



## Focus Article: Biosecurity at major equestrian competitions: Equestrian Olympic and Paralympic Games London 2012

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The London 2012 Olympic and Paralympic Equestrian Games were the highest profile event in this year's equestrian calendar and were the culmination of four years of detailed and meticulous biosecurity planning to ensure that all horses arrived, competed and returned home safely and in good health. The goals for the biosecurity programme for London 2012 were to prevent disease entry into the Greenwich Park venue; prevent disease spread within the venue; prevent disease spread outside the venue; and safeguard competition.

There were several unique features of London 2012 which made the disease risks quite different from all recent equestrian Olympic and Paralympic Games. In previous Games, virtually all horses have flown long haul to the Olympic venue requiring a massively complex logistics exercise to coordinate the smooth arrival of horses, feed, tack, equipment, medicines and accompanying staff. In addition, international hygiene regulations and the importation requirements controlling movement of horses from third countries have had to be taken into account. The host country's health regulations have usually required horses to be quarantined (pre export quarantine – PEQ) and closely monitored before they fly and then a further period of monitoring (post arrival inspection – PAI) after arrival before competition begins. Additional vaccination and testing have sometimes been required or recommended, depending on the country of origin. Health certificates and declarations have to be completed, importation regulations complied with and re-export requirements fulfilled before horses can return home. In addition to these regulatory aspects, international air transport of horses brings its own health risks from respiratory diseases such as shipping fever (pleuropneumonia) and muscle diseases such as myopathies. There is a risk that exotic or endemic disease might be imported with the competition horses, triggering an outbreak of disease at the venue which may result in a wider spread disease outbreak if not contained at the venue. Furthermore competition horses may contract endemic or exotic diseases present in the host country. In both situations there would be an impact on the Games and where exotic disease is imported with the competition horses there would be animal health, economic and trade implications for the host country. Planning for each of these contingencies is a major feature of the preparation for all Equestrian Olympic and Paralympic Games.

Almost all horses travelled to London by road from permanent bases or training camps in Europe to Greenwich. Of the 348 horses stabled at Greenwich Park during the Games, only three flew directly to London from third countries and a further nine flew into Europe from third countries and were based temporarily in Europe or the UK for the run up to, and duration of, the Games. The horses that flew directly into the UK for the Games and those that were based temporarily in Europe for competition were from North America and Australia. The fact that almost all horses made relatively short journeys from within Europe meant that some of the key biosecurity controls usually put in place for the Olympic and Paralympic Games (i.e. pre export quarantine and post arrival inspection) were not possible. One of the early decisions made by the biosecurity team was not to impose additional health monitoring requirements over and above those of the standard animal health certificates and TRACES scheme because to do so would undermine the current provisions facilitating horse movements within Europe. Although PEQ and PAI were not required for most horses, potentially posing an increased disease threat for London 2012, this potential increase in



in risk was off-set by the high health status of elite competition horses and the fact that they are very closely monitored, have high standards of veterinary health care and, critically, that their movements are documented allowing the disease risk to be profiled for each shipment. Taking all these factors into account, the overall assessment of exotic disease risk in the competition horses was officially classified as very low. However, the impact on the Games could be very high should some of the diseases on the Equestrian Games Risk Register occur and therefore detailed contingency and countermeasures planning was required for each disease. A risk-based approach to biosecurity was taken with exotic and endemic diseases considered in the same biosecurity plan; the plan was put together by a single biosecurity team made up of representatives from the Equestrian Games organisers (LOCOG), equestrian logistics (Peden blockstock) and Government (Defra and AHVLA). This integrated approach to biosecurity was a unique feature of planning for the Games. The biosecurity team's objectives were to generate the Equestrian Games Risk Register, devise countermeasures and contingency plans, and produce standard operating procedures for biosecurity and welfare. The approach was to use a five-stage package of precautionary measures to manage risk: international and country level disease surveillance (provided by the Defra Global Animal Health team); movements before embarkation (provided by the Peden logistics team); health information from point of embarkation (provided by the National Federations); a health screening point before entry into the venue (the Equestrian Staging Facility); isolation facilities at the venue (for containable diseases) and remote to the venue for diseases judged difficult to contain at the venue or which raised suspicion of notifiable disease (Fig 1).

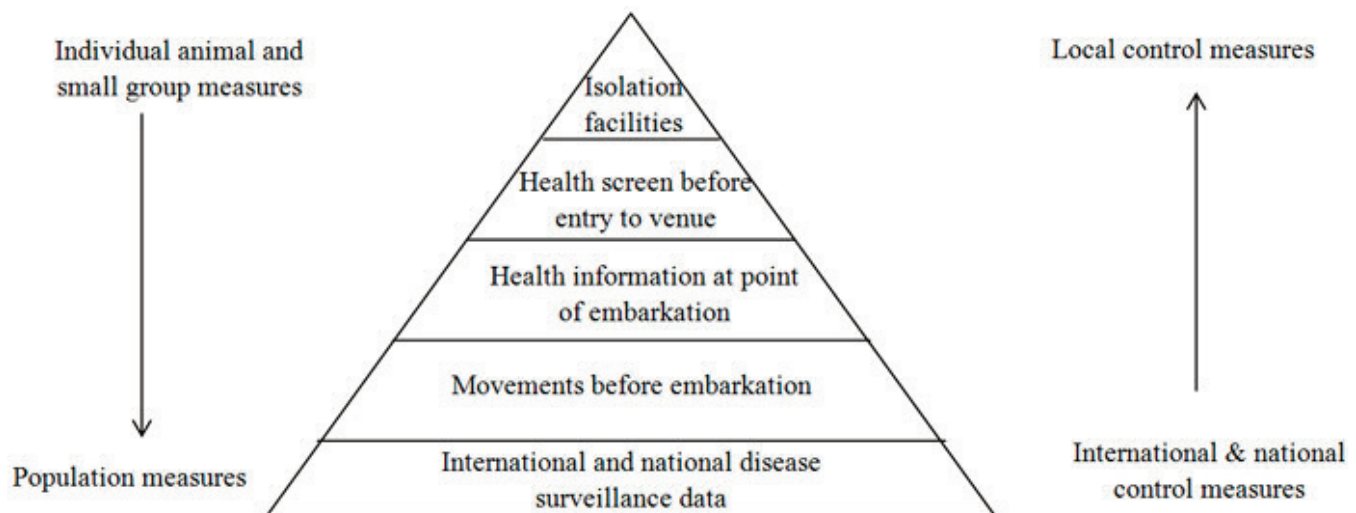


Fig.1. Precautionary measures for venue biosecurity

### London 2012 Equestrian Games Risk Register

The Risk Register identified 14 notifiable (exotic) and endemic diseases that posed a threat to the Games and detailed the measures required to mitigate that threat. For London 2012 this required a global view of all diseases which could impact on the successful running of the Games, including non-equine diseases like Foot and Mouth Disease which could impact via restrictions on horse transportation through infected zones or from infected premises where horses were kept dual use agricultural premises.



International and national disease surveillance, coupled with advance knowledge of the origins and movements of horses likely to qualify to come to Greenwich, allowed a risk-based assessment of which disease should be included in the Risk Register. The risk register took into account the impact of diseases occurring in competition horses as well as disease occurring in horses in countries of origin, countries of transit and the UK because each of these could affect the ability of horses to move to the UK and compete, or to move back to their country of origin from the UK; return movement (re-export) had real potential to create problems in the event of a notifiable disease occurring at the venue or in the UK. Based on international surveillance data the current likelihood of each disease occurring was determined; the impact of that disease on competition and logistics was estimated; countermeasures currently in place were listed; and the contingency plan should disease occur was summarised. Combining likelihood and impact for disease allowed an overall assessment of the status of the disease to be made using the red (action needed), amber (monitoring needed with possible action) and green (no action needed) system of annotation. Two notifiable diseases (Equine Infectious Anaemia and African Horse Sickness) and three endemic diseases (Salmonellosis, Equine Herpesvirus Myeloencephalopathy) had amber status; no diseases had red status.

### **Equestrian staging facility**

The Equestrian Staging Facility (ESF) as shown in Fig. 2 was a key precautionary measure in preventing disease entry into the venue. Located 10 k from the venue, the ESF was a purpose-built, temporary facility constructed for security screening of horse transporters, equipment and accompanying personnel as well as health screening of arriving horses. The ESF provided an intervention point to identify horses with clinical signs of disease and divert them to an isolation facility on the edge of venue, or for diseases judged non-containable in the venue isolation stables, to a remote isolation facility located at an equine hospital in north London. On arrival at the ESF, whilst security screening was in progress, horses were unloaded and moved to stable blocks for a veterinary health check. Following verification of identity from the passport and microchip (if present) and the biosecurity team carried out a visual inspection and physical examination of each horse recording rectal temperature and any other clinical signs detected. To assist the clinical decision making process each team had been asked to complete an ESF Arrivals Form detailing rectal temperatures at time of embarkation, journey time and any unexpected or unusual events that had occurred during transport. An important concept that assisted with raising suspicion of exotic disease was that of 'usual' and 'unusual' clinical signs of disease. Detection of a single unusual clinical sign (e.g. haemorrhagic discharges) would trigger suspicion whereas detection of multiple unusual clinical signs would raise suspicion to a higher level.



Fig. 2: The Equestrian Staging Facility (ESF)

### Venue biosecurity measures

The venue was divided into three biosecurity zones. The Green Zone was the Greenwich Park main stabling. Access to this area was controlled via accreditation passes but there were no additional restriction on personnel movements. All National Federations were encouraged to follow the simple biosecurity guidance (hand washing, avoiding contact with other horses, limiting horse-to-horse contact and not sharing equipment). There were no special requirements for PPE or boot disinfection. The message to all personnel was that small biosecurity changes have a big impact on health. The Amber Zone was the Equestrian Staging Facility and the venue Veterinary Clinic. Access to these areas was restricted to essential personnel only with requirements for PPE, boot disinfection and cleaning and disinfection. The Red Zone was the venue isolation stables. Access to this area was restricted to essential personnel who had been trained. Stringent biosecurity precautions designed to reduce the risk of disease spread within the stables and reduce the risk of disease spread to outside areas including PPE, boot disinfection and hand washing requirements were in place.

### Results: health screening and biosecurity

No significant clinical signs of disease were detected at the ESF or at any point during the Games. This contrasted with the relatively high prevalence (5-10%) of horses with clinical signs, including pyrexia and respiratory signs, following long-haul air transport. The mean rectal temperature of horses at the ESF was 37.8 +/- 0.25oC (range 37.1-38.3; 95% CI 37.76-37.84; n=348). No horses had rectal temperatures above the 38.5oC cut-off specified in the biosecurity SOPs.



## Conclusions

London 2012 was very different from previous Olympic and Paralympic Games because most horses travelled by road to London and did not fly internationally. Uniquely, the health and welfare preparations for 2012 involved an integrated response to exotic and endemic diseases by the Defra, LOCOG and equestrian logistics teams. The overall official risk assessment of exotic disease occurring was very low. No significant health or welfare problems were detected during the Games and the data collected from the arrival health checks allowed a reference point for mean rectal temperatures to be established which will inform future planning of biosecurity measures at equestrian competitions. The biosecurity countermeasures and contingency planning from London 2012 are a valuable legacy for future equestrian competitions.