

CALIFORNIA HORSE RACING BOARD  
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## MEDICATION COMMITTEE MEETING

of the California Horse Racing Board, to consider Medication Committee issues, will be held on Friday, July 24, 2009, commencing at 10:00 a.m., at the Del Mar Surfside Race Place (Downstairs General Admission Area), 2260 Jimmy Durante Blvd., Del Mar, California. This meeting to discuss issues before the Medication Committee is noticed as a Board Meeting, in order to allow, consistent with California's Open Meeting Law, four or more CHRB commissioners, including non-Medication Committee member, to attend and participate in the meeting. In the absence of a board quorum, the commissioner attendees will nonetheless proceed with non-final actions similar to a committee of the whole.

### Agenda Items

1. Report and discussion of **exercise induced pulmonary hemorrhage (EIPH/bleeding) and the use of furosemide as permitted under CHRB Rule 1845, Authorized Bleeder Medication.**
2. Discussion regarding **CHRB Rule 1688, Use of Whips, and issues related to use of whips.**
3. Report and discussion regarding **anabolic steroid regulations including the addition of blood testing to current anabolic steroid testing procedures.**
4. Discussion regarding **national efforts relative to glucocorticosteroid (cortisone) policy and regulation.**
5. Discussion regarding **CHRB Rule 1866, Veterinarian's List, and issues related to current veterinarian's list procedures.**
6. Discussion and action regarding **proposed amendment to CHRB Rule 1866, Veterinarian's List, to prohibit a horse placed on the veterinarian's list as injured, unsound or lame, from working out within 72 hours of being placed on the list without permission of the Official Veterinarian.**
7. Discussion and action regarding **proposed amendment to CHRB Rule 1890, Possession of Contraband, to prohibit the possession on the premises during a recognized race meeting of any veterinary treatment or medication, which has not been prescribed or labeled in accordance with Rule 1840, Veterinary Practices and Treatments Restricted, and Rule 1864, Labeling of Medications.**

8. Discussion and action regarding **proposed amendment to CHRB Rule 1867, Prohibited Veterinary Practices**, to provide that the presence of any drug substance prohibited under this rule found in a test sample obtained consistent with the Board's rules shall apply in the same manner as to a horse entered to race.
9. Discussion and action regarding the proposed **amendment to CHRB Rules 1843.6, Total Carbon Dioxide Testing**, to authorize the Equine Medical Director and the stewards as well as the Official Veterinarian to direct that blood samples be taken from a horse for the purposes of TCO<sub>2</sub> testing.
10. Discussion and action regarding the **proposed amendment to CHRB Rule 1858, Test Sample Required**, to reduce the minimum number of "other" horses designated for testing from six to one horse, and to authorize the Equine Medical Director to designate such horses for testing as well as the stewards and Official Veterinarian.
11. Discussion and action regarding the **proposed amendment to CHRB Rule 1859, Taking, Testing and Reporting of Samples**, to provide that urine, blood or other official test samples may be taken under the direction of the Equine Medical Director as well as the Official Veterinarian.

Additional information regarding this meeting may be obtained from Jacqueline Wagner at the CHRB Administrative Office, 1010 Hurley Way, Suite 300, Sacramento, CA 95825; telephone (916) 263-6000; fax (916) 263-6042. A copy of this notice can be located on the CHRB website at [www.chrb.ca.gov](http://www.chrb.ca.gov). \*Information for requesting disability related accommodation for persons with a disability who require aids or services in order to participate in this public meeting, should contact Jacqueline Wagner.

MEDICATION COMMITTEE  
Chairman John Harris, Chairman  
Commissioner Bo Derek, Member  
Kirk E. Breed, Executive Director

CALIFORNIA HORSE RACING BOARD  
TITLE 4. CALIFORNIA CODE OF REGULATIONS  
ARTICLE 15. VETERINARY PRACTICES  
RULE 1845 AUTHORIZED BLEEDER MEDICATION

Medication Committee Meeting  
July 24, 2009

1845. Authorized Bleeder Medication.

Authorized bleeder medication for the control of exercised induced pulmonary hemorrhage (EIPH) may be administered to a horse on the authorized bleeder medication list.

(a) A horse is eligible to race with authorized bleeder medication if the licensed trainer and/or veterinarian determines it is in the horse's best interest. If a horse will race with authorized bleeder medication, form CHRB 194 (New 08/04), Authorized Bleeder Medication Request, which is hereby incorporated by reference, shall be used to notify the official veterinarian prior to entry.

(b) The official laboratory shall measure the specific gravity of post-race urine samples to ensure samples are sufficiently concentrated for proper chemical analysis. The specific gravity of such samples shall not be below 1.010.

(c) If the specific gravity of the post-race urine sample is determined to be below 1.010, or if a urine sample is not available for testing, quantitation of furosemide in serum or plasma shall then be performed. Concentrations may not exceed 100 nanograms of furosemide per milliliter of serum or plasma.

(d) A horse qualified to race with authorized bleeder medication shall be assigned to a pre-race security stall prior to the scheduled post time for the race in which it is entered, and shall remain there until it is taken to the receiving barn or the paddock to be saddled or harnessed for the race. While in the security stall, the horse shall be in the care, custody, control and constant view of the trainer, or a licensed person

assigned by the trainer. The trainer shall be responsible for the condition, care and handling of the horse while it remains in the security stall. The official veterinarian may permit a horse to leave the security stall to engage in track warm-up heats prior to a race.

(e) A horse qualified for administration of authorized bleeder medication must be treated on the grounds of the racetrack where the horse will race no later than four hours prior to post time of the race for which the horse is entered. The authorized bleeder medication, furosemide, shall be administered by a single intravenous injection only, in a dosage of not less than 150 mg. or not more than 500 mg. A horse racing with furosemide must show a detectable concentration of the drug in the post-race serum, plasma or urine sample. The veterinarian administering the bleeder medication shall notify the official veterinarian of the treatment of the horse. Such Notification shall be made using CHRB form-36 (New 08/04), Bleeder Treatment Report, which is hereby incorporated by reference, not later than two hours prior to post time of the race for which the horse is entered. Upon the request of a Board representative, the veterinarian administering the authorized bleeder medication shall surrender the syringe used to administer such medication, which may then be submitted for testing.

(f) A horse placed on the official authorized bleeder medication list must remain on the list unless the licensed trainer and/or veterinarian requests that the horse be removed. The request must be made using CHRB form 194 (New 08/04), and must be submitted to the official veterinarian prior to the time of entry. A horse removed from the authorized bleeder medication list may not be placed back on the list for a period of 60 calendar days unless the official veterinarian determines it is detrimental to the welfare of the horse. If a horse is removed from the authorized bleeder medication list a

second time in a 365-day period, the horse may not be placed back on the list for a period of 90 calendar days.

(g) If the official veterinarian observes a horse bleeding externally from one or both nostrils during or after a race or workout, and determines such bleeding is a direct result of EIPH, the horse shall be ineligible to race for the following periods:

- First incident—14 days;
- Second incident within 365-day period—30 days;
- Third incident within 365-day period—180 days;
- Fourth incident within 365-day period—barred for racing lifetime.

For the purposes of counting the number of days a horse is ineligible to run, the day after the horse bled externally is the first day of such period. The voluntary administration of authorized bleeder medication without an external bleeding incident shall not subject a horse to the initial period of ineligibility as defined under this subsection.

Authority: Sections 19440 and 19562,  
Business and Professions Code.

Reference: Sections 19580 and 19581,  
Business and Professions Code.

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## Efficacy of furosemide for prevention of exercise-induced pulmonary hemorrhage in Thoroughbred racehorses

Kenneth W. Hinchcliff, BVSc, PhD, DACVIM; Paul S. Morley, DVM, PhD, DACVIM; Alan J. Guthrie, BVSc, PhD

EQUINE

**Objective**—To evaluate the efficacy of furosemide for prevention of exercise-induced pulmonary hemorrhage (EIPH) in Thoroughbred racehorses under typical racing conditions.

**Design**—Randomized, placebo-controlled, blinded, crossover field trial.

**Animals**—167 Thoroughbred racehorses.

**Procedures**—Horses were allocated to race fields of 9 to 16 horses each and raced twice, 1 week apart, with each of the 2 races consisting of the same race field and distance. Each horse received furosemide (500 mg, IV) before one race and a placebo (saline solution) before the other, with the order of treatments randomly determined. Severity of EIPH was scored on a scale from 0 to 4 after each race by means of tracheobronchoscopy. Data were analyzed by means of various methods of multivariable logistic regression.

**Results**—Horses were substantially more likely to develop EIPH (severity score  $\geq 1$ ; odds ratio, 3.3 to 4.4) or moderate to severe EIPH (severity score  $\geq 2$ ; odds ratio, 6.9 to 11.0) following administration of saline solution than following administration of furosemide. In addition, 81 of the 120 (67.5%) horses that had EIPH after administration of saline solution had a reduction in EIPH severity score of at least 1 when treated with furosemide.

**Conclusions and Clinical Relevance**—Results indicated that prerace administration of furosemide decreased the incidence and severity of EIPH in Thoroughbreds racing under typical conditions in South Africa. (*J Am Vet Med Assoc* 2009;235:76–82)

Horse racing is a popular, multimillion-dollar industry worldwide, but reports of injuries and other physical disorders in racehorses have harmed public perceptions of the sport and challenged the economic viability of the racing industry. In addition, controversy has been generated by use of medications that are perceived to affect the performance or well-being of racehorses. One of the foremost concerns in this regard is the occurrence of EIPH and the use of medications in an attempt to prevent it. Factors that make this an important issue include the frequency of EIPH, the importance of the disease in terms of the performance and well-being of horses, and the common use of prophylactic treatments. At least 80% of racehorses can be expected to develop the condition at some time during their career,<sup>1,2</sup> approximately 60% of sudden deaths during racing have been attributed to pulmonary hemorrhage,<sup>2</sup> severe EIPH has been shown to adversely affect race performance,<sup>3</sup> and EIPH is believed to adversely affect the overall health of racehorses.<sup>4</sup> Beyond this,

### ABBREVIATIONS

EIPH	Exercise-induced pulmonary hemorrhage
IQR	Interquartile range
NHRA	National Horse Racing Authority of South Africa
OR	Odds ratio
R	South African Rand

management and treatment of EIPH have a substantial economic impact, with the cost of treating EIPH estimated to exceed \$100 million annually in the United States alone.<sup>4</sup>

Furosemide is the drug most widely used to prevent EIPH in racehorses and is administered on the day of racing to > 92% of Thoroughbred racehorses in North America (approx 400,000 doses/y).<sup>4,5</sup> However, few studies have examined whether furosemide is effective in preventing the development of EIPH, and the studies that have been performed were not conducted

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under actual racing conditions. Given this lack of evidence and the finding that furosemide can improve the performance of Thoroughbred racehorses,<sup>6</sup> the use of furosemide to prevent EIPH remains controversial. The purpose of the study reported here, therefore, was to evaluate the efficacy of furosemide for the prevention of EIPH in Thoroughbred racehorses racing under typical conditions.

## Materials and Methods

**Study design**—The study was conducted as a randomized, placebo-controlled, crossover field trial. All study participants, including data analysts, were blinded to treatment assignments until statistical analyses related to the primary outcome were completed. The study was conducted at the Vaal Racing and Training facility in Free State Province, Republic of South Africa, between November 20 and 28, 2007, and the study protocol was approved by the institutional animal care and use committees of the University of Pretoria and Colorado State University. For all horses participating in the study, the owner or his or her designee (ie, the trainer) provided informed consent.

**Experimental protocol**—In an attempt to include horses broadly representative of all horses racing in South Africa, the study was announced at public meetings of trainers, during television programs devoted to horse racing, via racing Web sites, in text messages to trainers, and in advertisements in the local print media inviting owners and trainers to nominate horses for inclusion in the study. Horses considered eligible for participation were Thoroughbred racehorses registered with the NHRA and trained by licensed trainers. Horses were enrolled without knowledge of whether they had previously had EIPH, with the exception that horses with a history of epistaxis during racing or training that had been documented by a veterinarian or steward employed by the NHRA were excluded. At the time horses were nominated for inclusion in the study, the owner or trainer was asked to indicate the specific race or races (eg, 1,300-m race with colts and geldings that had merit ratings  $\leq 76$ ) designated for the study during which the horse would be allowed to race.

Horses accepted for inclusion in the study were assigned to race fields on the basis of age, sex, and race record by a professional handicapper who also assigned handicap weights, with each race field consisting of 9 to 16 horses. Enrolled horses raced twice, 7 days apart, with each of the 2 races consisting of the same race field (with the exception of horses withdrawn from the study prior to the second race) and same race distance. Horses carried the same weight, were ridden by the same jockey, started from the same barrier stall, and wore identical tack during the 2 races. Races were run over turf according to the rules of racing of the NHRA, with the exception that administration of furosemide or a placebo prior to each race was permitted for purposes of the present study. In accordance with NHRA rules, blood and urine samples were obtained from selected horses after each race and tested for prohibited medications, including NSAIDs. Owners of horses included in the study were paid a participation fee of

R2,000 on completion of the second race. In addition, prize money was paid to the owners of horses that finished first (R28,750), second (R9,200), third (R4,600), fourth (R2,300), or fifth (R1,150) in each race. Prior to each race, trainers were allowed to withdraw (scratch) horses from the race in accordance with the standard rules of racing. Horses that were withdrawn prior to the first race were not allowed to participate in the second race.

Trainers were required to bring participating horses to the racetrack 4.5 hours before the scheduled start time of the race in which they were to compete. As each horse arrived at the track, study personnel confirmed the identity of the horse by checking for a microchip and applied an adhesive tag with a unique identifying number to the mane. Horses were then weighed, placed in stalls, and attended by their grooms. Access to food and water was denied from 4 hours prior to racing until after a tracheobronchoscopic examination was performed following completion of the race. Thirty minutes before the scheduled start of the race, horses were again weighed and moved to the saddling enclosure.

Four hours ( $\pm 5$  minutes) before the scheduled start of the race, horses were treated with furosemide or a placebo. Each horse received furosemide before one race and a placebo before the other. Treatment order (furosemide prior to the first race and placebo prior to the second race vs placebo prior to the first race and furosemide prior to the second race) was randomly determined by assigning a computer-generated random number to every horse prior to the first race. The first half of each field, as determined by these random numbers, was assigned to receive furosemide prior to the first race and a placebo prior to the second race. The second half of each field was assigned to the opposite treatment order.

Randomization and treatment assignment were performed by an investigator who was not involved in administering any treatments on race days. Individual doses of furosemide<sup>a</sup> (500 mg) and a placebo solution were prepared for all horses prior to the initiation of the study. Each syringe contained 10 mL of solution, and syringes were labeled with horse identification number, race number, and race day. The furosemide solution that was used for the present study had a slight yellow color. Therefore, the placebo solution consisted of saline (0.9% NaCl) solution to which a vitamin B complex solution<sup>b</sup> (0.1 mL/1,000 mL of saline solution) had been added as a coloring agent. Because each 10-mL dose of the placebo solution contained only 0.0001 mL of the vitamin B complex solution, it was considered unlikely to have had any clinically important biological effect, and vitamin B complex solution was not added to the furosemide solution. Furosemide and placebo solutions were administered by IV injection into a jugular vein. Blood samples were collected 15 minutes after treatments were administered and tested for furosemide concentration to verify that the correct treatment had been given.

All races started within 4 minutes of the scheduled start times. At the end of each race, horses were returned to the parade ring, where they were examined by veterinary officials from the NHRA and their tack

was removed. A tracheobronchoscopic examination was then performed. All tracheobronchoscopic examinations were performed by one or the other of 2 teams consisting of 2 veterinarians and 2 lay assistants each. Individuals performing the tracheobronchoscopic examinations were experienced in the procedure, were provided information on the general study protocol, and were specifically asked to thoroughly examine the pharynx, larynx, and trachea to the level of its bifurcation. However, they were blinded to treatment group assignment. All examinations were directly overseen by one of the authors (KWH) and were digitally recorded. After completion of the tracheobronchoscopic examination, horses were released to the care of their trainers.

Maximum environmental temperature on race days ranged from 21.1° to 27.6°C (70.0° to 81.7°F), and minimum environmental temperature ranged from 18.9° to 25.6°C (66.0° to 78.1°F). Maximum humidity ranged from 18% to 73%, and minimum humidity ranged from 14% to 55%. Wind speed during the times that horses raced ranged from 3.4 to 9.2 m/s. A total of 2 mm of rain fell during the time that horses raced on the first race day; 4.2 mm of rain fell on the last of the 4 race days, although this fell after completion of the last race that day.

**Assessment of EIPH severity**—Digital recordings of each of the tracheobronchoscopic examinations were reviewed by 3 individuals experienced in endoscopic examination of the airway in horses. Individuals scoring the recordings were blinded to identity of the horses and treatment group assignments.

Scoring of EIPH severity was performed by all 3 individuals concurrently, with the digital recording displayed on a large-screen television. Each individual was asked to assign a score from 0 to 4 for severity of EIPH on the basis of a previously reported validated scoring system.<sup>7</sup> Individual scores were then discussed, and if necessary, the examination was reviewed to obtain a consensus score, with consensus scores used in all data analyses.

**Data analysis**—During design of the study, sample size calculations were performed with standard commercial software.<sup>c</sup> For these calculations, it was assumed that if furosemide were efficacious, the proportion of horses with an EIPH score  $\geq 2$  would be  $\leq 10\%$  following treatment with furosemide, compared with an assumed baseline prevalence of 20% when horses were not treated with furosemide,<sup>3</sup> and that the mean  $\rho$  value for repeated observations among subjects would be 0.4. When the  $\alpha$  error rate was set at 0.05, sample size calculations indicated that approximately 150 horses would need to complete both arms of the study to achieve a  $\beta$  error rate of 0.2. Assuming that a maximum of 20% of the study subjects would be withdrawn between the first and second arms of the study and that race fields would achieve a minimum of 90% subscription through the use of typical race enrollment methods, we calculated that 12 races with a maximum of 16 horses starting in each race would be required for each arm of the study. No rules for stopping the study or interim analysis of results were put in place.

The primary study outcome was the score for severity of EIPH as determined by means of tracheobronchos-

copy. Continuous data were summarized as median and IQR because data were generally not normally distributed, with the exception that differences between pre- and posttreatment body weights of horses were normally distributed and were summarized as mean and SE and elapsed times between the start of racing and tracheobronchoscopy were normally distributed and were summarized as mean and SD. For horses that completed both arms of the study, the EIPH severity score after treatment with furosemide was compared with severity score after treatment with placebo, and the difference between scores was summarized as mean and SD; the Wilcoxon signed rank test was used to determine whether the median difference between scores was significantly different from 0. The Wilcoxon rank sum test was used to compare ordinal and continuous data between groups, and the  $\chi^2$  test of homogeneity was used to compare categorical data between groups. The Bowker symmetry test was used to compare paired EIPH severity scores for horses that completed both arms of the study.

Scores for endoscopic severity of EIPH could not be analyzed in their native form (ie, scores of 0 to 4) by means of proportional odds, multinomial logistic regression because assumptions of proportionality were not met. Therefore, scores were dichotomized (0 vs 1 to 4 and 0 or 1 vs 2 to 4) to allow analysis by means of logistic regression. Because various methods have been proposed for analysis of data from crossover studies with binomial outcomes,<sup>8-10</sup> mixed-effects, repeated-measures fixed-effects, and conditional logistic regression models were all used to analyze dichotomized scores. Horse identity was nested within treatment sequence in these analyses to account for random and repeated effects. The primary exposure of interest was treatment (furosemide vs placebo); however, sex, race distance, age, and treatment sequence (furosemide prior to the first race and placebo prior to the second race vs placebo prior to the first race and furosemide prior to the second race) were also evaluated as fixed effects in mixed-effects and repeated-measures modeling. It was not possible to analyze sex, race distance, or age in conditional logistic regression models, as there were no differences in these exposures for paired observations. Age ( $\leq 3$  years old vs  $\geq 4$  years old) and race distance (1,000, 1,300, or 1,600 m) were analyzed as categorical fixed effects. Exposure variables were analyzed for simple associations with outcome and were included in models with the primary exposure of interest (treatment). Confounding was investigated in multivariable models by evaluating the change in parameter estimates that occurred when variables were included or excluded from the model. Confounding was considered to be present when estimates changed by  $\geq 20\%$ . Effect modification was investigated by inclusion of first-order interaction terms. Treatment sequence was included as a random or repeated effect in each model, regardless of whether a significant association could be identified, when treatment sequence was analyzed as a fixed effect. This was considered a conservative method of accounting for incomplete washout,<sup>8-10</sup> even though incomplete washout was not expected.

It was not possible to analyze data on an intent-to-treat basis because tracheobronchoscopy is not routinely

performed after racing and occurrence of EIPH was not known for horses that did not participate. Therefore, data were analyzed on a per-protocol basis. However, use of repeated-measures and mixed-effects logistic regression allowed inclusion of data for horses that only completed the first race (as opposed to requiring that horses complete both arms of the study to be included in analyses), which provided some assurance that missing data for horses that were withdrawn (scratched) did not strongly bias the conclusions of the study.

Analyses were performed with commercial software.<sup>d</sup> A priori, values of  $P \leq 0.05$  were determined to be significant.

## Results

A total of 328 horses were nominated for inclusion in the study. Of these, 193 (77 females and 116

stallions and geldings) were enrolled in the study by the professional handicapper. Of the 193 horses enrolled in the study, 155 competed in both races, 12 competed only in the first race, and 26 did not compete in either race (Table 1). Horses that participated in the study were from 40 stables (median, 3.5 horses/stable; range, 1 to 14 horses/stable). Twenty-three trainers withdrew at least 1 horse from a study race. Demographic characteristics of horses that did not compete in either race did not differ significantly from characteristics of horses that competed in at least 1 race (Table 2).

Two horses that competed in both races would not allow tracheobronchoscopy to be performed after either race because of their fractious nature, and 1 horse would not allow tracheobronchoscopy to be performed after the second race. Mean  $\pm$  SD time between the start of racing and tracheobronchoscopy was  $41.6 \pm 5.9$

Table 1—Details of racing conditions for Thoroughbred racehorses enrolled in a study of the efficacy of furosemide for prevention of EIPH.

Race day	Race No.	Distance (m)	Class	Horses nominated	Horses enrolled*	Raced in first race	Raced in second race
A	1	1,300	Maiden fillies	38	18	15	12
A	2	1,300	Maiden colts and geldings	32	17	14	14
A	3	1,300	Maiden colts and geldings	31	18	15	14
A	4	1,600	Maiden colts and geldings	27	14	14	13
A	5	1,600	Maiden colts and geldings	26	14	13	11
A	6	1,600	Maiden fillies	43	18	15	13
B	1	1,000	Fillies and mares (merit ratings $\leq 68$ )	22	13	9	9
B	2	1,000	Colts and geldings (merit ratings $\leq 72$ )	37	18	16	16
B	3	1,300	Colts and geldings (merit ratings $\leq 76$ )	56	18	15	13
B	4	1,300	Fillies and mares (merit ratings $\leq 72$ )	39	16	15	14
B	5	1,600	Fillies and mares (merit ratings $\leq 68$ )	35	12	12	12
B	6	1,600	Colts and geldings (merit ratings $\leq 68$ )	38	17	14	14
			<b>Total</b>	<b>328</b>	<b>193</b>	<b>167</b>	<b>155</b>

Of the 328 horses nominated for inclusion in the study, 235 were nominated for 1 race, 90 were nominated for 2 races, and 3 were nominated for 3 races. Horses enrolled in the study raced twice, 7 days apart, with each of the 2 races consisting of the same race field (with the exception of horses withdrawn from the study prior to the second race) and same race distance. Each horse received furosemide (500 mg, IV) before one race and a placebo (saline solution) before the other, and severity of EIPH was scored immediately after the race by means of tracheobronchoscopy.

\*Included starters and reserves; the maximum number of horses in each race was 16 starters and 2 reserves.

Table 2—Demographic characteristics of Thoroughbred racehorses enrolled in a study of the efficacy of furosemide for prevention of EIPH.

Variable	Nominated but not enrolled	Raced at least once	Enrolled but did not race	P value
No. of horses	135	167	26	NA, NA
Age	4 (3-5)	4 (3-4)	4 (4-5)	0.39, 0.12*
Sex				0.86, 0.34†
Stallion	9	13	0	
Gelding	69	88	15	
Female	57	66	11	
Assigned weight (kg)	NA	57 (56-58)	58 (55-58)	NA, 0.45*
Merit rating‡	65 (55-72)	65 (59-69)	58 (54-65)	0.28, 0.02*
Lifetime No.				
Starts	12 (5-21)	10 (3-22)	12 (8-21)	0.35, 0.19*
First-place finishes	1 (0-2)	0 (0-1)	1 (0-1)	0.06, 0.79*
Second- and third-place finishes	2 (0-5)	2 (0-4)	2 (1-5)	0.50, 0.15*
Finishes earning money	4 (2-9)	4 (0-9)	4.5 (3-8)	0.56, 0.35*
Lifetime earnings (R)	536,250 (220,000-1,018,700)	60,850 (23,000-111,745)	48,750 (23,550-94,490)	0.21, 0.42*

Data are given as median (IQR) or number of horses. P values are given as the P value for comparisons between horses that were nominated but not enrolled and horses that were enrolled, followed by the P value for comparisons between horses that raced at least once and horses that were enrolled but did not race.

\*P value from Wilcoxon rank sum test. †P value from  $\chi^2$  test of homogeneity. ‡Excludes maidens.

NA = Not applicable.

minutes when horses were treated with furosemide and  $42.1 \pm 6.0$  minutes when horses were treated with saline solution. These values were not significantly ( $P = 0.63$ ) different.

Scores for endoscopic severity of EIPH ranged from 1 to 4 in 89 of 161 (55.3%) horses after administration of furosemide and in 125 of 156 (80.1%) horses after administration of saline solution (Figure 1); these proportions were significantly ( $P < 0.001$ ) different. For the 152 horses examined after both races, 87 (57.2%) had EIPH (ie, severity score  $\geq 1$ ) after administration of furosemide, whereas 120 (78.9%) had EIPH after administration of saline solution (Table 3). None of the horses had severe EIPH (ie, a score of 3 or 4) after administration of furosemide. Overall, 81 of the 120 (67.5%) horses that had EIPH after administration of saline solution had a reduction in EIPH severity score of at least 1 when treated with furosemide. Mean  $\pm$  SD reduction in EIPH severity score after furosemide administration in the 120 horses that had EIPH after administration of placebo was  $0.63 \pm 0.08$ ; median reduction in EIPH severity score was significantly ( $P < 0.001$ ) different from 0.

Results of mixed-effects, repeated-measures fixed-effects, and conditional logistic regression analyses all indicated that horses had significantly lower odds of developing EIPH (ie, severity score  $\geq 1$ ) or moderate to severe EIPH (ie, severity score  $\geq 2$ ) following administration of furosemide, compared with odds following administration of saline solution (Table 4). Horses were 3.3 to 4.4 times as likely to have an EIPH score  $\geq 1$  following administration of saline solution than they were following administration of furosemide and were 6.9 to 11.0 times as likely to have an EIPH score  $\geq 2$  following administration of saline solution than they were following administration of furosemide.

Although results of mixed-effects and repeated-measures fixed-effects logistic regression suggested that horses that were  $\geq 4$  years old were more likely to develop EIPH (ORs, 1.8 and 1.9, respectively;  $P = 0.04$  and 0.07, respectively), no effect modification (ie, an interaction between age and treatment) was detected, and age did not appear to be a confounding variable in these analyses. Development of EIPH was also not associated with sex ( $P = 0.30$  and 0.38, respectively), distance raced ( $P = 0.38$  and 0.99, respectively), or treatment sequence ( $P = 0.69$  and 0.99, respectively) in these analyses.

Mean  $\pm$  SE weight loss during the 4 hours prior to the start of the race was  $12.7 \pm 0.33$  kg ( $27.9 \pm 0.73$  lb) when horses were given furosemide ( $n = 160$ ) and  $5.4 \pm 0.28$  kg ( $11.9 \pm 0.62$  lb) when horses were given saline solution (155). These values were significantly ( $P < 0.001$ ) different. There was no association between weight loss and development of EIPH, even when controlling for treatment ( $P \geq 0.50$ ).

Analysis of blood samples collected 15 minutes after administration of furosemide or placebo confirmed the presence of furosemide in all horses after administration of furosemide and in none of the horses after administration of the placebo.

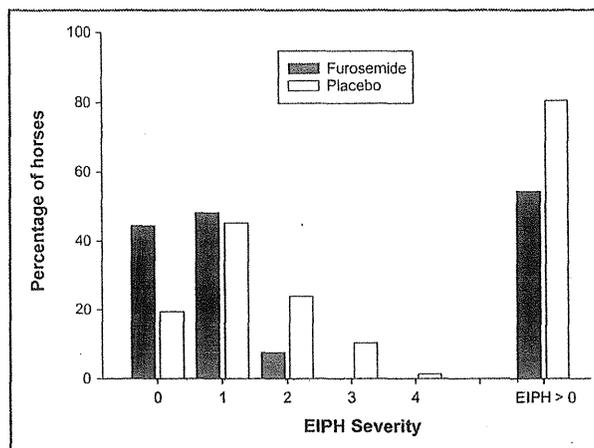


Figure 1—Distribution of scores for endoscopic severity of EIPH in Thoroughbred horses that raced following administration of furosemide (500 mg, IV;  $n = 161$ ) or a placebo (saline solution; 156).

Table 3—Cross-classification of scores for endoscopic severity of EIPH following racing in 152 Thoroughbred racehorses competing twice under similar conditions each time, except that furosemide (500 mg, IV) was administered prior to one race and a placebo (saline solution) was administered prior to the other.

EIPH score when administered furosemide	EIPH score when administered placebo					Total
	0	1	2	3	4	
0	21	32	10	2	0	65
1	10	32	21	11	1	75
2	1	3	4	3	1	12
3	0	0	0	0	0	0
4	0	0	0	0	0	0
<b>Total</b>	<b>32</b>	<b>67</b>	<b>35</b>	<b>16</b>	<b>2</b>	<b>152</b>

Potential EIPH scores ranged from 0 to 4. Distribution of scores differed significantly (Bowker symmetry test;  $P < 0.001$ ) between treatments.

Table 4—Results of logistic regression analysis of EIPH severity scores for Thoroughbred racehorses enrolled in a study of the efficacy of furosemide for prevention of EIPH.

Logistic regression analysis method	OR	95% CI	P value
Development of EIPH (ie, severity score $\geq 1$ )			
Mixed-effects	3.4*	2.0–5.7	< 0.001
Repeated-measures fixed-effects	3.3*	2.1–5.2	< 0.001
Conditional	4.4†	2.2–8.8	< 0.001
Development of moderate to severe EIPH (ie, severity score $\geq 2$ )			
Mixed-effects	7.1*	3.6–14.1	< 0.001
Repeated-measures fixed-effects	6.9*	3.7–13.0	< 0.001
Conditional	11.0†	4.0–30.3	< 0.001

\*Odds ratio was adjusted for age. †Odds ratio was not adjusted for age, because this variable did not differ between paired observations. CI = Confidence interval.  
Odds ratios represent the odds that horses would develop EIPH following administration of a placebo (saline solution), compared with the odds that they would develop EIPH following prerace administration of furosemide (500 mg, IV).

## Discussion

Results of the present study indicated that prerace administration of furosemide decreased the incidence and severity of EIPH in Thoroughbreds racing under

typical conditions in South Africa. Specifically, horses were substantially more likely to develop EIPH (severity score  $\geq 1$ ; OR, 3.3 to 4.4) or moderate to severe EIPH (severity score  $\geq 2$ ; OR, 6.9 to 11.0) following administration of saline solution than following administration of furosemide, and the estimated proportion (unadjusted for repeated measures or confounding) of horses that developed EIPH (ie, severity score  $\geq 1$ ) following administration of furosemide (89/161 [55.3%]) was significantly lower than the estimated proportion that did following administration of saline solution (125/156 [80.1%]). In addition, 81 of the 120 (67.5%) horses that had EIPH after administration of saline solution had a reduction in EIPH severity score of at least 1 when treated with furosemide.

Important strengths of the present study include the large number of horses examined, the evaluation of horses after standard race conditions, and the use of horses from a population expected to be at risk for developing EIPH (ie, Thoroughbred racehorses in active training and racing). Because various methods have been recommended for analysis of data from crossover studies, we elected to use mixed-effects, repeated-measures fixed-effects, and conditional logistic regression to analyze our data, and results of all 3 analyses were consistent. The strong association between furosemide administration and protection against development of EIPH made it unlikely that unidentified confounding factors or other biases were solely responsible for this effect. The use of a crossover study design enhanced the statistical power of the study over that associated with a parallel-group study design.<sup>11</sup>

Examination of drug effects under actual conditions of use has long been recognized as the best measure of efficacy in human medicine, with randomized, controlled, clinical trials considered to provide the highest degree of evidence for efficacy.<sup>12</sup> However, such trials can be difficult to perform in veterinary medicine, and we are not aware of any previous such studies that have addressed the effects of various preventive measures on the development of EIPH in racehorses.

Results of the present study provide strong evidence that furosemide can help prevent the development of EIPH in Thoroughbred racehorses. As such, its use in racehorses might be justifiable, assuming that other regulatory and policy issues important to the integrity of the sport are adequately addressed.

The mechanism by which furosemide prevents EIPH is unclear, and the present study was not designed to address this issue. It has been speculated that furosemide-induced reductions in body weight are indicative of reductions in body water and intravascular fluid volume and that these reductions in body water and intravascular fluid volume attenuate the exercise-induced increase in pulmonary arterial blood pressure typically associated with exercise, with a consequent reduction in the incidence of alveolar capillary rupture and decreased hemorrhage.<sup>13-15</sup> The amount of weight lost by horses in the present study after furosemide administration was consistent with the amount of weight loss in horses administered furosemide under experimental conditions.<sup>16-18</sup> However, weight loss does not appear to be directly related to the mechanism by which

furosemide prevents EIPH, in that we did not identify an association between amount of weight lost and prevention of EIPH in the present study. We have previously shown that EIPH adversely affects the performance of racehorses and that treatment with furosemide improves race performance,<sup>3,6</sup> and results of the present study would seem to suggest that the improved performance associated with furosemide could potentially be attributed to prevention or mitigation of EIPH.

For the present study, we believed that evaluating a large number of horses under actual racing conditions was important because previous studies<sup>13,19</sup> have used experimental models (eg, horses running on a treadmill) that might not reflect racing conditions, had low statistical power because of low numbers of horses, or had limitations in study design or statistical analysis that may have affected their results. Two previous studies<sup>1,20</sup> have examined the effect of furosemide in racehorses under field conditions, although with differing conclusions regarding efficacy. However, neither study was conducted as a randomized, controlled trial, and the data analysis in one of these studies<sup>21</sup> has been criticized.

An important concern with crossover studies is that the time between arms of the study (ie, the washout period) must be sufficiently long to preclude any residual effects associated with the previous treatment. In the present study, we elected to use a washout period of 7 days on the basis of the reported short elimination half-life of furosemide in horses ( $\beta$  half-life, 24 minutes;  $\gamma$  half-life, 177 minutes) and the brief (1-hour) diuretic effect of the drug.<sup>22</sup> The fact that we did not detect furosemide in any of the blood samples collected 15 minutes after administration of saline solution suggested that the washout period was adequate. In addition, there was no evidence that treatment order had an effect on the results of our statistical analyses. Finally, even if there had been a carryover effect in horses that had been treated with furosemide first, this would have acted to make it more difficult to identify a difference between the 2 treatments.

Furosemide reduces mucociliary clearance in humans and causes bronchodilation in ponies with recurrent airway obstruction.<sup>23,24</sup> It is possible, therefore, that furosemide did not actually decrease alveolar bleeding in the present study but simply decreased the rostral progression of blood from the alveoli, diminishing the amount of blood in the trachea at the time of endoscopic examination and resulting in an artifactually low EIPH severity score. Alternatively, bronchodilation secondary to furosemide administration might have favored rostral movement of blood and made the endoscopic score appear worse than it would have been had furosemide not been administered. We believe that the magnitude of either of these potentially conflicting effects is likely to be small in horses without recurrent airway obstruction and bronchoconstriction and would have been unlikely to have materially affected the overall conclusions of the present study.

The present study was performed in South Africa for logistic reasons. However, South Africa has a well-regulated racing industry with horses comparable to those racing in other parts of the world. We believe, therefore, that our results can be generalized to other

racing jurisdictions, particularly given the relative genetic homogeneity of Thoroughbred racehorses,<sup>25</sup> the similarity in training techniques and racing conditions throughout the world,<sup>26</sup> and the characteristics of horses included in our study. Although racing and training conditions in other parts of the world do differ from those in South Africa in minor respects, we do not have any evidence that any of these differences have been demonstrated to have an impact on the frequency or severity of EIPH. Therefore, we believe that results of the present study are relevant to horses racing worldwide.

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  - b. Kryovite B Co Super, Kyron Laboratories (Pty) Ltd, Benrose, South Africa.
  - c. PASS 2007, Number Cruncher Statistical Systems, Kayesville, Utah.
  - d. SAS, version 9.2, SAS Institute Inc, Cary, NC.
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#### FOR IMMEDIATE RELEASE

June 29, 2009

### Study: Furosemide has health benefits for Thoroughbred racehorses

**Schaumburg, IL** — A groundbreaking study to be published in the *Journal of the American Veterinary Medical Association (JAVMA)* shows that furosemide does more than enhance performance in Thoroughbred racehorses; it also has beneficial effects on the health and welfare of those horses.

Most countries ban the race-day use of furosemide because it improves performance in racehorses. Only the United States, some South American countries, including Brazil, and some tracks in Canada, allow the use of furosemide on race day.

"The data in the study provides the most reliable information to guide the highly politicized debate over use of furosemide in horses," says Dr. Kenneth Hinchcliff, professor and dean of the Faculty of Veterinary Science, The University of Melbourne, and co-author with Professor Paul Morley, Colorado State University, and Professor Alan Guthrie, University of Pretoria in South Africa. "To date, there has been only a limited amount of high-quality evidence – and none matching the quality of this study – to inform the debate. We know that furosemide is associated with improved performance, and that exercise-induced pulmonary hemorrhage (EIPH) markedly affects race performance. But we didn't know the answer to the third – and most important – leg of the trifecta: Whether furosemide is effective in treating EIPH. We now know."

The study, "Efficacy of furosemide for prevention of exercise-induced pulmonary hemorrhage in Thoroughbred racehorses," which will appear in the July 1, 2009, issue of the *JAVMA*, is the first of its kind to draw a definitive link between the use of the drug and the prevention of the bleeding condition in Thoroughbreds.

The study included 167 Thoroughbred racehorses that performed under typical racing conditions in South Africa between Nov. 20 and Nov. 28, 2007. Each horse in the study raced twice, once after receiving furosemide before the race and once after receiving a placebo. The results showed that horses were 3 to 11 times as likely to have EIPH after placebo administration as they were after administration of furosemide. In addition, about two-thirds of the horses that had EIPH after administration of the placebo had a reduction in EIPH severity when treated with furosemide.

Hinchcliff, Morley and Guthrie conducted what is considered the "gold standard" of scientific studies, performing a well-designed, randomized, controlled clinical trial.

The study was truly an international collaboration.

"The study could not have been conducted without the strong support of the racing industry, both through the Grayson-Jockey Club Research Foundation and Racing Medication and Testing Consortium in the United States, and the racing industry in South Africa," said Guthrie.

"This study design is similar to those used to test the efficacy of treatment in human medicine,"

Morley said. "To date, such studies have been uncommon in veterinary science, and we believe that our study is unique among studies of drug efficacy in racehorses under conditions of racing. The rigorous approach to study design resulted in a very clear result."

Once the study results are widely circulated, the authors anticipate that some racing jurisdictions may reconsider their ban on the use of furosemide.

"It is likely that racing jurisdictions will reconsider, in one way or another, their position on the use of furosemide," they said. "However, the decision to allow or disallow the use is based on the balance of a number of factors, and resolution of this complex situation will take some time."

"The challenge will now be for countries such as England, Hong Kong, Australia and South Africa that do not currently permit race-day use of furosemide. The challenge that they will face is balancing the animal-welfare aspect of being able to prevent or reduce the condition against the imperatives for drug-free racing. Additionally, instituting race-day administration of furosemide would be a significant added expense to racing."

For a copy of the study, contact David Kirkpatrick at 847-285-6782 or [dkirkpatrick@avma.org](mailto:dkirkpatrick@avma.org).

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CALIFORNIA HORSE RACING BOARD  
TITLE 4. CALIFORNIA CODE OF REGULATIONS  
ARTICLE 8. RUNNING THE RACE  
RULE 1688. USE OF WHIPS

Medication Committee Meeting  
July 24, 2009

1688. Use of Whips.

(a) In all races where a jockey will not ride with a whip, an announcement shall be made over the public address system of such fact.

(b) Although the use of a whip is not required, any jockey who uses a whip during a race is prohibited from whipping a horse:

(1) on the head, flanks, or on any part of its body other than the shoulders or hind quarters;

(2) during the post parade except when necessary to control the horse;

(3) excessively or brutally causing welts or breaks in the skin;

(4) when the horse is clearly out of the race or has obtained its maximum placing; or

(5) persistently even though the horse is showing no response under the whip.

(c) Correct uses of the whip are:

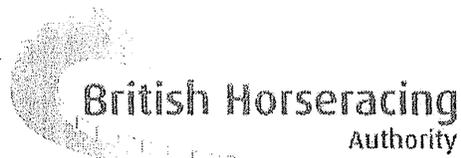
(1) showing horses the whip before hitting them;

(2) using the whip in rhythm with the horse's stride; and

(3) using the whip as an aid to maintain a horse running straight.

Authority: Sections 19420, 19440 and 19562,  
Business and Professions Code.

Reference: Sections 19440, 19481 and 19562,  
Business and Professions Code.



## **USE OF THE WHIP IN HORSERACING**

### **Introduction**

The British Horseracing Authority regulates, promotes and represents the sport of horseracing. The Authority manages the fixture list; sets, promotes and enforces standards through education, Rules and disciplinary processes; represents the views of racing's stakeholders; and seeks to ensure racing is clean and fair. The safety and welfare of horse and rider is a priority.

Racing is one of the country's major sports, and a significant contributor to the economy and heritage of Britain. About 6 million people attend just over 1,500 race meetings in a year. There are over 15,000 racehorses in training, and 50,000 people have an individual or group ownership of racehorses.

### **The Issue**

The Authority recognises the range of opinions and perceptions on the use of a whip by jockeys, both amongst racing's participants and more widely, as part of our responsibility for the welfare of horses and sustaining the reputation of racing for the long term.

It is the policy of the Authority, as set out in the Rules of Racing, that a jockey is required to carry a whip and that its use is optional. Any whip use is subject to the overarching policy that jockeys must use a whip responsibly, and must not at any time abuse a horse through unacceptable use of a whip.

### **Acceptable Use**

The Rules reflect the policy of the Authority that the whip can be used in racing only for safety, correction and encouragement – anything else is unacceptable as far as the sport is concerned. Breaking the Rules, in the use of the whip as in other areas, is a breach of the sport's agreed standards and is unfair to other participants and those who enjoy attending or watching racing.

Use for 'safety' would include using the whip to assist in avoiding a dangerous situation. Use for 'correction' is similar and would include swinging as well using the whip to keep a horse running straight. The use of the whip for 'encouragement' is permitted only on the basis of: showing the horse the whip and giving it time to respond; using the whip in the backhand position for a reminder; having used the whip, giving the horse a chance to respond before using it again; keeping both hands on the reins when using the whip down the shoulder in the backhand position; using the whip in rhythm with the horse's stride and close to its side. Whips should only be used on the quarters with the whip in either the backhand or forehand position or down the shoulder with the whip in the backhand position.

## **Unacceptable Use**

Abuse of the whip is use outside the use above and would include: hitting horses to the extent of causing injury; use with the whip arm above shoulder height; use rapidly without regard to the horse's stride; use with excessive force or frequency; use without giving the horse time to respond, use when the horse is showing no response, out of contention, clearly winning, or when past the winning post.

## **Whip Specification**

The whip used by a jockey must meet a specification laid down by the Authority. This specification has been set in consultation with animal welfare groups.

## **The Authority's Standards for Use of the Whip**

- The Stewards enforce the Rules on behalf of the Authority at the racecourse. The Rules state that the sport 'will not tolerate abuse of the horse and consider its welfare, and the safety of the rider to be paramount.' Stewards are trained to ensure consistency, and apply the Rules fairly and with good judgment.
- The Authority's Veterinary Officers, who are experienced Veterinary Surgeons, attend every race meeting and have oversight of horse welfare.
- Veterinary Officers check the horses as they return from the course. If a horse is found to show any sign of misuse of the whip the jockey will face an enquiry and may be suspended.
- We educate to improve the standard of riding at all levels and encourage responsible use of the whip from the very beginning of a rider's career.

## **Showing our Commitment**

- The Authority regularly consults with animal welfare organisations, such as the RSPCA and the ILPH, on relevant animal welfare issues including the use of the whip and meets them formally once a year.
- The RSPCA has an open licence to attend all race meetings.
- The number of whip offences dealt with by Stewards is published annually.
- The results of the Authority's disciplinary hearings are made public.
- All Rules and their penalties, including those relating to whip abuse, are reviewed annually, and will be changed if required to improve compliance or respond to new knowledge in animal welfare science.

April 2008  
Revised August 2008

[http://www.britishhorseracing.com/inside\\_horseracing/pdf/guide\\_to\\_procedures\\_2008.pdf](http://www.britishhorseracing.com/inside_horseracing/pdf/guide_to_procedures_2008.pdf)

#### **Whip Policy**

You can download The Authority's overall policy on use of the whip in horseracing

#### **Whip Use Rules**

The technical rules on whip use by riders and the whips they are allowed to carry are as follows:

#### **Instruction H9 - Use of Whip**

The British Horseracing Authority will not tolerate abuse of the horse and consider its welfare, and the safety of the rider, to be paramount. The whip should be used for safety, correction and encouragement only and they therefore advise all riders to consider the following good ways of using the whip which are not exhaustive:

1. Showing the horse the whip and giving it time to respond before hitting it.
2. Using the whip in the backhand position for a reminder.
3. Having used the whip, giving the horse a chance to respond before using it again.
4. Keeping both hands on the reins when using the whip down the shoulder in the backhand position.
5. Using the whip in rhythm with the horse's stride and close to its side.
6. Swinging the whip to keep a horse running straight.

The British Horseracing Authority has asked Stewards of Meetings to consider holding an enquiry into any case where a rider has used his whip in such a way as to cause them concern and publish the following examples of uses of the whip which may be regarded as improper riding:

Hitting horses:

to the extent of causing injury;  
with the whip arm above shoulder height;  
rapidly without regard to their stride, i.e. twice or more in one stride;  
with excessive force;  
without giving the horse time to respond.

Hitting horses which are:

showing no response;  
out of contention;  
clearly winning;  
past the winning post.

Hitting horses in any place except:

on the quarters with the whip in either the backhand or forehand position;  
down the shoulder with the whip in the backhand position;  
unless very exceptional circumstances prevail.

Hitting horses:

with excessive frequency.

When examining cases of Excessive Frequency, the Stewards will consider all the relevant factors such as:

1. Whether the number of hits was reasonable and necessary over the distance they were given, taking into account the horse's experience;
2. Whether the horse was continuing to respond and
3. The degree of force that was used; the more times a horse has been hit the stricter will be the view taken over the degree of force which is reasonable.

It is emphasised that the use of the whip may be judged to be proper or improper in particular circumstances which have not been included above.

Horses will be subject to an inspection by a Veterinary Officer and he will report his findings to the Stewards; therefore trainers may be required to remove or adjust rugs or sheets.

It is further emphasised that under the Rules of Racing trainers have a responsibility for giving instructions to their riders, which should include instructions on the use of the whip, especially with horses which may weal and when employing apprentice or conditional jockeys. Owners who choose to give their riding instructions must accept a similar responsibility. Failure to give adequate instructions or giving instructions which if obeyed could or would lead to a violation of this Instruction will result in disciplinary action being taken against owners and trainers.

The British Horseracing Authority warns all riders that Stewards of Meetings have been asked to exercise fully their powers under Rules 15 and 153 of the Rules of Racing in all cases of misuse of the whip, which the British Horseracing Authority regards as improper riding.

Further, they warn owners, trainers and riders that severe disciplinary action will be taken against any person who is found to be in breach of this Instruction resulting in serious injury to any horse.

**To read our Guide to Penalties and Procedures which sets out the Racecourse Stewards' procedures following interference, the penalties and the whip rules, please [click here](#)**

#### **Instruction H8 - Whip Specifications**

Only whips which have been approved by a panel nominated by the British Horseracing Authority will satisfy compliance with Rule 149 (ii). In approving any such whip, a panel will have regard to all the specifications set out below including the mandatory shock absorbing characteristics.

The whips have been designed, constructed and approved for either Flat or Jump races and are only to be carried in those races for which they have been approved. For Flat races, a max length of 70cms for Jump races, a max length of 68cms.

1. Maximum length, including flap, of 68 cms;
2. Minimum diameter of 1 cm.

The only additional feature which may be attached to the whip is a flap. If a flap is attached it must fall within the specifications below:

3. A maximum length of flap from the end of the shaft of 10 cms;
4. A maximum width of the flap of 4 cms, with a minimum width of 2 cms;
5. The flap from the end of the shaft must not contain any reinforcements or additions.
6. There shall be no binding within 23 cms of the end of the flap;
7. The contact area of the shaft must be smooth, with no protrusion or raised surface, and covered by shock absorbing material throughout its circumference such that it gives a compression factor of at least 6mm;
8. The flap must have similar shock absorbing characteristics to that of the contact area;
9. The weight must not exceed 160 gms.

**CALIFORNIA HORSE RACING BOARD**

**JULY 24, 2009**

**MEDICATION COMMITTEE MEETING**

**There is no board package material for Item 3**

CALIFORNIA HORSE RACING BOARD

JULY 24, 2009

MEDICATION COMMITTEE MEETING

There is no board package material for Item 4

CALIFORNIA HORSE RACING BOARD  
TITLE 4. CALIFORNIA CODE OF REGULATIONS  
ARTICLE 15. VETERINARY PRACTICES  
RULE 1866. VETERINARIAN'S LIST

Medication Committee Meeting  
July 24, 2009

1866. Veterinarian's List.

The Official Veterinarian shall maintain a Veterinarian's List of those horses determined to be unfit to compete in a race due to physical distress, unsoundness or infirmity. When a horse is placed on the Veterinarian's List, the trainer of such horse shall be notified within 72 hours. A horse placed on the Veterinarian's List shall be removed from the List only after having demonstrated to the satisfaction of the Official Veterinarian or the Racing Veterinarian that the horse is then raceably sound and in fit physical condition to exert its best effort in a race. A horse may be required to perform satisfactorily in a work-out or qualifying race to demonstrate its physical fitness, and if so a blood and/or urine post-work test sample shall be taken from the horse and the provisions of this article shall apply to such official work-out in the same manner as to a scheduled race.

Authority: Sections 19440 and 19562,  
Business and Professions Code.

Reference: Sections 19440 and 19562,  
Business and Professions Code.

STAFF ANALYSIS  
ARTICLE 15. VETERINARY PRACTICES  
PROPOSED AMENDMENT OF  
RULE 1866. VETERINARIAN'S LIST

Medication Committee Meeting  
June 24, 2009

BACKGROUND

Business and Professions Code Section 19440 provides that the Board shall have all powers necessary and proper for it to carry out fully and effectually the purposes of this chapter. Responsibilities of the Board shall include adopting rules and regulations for the protection of the public and the control of horse racing and pari-mutuel wagering. Business and Professions Code section 19562 provides that the Board may prescribe rules, regulations and conditions under which all horse races with wagering on their results shall be conducted in this State.

Board Rule 1866, Veterinarians List, states the official veterinarian shall maintain a Veterinarian's List of those horses determined to be unfit to compete in a race due to physical distress, unsoundness, or infirmity.

ANALYSIS

The proposed amendment to Rule 1866 provides that a horse placed on the Veterinarian's List for specified reasons may not work out for 72 hours after being placed on the list without permission of the official veterinarian. The amendment also states that the official veterinarian may require a horse placed on the veterinarian's list to undergo a veterinary examination prior to training at a track under the jurisdiction of the Board.

RECOMMENDATION

This item is presented for committee discussion and action.

CALIFORNIA HORSE RACING BOARD  
 TITLE 4. CALIFORNIA CODE OF REGULATIONS  
 ARTICLE 15. VETERINARY PRACTICES  
 PROPOSED AMENDMENT OF  
 RULE 1866. VETERINARIAN'S LIST

Medication Committee Meeting  
 July 24, 2009

1866. Veterinarian's List.

The ~~Official Veterinarian~~ official veterinarian shall maintain a Veterinarian's List of those horses determined to be unfit to compete in a race due to veterinary treatment, physical distress, unsoundness or infirmity. When a horse is placed on the Veterinarian's List, the trainer of such horse shall be notified within 72 hours. A horse placed on the Veterinarian's List as injured, unsound or lame may not work-out for 72 hours after being placed on the list without the permission of the official veterinarian. The official veterinarian may require any horse placed on the Veterinarian's List to undergo a veterinary examination prior to resuming training at a racing inclosure under the jurisdiction of the Board. A horse placed on the Veterinarian's List shall be removed from the ~~List~~ list only after having established or demonstrated to the satisfaction of the ~~Official Veterinarian or the Racing Veterinarian~~ official veterinarian or racing veterinarian that the horse is then raceably sound and in fit physical condition to exert its best effort in a race. A horse may be required to perform satisfactorily in a work-out or qualifying race to demonstrate its physical fitness, and if so a blood and/or urine post-work test sample shall be taken from the horse and the provisions of this article shall apply to such official work-out in the same manner as to a scheduled race.

Authority: Sections 19440 and 19562,  
 Business and Professions Code.

Reference: Sections 19440 and 19562,  
Business and Professions Code.

STAFF ANALYSIS  
ARTICLE 15. VETERINARY PRACTICES  
PROPOSED AMENDMENT OF  
RULE 1890. POSSESSION OF CONTRABAND

Medication Committee Meeting  
July 24, 2009

## BACKGROUND

Business and Professions Code section 19420 provides that jurisdiction and supervision over meetings in California where horse races with wagering on their results are held or conducted, and over all persons or things having to do with the operation of such meetings, is vested in the California Horse Racing Board (Board). Business and Professions Code section 19440 states the Board shall have all powers necessary and proper to enable it to carry out fully and effectually the purposes of this chapter. Responsibilities of the Board shall include adopting rules and regulations for the protection of the public and the control of horse racing and pari-mutuel wagering. Business and Professions Code section 19460 provides that all licenses granted under this chapter are subject to all rules, regulations, and conditions from time to time prescribed by the Board. Business and Professions Code section 19580 states the Board shall adopt regulations to establish policies, guidelines and penalties relating to equine medication to preserve and enhance the integrity of horse racing in California. Business and Professions Code section 19581 provides that no substance of any kind shall be administered by any means to a horse after it has been entered to race in a horse race, unless the Board has, by regulation, specifically authorized the use of the substance and the quantity and composition thereof.

Board Rule 1890, Possession of Contraband, states no person other than a veterinarian licensed by the Board, shall have in his possession on the premises during any recognized race meeting any drug which is a narcotic, stimulant, or depressant, or any hypodermic syringe or hypodermic needle or similar device which may be used for injection.

## ANALYSIS

The proposed amendment to Board Rule 1890 expands the prohibition on possession of narcotic, stimulant or depressant drugs to include any other drug substance or medication that may be injected. In addition, a new subsection (b) prohibits any person other than a veterinarian licensed by the Board from having in his possession during a recognized race meeting any veterinary treatment or any medicine, medication or other substance recognized as a medication, which has not been prescribed and labeled in accordance with the provisions of Rule 1840, Veterinary Practices and Treatments Restricted, and Rule 1864, Labeling of Medications.

## RECOMMENDATION

This item is presented for committee discussion and action.

CALIFORNIA HORSE RACING BOARD  
TITLE 4. CALIFORNIA CODE OF REGULATIONS  
ARTICLE 16. GENERAL CONDUCT  
RULE 1890. POSSESSION OF CONTRABAND

Medication Committee Meeting  
July 24, 2009

1890. Possession of Contraband.

(a) No person other than a veterinarian licensed by the Board, shall have in his possession on the premises during any recognized meeting any drug which is a narcotic, stimulant, or depressant, or any other substance or medication that has been prepared or packaged for injection by a hypodermic syringe or needle, or any hypodermic syringe or hypodermic needle or similar instrument which may be used for injection.

(b) No person other than a veterinarian licensed by the Board, shall have in his possession on the premises during any recognized race meeting any veterinary treatment or any medicine, medication, or other substance recognized as a medication, which has not been prescribed in accordance with Rule 1840 of this division and labeled in accordance with Rule 1864 of this division.

(c) No person shall have in his possession on the premises during any recognized meeting any electrical stimulating or shocking device commonly known as a battery, or any mechanical stimulating device, or any other appliance, which might affect the speed or actions of a horse.

(d) The stewards may permit the possession of drugs or appliances by a licensee for personal medical needs under such conditions as the stewards may impose.

Authority: Sections 19420, 19440 and 19580,  
Business and Professions Code.

Reference: Sections 19460, 19580 and 19581,  
Business and Professions Code.

STAFF ANALYSIS  
ARTICLE 15. VETERINARY PRACTICES  
PROPOSED AMENDMENT OF  
RULE 1867. PROHIBITED VETERINARY PRACTICES

Medication Committee Meeting  
July 24, 2009

## BACKGROUND

Business and Professions Code section provides that the Board shall adopt regulations for the control of horse racing. Business and Professions Code section 19562 states the Board may prescribe rules and regulations under which all horse races with wagering on their results shall be conducted in California. Business and Professions Code section 19580 requires the Board to adopt regulations to establish policies, guidelines, and penalties relating to equine medication in order to preserve and enhance the integrity of horse racing in California.

Board Rule 1867, Prohibited Veterinary Practices, lists specific drugs substances and medications that are prohibited, and states the possession or use on the premises of a facility under the jurisdiction of the Board of any drug, substance or medication, the use of which may endanger the health and welfare of the horse, or the safety of the rider or driver, is a prohibited veterinary practice.

## ANALYSIS

The proposed amendment to Rule 1867 enhances the list of prohibited drug substances by adding "analogs" to certain drugs. In addition, growth hormone and analogs are added to the list. The proposed amendment also adds a new subsection "(c)" to provide that the presence of any drug, substance or medication described in article 15 in any test sample obtained consistent with the Board's rules shall apply to the sample in the same manner as to a scheduled race.

## RECOMMENDATION

This item is presented for committee discussion and action.

CALIFORNIA HORSE RACING BOARD  
 TITLE 4. CALIFORNIA CODE OF REGULATIONS  
 ARTICLE 15. VETERINARY PRACTICES  
 PROPOSED AMENDMENT OF  
 RULE 1867. PROHIBITED VETERINARY PRACTICES.

Medication Committee Meeting  
 July 24, 2009

1867. Prohibited Veterinary Practices.

For purposes of this division, prohibited veterinary practices means:

(a) The ~~the~~ possession and/or use on the premises of a facility under the jurisdiction of the Board of any drug, substance or medication specified below, ~~for which a recognized analytical method has not been developed to detect and confirm its administration;~~ or the use of which may endanger the health and welfare of the horse, or the safety of the rider or driver, or alter equine performance.

(1) Erythropoietin (EPO) and analogs

(2) Darbepoietin and analogs

(3) Snake venom

(4) Snail venom

(5) Growth hormone and analogs

(b) The ~~the~~ possession and/or use on the premises of a facility under the jurisdiction of the Board of any drug, substance or medication that has not been approved by the United States Food and Drug Administration (FDA) for use in the United States.

(c) The presence of any drug, substance or medication described in this article in any test sample obtained consistent with Rules 1858, 1859 and 1859.25 of this article, and the provisions of this article, shall apply to such sample in the same manner as to a scheduled race.

The Board may grant an exception to this subsection if the person or persons seeking the exemption submits written documentation that demonstrates an FDA exemption has been obtained pursuant to Guide 1240.3025 of the FDA Center for Veterinary Medicine (CVM) Program Policy and Procedures Manual, which is hereby incorporated by reference. Guide 1240.3025 of the FDA CVM Program Policy and Procedures Manual may be obtained at the California Horse Racing Board's headquarters office.

Authority: Sections 19440, 19562 and 19580,  
Business and Professions Code.

Reference: Sections 19580 and 19581,  
Business and Professions Code.

STAFF ANALYSIS  
ARTICLE 15. VETERINARY PRACTICES  
PROPOSED AMENDMENT OF RULE  
1843.6. TOTAL CARBON DIOXIDE TESTING

Medication Committee Meeting  
July 24, 2009

## BACKGROUND

Business and Professions Code section 19580 provides that the Board shall adopt regulations relating to equine medication to preserve and enhance the integrity of horse racing. Business and Professions Code section 19581 states that no substance of any kind shall be administered by any means to a horse after it has been entered to race unless the Board has, by regulation, specifically authorized the use of the substance and the quantity and composition thereof.

Board Rule 1843.6, Total Carbon Dioxide Testing, provides that the official veterinarian may direct a veterinarian licensed by the Board or a registered veterinary technician licensed by the Board to collect blood sample(s) from a horse for the purpose of testing for total carbon dioxide (TCO<sub>2</sub>) concentrations.

## ANALYSIS

The proposed amendment to Board Rule 1843.6 will allow the Equine Medical Director or the stewards - in addition to the official veterinarian - to direct a veterinarian licensed by the Board or a registered veterinary technician licensed by the Board to collect blood sample(s) from a horse for the purpose of testing for total carbon dioxide (TCO<sub>2</sub>) concentrations. In addition, the proposed amendment would allow the Equine Medical Director to designate a horse or horses for TCO<sub>2</sub> testing.

## RECOMMENDATION

This item is presented for committee discussion and action.

CALIFORNIA HORSE RACING BOARD  
TITLE 4. CALIFORNIA CODE OF REGULATIONS  
ARTICLE 15. VETERINARY PRACTICES  
PROPOSED AMENDMENT OF  
RULE 1843.6. TOTAL CARBON DIOXIDE TESTING

Medication Committee Meeting  
July 24, 2009

1843.6. Total Carbon Dioxide Testing.

(a) At the direction of the Equine Medical Director, the stewards or the official veterinarian, a veterinarian licensed by the Board or a registered veterinary technician licensed by the Board may collect blood sample(s) from a horse for the purpose of testing for total carbon dioxide (TCO<sub>2</sub>) concentrations. Such blood sample(s) shall be collected under the provision of Rule 1859 of this article, and may be collected pre-race or post-race.

(1) The owner or trainer of a horse selected for testing may request that a duplicate sample be taken. Such request shall be made prior to the collection of the official sample. The costs related to obtaining, handling, shipping and analyzing the duplicate sample shall be the responsibility of the owner or trainer who requested such sample.

(2) If the Board in its discretion determines the duplicate sample cannot be analyzed within five days after the sample is collected, the findings of the official sample shall be final.

(b) Any horse on a facility under the jurisdiction of the Board may be selected by the Equine Medical Director, the stewards or the official veterinarian for TCO<sub>2</sub> testing.

(c) Any owner, trainer, or other person responsible for a horse who refuses or fails to permit the taking of test sample(s) from such horse shall be deemed in violation of Rule 1930 of this division and shall have the horse declared ineligible to race by the stewards.

(d) TCO<sub>2</sub> levels in the blood serum or plasma shall not exceed:

- (1) 37.0 millimoles per liter of serum or plasma.
- (2) TCO<sub>2</sub> levels in excess of 37.0 millimoles shall be considered a Class three-medication violation for administrative purposes.
- (e) The provisions of Rule 1859.25 of this article shall not apply to blood sample(s) collected for TCO<sub>2</sub> testing.

Authority: Sections 19420, 19440, 19580 and 19582.5,  
Business and Professions Code.

Reference: Sections 19581 and 19582,  
Business and Professions Code.

STAFF ANALYSIS  
ARTICLE 15. VETERINARY PRACTICES  
PROPOSED AMENDMENT OF  
RULE 1858. TEST SAMPLE REQUIRED

Medication Committee Meeting  
July 24, 2009

BACKGROUND

Business and Professions Code section 19440 provides that the California Horse Racing Board (Board) shall have all powers necessary and proper to enable it to carry out the purposes of the Horse Racing Law. Business and Professions Code section 19562 states that the Board may prescribe rules, regulations, and conditions under which all horse races with wagering on their results shall be conducted in California. Business and Professions Code section 19580 provides that the Board shall adopt regulations to establish policies, guidelines, and penalties relating to equine medication in order to preserve and enhance the integrity of horseracing in California.

Board Rule 1858, Test Sample Required, currently requires the winner of every race, and horses placing second or third in a stakes race with a gross purse of \$75,000 or more, and not less than six or more than nine other horses selected from the racing program to provide blood and urine samples.

ANALYSIS

The proposed amendment to Board Rule 1858 will lower the minimum number of "other" horses designated each day for testing from not less than six to not less than one. The proposed amendment also provides that the Equine Medical Director - in addition to the stewards and official veterinarian - may designate for testing the "other" horse or horses.

RECOMMENDATION

This item is presented for committee discussion and action.

CALIFORNIA HORSE RACING BOARD  
TITLE 4. CALIFORNIA CODE OF REGULATIONS  
ARTICLE 15. VETERINARY PRACTICES  
PROPOSED AMENDMENT OF  
RULE 1858. TEST SAMPLE REQUIRED

Medication Committee Meeting  
July 24, 2009

1858. Test Sample Required.

Blood and urine test samples shall be taken daily from the winner of every race, from horses finishing second and third in any stakes race with a gross purse of \$75,000 or more, and from not less than one ~~six~~ or more than nine other horses designated for testing by the Equine Medical Director, the stewards or the official veterinarian. Every horse within the inclosure or entered in any race is subject to testing and no owner, trainer or other person having the care of a horse shall refuse to submit it for testing when directed by the Equine Medical Director, the stewards or the official veterinarian.

Authority: Sections 19440, 19562 and 19580,  
Business and Professions Code.

Reference: Section 19580(b),  
Business and Professions Code; and  
Sections 337f, 337g and 337h,  
Penal Code.

STAFF ANALYSIS  
ARTICLE 15. VETERINARY PRACTICES  
PROPOSED AMENDMENT OF  
RULE 1859. TAKING, TESTING AND REPORTING OF SAMPLES

Medication Committee Meeting  
July 24, 2009

BACKGROUND

Business and Professions Code section 19420 states jurisdiction and supervision over meetings in California where horse races with wagering on their results are held or conducted, and over all persons or things having to do with the operation of such meetings, is vested in the California Horse Racing Board (Board). Business and Professions Code section 19440 provides that the Board shall have all powers necessary and proper to enable it to carry out the purposes of the Horse Racing Law. Business and Professions Code section 19562 states that the Board may prescribe rules, regulations, and conditions under which all horse races with wagering on their results shall be conducted in California.

Board Rule 1859, Taking, Testing and Reporting of Samples, provides that urine, blood or other official test samples shall be taken under the direction of the official veterinarian or his or her designee.

ANALYSIS

The proposed amendment to Board Rule 1859 provides that urine, blood or other official test samples may be taken under the direction of the Equine Medical Director, in addition to the official veterinarian or a designee.

RECOMMENDATION

This item is presented for committee discussion and action.

CALIFORNIA HORSE RACING BOARD  
TITLE 4. CALIFORNIA CODE OF REGULATIONS  
ARTICLE 15. VETERINARY PRACTICES  
PROPOSED AMENDMENT OF  
RULE 1859. TAKING, TESTING AND REPORTING OF SAMPLES

Medication Committee Meeting  
July 24, 2009

1859. Taking, Testing and Reporting of Samples.

(a) Urine, blood or other official test samples shall be taken under the direction of the official veterinarian, the Equine Medical Director or their designee. All samples shall be taken in a detention area approved by the Board, unless the official veterinarian or the Equine Medical Director approves otherwise. The taking of any test sample shall be witnessed, confirmed or acknowledged by the trainer of the horse being tested or ~~their~~ his or her agent or employee, and may be witnessed by the owner, trainer or other person designated by them. All official test samples shall be sent to the official laboratory approved and designated by the Board, in such manner as the Board may direct. All required samples shall be in the custody of the official veterinarian, ~~their~~ his or her assistants or other persons approved by ~~them~~ the official veterinarian, from the time they are taken until they are delivered to the custody of the official laboratory.

(b) If the official laboratory fails to detect a prohibited drug substance as defined in this article in the official test samples, ~~a prohibited drug substance, as defined in this article~~, the official sample shall be discarded immediately.

(c) The Executive Director and the Equine Medical Director shall immediately be notified by the official laboratory of each finding that an official test sample contains a prohibited drug substance, as defined in this article. The official laboratory shall further

provide all information and data on which the finding is based to the Equine Medical Director, and shall transmit its official report of the finding to the Executive Director within five (5) working days after the initial notification is made.

(d) The Board has the authority to direct the official laboratory to retain and preserve by freezing samples for future analysis.

(e) The fact that purse money has been distributed prior to the issuance of a laboratory report shall not be deemed a finding that no drug substance prohibited by this article has been administered, in violation of these rules, to the horse earning such purse money.

Authority: Sections 19420, 19440, 19562 and 19577,  
Business and Professions Code.

Reference: Sections 19401, 19440 and 19577,  
Business and Professions Code.