Launch of Equitarian Projects: Strategic Partnerships, Rewards, Challenges, and Solutions

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Equitarian projects to address the health care needs of working equids and to educate their owners on basic health care are successful when well planned. Strategic partnerships with other nonprofit groups and regional veterinarians as well as strong community leadership contribute to effective work days. Hands-on involvement of veterinary students as well as local veterinarians augments their learning opportunities in equid health care and interests them in continuing community service. The greatest medical challenges encountered are malnutrition, parasites, infectious diseases, dermatitis, respiratory disease, and hoof care. Early planning and collaboration of participants help overcome logistical challenges such as estimation of case numbers, adequate supplies and equipment, as well as regulatory permission for biologics, medications, and veterinary care. Authors’ addresses: Equitarian Initiative, 10777 110th Street North, Stillwater, MN 55082 (Wilson); 202 Wild Turkey Lane, Columbus, NC 28722 (Otto); 3281 Luneman Road, Placerville, CA 95667 (Turoff); World Horse Welfare, Anne Colvin House, Ada Cole Avenue, Snetterton, Norfolk NR16 2LR, UK (Bridges); Universidad Nacional de Agricultura, Apartado Postal 09, Catacamas, Olancho, Honduras (Castro Mejia, Caballero Reyes); and Veterinaria Tico Pet, Puerto Jimenez, Puntarena, Costa Rica (Alfaro Paniagua); e-mail: wilso011@umn.edu. *Corresponding and presenting author. © 2012 AAEP.

1. Introduction

Equine veterinarians have recognized that there are huge numbers of working equids worldwide whose health care needs are underserved. The Equitarian Workshop was established in 2010 with support of the American Association of Equine Practitioners Foundation as an annual event to train veterinarians to work on this population in impoverished areas and to provide a framework for organizing new projects in areas of need. Armed with this Equitarian training and a network of mentors and like-minded colleagues, workshop participants have established new projects in Costa Rica, Honduras, Mexico, and Native American Reservations within the United States. The processes of project organization and execution are challenging and provide many learning opportunities for participating veterinarians as well as the owners of the animals.

Key components for project success include local contacts for community planning and logistics; government support for importation of medications,
vaccines, and equipment; work permission, and laboratory work; interest from regional veterinarians and veterinary college; and funding. Experienced partner organizations make an invaluable contribution to project success, and the sustainability of the efforts that will ultimately bring the rewards of improved health to the working equids that provide critical services in many regions of the world. Engagement with the area’s veterinary college further increases the learning opportunities and contributes to both the project’s impact and sustainability.

World Horse Welfare (WHW, formerly known as the International League for the Protection of Horses), a British charity established in 1927, invited the Equitarians to explore working together in Honduras in October of 2011. This organization has since become a key strategic partner for planning several additional Equitarian projects demonstrating great synergy and potential for future collaboration. World Horse Welfare has been committed to protecting horses throughout its history and now focuses on both domestic and international programs. This year, WHW has ongoing programs in eight countries spanning Africa, Asia, and Latin America: Honduras, Guatemala, Nicaragua, Mexico, Senegal, Soweto, Lesotho, and Cambodia. In each of these locations, WHW sets up training programs for local farriers and saddlers, using a series of modules. Students are typically drawn from the local community and trained not only in the requisite technical skills but also in good business practices. Hands-on training takes place locally, providing trimming, shoeing, and harness services to the working equids. When a training program concludes, WHW may seek a training site in another area in that country or move on. World Horse Welfare also supports emergency relief efforts in collaboration with other charities. Recent examples include providing African Horse Sickness vaccines in The Gambia and aiding distressed horses during flooding in Tabasco, Mexico.

New Equitarian projects in Honduras and Costa Rica provide valuable insights into project planning, organization, and execution. The challenges for both projects are similar, but working in a Honduran city differs slightly from working in a rural setting in Costa Rica, as do the clinical problems and disease syndromes that are seen.

2. Methods: Project Organization

Honduras

The Honduras Equitarian Project was based in San Pedro Sula, the second largest city, which is located in the northwest corner of this Central American country. At the invitation of WHW, the potential project organizer (J.W.) met with the WHW staff and two faculty members from the new veterinary college in San Pedro Sula for 2 days to observe the farrier and harness students at work and to explore the feasibility of a pilot health care project. The horse population of interest was an estimated 3,500 cart horses that hauled the city’s garbage as well as occasionally produce and construction materials. Most belonged to people living in slum housing along a river that passes through the city. Many of the horses showed signs of malnutrition, pneumonia, harness wounds, lameness, and poor hoof care. Clearly, this was a population of working equids in need of health care and a group of horse owners who could benefit from health care education.

Support from within Honduras was critical for establishing this new project. World Horse Welfare offered to handle in-country logistics and community preparation if the Equitarian veterinarians could join them at the end of their next training module in 3 months’ time. Health care needs would be met at work sites within the slum community when the cart horses came for farrier work. World Horse Welfare’s in-country coordinator, a veterinarian (D.C.R.), agreed to facilitate governmental permissions for importation of medications and vaccines as well as permission for American veterinarians to work under his supervision. He estimated that 80 horses were likely to need veterinary treatment during the planned 4 days of work and informed the community leaders about the opportunity for their horses. Additionally, he alerted veterinarians in the region to come and work with the Equitarians and to attend evening presentations by the visiting veterinarians. The veterinary college lead faculty (F.C.M.) promised to seek administrative support and funding for bringing a small group of their inaugural class of second-year veterinary students to participate in this hands-on learning opportunity. A local animal welfare group, ProAni, which has been principally focused on dogs, agreed to help with local organization and publicity.

The opportunity to create this pilot project in Honduras was announced at the American Association of Equine Practitioners (AAEP) Convention’s Equitarian Outreach Table Topic, garnering both interest in participation and funding from FullBucket, a new American equine nutritional supplement company headed by two equine veterinarians who had participated in the Equitarian Workshop. Next, a supply list was created with input from a number of experienced Equitarians, along with a bilingual medical record form and formulary. Bulky liquids and controlled medications (ketamine and pentobarbital for euthanasia) were sourced in Honduras. Honduran agropharmacies were encouraged to donate products for use on the horses. Miscellaneous medical supplies were also donated by several U.S. companies. The final list of medications, tetanus vaccines, and supplies was forwarded to Honduran officials for approval. Official letters of introduction and permission for the medications, vaccines, and supplies were provided shortly before departure. All medications and vaccines were packed in
a single large suitcase to facilitate review by customs officials. Visas were not required.

In San Pedro Sula, the three Equitarian veterinarians were joined by two veterinary college faculty, 10 sophomore veterinary students, eight area veterinarians, and two animal welfare groups to provide health care to the cart horses. World Horse Welfare farrier students, led by an experienced Guatemalan farrier, trimmed feet and reshod the horses alongside the veterinary team. Three different roadside worksites provided opportunities for horse owners to bring their animals for hoof and health care over the course of the 4 days. A dental station was established each day, and battery-powered tools were used for dental equilibration. The battery packs were recharged using a vehicle's battery. A central supply table adjacent to a vehicle anchored the rest of the team as well as the water supply. The veterinary students were given a brief review of physical examination, ageing based on tooth eruption and wear, Henneke body condition scoring (BCS), and use of the medical record form. They chose to work in teams of two to three students as they examined the horses. They estimated the age of the horse if unknown, recorded the signalment and history of each animal, provided a physical examination, and consulted with the supervising veterinarians on any problems identified. When a number of horses were waiting, the veterinarians also independently worked on horses. Every horse was dewormed unless it had received dewormer in the last month. Tetanus toxoid was administered to the first 100 horses. If a problem was identified in an individual, a treatment plan was made, executed, and, if necessary, medication was dispensed for continued treatment. Horses with harness sores were encouraged to come to the final work day when the saddlers were present. Relevant topics of nutrition, disease control, and prevention were discussed with each owner. A copy of the completed medical form was given to each owner. Blood was drawn for Equine Infectious Anemia (EIA) testing on any horses that were lethargic and pale. Fecal samples were also saved for parasite analysis from horses at each worksite location. These samples were processed by the federal laboratory with the assistance of a rotating subset of veterinary students. Three of the four work days concluded with an evening session consisting of a short discussion of the day’s issues followed by a presentation for the veterinarians. Topics included dentistry, distal limb lameness, and colic.

Costa Rica

The 2012 Costa Rican Equitarian work was based in the Osa Peninsula on the Pacific coast. This effort built on the experience and relationships that were established by the organizer (A.O.), an Equitarian Workshop participant, who had both lived in the area and conducted a pilot equine veterinary project there in 2011. Timing of the project was influenced by the lunar phase, to encourage castrations, as there is a local cultural belief that castration at the new moon minimizes hemorrhage. In-country support was provided by the only veterinarian on the peninsula (R.A.P.), a mixed animal practitioner, who organized the community contacts for five worksites at diverse locations over the five work days. Four of these locations were the same as in 2011. North American veterinarians were recruited from among the Equitarian Workshop participants. An equipment and supply list was developed and distributed to these veterinarians to solicit donations or to bring needed items from their practice. Funding for medications, supplies, vehicle rental, and equine infectious anemia testing and prevention was provided by a grant from the American Association of Equine Practitioners Foundation. Significant product donation from a variety of U.S.-based companies and individuals also supported the project. Faculty and students at the Costa Rican veterinary college in Heredia were invited to join the project. Government permission for the anticipated work was not required; however, each veterinarian carried a letter describing the work that was to be done and the reason for bringing medical supplies and equipment into the country.

The international Equitarian team assembled included nine veterinarians (six Americans, two Costa Ricans, one Mexican), a final-year veterinary student, and three other Americans: a preveterinary student, a retired outfitter with farrier skills, and an accomplished Standardbred horse breeder and trainer. Costa Rican veterinary students and faculty were unable to participate, due to logistics and remoteness of the sites. Three vehicles were used to transport the team from San Jose to Puerto Jimenez, an 8-hour drive. The first worksite was a cattle ranch and attracted predominantly ranch horses from the region. The second and third sites were small farms on the north coast and focused on horses rented to tourists. The fourth worksite was a soccer field in an indigenous people’s area where the horses were primarily used for transportation, ranching, or packing. The final worksite was a stadium for fiestas and bull competitions on the outskirts of Puerto Jimenez, where riding horses were the main population. At all five worksites, specific areas were designated for dental work and surgery. Blood was drawn primarily from lethargic or pale horses for EIA testing using ELISA test kits. Children and adults that accompanied horses were invited and encouraged to participate in age-appropriate learning exercises that focused on equine health care. At each location, interested horse owners were tutored in hoof-trimming skills, and basic trimming tools were left with whomever showed the most aptitude. At least one owner was approached to build traps for trapping tabanids to reduce transmission of equine infectious anemia virus.
that the horses ate just roadside grass or cut grass upon questioning, the majority of the owners stated these horses along with nutritional counseling provided at the time of examination for many of the implementation with injectable or oral vitamins was day, and lethargic attitude (Fig. 1). Vitamin sup-

abdomen, poor hair coat, minimal muscle mass suggested by the low scores, together with a large

lack of both adequate calories and proteins was most common problem identified (42% of horses).

average BCS of 2.33 for foals, 2.78 for cart horses, (7.2 years). The range of BCS was 1 to 6, with an

yearlings not yet working (4%). Five yearlings were followed by riding horses (12%), foals (8%), and year-

majority of the horses seen were cart horses (76%),

is available in Central America. (No surgical pro-
durred to subsequent horses.) The supplied number, received health care from the Equi-
tarian team during the four work days. Almost all of these animals also received hoof care from the

WHW team on the same day. Only the first 100 received tetanus toxoid intramuscularly, due to limited

supply of vaccine brought from the United States, as neither the vaccine nor tetanus antitoxin is available in Central America. (No surgical procedures were performed to subsequent horses.) The majority of the horses seen were cart horses (76%), followed by riding horses (12%), foals (8%), and yearlings not yet working (4%).

Virtually none of the horses had ever had dental work. Significant incisor and cheek tooth problems were identified in multiple horses, including one that was having difficulty eating due to a fractured molar and had a BCS of 1 (Fig. 4). Another horse with a fractured molar also had unilateral maxillary sinusitis that was addressed with a sinus trephination and flush along with systemic antibiotics. The veterinary students participated in routine floating, and, along with the local veterinarians, watched correction of incisor abnormalities, waves, hooks, and ramps.

Equine infectious anemia tests were to be performed on samples from horses with pale mucous membranes and/or fever. Although only 12 samples were submitted, promised governmental funds were ultimately not available to run the tests. The possibility of concurrent piroplasmosis was sus-

3. Results

Honduras

Two hundred horses, more than twice the anticipated number, received health care from the Equi-
tarian team during the four work days. Almost all of these animals also received hoof care from the WHW team on the same day. Only the first 100 received tetanus toxoid intramuscularly, due to limited supply of vaccine brought from the United States, as neither the vaccine nor tetanus antitoxin is available in Central America. (No surgical procedures were performed to subsequent horses.) The majority of the horses seen were cart horses (76%), followed by riding horses (12%), foals (8%), and yearlings not yet working (4%).

Low BCS (<3) indicative of malnutrition was the most common problem identified (42% of horses). Lack of both adequate calories and proteins was suggested by the low scores, together with a large abdomen, poor hair coat, minimal muscle mass along the top line despite many hours of work per day, and lethargic attitude (Fig. 1). Vitamin sup-

plementation with injectable or oral vitamins was provided at the time of examination for many of these horses along with nutritional counseling. Upon questioning, the majority of the owners stated that the horses ate just roadside grass or cut grass from unimproved fields. This was in contrast to some of the higher-scoring horses that were fed left-

over produce, including banana peels. Most of the cart horses were relatively small in size, with an average weight of 246 kg, based on weight tape estimation. Mares with foals at their side were thin, as were the foals. Most horse owners failed to recognize the need for extra nutrition for the late gestation and lactating mare as well as the benefits of resting the mare after foaling. Weaning was not common until the foal was 8 or 9 months of age, forcing many of the foals to trot alongside its dam while she worked in the city.

Internal and external parasites contributed to the poor state of many horses. Of the 14 fecal samples submitted for examination, strongyles and ascarids were found in most. Heavy tick loads were found in the ears, mane, and perineal area on 24 of the horses. In the most severe cases, insecticide labeled for bathing horses to control ticks was dispensed along with instructions for use. Lice were observed on just one debilitated horse. All but two saddle horses that had been recently dewormed were administered anthelmintic. Oral ivermectin was administered to the majority of horses while supplies lasted, after which a variety of paste de-
wormers were used. Young foals were given half of the recommended dose of fenbendazole, along with instructions to administer a dispensed full dose in 2 to 3 weeks.

Harness-induced sores were commonly observed across the chest, back, and girth area in the cart horse population. These were cleaned and treated with silver sulfadiazine cream. World Horse Welfare saddlers provided better padding for the harness of the worst-affected as well as less-abrasive breast plates, breechings, and girths. In a few cases, a better-fitting wooden saddle was also provided (Fig. 2). Instead of a bit, many carters used a chain noseband positioned low on the nose, which caused superficial wounds on a number of horses (Fig. 3). Alternatives to chain for the noseband were suggested to the owners.

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Fig. 1. Typical cart horse with low body condition score, poor hair coat, pendulous abdomen, poor muscling on the top line, and lethargic attitude. Note the chain noseband (photo by Dr. Tracy Turner).
expected but not investigated at the time due to limited resources. Neither fly spray nor traps were in common use. Fringe brow bands from WHW were given to those horses with eye irritation from face flies.

Although castration was offered to owners of the large proportion of stallions (40% of adult population) and encouraged in those that were ill-behaved, not a single owner opted for this service. Many of the cart horse owners did not perceive a need for castration, as their horse was relatively well-behaved and it gave them an option of breeding more cart horses. Among the intact riding horses, the owners clearly appreciated the stallion’s spirit and enjoyed riding the more animated horse. Stallions comprised 55% of the riding horses, and 92% of the riding horse males presented.

Other problems seen in multiple horses included arthritis, recurrent airway obstruction, pneumonia, Culicoides-induced dermatitis, sarcoids, periocular habronemiasis, conjunctivitis and occluded nasolacrimal ducts, uveitis, vampire bat bites, squamous cell carcinoma, melanoma, coronary band inflammation, historic colic, and traumatic wounds. A single horse was seen with potential endocarditis and another with potential encephalitis. One riding horse

Fig. 2. Typical home-made cart horse harness contrasted with World Horse Welfare’s harness (photos by Dr. Tracy Turner).

Fig. 3. Chain noseband used in lieu of a bit (photo by Dr. Tracy Turner).

Fig. 4. Working at a roadside worksite, Dr. Turoff extracts a fragment of a fractured molar with the assistance of Honduran veterinary student, Aguiriano Francisco (photo by Dr. Tracy Turner).
with acute laminitis was examined and treated at the owner’s home at the request of the local veterinarian.

The three evening meetings with the regional veterinarians, veterinary school faculty, and veterinary students generated strong interest as well as discussion of cases and potential project improvements for the next Equitarian trip. The veterinary college committed to returning with veterinary students and investigating the possibility of adding a day or two at a location near the veterinary college. World Horse Welfare offered potential dates for a return in 2012 or early 2013 and proposed collaboration with Equitarian-trained veterinarians in other countries as well. The two veterinary college faculty and the students were invited to apply for participation in upcoming Humane Society Veterinary Medical Association–sponsored trips in Guatemala, Peru, and Nicaragua.

Costa Rica

The veterinary team treated 215 patients, the vast majority of which were horses of the small-built Criollo-type breed. Each equid was dewormed with banana-flavored ivermectin or fenbendazole unless it had received dewormer in the preceding 3 months or was less than 3 months of age. The number of horses presented for treatment varied between the work sites, with only a small number (28) at the indigenous people’s work site. Large numbers of horses awaited the team at the second and third worksites, prompting the use of individual horse numbers to establish a fair work order: Each horse was marked with a number on its shoulder, using a livestock marker. Overall, dental care was provided to 61 animals, with detomidine sedation in most cases. Triple-drip anesthesia after xylazine/ketamine induction was used to perform 23 castrations, including 7 cryptorchids. Each castration patient received tetanus anti-toxin and an injection of long-acting ceftriaxone. No complications of surgical treatment were observed. One horse was euthanized due to infected traumatic lacerations of the hind flexor tendons and stifle joint. A concentrated solution of Epsom salts was administered after xylazine/ketamine induction of anesthesia, as an AVMA-approved means of euthanasia such as barbiturate solution, concentrated potassium chloride or a gun was not available. This choice eliminated risk of exposing wild animals and raptors to barbiturates.

Tick infestations were very common and often severe (Fig. 5). Topical fipronil prepared with emollients was applied to affected areas in most cases and was very well tolerated. A second commercial product available locally was used topically as a pour-on for 19 animals, with care taken to avoid the saddle area due to its potential for contact irritation. Other dermatologic conditions commonly seen were photodermatitis of the face and distal limbs, Culicoides hypersensitivity, vampire bat bites, and squamous cell carcinoma.

Forty-six horses were tested for EIA, with 20 (43.5%) of these deemed positive. A correlation between low BCS, high tick load, respiratory signs, and EIA was noted. As this informal testing was for informational purposes only, federal regulatory measures were not invoked. Instead, control measures were discussed with the owners throughout the workshop. At each worksite, at least one person agreed to build tabanid traps based on plans provided by the project leader (A.O.). Follow-up on EIA test results and trap construction was arranged through the local veterinarian (R.A.P.).

Upper respiratory disease characterized by stertorous breathing, narrowed nasal passages, and mucoid nasal discharge was seen in 31 horses. On palpation, the nasal septum in several horses felt thickened and had a cobblestone texture. A fungal etiology or possibly Besnoitae was suspected, along with irritation from environmental dust. Symptomatic treatment for an airway infection was prescribed, along with the suggestion of inhalation therapy with a eucalyptus-based product or crushed leaves. A few additional horses presented with signs of recurrent airway obstruction, characterized by expiratory wheezes on auscultation, prolonged expiration, and abdominal lift.

Fig. 5. Heavy tick infestations on an eyelid and ears of Costa Rican horses (photos by Angela Gebhart).
Horses with severely overgrown or imbalanced feet were trimmed, and a few lame horses were treated for sole bruises or abscesses. Horse owners were encouraged to practice their skills with rasp, nippers, and hoof knives under supervision as an alternative to trimming with a machete. Those showing aptitude for trimming were given a hoof knife, rasp, and nippers for future service in the community.

Few problems associated with bits, nosebands, or harness were observed. One horse with back ulcers was being ridden in a saddle with a broken tree and poor, irregular padding. A replacement saddle was purchased by the Equitarians for this horse. Girth galls were cleaned and alternative girth materials were recommended. Similarly, noseband abrasions prompted recommendations for use of different materials or more padding.

The informal educational sessions held at each of the work sites generated strong interest, particularly when children gathered. The children were presented with crayons and coloring books featuring equine-care themes, designed and illustrated by the pre-veterinary student and her 4-H group. Based on past experiences at the Equitarian Workshop, sharing of the coloring books with family members was encouraged. Education of the adults is attempted by discussion with each owner. The “trickle in” nature of animal and owner arrival in this area precluded a more formal, sit-down session. The concept of community education sessions may be pursued by the local veterinarians, and adult-targeted handouts that take into account low literacy levels are planned for future projects.

Ample time for discussing cases and future project growth was found while traveling to the worksites and over meals. A second project site to assist pack horses near a popular tourist destination was proposed and will be investigated for 2013. An expanded medical record form with more space for capturing procedure details was drafted. A summary of the project as well as a presentation on new tools for treating arthritis were given at the School of Veterinary Medicine, Universidad Nacional de Costa Rica, immediately after the work project. Two team members were able to meet with department heads at the veterinary school, resulting in a commitment of participation from the faculty and veterinary students for 2013. All of the Equitarian veterinarians stated a keen interest in returning to Costa Rica for more Equitarian work in the future.

4. Discussion

The leadership provided by WHW in inviting and facilitating the veterinary team in Honduras made establishment of a concurrent health project a positive experience. The success of the joint venture in Honduras spawned plans for a similar project in Guatemala and South Africa. The farrier and harness teams liked being able to do more for the horses and to interact with the veterinarians on hoof and harness wound cases. This capacity for improved hoof care and the assistance of saddlers was missed on the Costa Rica trip.

The organizers of both trips were fluent in Spanish, minimizing communication errors in preparing the projects and local logistics. Participants who spoke Spanish were able to glean more from conversations with horse owners and local veterinarians. Having a bilingual medical record form removed at least one communication barrier. Fortunately, there were enough Spanish speakers and camaraderie on both trips that all language barriers were eventually overcome. Lessons learned on worksite set-up and case management during the Honduran trip were applied to the Costa Rican trip, and unused Honduran supplies were cycled into the Costa Rican trip as needed.

The Honduran and Costa Rican Equitarian projects succeeded in attracting large numbers of horses as the result of an effective local organizing veterinarian. Local planning for both projects was initiated well in advance, and community leaders were subsequently reminded multiple times to encourage horse owners to take advantage of the services offered. Their worksite selection was adequate to good in all instances, providing room for the gathered horses, water, shade, and level ground for surgery and lameness evaluation. In most locations, a tree or soccer goalpost provided a means of suspending a pulley to attach to the dental speculum during dentistry. In Honduras, roadside traffic made thoracic auscultation difficult at times but did not affect the horses’ behavior. A narrow access lane at one worksite in Costa Rica allowed two stallions to get too close to each other, with the result that one, upon rearing up, broke the rear window of a team vehicle. The stallion was unharmed, and a different work site will be pursued for future work. Chiggers in leaf litter at one Costa Rican site resulted in extensive pruritic bites for many of the participants. One improvement needed for several of the sites was a means of providing water for the horses while they awaited treatment. This is important, as a number of them traveled several hours to the project site or had just finished several hours of work in the city.

Parasite burdens were very high in the Honduran horse population fecal samples. The only horses in this group that had been dewormed in the last year were a few riding horses that had been dewormed the previous month. In contrast, more Costa Rican horses had been dewormed in the last 6 months, so anthelmintics were not administered unless more than 3 months had passed since the last deworming. Ideally, fecal egg counts would be used in both populations to monitor parasite burdens, determine which horses to deworm, and monitor response to anthelmintic. This was not logistically feasible at the time of either project. However, with the use of a medical record form, fecal egg counts would be of interest to compare horses that present again to the
veterinarians versus first timers at the following year’s site visit.

The difference in community interest in castration was interesting and may reflect groundwork done on the first Costa Rica visit the preceding year. At that time, horse owners expressed a reluctance to castrate their animals unless the moon was new. The 2012 project dates in Costa Rica were specifically chosen with that belief in mind. Encouragement from the local veterinarian over the course of the intervening year was probably helpful as well. Multiple castrations in one day necessitated having a means of cleaning and disinfecting instruments at the work site. An autoclave donated to the local veterinarian by one of the participating veterinarians enabled instrument sterilization at the end of each day. The Costa Rican horses have more opportunity to rest postoperatively than the cart-horses, which seldom have more than a day off of work. In the future, horse owner education on the benefits of castration should precede the start of the project work days. All of the Costa Rican castrations were uneventful, although one recovery was prolonged due to high doses of sedatives that were needed to get near enough to the horse to place a catheter.

Tetanus prophylaxis is critical for castration cases as well as horses with penetrating wounds. Tetanus toxoid is not available in either country, so provision of both tetanus toxoid and antitoxin from the United States is advisable and may require additional permission for importation. Similarly, horses were not vaccinated against arboviral encephalitis or rabies, although these diseases are present, a point that should be retained by veterinarians planning work in Central America.

Discussion is an important component of learning opportunities. Time for discussing cases and aspects of project design and execution was more formally addressed in the Honduras project. The offering of evening presentations helped entice the regional veterinarians into the project and made them more comfortable with providing hands-on assistance during the work day. The discussions also gave the visiting veterinarians insights into locally available solutions and practices for common problems as well as the knowledge level of the veterinarians. More informal discussion time in the Costa Rica project very much enjoyed the opportunity to do procedures, particularly those she had not done before, such as a urethral catheterization. In both countries, the veterinary students built relationships with veterinarians that can serve as mentors as well as provide opportunities for future learning experiences.

Other than the equid health coloring books, no educational handouts were available for distribution to the horse owners to reinforce verbal recommendations. These could be developed as a collaborative effort between the North American veterinarians and the in-country veterinarians and veterinary colleges. Community meetings for the animals’ owners and caregivers may be another option to both introduce the visiting veterinary team and tackle education on common problems in collaboration with the local veterinarians. This should be considered when scheduling Equitarian projects and a great addition for returning projects that have established a relationship with the area veterinarians and veterinary college.

Both Equitarian projects faced significant challenges. In Honduras, widespread malnutrition was only superficially addressed by discussion with the owners and a single treatment of vitamins. Affordable protein sources must be identified and made available. Literacy levels were low in this group, so educational handouts for future educational efforts should include predominately pictorial material. In Costa Rica, grazing was much more available, so few animals were too thin. However, for those that are used for tourist rides, poor body condition is a major concern and deterrent to horse selection.

Both projects saw more animals than planned and ran out of some medications and ivermectin. This highlights the need to accurately estimate the likely project caseload in advance, and wherever possible, have local sources that can be called upon when transported supplies and medications fall short. In Honduras, one of the regional veterinarians remedied the ivermectin shortage by donating a bottle of ivermectin the following day. In Costa Rica, fenbendazole liquid was used as a substitute, but the larger volume of liquid frequently dribbled out of the horse’s mouth. In both instances, the compounded “banana-flavored” products were more accepted than the alternatives. The severe tick infestations were not fully anticipated, and the locally available products raised fears of narrow safety margins. These challenges have led to changes in planning of supplies and targeting U.S. pharmaceutical donations for future projects in tropical regions.

Limited diagnostics frustrated interest in pursuing the upper respiratory syndrome in Costa Rica and the role of piroplasmosis in weak or pale horses in both countries. Ideally, all such horses would be screened for both EIA and piroplasmosis so that more precise control recommendations could be made for local horses. This would require community cooperation, more funding, and foreplanning of...
how to handle the positives to balance a government policy that requires euthanasia but does not offer compensation with a poor family’s reliance on their working equid for transportation and income. Use of tabanid traps should become a recommendation for the Honduras project as well.

Another problem with better potential solutions is the widespread photosensitization of areas of white skin. Neither team came prepared with products to address photosensitivity. Future projects might consider long-acting sunblock creams or washable face masks for affected animals. Supporters of WHW make a large number of fly fringes, and perhaps like-minded volunteers could be persuaded to make and donate sun masks.

North American veterinarians greatly enjoyed participating in these Equitarian trips and plan to continue this work. Providing both education and health services was professionally and spiritually rewarding. More time to explore area cultural and natural attractions was universally wished for and should be considered in project planning. Project dates should be set in accordance with lunar phases where possible to encourage castration and far enough in advance to take advantage of lower airfares. This ideal must be balanced with the more relaxed approach to time tables typical of the in-country contacts.

5. Conclusions

Launching Equitarian projects is greatly facilitated by partnering with organizations such as WHW and veterinarians established in the chosen work area. Experience gained from the Equitarian Workshop and similar projects prepares veterinarians to organize successful projects such as those described here in Honduras and Costa Rica. Collaboration with experienced Equitarian veterinarians greatly simplifies planning the list of needed supplies, vaccines, and medications; however, project organizers should be prepared for more animals than anticipated. Inclusion of faculty and students from the country’s veterinary college as well as local veterinarians will increase the impact of the project beyond the health care of the working equids. Participating Equitarian veterinarians gain experience with exotic diseases, problem solving with very limited resources, natural remedies for common problems, and new perspectives in both veterinary medicine and culture.

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3. FullBucket, Dennis, TX 76439.
4. MWI Veterinary Supply, Boise, ID 83705.
5. 3M Animal Care Products, St. Paul, MN 55144.
10. SafePath ELISA II, SafePath Laboratories, Carlsbad, CA 92010, donated by Dr. Chris Brasmer.
11. Equi-Tox Pharma Inc., Central, SC 29630.
13. Impacto®, Ourofino, Costa Rica.