regulation of these events, especially of horse racing, recognize that the "only hay, oats, and water" philosophy for the racing animals would be an unrealistic and unobtainable goal. It became evident that the alternative to a sensible, well-administered controlled medication program would not be a "No medication" situation but rather one of uncontrolled medication.

With much foresight, Dr. Gene Bierhaus initiated the first program of controlled medication in Colorado in 1958. He realized the problem of medication of the racing horse would only worsen as more substances were available as therapeutic agents. Although many changes and revisions have taken place over the years, this basic philosophy of a workable, realistic, controlled medication program remains viable and continues to serve as a model, in whole or in part, for the controlled medication programs of a large number of our parimutual racing states.

The responsibility for the formulation of the rules regarding the medication of the racehorse is assigned to the members of the racing commissions or wagering boards of the various racing jurisdictions. These individuals, for many reasons, have been given a difficult task. Almost without exception, members of commission or boards are political appointees who often have no experience with any facet of this complex racing industry other than as a spectator. Again, almost without exception, they are totally devoid of any knowledge regarding medication or its use, actions, and effects on the racing horse. They are often oblivious to the potential abuses of both the legal and illicit medications in these racing situations. To compromise their positions further, they are subject to a great deal of pressure from both the political arena and the various humane organizations, all of whom are equally uninformed, albeit well-intentioned.

Realizing the untenable position that these racing commissioners are expected to occupy, the AAEP offered assistance to the National Association of State Racing Commissioners (NASRC) with regard to the medication situation. The position of the AAEP is well known. In summary, the two paramount points follow: (1) The use of a stimulant, depressant, narcotic, tranquilizer, local anesthetic, or masking agent in a manner that might affect the racing performance of a horse is prohibited. 2) Full use of modern therapeutic measures to alleviate conditions of disease and injury and to protect the health and well-being of the horse is allowed.

No group of individuals has a greater concern for the health and welfare of our equine athletes than the AAEP. Also, the AAEP is more knowledgeable than any other group concerning both the medications available and their effects on racehorses. These veterinarians have devoted their lives to the care of horses. Therefore, that the NASRC chooses to ignore the recommendations of the AAEP when they formulate their medication guidelines is puzzling. Granted, the NASRC formed the Veterinary-Chemist Advisory Committee, which consists of many of the experts in the fields of equine medicine as well as racing chemistry. Yet, examination of the decisions made with respect to the input from this committee indicates that for the most part their advice was ignored during the decision-making process.

Many of the more recently appointed racing commissioners have made a concerted effort to become familiar with the medication problem. They have, in many cases, solicited the assistance of the equine practitioner on the race tracks, and such involvement will lead to a greater understanding of the problem and attainment of sensible solutions. Only when the facts are known and the education is complete can rational, realistic decisions be made concerning the formulation and administration of the rules regarding a controlled medication program. Of paramount importance is the understanding that the alternative to a sensible, controlled medication program is "un"controlled medication rather than "hay, oats, and water" situation.

The misnomer "permissive" medication is often incorrectly substituted for "controlled" medication. One premise of the controlled medication concept, however, is to limit the use of legal therapeutic medication to conform to prescribed rules and guidelines rather than to allow "permissive" use. Some individuals prefer the term "therapeutic medication."

In April of 1981, the NASRC adopted, in revised form, a proposed national medication guideline. These proposals are a matter of record and are not quoted herein. As of this writing, however, a very small percentage of the 29 racing states with pari-mutual wagering are attempting to conform in total to these guidelines. Perhaps had the input of the AAEP and their own Veterinary Chemist Advisory Com-