Overview of working equids in the developing world: Their problems and how best to approach them

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The majority of the working equids in the developing world is used for transport of people and goods. They are used either as pack animals or pull carts in the markets and construction sites for carrying sand, gravel, debris and bricks especially in brick kilns. They are used in grain, vegetable and fruit markets, for agricultural work, carry household essentials like water and fuel, and also to carry goods up the hill in pilgrimage places. In the developing countries working equids suffer tremendous abuse, injury and pain. Harness wounds and lameness are common due to improper harness, overloading and lack of knowledge about care and management among the owners. Poor nutrition and worm load adds to the misery. The other major problem the working equids suffer is the lack of medical care during emergencies like colic, accidents and dystocia etc.

In the developing world the working equids are the lifeline for the people who keep them. Most of them belong to the poorer section of the society and are illiterate. The working equids suffer from severe health and welfare issues due to the poor economic status of the owners and lack of knowledge. Many nongovernmental organisations provide free treatments to the working equids in the developing world. But apart from the regular treatments and preventive health measures, the best way to solve the problems and to improve the health and welfare of the working equids is to carry out education and extension activities for the owners and their children.

Cartoon films, comic info leaflets and banners, street plays and puppet shows can be used as tools to educate the owners. Hands on training for the owners in basic care and management, providing practical lessons on how to fit a harness properly, use of proper padding materials and making proper back protectors, promoting correct treatment and also encouraging the use of readily available natural herbal products and most importantly educating the children (future equine owners) will help in sustaining the health and welfare of the working equids.

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14.25–14.50

Approach to wounds in resource-limited settings

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The equid in Africa or Asia is uniquely prone to injury. It competes for roadspace with articulated lorries all day long, it is hobbled with fencing wire, its harness is inadequate and it is often ludicrously overloaded. If this were not enough to ensure injury it also has to endure the best intentions of owners who pour engine oil, soil or even hyena faeces into wounds, aggressively fire over joints and limbs and inject irritant substances into the neck and gluteals. This presentation looks at the way we approach these wounds in the resource limited setting of a charity clinic in the developing world.

The provision of care is limited by a number of important factors. The first is obviously cost: donors unfortunately do not have limitless pockets and the issue of cost is even more critical today. The other important limitation to the quality of care we can provide is availability. Drug selection is limited with staples such as ketamine, opioids, sedatives, antibiotics and even euthanasia solutions often being difficult, if not impossible, to source locally. The same is true for consumables, particularly dressings and bandaging material. In Luxor for instance one cannot buy non adherent primary dressing, Sofban, Vetwrap, casting material, duct tape or even elastoplast bandage. The issue of availability seems to compromise all aspects of wound care in many developing countries. It is hard to source sterilisers and then even harder to keep them functioning. Surgical equipment is limited, suture is usually limited to catgut and nylon, drains, of any variety are unheard of. By necessity we have to compromise, use next best alternatives, and often think outside the box. I rely quite heavily, for example, on the use of nappies, honey and home made ‘Intrasite’; I use latex gloves in the place of penrose drains and I have even used mosquito mesh in repairing abdominal hernias. Another important constraint that we have to deal with is owner cooperation. It is often impossible to persuade an owner to allow us to hospitalise his animal as many of them are in constant use and this can make treatment frustrating.

This presentation discusses the ways that I have tried to overcome some of these limitations and get wounds to heal anyway. Cost and ketamine availability mean that we rely heavily on standing sedation for most patients; all joint flushes, regional perfusions and most wound repair is done standing, even surgeries such as enucleations and caesarians that would normally be done under GA in the UK are amenable to standing surgery in our population of animals. Some of these cost saving measures might be increasingly familiar to vets in the UK whose clients may be feeling the effects of the credit crunch.

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The result of an abscess, this horse in Morocco went on to make a full recovery.
Creeping closer: A strategy for the control of infectious disease in the developing world

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The threat of infectious disease spread from other countries has increased enormously since the advent of transportation and the increasing lack of discipline in documentation. Historically, major epidemic diseases such as glanders, African horse sickness and epizootic lymphangitis (EZL) were usually easily explained by the direct importation of infected animals or material capable of harbouring the infectious organisms. Currently the serious threats to horses are from viral diseases - African horse sickness, rabies, influenza virus variants, equine infectious anaemia, equine viral encephalitides and morbillivirus. Diseases such as glanders and EZL (Histoplasma farciminosum) are not a real threat to the UK since our controls from endemic regions are very strong and in any case we would be most unlikely to ‘need’ to import horses from these areas. However, within the endemic areas of the world these diseases continue to cause havoc. Since the diseases have for the most part been eliminated from the developed world, there has been very little willingness on the part of the scientifically capable countries to make any further effort to help eradicate the diseases. Should this policy change? Even from a purely selfish viewpoint, if the diseases did not exist then we would have no threat from them. However, this issue is much wider than that, since epidemic disease in working animals has a disproportionate effect on the socio-economic status of many of the poorest countries in the world. The eradication of smallpox is a lesson to us all - a potentially devastating disease has been eliminated from the world to universal advantage. Clearly it is possible with good will and investment to make a very significant effect.

Disease control strategies rely on awareness of the presence of the conditions that might cause international epidemics and the sharing of epidemiological information. Therefore it is important that a central organisation provides a global view of the prevalence of disease and can disseminate information about outbreaks and epidemics of the diseases to relevant governmental bodies in neighbouring countries/states. The difficulty here lies in our almost natural vilification of countries that encounter outbreaks of disease. We remain very critical for example about the perceived lack of control of rabies in mainland Africa but we should just remember for a few moments our own inadequacies in controlling foot and mouth disease and our almost paranoid attempts to control BSE based on ‘conjectural science’!

Within the developing world there is little intergovernmental cooperation in veterinary disease control and this is an area where we would do well to provide help and advice. For example, epizootic lymphangitis is endemic in Ethiopia in certain areas of the highlands of the country. The difficulty here is the very strong similarity in clinical presentation to glanders. How many cases of glanders are in fact either complicated by or mistaken for EZL. A common sense approach needs to centrally coordinated even if only for selfish reason of self-preservation.

In the developing world strategies for controlling infectious/contagious diseases are limited by the socio-economic climate. Where a disease is simply an economic problem for a limited number of individuals there is less impetus to control the disease. Tetanus for example is a major threat to unvaccinated horses and donkeys. In the developing world, few if any animals have the chance to be vaccinated - even the children have little chance of protection. Vaccination policies are clearly one of the mainstays of disease control programmes. The difficulty with vaccination programmes for even the simplest of disease such as tetanus may be insurmountable. In the case of serious disease such as influenza the majority of the population has to be vaccinated for any significant benefit to accrue. By contrast tetanus vaccination is individually effective but of course whilst the disease in infectious it is not contagious and so vaccination will inevitably bring benefits. Where a policy for tetanus vaccination can be carried out the results are as might be expected, spectacularly successful.

In the case of glanders there has been a universal acceptance that vaccination is not desirable. The disease is very contagious and so even if an effective and safe vaccination were to be found,
Rabies is possibly the most feared disease threat from the developing world. Rabies is a disease that can reasonably be eliminated if a suitable vaccination policy could be developed. Current vaccines are very effective in preventing infection but they have limited use in the wild animal population where the disease originates. Attempts to vaccinate wild carnivores, in particular with oral bait vaccines, has been partially successful in limited areas of Africa and parts of the Middle East. The epidemiology of the condition. This means that either the fly population has to be controlled (an unlikely option at best!) or the source of infection has to be eliminated. It has been accepted that severely affected horses (and to lesser extent donkeys) are major source of new infections. In Ethiopia a new policy endorsed by government gives the veterinary welfare charities such as SPANA the right to subject to euthanasia and suitably dispose severely affected horses. This policy has been in operation now for a limited period of 2 years but already a benefit is detectable with fewer new cases. An additional string to the bow however, has to be the prevention of disease progression - it's no good just removing the most severely affected animals since more and more will develop. Therefore early detection of infected animals and the aggressive treatment of any accessible cases are also vital measures. As might be expected, however, detection requires accessibility and then tolerance. It also requires that an effective treatment is available. For EZL, treatment options are limited and very time consuming. Here is a real opportunity to improve welfare and human quality of life. Not only would a treatment result in improved animal survival but the zoonotic threat would also be much reduced. Since EZL has a low infectivity (being reliant on a vector transmission), even a limited a vaccination programme would have immediate benefits in reducing the overall disease challenge; the problem is that there is no vaccine and no apparent will to produce one since there is no ‘economic advantage’ in doing so to the developed world. A vaccine is feasible and with good will and investment the lives of countless horses and human families could be improved - this is simply not a sentiment that attracts any support.

The wounds on the 2 donkeys shown above were hyena bites. The temptation to simply treat the bites is considerable but the hidden risk of rabies has to be considered. While bites such as these are obvious in the fresh stage, infected bites can heal and there can be no indication that the animal has rabies until the last days of the disease course when rapidly progressive neurological signs are present (bottom pictures). Clearly the threat to the owner and the vet is much higher in the advanced case when the possibility of rabies can be overlooked. Fortunately equids are not strong salivary secretors of rabies virus.

Another threat to horses across the world is African horse sickness. In this case the disease is vector reliant and since the vectors have a limited geographic distribution the disease has tended to remain in Africa and parts of the Middle East. The disease has significant aspects that relate to its pathogenesis and its severity. Strain variations result in differences in clinical presentation but spread to a naive population results in significant mortality. Indeed certain strains will carry a high mortality and a very high morbidity even in endemic areas. A vaccine strategy has been largely successful in sub-Saharan Africa for many years but this is of course reliant upon access to the animals and the ability of the owners to pay for an expensive vaccine; both aspects are problematic in large areas of the world. Additionally, where the vector extends its range the disease is likely to follow and where the vector exists, the simple act of importing a carrier zebra for example may result in a severe outbreak. What is needed is a far better vaccine with a better safety margin and fortunately the commercial pressures and almost paranoid fear of the disease in Europe has triggered a real effort to create a better vaccine. It’s just a pity that this was not developed many years ago... but then of course we weren’t really concerned for either the people or the animals of the endemic countries!

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circumstances but to eradicate the disease we would need a much greater international effort. The technology exists but the investment from the international community does not. I believe that rabies COULD be eliminated - its matter of the will to do so. In the meantime, we are left with the significant danger to animals and to the human population. From whichever angle we view it, we have to exert more international pressure.

There are of course other threats to our own horses from infectious and contagious disease. Bacterial infections such as brucellosis are endemic in our own country but a vaccine would certainly improve the welfare of horses and people alike in many of the poorest countries in the world. We don’t perceive that we have a threat from the major protozoan diseases such as dourine (T. equiperdum), trypanosomiasis (T. evansi/T. Congolensis), piroplasmosis (T. evi) and equine viral encephalitis but we DO expect that at least some of these will gain entry to the UK at some point in the future - more particularly since we become less meticulous about our willingness to invest in international disease control. The remarkable thing is that we perceive that we are ready to cope with any disease threat in our animal population but as illustrated by the foot and mouth debacle and the ‘panic’ that followed the introduction of influenza in Australia and South Africa, it is clear that we are ourselves ill equipped. This makes it the more important that we are better aware of what diseases are in what geographical location and we are better helping in these places - even if it’s only to help ourselves. We need to have strategies that help control disease as well as those that prevent importation of disease to our own countries.

Disease surveillance and the early detection and reporting of outbreaks are the most important measures in the battle to contain and confine infectious/contagious disease. The first criteria for any control strategy has to be to identify where the relevant diseases are currently found either endemic or epidemically or occasionally. This is the more important where outbreaks appear unexpectedly out with endemic areas. In some cases such as glanders (Burkholderia mallei) the likelihood of a disease outbreak occurring in UK is very remote since movement of animals from endemic areas is forbidden and in any case serological (or other) tests have to prove negative before importation can occur. This is an effective strategy but can be bypassed if even minor breakdowns of discipline, honesty and integrity occur; this alone is a very serious threat since the individuals responsible for the illegal movement of animals seldom if ever have any idea of what the implications of their actions are.

Outbreaks of equine viral arteritis (EVA) have occurred in UK as a result of ‘testing inconsistencies in the countries of origin’. Similarly a recent outbreak of equine infectious anaemia (a critically dangerous disease for equine populations) occurred in Ireland. The origin of the infection in the latter case was identifiable but there were difficulties with the conventional wisdom concerning the infectivity of the condition. This raises major issues about the reliability of the published information about many of the most serious diseases. We have probably relied far too much on the classical descriptions and advice from previous generations of scientists. This information may be soundly based but total reliance is wrong since diseases could easily adapt and adjust with time. Influenza threats are a major case in point - major epidemics of a serious variation of the virus pathogenicity we have on many of the diseases that threaten our shores.

The problems for the developing world are far more significant - it’s not just sport that matters - it’s life itself. Countless millions of people rely upon their working animals for their survival and social and economic future. Disease is bad enough but epidemic disease is quite another matter.

West Nile fever created a major epidemic and not a little panic amongst horse owners in USA but since this exerted enormous pressure on the scientific community, a very effective vaccine was developed within a few months. This had an almost universal uptake and as result the disease was stopped in its tracks and is now rare in USA at least; we are probably ready for it in UK but what about the Moroccan shepherd and the Ethiopian farmer? This illustrates what can be done given the will... it’s just a problem that when disease affects poorer people we simply don’t care. We only start caring when our own selfish commercial and economic interests are threatened. Clearly we still have much to learn about man’s inhumanity to man and to the animal world. A bit more humanity, sympathy and sensitivity would not go amiss!

Current facilities and mechanisms for the prevention and control of exotic infectious diseases into the UK are pathetic; we simply rely on chance to keep us clean. Official websites across the world exhort everyone (especially veterinarians) to be vigilant to prevent the importation of epidemic or zoonotic disease but they are vague in the extreme. The best current advice is given by the Australian Government on the importation of equine influenza and they also have strong strategies and advice on other serious diseases. However, they have done this largely since they had a problem... the stable door is now closed but the horse has bolted! Information for the UK is sparse in the extreme and in many ways is an open invitation to the exposure of our horses and in some ways ourselves, to these diseases. We need to be more aware of them; we need to have a regular and detailed update as to what diseases occur where and when and how they are transmitted. We also need to ensure that we are all aware of the clinical presentations for all of the serious diseases that may affect our patients - not only the notifiable ones; all of them. Do YOU want to be the person who missed the first case of AHS in the UK - the one that resulted in a pandemic and panic... or do you want to be the one who identified it, controlled it and stopped it in its tracks... ask yourself which of these you would like to put in the ‘OTHER COMMENTS’ part of your CV!

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Clinical training in the developing world: Why it is needed, what are the obstacles, what is achieved

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There are currently approximately 100 million working equids across the world many of which have no access to basic veterinary care. A growing number of equine vets in the developed world are taking an interest in the veterinary care of working equids in the developing world and are looking to broaden the participation of the veterinary profession as a whole to addressing these global problems.

Providing veterinary care to these animals can be a challenge and there are many aspects to consider before becoming involved, these include cultural and language issues, dealing with unfamiliar disease conditions, working in a low resource environment, and coping with vastly different standards of animal welfare than to those of the developed world. There are often fundamentally different views regarding what individuals require treatment, what animals are fit to work and particularly surrounding euthanasia.

However, there are many benefits of becoming involved: these include excellent training for local staff in clinical examination, differential diagnosis and treatment of conditions affecting working horses, donkeys and mules, to a level where they can: a) ensure good quality clinical service provision appropriate to working equids; and b) train and monitor other veterinary/animal health staff effectively (i.e. the trained become the trainers).

In the long term the provision of this education not only improves animal welfare in these areas but can allow local and international monitoring of disease, small-scale clinical research and more long-term planning of veterinary training and resources needed to carry out these activities.

In addition to training of local vets within developing countries, an increasing number of organisations are sending vets from the developing world to Europe for training. This not only benefits those who travel but adds a dimension to any clinic in which these individuals work. Within the University of Glasgow visiting vets from the developing world work within the equine hospital on a regular basis, developing their own clinical skills and providing undergraduates with an invaluable insight into this kind of work.

NOTES
16.10–16.35

Dealing with donkeys: Clinical examination, treatment and comparative therapeutics

El Mouhaine Boubker


Many practitioners consider the donkey as a small horse in their diagnostic and therapeutic approach. Current knowledge demonstrates that there are many anatomical, physiological, clinical and pharmacological differences between the donkey and the horse. The clinician is required to know the differences so that they can ensure therapeutic efficacy and safety. The following article summarises pharmacological data specific to the donkey.

NOTES
16.35–17.00

Approach to equine welfare in the world’s most forsaken places. Afghanistan/Darfur

Keith Powell

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A significant number of the world’s equines live and work in far-flung corners of the globe, often made inaccessible by remoteness, poor infrastructure or politics (or all 3!). Providing or improving the care available to these animals raises some unique challenges. Welfare has to be presented in a locally acceptable fashion as the owner and his/her family may not have the 5 freedoms themselves. You will not be there indefinitely and you will mostly only see an individual animal once, therefore it is essential that we constantly pass on our knowledge to owners and local health professionals in suitable language. Many drugs available will be counterfeit, we need to shape our advice to what is available, local and genuine. Numeracy, local beliefs, language, cost, tribal antipathies all present challenges. Finally, you can’t treat an animal if the owner doesn’t present it to you, or, more importantly people will not be receptive to your educational messages if you lack credibility; how do you gain standing in the eyes of equine owners who belong to a culture which could be distrusting of our own?

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