

Strangles Symposium Report: Working Together to Stamp Out Strangles

A meeting of invited industry leaders and respected equestrians was held 29th March 2019 at the University of Edinburgh (Royal Dick) Vet School with sponsorship from Redwings Horse Sanctuary and British Horse Society

The meeting was coordinated and delivered collaboratively by a committee with members from the following organisations:





“Learn more about how others in the professions and industry view the challenges and opportunities to change how things are done that will reduce the risk of strangles without impeding the smooth running of equine businesses and activities.”

Expectations given in response to the pre-event survey by a workshop attendee

This report was prepared by Jo White, Human Behaviour Change for Animals and funded by The British Horse Society and Redwings Horse Sanctuary

“Why? Because if we understand why humans do the things they do and what drives them to change, we will be more effective at making the world a better place for animals.”



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Introduction

This report provides an overview of the contents of the Strangles Symposium, and the subsequent outputs and recommendations for future action to be taken by the attendees and stakeholders from the equine sector. The event and this report are intended to act as a catalyst for change through building on the existing work of charities and the industry, together with identifying and initiating new collaborative actions that can pave the way for positive behaviour change at varying levels of the equine sector. The goal is to improve the uptake of preventative measures and controls against strangles, ultimately move towards stamping out strangles in the UK, which will also benefit wider infectious disease prevention and equine health.

Strangles Symposium aims:

- Inspire a broad spectrum of influential people to look at what they can do to improve biosecurity practices.
- Consult and raise awareness of the existing strangles initiatives, notably the Premium Assured Strangles Scheme, Redwings' Stamp out Strangles Campaign and the Strategy to Eradicate and Prevent Strangles (STEPS) guidance.
- Promote cross-industry collaboration.
- Facilitate discussion among equine sector professionals and representatives to identify ideas and suggestions for future action that will influence practice and encourage positive change.
- Secure commitment among the attendees and the equine sector to initiate agreed actions from the Symposium.

Attendees

The Symposium was attended by 39 respected practitioners and industry leaders representing a variety of fields in the equine sector, including the veterinary profession, equine welfare organisations, research, education, farriery, government policy makers, local authorities, sporting organisations and governing bodies, horse and yard owners, instructors and coaches, event organisers, and equine breeders. Attendees were identified, selected and invited based on their existing work on strangles and/or biosecurity, and their influence in respected sub-sectors of the UK equine industry. There was a maximum of 50 spaces available, 51 invitations were sent, 8 declined and 4 apologies on the day.

Symposium content and approach

The day comprised of morning presentations (Appendix 1) providing the latest update on strangles and related initiatives aimed at delivering behaviour change. A panel discussion followed where representatives from different parts of the equine sector presented their own experiences of strangles and took questions from the audience. The session highlighted where there are synergies between stakeholders and provided stimulation and focus for the afternoon discussions. The afternoon session was a facilitated workshop where five groups representing different stakeholders in the equine sector (i.e. those caring for horse directly, vets, mobile equine service providers such as farriers, educators and communicators, and those involved in governing and organising bodies and events). The groups worked through a series of connected exercises aimed at exploring how the equine sector could address current barriers and challenges, utilise opportunities and develop and implement an action plan to deliver change. The Symposium workshop concluded with pledges of action being made by the attendees.

Pre and post event surveys were undertaken to evaluate the Symposium and explore attendees knowledge, experience, perception and opinions connected to the disease strangles, its prevention, management of outbreaks and perceived risk (Appendix 4). In addition any outputs have been

recorded, such as press coverage, proposed meetings, feedback and progress on actions discussed at the Symposium (Appendix 3).

Overview of proceedings and findings

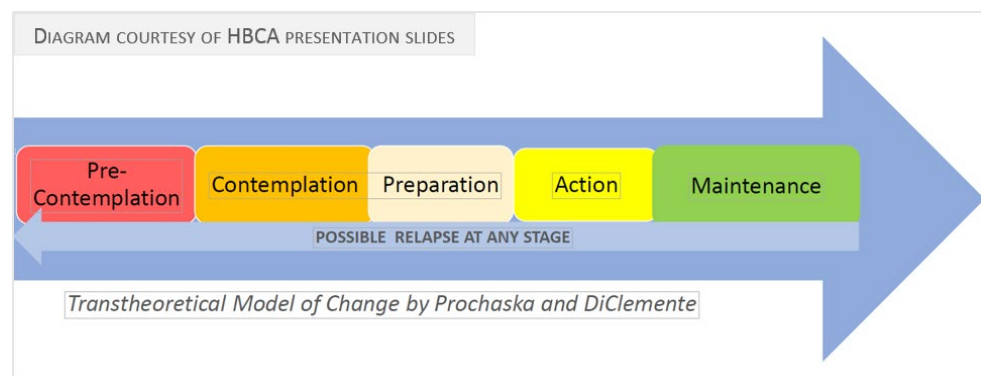
Presentations

PLEASE NOTE THAT THE SUMMARY INCLUDES HIGHLIGHTS FROM THE MORNING SESSION AND IS NOT A COMPREHENSIVE ACCOUNT OF WHAT WAS COVERED IN THE PRESENTATIONS, IT HAS BEEN DRAFTED USING THE INFORMATION KINDLY RECORDED BY DR JILL THOMSON. SLIDES WERE CIRCULATED TO ATTENDEES AND CAN BE MADE AVAILABLE ON REQUEST.

Introduction and welcome - Professor Scott Pirie, Royal (Dick) Vet School: Biosecurity and infection control are different - biosecurity relates to prevention, and infection control focuses on limiting the impact of disease. Currently true biosecurity is difficult to implement in equine establishments due to inadequate facilities. Infection control needs to move from a reactionary to a proactive process, implementing evidenced based changes and reviewing the impact of these changes to develop a culture of infection control across the sector. This means identifying and incentivising changes to facilities, procedures and habits that will enable infection control.

The relevance and use of human behaviour change - Jo White, Co-Director and Co-Founder of Human Behaviour Change for Animals: The common thread with strangles is the role of humans and their behaviour. We do have the ability, knowledge and power to effect behaviour change, but to do this we need to understand what influences it. For example, we are emotional animals which impacts on our decision making, and around 45% of our daily behaviours are habitual, which presents an opportunity for interventions related to biosecurity routines. Caution should be applied regarding a 'one size fits all' approach with those we are working with, as research supports a more tailored approach to reflect individual differences. Evidence suggests that awareness raising alone is unlikely to deliver effective sustained change, and care should be taken regarding assumptions around developing knowledge and changing attitudes as this does not necessarily change behaviour. Change is a process in which we need to understand what stage a person is at, to develop effective interventions to address the issues surrounding strangles.

The Transtheoretical or 'Stages of Change' Model (Prochaska and DiClemente, 1983) comprises of five stages (i.e. pre-contemplation, contemplation, preparation, action and maintenance),

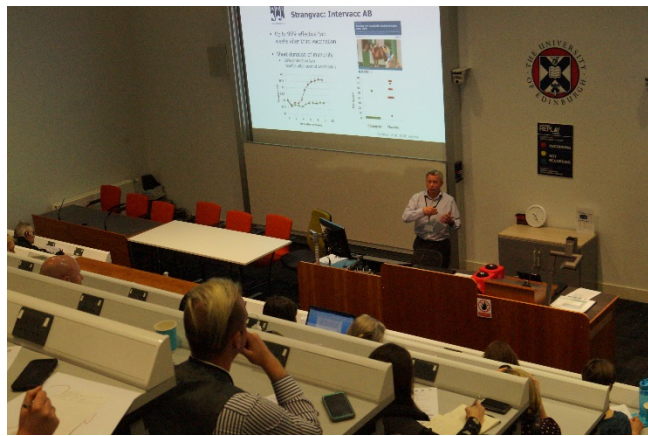


and provides a useful tool in examining where a person might be in the process of change. For example are they in 'pre-contemplation', with little or no awareness of the need and benefits of change to improve biosecurity and prevent strangles, or, are they in 'contemplation', where they are aware of the issues. It is worth noting that a person may slip back and relapse to any of the stages if maintenance is not established, and this is where the power of developing habitual behaviours can work towards sustainability. This model also highlights that different approaches and behaviour change techniques may be required at different stages.

Another useful model for the development of human behaviour change interventions is the 'COM-B' model (Mitchie et al 2014). This provides greater understanding of the behaviours a person or people are currently performing, or indeed the desired behaviours that they may not be performing (e.g. regularly taking a horse's temperature), through examining their Capability, Opportunity and Motivation. When used in conjunction with the Behaviour Change Wheel (Mitchie et al 2014) it provides a guide to developing effective evidenced-based behaviour change interventions. Using this model is beyond the scope of this session but it is worth being aware of, as if behaviour change is an ambition for the equine sector in addressing strangles and other areas of concern, this is a helpful tool.

Author's supplementary note: *In relation to strangles (e.g. screening for carriers) there are a number of behaviours we want to change in relation to the disease and other biosecurity practices. The introduction of these behaviours also offers potential benefits for reducing infectious disease risk in general (temperature checking and isolation).*

Disease update - Dr Andrew Waller, Animal Health Trust: We can break the cycle of infection by identifying carriers, treating infected horses and preventing the spread of disease. International transmission is a real problem as it introduces new strains via apparently healthy horses, and currently the OIE (World Organisation for Animal Health and the international organisation responsible for control infectious diseases affecting animals) does not list strangles as a serious problem. The lack of OIE recognition



may result in reduced screening for strangles and is a serious inhibitor to the prevention and control of the disease – which is arguably the most important infectious disease in the UK in terms of prevalence and impact on the enjoyment and welfare of the horse.

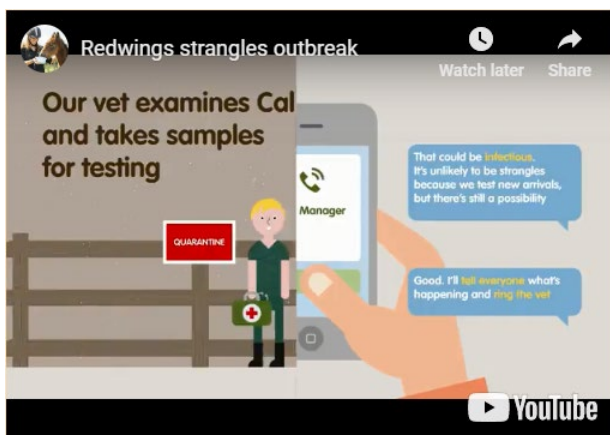
To manage risk, new horses should be placed in quarantine, blood sampled on arrival and re-sampled three weeks later. Sero-positives should be scoped and, if they are indeed infected with *S. equi*, they should be treated and checked again after two weeks to confirm that they no longer pose a risk to others. In an outbreak scenario, create three groups: red (positive), amber (previous contact with positives), green (low risk) – see STEPS/Strangles Information Pack.

A live attenuated vaccine has been available for a number of years and is administered into the lip, as when injected into muscle it can cause a severe reaction. The new vaccine in development 'Strangvac' is safe for intramuscular injection and does not give a positive iELISA result, however, it only provides a short duration of immunity (only 50% of horses were still protected two months after second vaccination). Vaccination can be useful for short-term protection (i.e. going to events etc.) where horses might be at risk, or to protect horses in a yard during a strangles outbreak, if the outbreak cannot be managed via good planning and biosecurity. Finding a long-term protective vaccine is still a work in progress.

The Surveillance of Equine Strangles (SES) scheme - Abigail McGlennon, Epidemiology and Disease Surveillance, Animal Health Trust: A two-year project funded by Horse Trust, with the aim of developing methods to determine the prevalence of strangles across the UK. Project outputs include regular reporting of summarised findings, mapping of diagnoses at a level that preserves anonymity

of premises, and whole genome sequencing of *S. equi* isolates collected throughout the project. SES has two networks across the equine industry: SES Laboratory and SES Veterinary allowing for comprehensive data to be captured. The aim is to raise awareness of outbreaks, enabling an increase in general knowledge of strangles which would allow for vets and owners to implement enhanced biosecurity measures to keep their horses healthy and reduce the spread of strangles.

Roadmap of Strangles Advice and Guidance to date: where next for behaviour change - Alison Braddock, SRUC Veterinary Services': We have moved far beyond the days of having to live with this disease. We have over 10 years of owner information and education which has developed alongside the veterinary knowledge that enables prevention, treatment and eradication. Meanwhile, in more recent years there is a sense that stigma associated with the disease and negative attitudes to owners and premises that manage cases is being addressed. The 2015 Redwings outbreak was pivotal as information was shared which promoted openness. Redwings/Liverpool survey found 90% of



Watch and share; Redwings' Outbreak Animation
www.redwings.org.uk/strangles

participants believed strangles should be more of a priority in the UK, and identified yard managers, vets and mobile service providers as having a role in facilitating behaviour change. Our toolbox has everything we need to control strangles: scientific expertise, information resources (Redwings Strangles information Hub¹, BHS/AHT STEPS guidance and PASS certification); all we need is mass social change to make this happen. Certification can offer peace of mind that new horses will not pose a threat to existing horses. Working together could mean better biosecurity for horse owners and businesses, using consistent messaging.

Equine Disease Coalition (EDC) Biosecurity Project update - Roly Owers, CEO World Horse Welfare (WHW): There is so much information available yet the risk of disease incursion and spread is high, and for this to be improved we must change behaviours. The problems with inadequate biosecurity have been highlighted in World Horse Welfare (2009) and Redwings (2016) surveys, and the Equine Disease Coalition (formed in 2011) biosecurity checklist.

We need data so that success can be measured. Working with DEFRA, the Equine Disease Coalition's Biosecurity Project aims to develop and evaluate an intervention aimed at behaviour change that will improve biosecurity and protect horses from infectious disease. World Horse Welfare, representing welfare charities on the EDC, are leading a project with technical support from the Behavioural Insights Team (BIT) in collaboration with BHS, Redwings and Blue Cross. BIT and World Horse Welfare identified the high-level objective and framed this in terms of broad behaviours, then micro behaviours, and then worked to understand the barriers to people performing it. Last June a self-targeted online survey of 2500 responses indicated that 70% of disease outbreaks were in yards of six or more horses. This project is continuing throughout 2019, with more in depth interviews being

¹ www.redwings.org.uk/strangles

carried out at livery yards across the country. Poor biosecurity is a significant risk to equine health and human behaviour change is vital to better practices being routinely carried out.

Panel discussion: “Strangles experience and how we can work together”

The following representatives formed the panel for the discussion which included questions from the Symposium attendees:

1. **Sheila Voas**, Chief Veterinary Officer, Scotland (*Chaired the panel discussion*)
2. **John Burns**, Field Officer, World Horse Welfare and National Equine Welfare Council (NEWC) representative
3. **Alistair Duff**, University of Edinburgh Farrier School
4. **David Mountford**, Chief Executive, British Equine Veterinary Association (BEVA)
5. **Shirley Melling**, Yard Manager, Scottish National Equestrian Centre, PASS accredited and Stamp Out Strangles Yard Manager Pledger
6. **Jane Nixon**, Chair of the Horse Health Steering Group, BEF
7. **Andrea Vilela**, Education and Campaigns Manager, Redwings Horse Sanctuary – 2016 horse owner survey.



The questions from the audience are listed below, followed by a summary of the discussion these evoked.

1. *Should compulsory registration/licencing of livery yards be introduced?*
2. *Would a voluntary scheme be acceptable to the equine industry?*
3. *Are vets themselves doing enough to maintain biosecurity, and also farriers?*
4. *Equipment sterilisation and overalls? Can vets do more, better suited equipment?*
5. *Flu outbreak - how many more horses were vaccinated for flu following recent threat due to fear-factor - how could we enact the same impact regarding strangles?*
6. *Biosecurity at liveries – should the BHS require isolation facilities?*
7. *The key to control is reporting of outbreaks. If equine industry wanted to make the disease have ‘Reportable’ status, would Scottish Government support it?*

The question of livery yard licencing is a political one. The panellists expressed differing levels of confidence regarding whether licencing was feasible or likely to take place. Licencing could create opportunities for biosecurity enforcement as livery yards are the focus of disease outbreaks and there are wider welfare benefits.

It might add to costs. Many yards do not have quarantine facilities or appropriate quarantine facilities and this is a major failing in biosecurity. Regulation should not impact on the ability of small businesses to trade.

If yards were regulated the requirements used for kennels and catteries to have biosecurity could be incorporated into any relevant regulations. When yards have protocols in place it raises awareness of the importance of biosecurity. Eighty per cent of horse owners in the Redwings Strangles Survey said they were likely or highly likely to choose a yard with a protocol for new arrivals, which suggests that there is demand for better biosecurity on yards.

It depends where you are in the UK as to how the different administration's approach this, for example in Scotland this legislation is devolved. In Scotland all animal boarding is currently being examined and regulated, and the equine sector will have an opportunity to look at this. Once establishments are visible and registered they can be more easily influenced and issues such as quarantine, hygiene, vaccination and monitoring can be written into guidance and operating standards. While there may not be an appetite for more red tape - regulation in the long term could bring real biosecurity gains in time.

The licencing of animal welfare and rehoming establishments is at different stages of consultation in England, Wales and Scotland, and progress in this area was considered necessary before movement could be made towards livery yard licencing. There may be more that the BHS can do as part of their approvals scheme to ensure yards have effective controls against disease.

Voluntary improvement of biosecurity, such as through the PASS scheme and mobilisation through the Redwings' Stamp Out Strangles Pledge, are key opportunities but they are currently limited in terms of reach (at the time of writing, 110 yards have taken the Redwings Strangles Pledge which includes keeping a protocol and having screening for new arrivals).

Vets could do more to promote biosecurity and we need to understand why they are not more proactive. How can we incentivise better biosecurity between clients and support them during an outbreak. Most show societies have health policies but not all and their practical impact has not been evaluated. David emphasised that we need to find ways of making small incremental improvements in what we do. He emphasised the value of role-modelling good practices such as show judges using disinfectant wipes between examining horses' mouths, bits etc.. Pig and poultry sectors are exemplars, biosecurity in the equine sector is poor by comparison.

Farriers aim to schedule affected yards and infected horses last in their day. There was some debate over the practicality of disinfecting between clients. At the start of the flu outbreak farriers were posting pictures of themselves in overalls to promote behaviour change. Meanwhile disinfecting wipes, equipment and spare clothing could be used, however this requires a shift in people's ways of working. Horse owners are likely to bear the cost of this and are required to demand better biosecurity to make it a reality. There may be technical solutions that can help improve practices, for example farrier and veterinary equipment designs that are disinfection-friendly.

What can be learned from the impact of the recent equine influenza outbreaks? Horse owners have vaccinated their horses and shows have improved vaccination protocols. The question from the audience asked what we can learn from the impact of the flu outbreaks on behaviours and whether an increased 'fear factor' is what is needed to motivate horse owners? The impact of outbreaks on behaviour was also demonstrated in the strangles survey which indicated people would be more likely to stop risky behaviours such as sharing equipment if they thought there was a strangles risk, and organisations are aware that yards often implement a protocol for new arrivals after experiencing strangles outbreaks. However, there are still many things we don't really know such as whether these changes are effective or sustained in the long term and whether increased alarm really leads to behaviour change, or what happens to people's motivation if they are unable to act.

Sheila Voas responded to the suggestion that strangles should be given an official status and said that the Government would need to receive a strong case before considering notifiable or reportable status. Dr Andrew Waller highlighted that there is also a danger that the disease is not reported and becomes hidden, which would mean a step back in tackling the disease as people would be more inclined to keep it below the radar.

Facilitated Session

PLEASE NOTE THAT THIS IS A SUMMARY OF KEY POINTS FROM THE AFTERNOON SESSION FACILITATED BY JO WHITE FROM HBCA (APPENDIX 2).

Group discussions and activities were undertaken to enable Symposium participants to share their thoughts and ideas.

The aim was to engage all attendees in the process of identifying how the equine sector can work together. Examining how to utilise the latest developments in strangles knowledge and control strategies, coupled with human behaviour change principles and practices, to move towards stamping out strangles. With the final step being to develop a plan and pledge to engage in the process of taking action.



The groups included:

- **Direct Care Givers and Quarantine:** e.g., horse owners, yards owners, people undertaking direct care and management of the horse including quarantine.
- **Educators and Knowledge Transfer:** e.g., universities, colleges, educational providers or bodies, instructor and coaches, and communication channels.
- **Events and Organising Bodies:** e.g., show and event organisers and sporting organisations and governing bodies.
- **Mobile Equine Service Providers:** e.g., farriers, dentists, transporters.
- **Veterinarians:** e.g., practitioners, policy makers, researchers, BEVA.

Eight activities were undertaken by each group:

1. **Identify:** problems associated with stamping out strangles; opportunities / solutions for addressing strangles; other ideas, general comments, group (e.g. vets) specific.
2. **Cluster problems into themes,** prioritise the problems (high, medium, low priority) and each group agree on three themes to prioritise.
3. **Cluster opportunities into themes.**
4. **'H' Frame:** Focusing on the three problem priority themes agreed – identify the barriers and gaps, the opportunities/solutions and any ideas/light bulb moments.
5. Develop a simple **action plan** that can be used to implement these recommendations.
6. **What can I do?** Each attendee considered how they could help drive the plan forward.
7. **Pledges** were made using two postcards (one for the attendee to keep and one to hand in), this included their name, three actions they would take, the date to complete and who they would inform that they had completed it.
8. **Collaborate:** The groups shared their action plans with all the Symposium attendees.

Activity outputs: summaries of the action plans are outlined below, for further details of the activities completed refer to Appendix 2. The summaries have been collated using each groups completed activity tables undertaken during the workshop session, and available transcriptions of the group work and feedback which was audio-recorded for this purpose.

Direct Care Givers and Quarantine Group (Appendix 2)

1. Encourage good behaviour: The group decided to incentivise good behaviour with rewards for good practise (i.e. positive yard behaviour). The barrier was knowing what incentives would work, and would good behaviour be sustainable. A variety of approaches were discussed including Stamp Out Strangles day, rosette, chocolate orange, or something as simple as highlighting their success on social media. The question of what is needed to monitor and evaluate a yard pilot project requires further consideration.

NEXT STEP: *is to engage with livery yards and create a high profile day of action*, which is simple and cheap to do - Redwings' Yard Manager's pledge already attempts to do this. There is a need to promote this more widely to yard managers who also prioritise high health and hygiene status.

2. Issues with the cost of testing, follow-up and treatment: Does insurance cover carrier identification and treatment? Will they pay out if a carrier is identified and needs veterinary treatment? There is a need to ensure there are no disincentives to have horses screened as they move into new premises. There is a requirement to look at other ways of cost sharing for screening and clearing strangles carriers. Agreed that there was an opportunity to engage vets and drug companies to look into bulk buying opportunities for testing and screening activities. The group started to talk about the high-health cattle schemes, and other work that is being done in cattle with disease prevention, like incentivising beef farmers to join schemes and combat disease. They also talked about making it similar to the Cushings testing month, with a concentrated time for undertaking it. The barriers are getting to the right people and the resources needed; vets need to develop affordable packages for clients, which could link to the BEVA trust.

NEXT STEP: *to liaise with the insurance sector, veterinary profession and drugs companies, to investigate opportunities.*

3. Challenge the stigma and shame of strangles: the barriers highlighted by the group are the negativity around social media, trolling and people feeling disengaged in their communities. The group explored the question of - how to find the disinterested, disengaged and the simply busy? They identified the need for an influential champion who people are connect and impressed with (e.g. Martin Clunes); this related to social media shares and an appropriate influential figure that would reach a mass audience. Ideas included a day of action to mobilise people passionate about tackling the disease, amplifying their voice to reach those who are disengaged and demonstrating the impact an outbreak can have and how the risk can be reduced.

NEXT STEP: *to examine how to best access these audiences, identify an influential champion who people connect with, and explore how they can be utilised through varying communication channels (e.g. social media) to model, influence, encourage, persuade and motivate positive behaviours.*

Further discussion is needed on **quarantine**, but a suggestion put forward was to produce a how-to-do-quarantine-easier or "*quarantine made easy*" resource, but this wasn't agreed by the whole group at the time – therefore further discussion is required.

Educators and Knowledge Transfer (Appendix 2)

1. Communication: Recognised there has been a lot of different types of communication, but looked at agreed opportunities: roadshows should go to local priority areas; vocational training to include strangles; digital communications is cheaper to stretch over a wider area; encourage business-to-business and client evenings.

The agreed barriers are money and evidence-based ways of reaching those unaffiliated to charities or educational routes. There appears to be an issue with people who resist adapting their behaviours in response to repeated advice. There is a need to identify 'challenging populations' and better understand how to engage them, and what are the barriers or disincentives they face to taking on advice and adapting their practices - are there conflicting messages for example? Do we need to give them a common message, so consistency across the board?

Resources needed: teams of people, education packages (which to some extent already exist), but there should be consistent messages across the board, using social media with joined up thinking, word of mouth, word of sight, websites, apps; also looking at interaction and live chats. Monitoring and evaluation: consider how many lab tests have been done; examine free movement of horses in the UK; vet practices, monitoring online platforms looking at analytics and engagement in terms of digital communications.

NEXT STEP: *the group recommended an interactive approach that incorporates sharing what is out there: Facebook groups, social media, developing materials with consistent information and messages.*

2. Knowledge transfer: Which also linked to communication, but for knowledge transfer the group looked at educational packages and ensuring the educational packages that are already out there are shared; making sure people aware of what is available. Also, try to get the message out about biosecurity, it's not just about strangles as it has a knock-on effect for other infectious diseases. An agreed barrier was professional/ client barrier in relation to making assumptions about knowledge - perhaps assuming people already know.

NEXT STEP: *Keep messages simple and straight-forward which will require similar resources needed for communications, together with outreach to find the hidden horse owners, and prioritising yards to focus on in particular areas. Educate/address vets and professionals to deter assumptions about what the client's capabilities, opportunities and motivations are.*

3. Delivery: Consistent information and messaging. Develop networks, not just at strategic levels but also at grass roots level (e.g., owners, yards). Openness with the equine community in terms of opportunity.

Collaboration was an agreed barrier, as in certain circumstances individuals and organisations want to collaborate but many have their own agendas – there is a need to put this in the past and look at protecting yards and the industry. Resources needed: funding for science and education. Getting feedback to find out what is working and going back to the drawing board.

NEXT STEP: *To support network development, and dissemination of information packs. Identify if collaboration would have an impact on support and what risk this poses so that meaningful pooling of resources and collaboration can take effect? Senior level discussion (memorandum of understanding?) between leading organisations regarding how a biosecurity project/strangles*

project should be supported by each other – collaborating on future outputs, supporting digital dissemination?

Author's supplementary note: Behaviour change interventions need to be based on an understanding of the specific stakeholders being targeted, addressing the barriers that exist based on evidence and avoiding or testing assumptions wherever possible. Simple awareness raising campaigns are unlikely to achieve change in practice, they should be considered strategically based on where and when information and awareness is really needed, and what else should be in place to enable behaviour change.

Events and Organising Bodies (Appendix 2)

1. Education: pre-event information for those attending and post event updates.

Agreed barriers: lack of uniform messaging from national governing bodies came up three times. Resources needed were a willingness to openly discuss (the mind-set is more important than huge amounts of money – it is down to personal contact) and the use of communications such as short blogs and videos. Unforeseen consequences or circumstances may include: Scare-mongering and confusion regarding mixed messages, which is due to lack of uniform messaging.

NEXT STEP: *to develop a Code of conduct for individual event/venues initially. Moving toward uniform code of conduct for national governing bodies. Direct information to all competitors.*

2. Communication: Opportunity for consistent information from differing venues/events, but the current barrier is a lack of uniform messaging from national governing bodies. Resources needed include a willingness to openly discuss and communicate; a change of mind-set, together with resources such as an awareness raising 'story' from high profile rider. Unforeseen circumstances or consequences mental health issues due to inappropriate communications, and information fatigue/overload.

NEXT STEP: *Face-to-face communications – engage with venues, plus encourage the display of strangles policy or code of conduct.*

3. Governance: The opportunity and need for a uniform message across NGB's. Lack of NGB guidance which must be consistent. Resources: leadership and governance - with leadership of the equine industry, particularly with the over-reaching national governing bodies (BEF). Unforeseen circumstances or consequences NGB's could feel bullied rather than supported.

NEXT STEP: *NGB consultation working group, top down communications and specific timeframe.*

Authors' supplementary comment: Would a flexible and adaptable biosecurity event pack that can be tailored for all levels of competition be a project worth exploring with NGBs? Co-development, testing and branding may help to improve buy-in and implementation

Mobile Equine Service Providers (Appendix 2)

1. Lack of information on current cases (public): Agreed solution would be to develop an accessible database of information from vets, labs, farriers, horse owners, equine businesses.

Agreed barriers: currently there is not a database so one would have to be made and decision made as to how the data would be accessed and displayed; it also needs to be local and national. Resources: volunteers or funded source / impartial organisations to raise the money and collect data. Monitoring & evaluation/assumptions: whether horse owners actually want this information? Could this data be misused? Is there a need for verification/ quality control of the data?

NEXT STEP: *explore if it is required? Canvas opinion, develop procedures and identify the database provider and an overseeing body.*

2. Lack of testing: funding for a national programme for testing. Finance and lack of ideas are the barriers, plus no accurate idea to the extent of the problem. Resources: need cheap testing so perhaps the government could supply the money, or it could come from insurance companies - either by adding to the premium or getting involved in some way, or, a possible levy through other sources. The unforeseen circumstances are lack of owner participation, the threat of finding a population that cannot be treated, and the concern that it may create unrealistic expectations.

NEXT STEP: *to undertake research on testing types – is it cheaper and is it wanted?*

3. Addressing the stigma of strangles: Empowering and educating the general horse owning public. Barriers: Look to change personal perceptions, and the need to encourage dialogue in the equine community. Resources: impartial knowledge, platforms easily accessible with reliable information. Unforeseen consequences: incorrect information being shared, information being misinterpreted.

NEXT STEP: *develop a pool of agreed data/information and methods of sharing information presented.*

Author's supplementary note: It seems that surveillance and information dissemination about outbreaks is of key interest to mobile equine service providers. Perhaps respective governing bodies (e.g. BAEDT, BFBA etc) would be interested in the newly developed Surveillance of Equine Strangles project by AHT/Horse Trust (see slides available on request). Can governing bodies of equine service providers be made aware of this. Would the SES development benefit from the involvement of these stakeholders in the next phases of the research project?

Service providers are interested in remaining informed about the costs of testing and the different diagnostic routes. Is this something that the veterinary sector can provide support for? Could equine service provider governing bodies make BEVA-approved biosecurity advice available to their members e.g. through their websites?

Veterinarians (Appendix 2)

1. Targeted screening: Screening provides a whole new range of opportunities. Narrowing it down, the biggest risk is horse movements. While we will never catch all movements, we can increase the level of screening at pre-purchase examinations (PPE), and both at import and at export. This should have a significant effect on our perception or understanding of the level of disease within the country; it will also highlight the risks and enable awareness to be raised.

Resources needed on the PPE side there is the opportunity to work with insurers to consider whether they might offer discounts to clear samples of PPE, the group identified the need to get insurers to buy into that and measure success based on the number of tests and percentage of positives. The potential unforeseen consequences might be a decrease in the number of PPEs.

NEXT STEP: *Approach the insurance companies and promote to the veterinary profession to the benefits of PPE screening.*

With import/exports the biggest risk discussed was the low end of the market, but potentially the easiest first step being the top end of the market, and experience with AHT has with high value horses exporting Strangles across the globe.

NEXT STEP: *ensuring the pre-export, pre-import of high value horses as a first step in that process.*

Running through this and the other issues were the importance of the business case. At one point on this final sheet "Does it matter?" is written down. The group came back to this a number of times. For the majority of horse owners/yards in this country, they will go 20 years without a strangles outbreak when moving horses around*, they've got random people coming in out of the yard, they are employing pretty low levels of biosecurity, and they get away with it; also, even having some of the highest biosecurity environments there are still occasional strangles outbreaks.

NEXT STEP: The group recognised and believe there is a real ***need to provide a demonstration of the risk***, not of how awful strangles can be, because many people know that, but what actually is the risk - if we cross that road, some of us will automatically go to pedestrian crossing, majority won't, because you know, 1 in 20 million we'll be run over and killed. ***We felt there's a need to address that issue in line with other problems.***

2. Individual attitudes (as opposed to general attitudes): there may be some quick wins and low cost wins. We recognise there's a huge amount of educational resources, advice and guidance, most of which is along similar lines, but it is in lots of different places. If the **advice and guidance could be harmonised**; if we could have **one document** across all sports, racing, welfare organisations, horse associations, then that could provide and ensure some level of consistency and recognise that everyone is an interested party, and that everyone wants to be on front page in top right hand corner, we need to address those issues. The other thing we can do is **celebrate good practice better**, simple things like create maps of yards that do the required screening, or do have a certain level of biosecurity and make those maps widely available. Barriers are the interested parties, whether it really matters and if there is a business case for this approach. Resources, need to keep cost low, utilise BHC/NEWC/AHT/EDC. M&E: could be undertaken through surveying and feedback from mapped yards.

NEXT STEP: *promote Redwings content and utilise forums/groups to harmonise advice and guidance.*

3. Cost of implementing improvements: The group looked to themselves as vets and decided there is an opportunity for the veterinary profession to improve efficiency in carrying out sampling, particularly scoping. Training is an opportunity to improve that and this is something we've already started on - BEVA runs a course supported by Redwings. The challenge is having sufficient horses for inexperienced people to scope the guttural pouches. Ethically there needs to be a clinical need, which only happens when there is a large number of horses imported into the country at the same time, this probably means the horses the army imports - this is one group we're using at the moment. Training is an opportunity to make vets' time more efficient, and decrease costs potentially.

NEXT STEP: *Promote this to the veterinary profession and look at the business case.*

The other cost opportunity was looking for subsidies from industry; be that sporting authorities, or pharmaceuticals. The group recognised that the sporting bodies are very unlikely to subsidise testing at the lower end of the market, unless they see that the disease level in the lower market are a threat to their business. There might be commercial value in terms of the imports/exports market in demonstrating that a large number of horses are screened for it.

NEXT STEP: *Promote to industry and examine the business case.*

Author's supplementary note: Research was recently presented at the Dorothy Havemeyer Workshop, Reykjavik (2nd May 2019), entitled "Getting to grips with strangles and other streptococcal diseases", this highlighted the significant economic impact of strangles compared to non-strangles affected yards in Sweden (Gröndahl, G and Ekmann, A. (forthcoming)

**Is this true? Diagnostics have advanced in 20 years and perhaps outbreaks are less likely to be overlooked?*

Summary of workshop actions:

Cost of testing, follow-up and treatment:

- Engage vets and drugs companies to look into bulk buying.
- Engage insurers and their veterinary advisors to explore incentives, ensure there are no disincentives to testing, and no exclusions are added post-recovery from strangles.
- Encourage veterinarians to provide affordable packages for clients, through increased/improved training around sampling and scoping to increase efficiency and drive down costs.
- Examine other schemes for ideas (high-health cattle schemes, Cushings testing month, human health).
- Examine the possibility of a national programme for testing and potential routes for funding support including: government, insurance companies, or a levy, consider what can be learnt from non-equine case studies (e.g. BVD eradication scheme in cattle or improved hygiene in human health).
- **NEXT STEP: *speak to the veterinary industry and pharmaceutical companies promoting the business case, and explore other routes for support (e.g. sporting authorities).***

Targeted screening:

- Identify yard(s) where repeated outbreaks have occurred and the management are motivated to change; help them upgrade biosecurity with clients – make this a comms/campaign (see/adapt the shelved Redwings/BEVA Trust proposal from 2016 for scoping clinic project).
- Increase the level of screening at pre-purchase examinations, and at import and at export.

- **NEXT STEPS:** 1. *approach insurance companies and promote to the veterinary profession the benefits of PPE screening.* 2. *Ensure the pre-export, pre-import of high value horses as a first step.* 3. *Examine demonstrating the risk related to strangles to encourage testing.*

Lack of information on current cases (public):

- Work with AHT / Horse Trust (HT) on the surveillance project, supporting collaboration through communication and engagement of labs and vets. Explore how to ensure this is an accessible database of information from vets, labs, farriers, horse owners, equine businesses and is effective in influencing behaviours in a positive way?
- **NEXT STEP:** *Consult with HT/AHT to explore a strategy to support the project and ensure effectiveness for behaviour change. Ascertain the potential of the Equine Register / Scottish Equine ID for biosecurity.*

Encourage and celebrate good/positive behaviour:

- Incentivise good behaviour with rewards for good practice.
- Celebrate good practice through creating a map of yards that do the required screening, or have a certain level of biosecurity; make the map widely available.
- **NEXT STEP:** *Engage a livery yard and promote Redwings positive-style content.*

Addressing the stigma and shame of strangles:

- Empowering and educating the general horse owning public. Trial a national day of action that the entire sector can get behind.
- Examine how to find the disinterested, disengaged and the simply busy?
- **NEXT STEP:** *Examine how to best access these audiences, identify an influential champion who people connect with (e.g. Martin Clunes), and explore how they can be utilised through varying communication channels (e.g. social media) to model, influence, encourage, persuade and motivate positive behaviours. HBCA could help with this.*

Communications and education:

- Need for a uniform, consistent, approach to messaging and delivering information. Some feel there are inconsistencies although no specific issues were documented. Pooling resources in one place should be a priority. These need to be looked at to ensure they utilise HBC principles and practice - values base and positively framed
- There is a large amount of educational resources, advice and guidance, examine whether this could be harmonised into one document, or, collated in one central area (e.g., BEVA website and NEWC), then direct National Governing Bodies (NGBs) to this resource location. This would ensure some level of consistency and recognise that everyone is an interested party.
- Ensure people are aware of the communication and educational packages available.
- Ensure that the biosecurity message is clearly made and effectively disseminated, as it is not just about strangles but other infectious diseases as well.
- There is a need to consider targeting interventions with those people who repeatedly resist acting on advice (yards where disease is endemic and little change takes place) as well as to reach the unaffiliated horse owners in order to engage them and communicate a consistent message.
- **NEXT STEP:** *1. Utilise forums/groups to harmonise advice and guidance, and ensure it reaches its desired audience. 2. Use an interactive approach that incorporates sharing what is out there: Facebook groups, social media, developing materials with consistent information and messages. 3. Keep messages simple and straight forward which will require similar resources needed for communications, together with outreach to find the hidden horse owners, and prioritising yards to focus on in particular areas.*

Equine event communications, education and governance:

- The need for consistent pre and post-equine event information and updates from differing venues/events, together with guidance and uniform messaging from across the National Governing Bodies (NGBs).
- **NEXT STEP: 1. *Develop a Code of conduct for individual event/venues; moving towards a uniform Code of Conduct for NGB's. Direct information to all competitors. 2. Face-to-face communications to engage venues and encourage them to display the strangles policy or the code of conduct. 3. NGB consultation working group, top down communications and a specific timeframe.***

Delivery:

- Develop networks, not just networks at strategic levels but also on grass roots level (e.g., owners, yards). Openness with the equine community in terms of opportunity. Collaborate and put organisational and personal agendas in the past - look at protecting yards and the industry.
- **NEXT STEP: *Support the network development and dissemination of information packs.***

Additional recommendations and actions

THE RECOMMENDATIONS AND ACTIONS ARE BASED ON THE INFORMATION FROM THE MORNING PRESENTATIONS, PANEL DISCUSSION, ADDITIONAL POINTS TO THOSE IN THE ACTION PLANS AND PLEDGES (SEE APPENDIX 5) DEVELOPED IN THE AFTERNOON WORKSHOP, AND THE INSIGHTS FROM THE PRE AND POST-SURVEYS.

Building on the momentum and creating a network

1. Build on the momentum created by the Symposium and the ongoing work of organisations, charities and individuals to drive positive change to behaviour, intention, attitudes and beliefs regarding stamping out strangles – to be achieved through collaboratively working together (see recommendation 2).
2. Identify the best forum for collaboration that will enable the actions from the Symposium to be progressed, and that will facilitate continued open and supportive discussion among interested parties from the equine sector to deliver positive change. Consideration should be given as to whether an existing group or network could take on this role to maximise efficiency and avoid duplication (e.g., the organising committee for the Strangles Symposium, the BEF High Health Steering Group, the Equine Disease Coalition or another existing group), or if a new tailored network is required to aid in championing particular areas.
3. Identify who will provide the resource and capacity to: develop and implement plans of action, undertake research, develop project plans for behaviour change intervention design and implementation, and access funding to support delivery. Does the BEF have this capacity? Do others? How can this be procured?
4. Build upon the action plans from the Symposium by developing SMART objectives to be carried out by agreed individuals, groups or organisations.
5. Provide the Symposium attendees and relevant interested parties with an update on the progress made since the Symposium and the future plans; engage their support.
6. Follow-up on the individual pledges from the Symposium to support people in implementing and delivering on them.

Research and development

7. Gain expert behaviour change support to effectively utilise current models in analysing the problem, identify target behaviours and developing and designing behaviour change interventions (e.g., COM-B, TTM, the Change Curve, Fogg Model etc.).
8. Working collaboratively, review the current materials available to ensure a consistent shared message and approach for communications, guidance and educational materials (refer to the 'Roadmap' presented by Alison Braddock or SRUC - slides available on request):
 - Examine whether the materials are disseminated effectively to have the greatest impact (relates to recommendation 9.),
 - Consider hosting them in a central place and disseminating this to equine service providers and governing bodies with a recommendation to make members aware of a central hub. For example, there is potential for the BEVA website to act as a central hub including links to all key resources in a similar way to obesity (<https://www.beva.org.uk/Resources-For-Vets-Practices/Clinical-Practice-Guidance/Obesity-in-horses> and <https://www.beva.org.uk/Resources-For-Vets-Practices/Welfare-guidance>); NEWC could have a similar webpage on biosecurity and other organisations could also be considered - HBLB, KBHH and AHT).
 - Consider utilising the behaviour framework drafted by WHW/Behavioural insights team as a starting point on which to Equine Disease Coalition's Behavioural Framework (Appendix 1) to map existing interventions being delivered by different organisations against identified high level objectives, broad behaviours and 'micro' behaviours, to establish what is currently taking place, where there are gaps, together

with how the current interventions and possible future interventions could be monitored and evaluated for impact. This could then be utilised to inform research aimed at understanding the target audience together with discussions and further research and design of behaviour change interventions.

9. Build on existing and undertake new audience research to (see recommendation 11):
 - Understand who the target audiences are and how to reach them.
 - The best way to communicate with them to deliver positive sustainable change (behaviour, intention, attitudes) in relation to strangles – including how to move them through the stages of change (e.g. from ‘pre-contemplation’ to ‘contemplation’).
 - Why they have or have not taken part in existing schemes (e.g. STEPS, Redwings Stamping Out Strangles, SRUC PASS, Keep Britain’s Horses Healthy Yard Excellence, etc.).
 - Utilise this information to inform the design of behaviour change interventions.
10. Continue to undertake research and evaluation to:
 - Understand the micro-behaviours being or not being performed, including identifying where people are in the process of change, and how to reach those that are not engaged, interested (in ‘pre-contemplation’ or ‘contemplation’).
 - Identify the problems, barriers and opportunities to change.
 - Undertake a literature review and evaluation of the current evidence on the costs of an outbreak (i.e. impact on: equine welfare, finance, social issues including psychological and physical health, competition, business/livelihoods etc.).
 - Investigate pros and cons of licencing and how Equine ID regulations can support better biosecurity.
 - Test assumptions and identify unforeseen consequences.
 - Test potential behaviour change interventions (such as those prioritised in the group sessions above), for example how best to engage them, communicate effectively to motivate, encourage and empower change, and what behaviour change techniques are needed.
 - Continue with the Biosecurity Project Yard Level Research currently taking place
 - Evaluate the impact of existing campaigns/interventions with the intention of identifying areas for strengthening impact and complementarity (e.g., Redwings Strangles Pledge, vets distribution of Strangles information [Redwings], KBHH and yard excellence scheme, PASS, BHS approvals process) and make recommendations.
 - Investigate veterinary support to clients in proactive and reactive guidance; make recommendations to enable vets to include strangles in client education, and explore their willingness to participate in surveillance dissemination.
 - Redwings to consider publishing the strangles survey and interrogate the data to help test assumptions and answer some of the questions below.
 - Consider the case for strangles being listed with the OIE, examining the pros and cons of this approach (e.g. reporting of cases).
11. What questions need answering and what assumptions need challenging to take an evidence based approach to behaviour change:
 - Do people really know what strangles is?
 - What impacts on a person’s knowledge of strangles?
 - What affects people’s perception of risk of strangles (e.g. the person’s role in relation to the care of the horse) and what implications does this have for the short, medium and long term existence of a surveillance system?
 - Do people understand what a carrier is and how it may impact on them?
 - Building on Redwings research, examine whether knowledge of carriers has an impact on the behaviour performed.

- Do they understand how to prevent strangles and the value to them, their horse, their life, their community of preventing it?
- Do they understand what biosecurity is and how to carry it out? (knowledge, skills, resources)
- Do they understand what infection control is and how to carry it out? (knowledge, skills, resources)
- Do we really understand why some yards don't have quarantine facilities or engage in biosecurity? Will this be investigated as part of the EDC Biosecurity Project Yard Manager interviews?
- Do people really understand how simple behaviours reduce the risks of strangles and other infectious diseases?
- What culture is needed to enable good, proactive biosecurity and infection control to be implemented on yards?
- How do people evaluate and assess the risk (e.g., origin, movement, threat of carrier)?
- Do professionals really understand their role, and do they have the biosecurity skills/behaviours in place (e.g. vets, farriers, physios, instructors, welfare officers etc.)?
- What motivates the varying audiences/individuals to perform the desired behaviours?
- What behaviour change approaches and techniques do they respond to (e.g. the use of role models, social support, incentives etc.)?
- For any planned action have the assumptions been tested and the unforeseen consequences considered?
- What other questions should be considered?

HBC Approaches

12. Consider the role of habitual behaviour formation in interventions related to good biosecurity (HBCA is undertaking ongoing work in this area).
13. The importance of small steps in addressing strangles – through the use of micro/tiny behaviour changes.
14. Look to actively reward positive behaviour, including:
 - Celebrating and communicating success stories that are relevant to the identified target audiences, which positively impact emotionally, motivating and empowering change.
 - Providing help to undertake this change, for example social support (friends, family, equine professionals), tips on setting up quarantine, or encouraging yards and horse owners to welcome the identification and treatment of carriers during screening.
15. Look to use values-based communications and positive framing in any messaging and educational materials, for example, biosecurity is something responsible and caring people do. Assess the extent to which this is present in existing campaigns and materials and whether this is persuasive, effective and why.
16. Effectively raise awareness of the 'intervention' vaccine due in 2020 and develop support to look for a vaccine that provides greater long-term cover.
17. Examine and promote the benefits of certification and pledges.
18. Look to address/breakdown the barrier of cost (e.g., the business case, subsidies, incentives, benefits etc.). Look to insurance companies to ensure no financial disincentives against screening and clearing strangles carriers, and explore opportunities for them to support this work and potentially incentivise it.
19. Look to collaborate with those undertaking mapping of strangles and related activities to establish what is going on where. This could help to communicate outbreaks, cases, success

stories, concerns, certification, and projects more effectively, and be utilised to provide support for the different audiences

20. Share this report with City and Guilds Examination board and consult regarding how and where strangles and biosecurity occurs in relevant land-based educational curriculums.

Appendix 1: List of Attendees

Name	Organisation
Helene Mauchlen	BHS Scotland
Abbi McGlennon	Surveillance of Equine Strangles, Animal Health Trust
Alison Braddock	SAC
Alistair Duff	Edinburgh School of Farriery
Andie Vilela	Redwings Horse Sanctuary
Andrew Waller	Animal Health Trust
Claire Gotto	Keep Britains Horses Healthy
Colin Tait	Equitait
David Mountford	British Equine Veterinary Association
Debbie Dowe	ScotEquine ID
Eileen Gillen	World Horse Welfare
Grant Turnbull	Horse Scotland
Jamie Gartside	Tay Valley Vets
Jane Nixon	British Equestrian Federation, Equine Vet
Jeanette Alan	Horse Trust, British Horse Council
Jenni Surgeon	SSPCA
Jill Thomson	SRUC
John Burns	World Horse Welfare, National Equine Welfare Council
John Reid	Local Authorities in Scotland
Jo White	Human Behaviour Change for Animals (Facilitator)
Leanne McPake	World Horse Welfare
Louise Bulmer	SRUC, Oatridge Campus
Mona Parr	Strangles and EHV Facebook Group
Nic de Brauwere	Redwings Horse Sanctuary, National Equine Welfare Council
Nicky Blair	
Robin Pape	British Farriers and Blacksmiths Association
Robyn Gray	SSPCA
Roly Owers	WHW, Equine Disease Coalition, BEVA Council Member
Sally McCarthy	Aberdeen
Richard Johnston - Smith	BHS Coach
Sarah Logie FWCF	Farrier, Scottish Equine Education Seminar
Scott Pirie	University of Edinburgh
Shiela Voas	CVO Scotland
Shirly Melling	Livery Yard Spokesperson
Tom Best	Stud Farm Owner and author
Jenny Croft	

Appendix 2: Afternoon Workshop Action Plans

Direct Care Givers and Quarantine					
PROBLEM	AGREED OPPORTUNITIES / SOLUTIONS FOR ACTION	AGREED BARRIERS & GAPS TO ADDRESS FUNCTION?	RESOURCES NEEDED (£, PEOPLE, DATA ETC.)	M+E TESTING FOR ASSUMPTIONS UNFORSEEN CONCEQUENCES	ACTIONS + NEXT STEPS
GOOD BEHAVIOUR IS NOT BEING ENCOURAGED	Incentivise good behaviours with rewards for good practice i.e. positive yard behaviour	Knowing what incentives will work Would the good behaviour be sustainable	Could be as simple as highlighting on social media	Yard pilot project	Engage with livery yards
COST OF TESTING FOLLOW UP AND TREATMENT	Engage vets, drug companies + lab in bulk buying opportunities → Scheme similar to cushing testing month Joint working	Getting deals are hard	Vets need to make affordable BEVA Trust Clinic Proposal Partnerships	Learning from cattle industry in health screening	Speak with veterinary industry + drug companies
STIGMA	Challenge the shame of strangles	Social media trolling Engaging the disengaged/disinterested community	Influential champions	Social media shares	Need to get appropriate influential figure that would reach a mass audience

Educators and Knowledge Transfer					
PROBLEM	AGREED OPPERTUNITIES / SOLUTIONS FOR ACTION	AGREED BARRIERS AND GAPS TO ADDRESS -ACTION	RESOURCES NEEDED (£, PEOPLE, DATA ETC.)	M+E, TESTING FOR ASSUMPTIONS; UNFORSEEN CONSEQ-UENCES	ACTIONS AND NEXT STEPS
COMMUNIC- ATION	<ul style="list-style-type: none"> Roadshows Vocational training Digital comms Business → 'business' Client evenings 	<p>Money Finding the unknown engagers</p> <p>Common message/ consistency</p>	<ul style="list-style-type: none"> Teams People Educational packages Social media Word of mouth Websites/ apps <p>→ Interaction → Live chats</p>	<p># Of lab tests?</p> <p>Free movement of horses in UK</p> <p>Online and vet practices Analytics/ engagement</p>	<p>Interactive! Sharing what's out there:</p> <ul style="list-style-type: none"> Facebook groups Social media Developing materials for consistent Info/ messages
KNOWLEDGE TRANSFER	<ul style="list-style-type: none"> Educational Packages Biosecurity Call infectious diseases 	<p>Professional/ client barrier knowledge assumptions</p>	<p>Digital stable</p>	<p>Outreach Finding the hidden horse owners</p>	<p>Keeping it simple & straightforward</p> <p>Prioritising yards/areas to focus on</p>
DELIVERY	<ul style="list-style-type: none"> Consistent info & messaging Networks (owners/ yards) Openness within the equine community 	<p>Collaboration</p>	<p>Funding for science & education</p>	<p>Trial & Error → feedback</p>	<p>Support network developments</p> <p>Pass information packs</p>

Events and Organising Bodies					
PROBLEM	AGREED OPPERTUNITIES / SOLUTIONS FOR ACTION	AGREED BARRIERS & GAPS TO ADDRESS ACTION?	RESOURCES NEEDED (£, PEOPLE, DATA ETC.)	M+E TESTING FOR ASSUMPTIONS UNFORSEEN CONCEQUENCES	ACTIONS + NEXT STEPS
EDUCATION	Pre event info to those attending Post Event update	Lack of uniform message from NGB's	Willingness to openly discuss + communicate short blogs or videos	Scaremongering confusion + mixed messages	Code of conduct for individual event/venues initially. Moving toward uniform code of conduct for NGB's. Direct info to all competitors
COMMUNI-CATION	Consistent info from differing venues/events	AS ABOVE	Willingness to openly com. Awareness 'story' from high profile rider	Mental health issues due to inappropriate comms. Information fatigue/overload	Face-to-face comms – engage with venues + encourage display of strangles policy or code of conduct
GOVERNANCE	Uniform message across NGB's	Lack of NGB guidance which must be consistent	Leadership in equine industry overarching NGB's (BEF?)	NGB's could feel bullied rather than supported	NGB consultation working group Top down comms Specific timeframe

Mobile Equine Service Providers					
PROBLEM	AGREED OPPORTUNITIES / SOLUTIONS FOR ACTION	AGREED BARRIERS & GAPS TO ADDRESS ACTIONS	RESOURCES NEEDED (£, PEOPLE, DATA ETC.)	M&E: TESTING FOR ASSUMPTIONS UNFORSEEN CONCEQUENCES	ACTIONS & NEXT STEPS
LACK OF INFORMATION ON CURRENT CASES (PUBLIC)	<p>Accessible database</p> <p>Info from vets, lab , farriers, owners, equine businesses</p>	<p>No database ↓ Make one</p> <p>How is the data accessed /displayed Needs to be local + national</p>	<p>Volunteers or funded source /impartial organisation</p> <ul style="list-style-type: none"> • £ • Data 	<p>Do horse owners want this info?</p> <p>Could it be (data) missed</p> <p>Is there a need for verification/ quality control of the data</p>	<p>Is it required? → Canvas</p> <p>Identify the data base provider and the overseeing body</p>
LACK OF TESTING	<p>Funding for a national programme of testing</p>	<p>Finances</p> <p>No accurate idea to the extent of the problem</p>	<p>Cheap test</p> <p>£ →either government →From insurance premiums/co mpanies →Levy through another source</p>	<p>Lack of owner participation</p> <p>Could find a population we can't treat. →Could create unrealistic expectations</p>	<p>Research on testing types (cheap)</p> <p>Is it wanted?</p>
ADDRESS THE STIGMA OF STRANGLES	<p>Empowering and educating the general horse owning public</p>	<p>Peoples personal perceptions</p> <p>Encourage dialogue in equine community</p>	<p>Impartial knowledge people</p> <p>Platforms easily accessible with reliable info</p>	<p>Incorrect information being shared</p> <p>Information being misinterpreted</p>	<p>A pool of agreed data/information</p> <p>Methods of sharing info decided</p>

Veterinarians					
PROBLEM	AGREED OPPORTUNITIES /SOLUTIONS FOR ACTION	AGREED BARRIERS & GAPS TO ADDRESS ACTION?	RESOURCES NEEDED (£ , PEOPLE , DATA ETC)	M + E TESTING FOR ASSUMPTIONS UNFORSEEN CONSEQUENCES	ACTIONS + NEXT STEPS
TARGETED SCREENING	PPE screening promotion/ education (insurance) Import/ export screening Promotion/ education (HHS as 1 st step) Industry subsidies for screening	Not all PPE Cost Time of travel Govt. willingness Logistics Benefit to dealers	Insurance buy in Motivational (business case)	No. of tests % of positives PPEs Black market imports	Change PPE Approach INS. Consider business case
INDIVIDUAL ATTITUDES	Harmonisation of advice Single doc Celebrate good practice Maps of yards	Interested parties Compliance Does it matter? Consider business case	£ low BHC/NEWC/ AHT/DC	Survey Feedback from mapped yards	Promote Redwings content
dCOSTS	Quicker vets Training Industry subsidies for screening	Cost/ equipment Overall price Horses Risk to relevant population Perception of risk Business case	Training (BEVA) (Redwings) Business case	Not trained +/- Devalue test Diverts Funds Take Advantage	Promote Business case

Appendix 3 – Symposium outputs

PLEASE NOTE THAT THIS IS A SUMMARY OF THE OUTPUTS THAT HAVE BEEN RECEIVED TO DATE, THEREFORE IT MAY NOT BE COMPLETE.



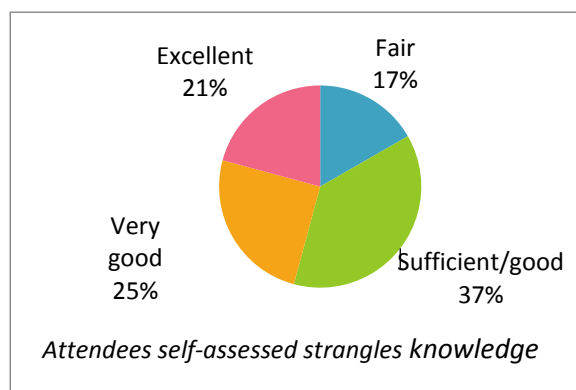
- Strangles Symposium 90 second film (350 views at time of writing) - <https://www.youtube.com/watch?v=KmvMKqKWFwc>
- H&H Report “The Importance of small steps in beating strangles” April 4th (print magazine) including raising awareness of the intervention vaccine due in 2020.
- H&H Report “Strangles screening costs a major barrier to overcome” April 11th (print magazine) calling for insurance companies to ensure no financial disincentives against screening and clearing strangles carriers.
- Press release picked up by BEVA, Vet News Online, MRCVS Online
 - <https://vnonline.co.uk/vn/news/18313/Symposium-calls-for-collaborative-approach-to-strangles>
 - <https://mrcvs.co.uk/en/news-story.php?id=18313>
- Report to support the BEF High Health Steering Group on biosecurity (meeting 14th May).
- Symposium update to be presented at the Scottish Equine Welfare Conference (17th May).
- Report to support the development of updated horse owner outbreak management guidance from BHS Scotland (TBC).
- Report to National Equine Welfare Council (April 3) and Education Group Meeting (23 May).
- Human Behaviour Change for Animals workshop materials and outputs (e.g. problem and opportunity analysis, ‘H’Frame – images of these can be provided on request).
- Pre and post Symposium survey were undertaken by attendees. The analysis of all the responses is beyond the scope of this report; please see appendix 4 for the results.

Appendix 4: Summary of Pre/Post-Symposium Survey:

SEVENTY SEVEN PER CENT OF PARTICIPANTS COMPLETED THE PRE EVENT SURVEY WHILE A THIRD COMPLETED THE POST EVENT SURVEY USING AN ONLINE SURVEY TOOL. FULL SURVEY REPORTS CAN BE MADE AVAILABLE BY REQUEST TO REDWINGS HORSE SANCTUARY.

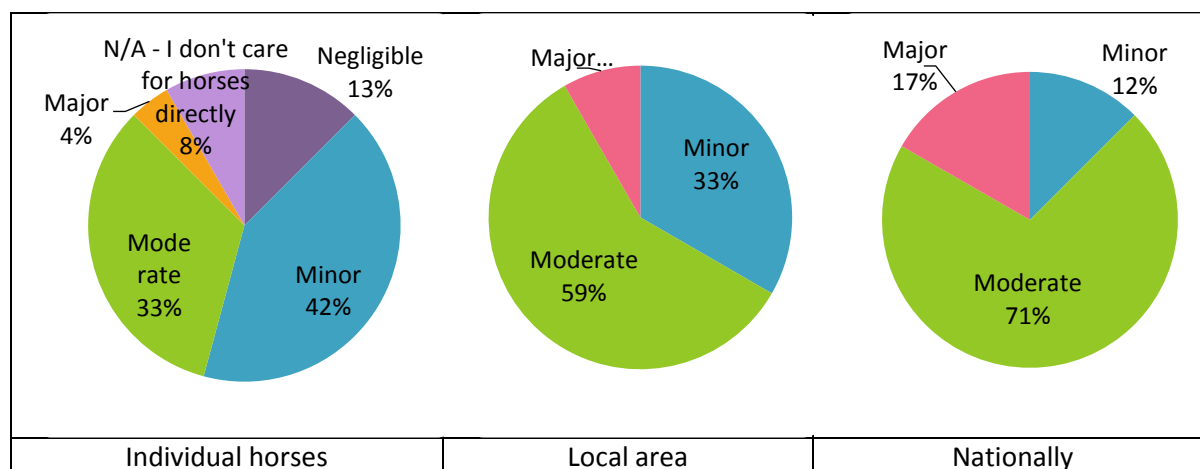
	Pre event survey responses	Post event survey respondents
	Count	Count
Complete	24	9
Partial	6	4
Totals	30	13
% attendees	77%	33%

62% had experience of strangles whilst 38% had no experience. 46% identified their disease knowledge as excellent or very good. This increased to 54% in relation to knowledge about how to prevent strangles. Just 8% rated this as 'fair'. Over half the comments referred to vets as a key source of their understanding on strangles, several referenced articles, equine degree courses and experience running of keeping their horses on yards were frequently referenced in addition to vets or work in a veterinary setting. Despite the invitation to the event from charities organising the event 4/21 people responded "none" to the question "What strangles initiatives and programmes are you aware of?" There was about equal distribution between STEPS, Redwings and SRUC amongst the other responses, and also reference to BEVA and the AHT work on strangles. Half of respondents then reported not to know of anyone who had used information or guidance from the initiatives they had listed. The Philip Ivens traffic light system was also mentioned.



The current activities to prevent strangles ranged from involvement in the implementation of interventions such as the national education campaigns such as 'Keep Britain's Horse's Healthy' and their Yard Excellence Scheme to isolation and screening on yards they manage.

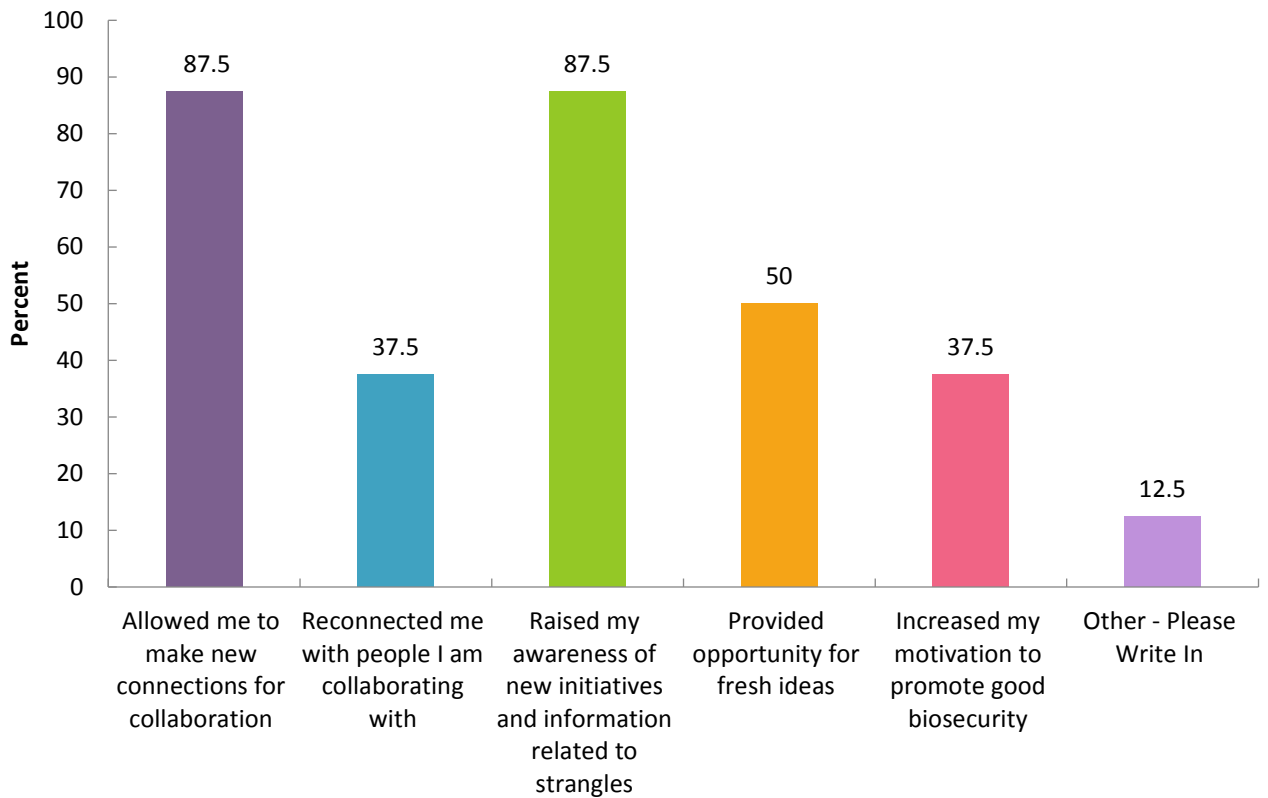
Views on the current threat of strangles:



87% reported being willing to become more actively involved in an initiative to reduce spread of strangles.

Impact of the Symposium:

62% said they were highly likely or quite likely to make changes to their biosecurity practices to improve disease risk reduction. The remaining 38% said neither unlikely or likely. All respondents said they would be likely or highly likely to advocate for better health and hygiene practices amongst their equestrian networks.



Other: Further opportunities for reading and increasing knowledge

63% said they were quite likely to fulfil their pledge commitments while 37% said that they were highly likely.

Appendix 5: Individual Symposium attendee pledges

30 OUT OF 31 PARTICIPANTS COMPLETED A PLEDGE (A FEW PEOPLE ATTENDED PART OF THE WORKSHOP, THEREFORE WERE NOT AROUND TO PLEDGE); PLEDGES ARE NOT LISTED IN ORDER OF PRIORITY, BUT ARE GROUPED INTO THEMES.

Communicate, educate raise awareness

- Post on Facebook / social media = 5
- Forward on social media info from this Symposium on business pages
- Report and discuss findings of Symposium with BEF NGBS Policy Biosecurity Meeting
- Organise a local event with yard owners
- Communicate strangles to clients / Share knowledge with clients = 4
- Assist with the development of educational material
- Talk more face-to-face about Stamp out Strangles (SoS)
- Host strangles evening with BHS
- Review marketing approach of SoS pledge
- Stamp out Strangles Day
- Promote equine ID in Scotland
- Lecture
- Share website links on my website
- Ask vet practices to share info
- Provide personal yard care/communication re strangles
- To promote awareness among liveries
- To promote awareness among vets
- Raise awareness of strangles prevention at Pony Club
- Increase awareness of how strangles is spread
- Let more vets know about strangles hub
- Encourage my farrier to consider what he can do
- Talk to licensed premises when I visit with vet
- Communicate BHS'S and Redwings strangles guidance
- Promote PPE screening
- Look into and promote PASS scheme

Horse's temperature

- Routinely take my horses temperature = 3
- Encourage owners to check horses' temperature routinely

Biosecurity

- Improve my biosecurity = 3
- Increase biosecurity measures when visiting yards
- Improve vet disinfection with all practice vets
- Dental kit disinfection
- Better biosecurity when touching horses e.g. Pony Club
- Rosette clean

Behaviour change and understanding

- More enquiries into barriers facing vets and clients

- Celebrate good behaviour
- Evaluate non-affiliated owners and yards
- Encourage open talking re outbreaks
- Promote behaviour change to HHSg

Action on PPE, import/export and screening

- Put a tick box on PPE booking form for Strep Equi testing
- Raise HHH import and export screening
- Continue screening for strangles carriers

Scoping training

- More effort to provide effective scoping training / Promote vet training for GP scoping / Consider running GP scoping CPD/webinar / Train junior vets in practice in E scope = 4

Research and development

- Increase the number of labs offering strangles testing
- Launch new vaccine
- Work on an online map/find a KBHH yard
- Liaise with the AHT to link with disease surveillance
- Capture the movement data to support analysis
- Create appropriate strangles policies

Schemes and guidance

- To map PASS yards / work with Redwings
- PASS rules match STEPS match Redwings – check
- Promote and encourage attendance of classes about PASS

Other

- Drug company
- More rehome ponies will be tested
- See a positive conclusion to assist in eradication by 2025

Thank you for your time: please feel free to ask questions or make comments. We look forward to receiving your feedback.

“Why? Because if we understand why humans do the things they do and what drives them to change, we will be more effective at making the world a better place for animals.”

