Reuss, Vicki A. (CDC/NIOSH/EID)

From: David Seftel [dseftel@gmail.com]
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To: NIOSH Docket Office (CDC)
Subject: Submission for Docket 104
Attachments: David Seftel NIOSH Presentation Final May 22_2007 Color.ppt

Herewith please find additional materials for NIOSH Docket 104

Thank You,

David Seftel, M.D.
Examining Environmental Health and Safety Factors at Equestrian Racecourses Nationwide: Rationale, Approach and Preliminary Focus

Bay Meadows and Golden Gate Fields Racecourses

David Seftel, M.D., M.B.A

Medical Director and Track Physician

Northern California, The Jockey's Guild, Inc.
- Track liability premiums
- Workers comp premiums
- Fewer accidents save money and lives
  - Trainer practices
  - Track conditions
  - Horse health and behavior
  - Human error
Accidents are related to a combination of:

Benefits All
Improved Jockey Care
Improved On-Track and Off-Track Medical Services Need to be Guided by an Objective Picture of Needs
Shape and scope
unless we know its size,
We can't solve a problem

Guide Sensible Legislation
Jockey Health and Welfare to
for a Comprehensive Study of
State and National Momentum
On and off the track population
health and fitness of the jockeys

First comprehensive look at the

National Jockeys Initiative (JNI)
Health Initiative study
as that used for the landmark Women's
modeled on the NIH study process such

Must be properly structured
for usable results studies
Heart failure due to pulmonary hypertension
Kidney failure requiring transplantation
Pancreatitis
Kidney stones
Lymphomas
P5E - Head and neck cancers, leukemias, and
National Health Claims Data
- Repeated infections
25% have immune compromise with persistent and
early sign of nephritis
40% have hematuria and proteinuria in the urine - an
20% have kidney stones
- Own Clinic data

We know many jockeys are physically fit but at the same time
have serious medical maladies.
What Ails Jockeys?

- Trauma
- Occupational Conditions
- Medical Conditions
Medical Maladies

- Weakened Immunity
- Malnutrition
- Dehydration

Complicating Conditions

- Ringworm
- Herpes, warts, acne, abscesses, athlete's foot
- Skin Infections - Viral, bacterial and fungal
- Lungs: Asthma and COPD - Smoking, dust, dirt
- Kidney: Stones, malfunction and failure
- (GERD) Peptic ulcer disease
- Bowel: Gastro-esophageal reflux disease
- Infections
- Throat: Recurrent upper respiratory tract
10. Long bone and joint injuries
9. Lumbar spine injuries
8. Foot: Metatarsal fractures
7. Ankle fracture
6. Shoulder: Rotator cuff syndrome
5. Chest: Rib fractures
4. Collar bone: Clavicular fractures
3. Nerve stretching / bruising: Neuroparaxias
2. Concussion

• Knee – twisting (inversion, eversion)
• Ankle – crush, twisting (inversion, eversion)
• Neck – trapezius muscles
• Cysts, metacarpal injuries
• Wrist – flexor and extensor tendons, ganglion
• Tendon and muscle strains
Recognizing and Responding to Trauma

- Tissues
- Repetitive stress and strain of soft
- Large number of injuries are related to
- Seriously
- Rest is Medicine and must be taken
  - Every muscle, tendon and nerve is
  - Ridding is very high torsion profession

Tissues
Flack jackets do not protect against them while off work.

Significant loss of professional income.

Take 4-6 weeks to heal.

Modest force to break.

Collar bone is intrinsically fragile, requires very common collar bone fractures.

Collar Bone Protection.
The latest jockey health claims that has been borne out by data.

But... there is another threat.

Radiation is a silent killer.

It's indispensable.

It's invisible.

Every X-ray adds to the risk.

Jockeys are subject to 10 times the radiation as the general public.
Radiation from excess X-rays
Jockeys track or facilities that treat low dose x-ray systems at all need

To avoid X-Cess Cancer
Provide best care medical record to enable doctors to
Need for secure common electronic
Discontinuity of care leads to poor care
Issues among providers
No communication about medical
Riders migrate frequently

all race tracks

quality of medical care across
Lack of standardization of
Benefits All Players
Improved Race Track Care

- Lowered claim costs reduce premiums
- Unnecessary ER visits
- Claim costs due to avoidance of Workers’ Comp
- Jockeys get rapid evaluation of injury

Paid by trainers and track operators
Research - Driven by objective measures and impartial

So let the renewal begin:

Inseparable
Operator Profitability are
Jockey Health and Safety and
Ultimately We All Believe That
Racing is a highly time-sensitive industry.

at the Track

Tracking the Process Flow
No excess of horse injuries associated with higher weight.

Horses in the same jockeys who race ride them in the afternoon.

Exercise riders weigh 140 and 150 pounds exercise same.

Support trained (ACLS) paramedics

Support trained (BLS) EMT vs Advanced Cardiac Life.

The ambulance crew on the sidelines.

Various parts of the surface.

Undisciplined horses are engaging in asynchronous behavior.

Danger: Visibility is frequently suboptimal unexpected, often.

Approximately 10 AM.

Exercise riders and jockeys exercise between five and 14 horses.

Jockeys on the track between 4-6 am.

Cropical up at 4 am. Prepare the horses for exercise riders and.

Environmental pathogens and stresses.

Tight time constraints amplify the effect of.
Reduce to Ride

- Many take laxatives diuretics and in a state of induced hyperthermia.
- Spend anywhere from one to five hours
- Reduce weight
- Jockeys go to hot box or sauna to

practice self-induced vomiting
and extremity injuries
• Still a high rate of serious head, chest, and extremity injuries.
• Goggles for each race.
  • Protective helmets, Jacker jackets and
  • Jockey don Featherweight boots, silks,

Dress for Success not Safety
Multiple individuals handle weights

Vallets and the Clerk of Scales

Treating weight done by the Jockeys, their

are used

combination of saddle pads and lead weights

different horses in the same race a

To equalize the amount of weight born by

the clerk of scales

Jockeys weighed in and out of each race by

Vigilant Weight Watchers

Oversee Equalization Process
Valleys and jockeys relted pathology, but no concern was raised about Mats originally designed to save horses from lead up Weight:

- Lead weights are almost always still needed to top the weight.
- Heavy rubber mats placed under the saddle are supposed to be the primary weight equalizing units.

- Lead weights often unprotected with friable edges and visibly shed lead dust.
- Some sewn into leather pockets while others are covered in a minimally protective paint.

Toxicity

Variable Protection Risks Lead
Video Presentation

A Day At The Races
In between races jockeys clean track debris from faces with standing water and sponges located next to their cubicles. Dedicated sinks for each jockey cubicle rare. Frequent re-use of contaminated water and sponges exacerbates underlying allergic dermatoses. The second bucket serves as a heaving bowl or spittoon.
Immuno-suppressed and immune incompetence.
Possibly due to co-existent malnutrition that contributes to general population cohorts.
More persistent and severe than those in comparable mediated communicable diseases.
Contributes to the rapid spread on airborne and contact.
Many antiquated and cramped with poor ventilation.

- A day.
- Jockeys spend anywhere between seven to 10 hours.
- Locker rooms.
- Other professional athletes spend few hours in their pathological culture medium.
- Cubicle upholstery rarely cleaned.

Communicable Conditions
Crowded Cubicles Contribute to
surfaces as a result of grooming and horse riding activities and gaseous pathogens released from the dirt and synthetic
measure and report excessive colliforms, airborne particulate
Remediation requires installation of air borne sensors to monitor,' who line up close to the track side.

Jockeys, outriders and the breathing air of thousands of fans
Decontamination amount can be carried into the workspace of
Depending on ambient wind, humidity and temperature a
recolitulated behind tanker trucks
Large volumes of this water is aerosolized while being
Colliform counts are required but regulatory oversight rare

Colliforms at certain stages in the Remediation
incident water high in colliforms at certain stages in the Remediation

Biohazardous Plumes

Track Grooming Can Generate
show safe and healthy for horses and humans
Need for independent peer-reviewed studies done to
toxicity.

Composition of synthetic surfaces, maintenance and
No Federal or State regulations regarding the
poisons with and without carcinogenic potential
Both individually and in concert with each other contain

Synthetic Surfaces:
Closer Investigation

Concerns regarding respiratory compromise that warrant
Jockeys Health Initiative survey revealed significant

Safety of the plume produced by horses hooves or tractors
No good independent peer-reviewed studies to document
Soft tissue injuries.
Trauma to horses and therefore fewer breakdowns and
Movement largely driven by anecdotal evidence of less

Solution?

Synthetic Surfaces
Regulators to operators, trainers, owners, jockeys and
illuminate this issue and provide genuine guidance
- Rational science based approach is needed to
  remain the same.
- Americans are getting bigger, but jockeys must
  starve.
- Archaic regulations tantamount to state-sponsored
  malnutrition.
- American that are subject to State mandated
  jockeys are the only professional athletes in

Weight Limits and the States.
Occupational Factors
Linked to Environmental and Medical Challenges Closely

- Overrunning (excessively racing an exhausted and decoupled horse)
- Inadequate diagnosis and treatment of stress fractures
- Inconsistent and unforgiving running surfaces
- Poor breeding
- Poor training
- Steroid abuse

...human charges, linked to

Accidents and injuries to horses that affect both them and their
environmental and occupational factors.

- Critical to examine interactions between horse, human
- No comprehensive peer-reviewed studies

What are the factors that contribute to this high accident rate?

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Throughbred horse racing is most dangerous professional

Sports, with more severe head injuries, clavicular fracture and
- Spinal fractures and ankle in the and wrist injuries than any other
- Spinal fractures and ankle in the and wrist injuries than any other
Human Factors Contributing

- Secondary to stimulant abuse.
- Alcohol intoxication and pulmonary hypertension.
- Acute and chronic renal failure, arrhythmia.
- Cardiomyopathy.
- Hypomagnesemia, hyper and hypocalcemia.
- Hypokalemia due to diuretic abuse.
- Hypertension, hyperthermia, hypoxia.
- Hypoglycemia.
- Myopathy.
- Incoordination, cognitive compromise.
- Jockey inexperience.
Variable track conditions, consistency and shock absorbing capability affect the health of both horses and humans adversely.

Presence of excessive coliforms can contribute to a panoply of pathology.

Poor ventilation in the jockey's rooms and the concentration of airborne toxins contribute to the rapid spread of infectious disease.
Immuno compromised due malnutrition
Limits with cascading effects
Include contra-physiological weight

The Occupational Factors
Mortality.
The record high rate of accidents with concomitant morbidity and
midnight situations and conditions and account at least in part for
risky jockey behavior and poor responsibilities in dangerous

These physical and mental challenges may well contribute to

spot that has absolutely no room for error
Impaired coordination, concentration, balance, and judgment in a

abnormalities and cognitive and muscular compromise

Conditions may acutely and chronically precipitate electrolyte

abuse, laxative abuse, alcohol abuse, and narcotic abuse

Weight limits promote anorexia, bulimia, stimulant abuse,

Contribute to a cascade of causation
Horse, human, environmental and occupational factors

Framework for Study
The Cascade of Causation - A


methodology and replace fiction with fact

We look forward to the opportunity to partner with NIOSH to supplant mythology with

We implement the best solutions. We welcome the guidance, support and

leadership of NIOSH and the CDC in helping

science base solutions

leadership, industry, California state regulators, horse owners, trainers, and jockeys - search for

unprecedented coalition of the horse racing

The Jockeys Health Initiative

to avoid unnecessarily poor outcomes after injury.

- Develop and implement comprehensive and qualitative processes for all jockeys as part of the counseling and education.

- Introduce mandatory nutritional education and competency and glycemic normality.

- May include elements of weight, body mass, fitness to ride, and composite physiological criteria to judge jockey performance.

- Comprehensive study needed to develop remediation avenues to explore.
Mandate use of strong but flexible safety reins

Suffered by jockeys, the currently high cumulative radiation exposure
Include low dose x-ray and ultrasound to reduce

Athletic sports and facilities provided by other professional
horse racing in line with medical standards
side medical care staffing and facilities to bring
Develop and implement solid standards for track

Remediation Avenues 2
Intervention.

- Detect trends to drive effective and expedient corrective measures.
- Implement a comprehensive nationwide injury surveillance system to be able to prospectively detect intervention.

Surfaces

- Verify the safety and efficacy of synthetic versus dirt.

Absorbing capability

- Improve horse running surface consistency and shock absorption.

Eliminate all lead from the workplace.

Remediation Avenger 3
Ingestion and inhalation of lead

Poor ventilation and cramped quarters amplify

Both ingestion and inhalational route significant

Lead causes both acute and chronic toxicity, with

Particulate exposure to this potent toxin

All steps must be taken to reduce both aerosol and

Lead in the Racing Workplace
Recent evidence indicates children with levels less than 10 mcg/dL may have compromised development and intellectual performance later in life.

Studies so far confirm that exposure to lead causes renal damage,encephalopathy, colic in adults, the peripheral nervous system is commonly affected (peripheral neuropathy). The brain or other organs are highly susceptible to lead exposure. High levels of lead can result in death or significant damage.

Lead is a highly toxic substance. Lead poisoning can cause irreversible damage to the brain. The effects of lead can be more severe in children because their developing brains and nervous systems are more susceptible to damage. Lead has a half-life of approximately 62 years. Lead and calcium are used interchangeably by the body. Human body needs 120 mg of lead, daily intake should not exceed 500 mcg.

The Lead-ing Facts
Lead causes a characteristic 'bi-peak' pattern of iron deficiency anaemia with hypochromia and microcytosis. Iron deficiency anaemia frequently coexists.

Lead poisoning may lead to a major medical morbidities.

Recent studies show that exposure to even low levels of lead may have potentially hazardous effects on the kidney and on the speed of progression of kidney failure and on the link between renal disease, hypertension, and gout.

Link between renal function, decline in renal function, low-level lead exposure linked to age-related kidney failure.

Medical Morbidity:
Low Level Lead Exacerbates Major
carcinogen in animals

- Lead has been classified as Group 2B
- Cancer
- Well
- Increases abnormal sperm frequencies as
- Lead reduces sperm count in males and

Reproductive and Carcinogenic Effects
exercise riders.

children of jockeys, grooms and

the clerk of scales, cleaners,

Daily basis by valets jockeys

Who Handles The Lead?
twice a day
Cleaners may handle lead once or
from two to four times per day
Clerk of scales may handle lead
eight times per day
Jockeys handle lead up to five to
per day
Vallets handle lead up to 14 times
lead?
How Often Do They Handle
rarely washed after contact
it with bare hands which are
Observationally, most handle

How do they handle lead?
How is Lead Stored?

- Lead weights are very difficult to encase robustly and even the leather-satcheted weights continually lead leak particulate material from the seams.
- No designated lead safety officer is available to provide continuous supervision.
- Coating is frail and friable.
- Lead weights are frequently dropped or thrown on one another causing further fracturing, particulate generation and aerosolization.
- Storage box often contains much visible particulate lead.
- Mostly in open air which aids aerosolization.
What Should Be Done?

- Vaults and Jockeys to assess cumulative exposure should be performed in select high exposure populations such as bone lead studies using techniques like x-ray fluorescence analysis.
- We are doing it for $4.19 per person.
- Hematological testing for lead levels - this is relatively inexpensive.
- All potentially exposed persons should be submitted to.
- No cooking should be performed with lead weights.
- Tested that their household environment is detoxified.
- Jockeys who have their own personal lead weights must surrender.
- Lead weights can be inexpensively replaced with cast iron.
- Issue an immediate and binding directive to remove all lead from the workplace.
We must act now to prevent a legacy of disease and disability. This is not one of those sit back and think about it decisions.
Let's Put Lead to Bed

Thank You