The purpose of this document is to provide all stakeholders with practical information on how they can manage and control strangles in horses and be better prepared should the need arise.

Introduction
Strangles is a notifiable disease in Victoria under the Livestock Disease Control Act 1994, which provides for the monitoring and control of livestock diseases in Victoria and must be reported within seven days.

What is strangles?
Strangles is a highly contagious infectious disease of the upper respiratory tract. It is caused by a bacterium called Streptococcus equi (S. equi) and affects horses, ponies and donkeys.

This endemic disease tends to favour the colder months and is readily recognised. Outbreaks may follow the mixing of groups of horses or the introduction of new horses onto a property. It is generally more common in younger horses whose clinical symptoms will be more severe; however horses of any age can become infected.

Clinical Signs/Symptoms
Classic signs (within 3 to 8 days of becoming infected) of strangles include:
- rapid on-set of high temperature (39.5 to 40.5 degs),
- loss of appetite,
- discharge of yellow pus from the nose,
- symmetrically enlarged glands of the head and neck that often form abscesses,
- coughing, and
- difficulty swallowing.

When abscesses burst, thick yellow pus is discharged. Sometimes discharge of mucus from the nostrils is all that is seen, and a carrier state without any obvious clinical signs is also possible.

Symptoms can last for days to months. Abscesses rupture and drain within 2 weeks and drain and recovery is generally without incident.

Keep in mind affected horses remain infectious for a minimum of 4 weeks after they have recovered and appear healthy.

Diagnosis
A veterinarian will be able to confirm a Strangles diagnosis by taking a swab from the back of the nasal cavity. Definitive diagnosis is based on culture of S. equi. It may take several days to confirm a diagnosis and culture may fail to isolate S. equi if antibiotic treatment has already commenced.

A rapid screening test is available at the DPI Primary Industries Research Victoria laboratory at Attwood.

Treatment
Immediate veterinary treatment should be sought in an attempt to control infection and treat the symptoms. Each case should be assessed and treated individually by your veterinarian.

The affected horse/s should be kept isolated for 6 to 8 weeks in order to prevent spread to other horses. Good biosecurity must be observed when handling infected horses.
In cases where the disease is not severe, the best treatment is good nursing. Keep the horse comfortable and quiet until the abscesses burst and the horse acquires natural immunity. To assist with the high temperature your veterinarian may prescribe non-steroidal anti-inflammatory medication.

Antibiotics are not always indicated, as they cannot penetrate the centre of an abscess where there is no blood supply. Anti-inflammatory treatment may be necessary if the horse is suffering from painful swellings and or a high temperature, early treatment with antibiotics may be given in some cases, however if antibiotics administered prior to testing may not be able to provide a confirmed diagnosis.

Treating abscesses once they have burst can be done by washing the site with warm water and antiseptic. Your treating veterinarian can advise you further on this.

**Transmission**

The incubation period of the disease is usually about 1 week, but may be up to 3 weeks.

Transmission occurs through both oral and nasal routes. Infection can occur via direct contact between individual horses and/or through indirect contact in several ways. Contaminated feed, water, bedding, stables, stable utensils and transport vehicles are important in the spread of infection. *S. equi* can survive for long periods in the environment. For example, it can survive in pus and purulent discharges for many months and in nasal discharges for several weeks. Careless horse handlers can make a significant contribution to transmission of strangles between horses.

Bacterial shedding usually ends rapidly after clinical recovery and can be confirmed by negative culture of swabs from the back of the throat (nasopharyngeal swabs). However, shedding may be intermittent and the occasional horse can become a long-term carrier. Therefore, before any convalescent horse or any in-contacts of any infected horse can be considered likely to be free of infection, a series of negative swabs are needed.

**Complications**

Complications are uncommon, and most horses recover uneventfully.

1. **Bastard Strangles** – This is where bacteria occasionally spread through the body and cause abscesses in the lungs, liver, spleen, kidneys, brain, and lymph nodes. These cases can be fatal.

2. **Purpura Haemorrhagica** – This is where red spots form on skin and mucous membranes, it is caused by bleeding from smaller blood vessels. Also present is swelling of the limbs and head. It is generally fatal.

3. **Chronic Carrier Status** - A small number of horses carry strangles in the gullet pouch (an out-pouching of the back of the throat) for months after they have recovered from the disease. Carrier horses appear healthy but shed bacteria in nasal discharges and are the source of infection for other susceptible horses.

**Disease control**

Infection can be controlled through the isolation of infected horses until they are free from infection.

Spread of strangles can be limited by the early detection of shedders amongst newly-affected horses and their in-contacts by taking three nasopharyngeal swabs over a two week period and culturing the swabs for *S. equi*. Three negative swabs provide strong evidence of freedom from infection in the great majority of cases.

All infected horses and their in-contacts should be placed under veterinary supervision in strict isolation with the highest possible standards of hygiene.

When strict isolation fails to prevent the spread of infection, this is usually due to a breakdown in hygiene standards.

Horses should not enter an affected stud unless they are vaccinated and can be kept in strict isolation from all sources of infection.

No infected or in-contact animal should be released from isolation or veterinary supervision unless three consecutive negative swabs have been taken over a two week period.

If animals are found to carry *S. equi* for more than two months, then investigations should be carried out to identify and treat the site of the infection (e.g. guttural pouch).

**Disease prevention**

All new horses should be monitored closely for at least two weeks after arrival, and ideally quarantined during that period.

Any horse that develops a nasal discharge should be isolated and swabbed to exclude the possibility of strangles.

Horses kept in isolation from other horses are not at risk. Horses that go to studs, shows or camps, or those on agistment with other horses are at risk and a regular vaccination program for strangles is recommended.

**Vaccination**

Vaccination for strangles does not always prevent disease in individual horses, but can assist control by reducing the severity and duration of clinical disease and the spread of disease in an outbreak. An initial course of 3 injections two weeks apart is necessary. At least annual booster vaccinations are then required.

For optimal protection, it is important that horses are given a full course of vaccinations and receive regular boosters. Horses should not be vaccinated while actively infected.

**Reporting strangles**

Under the Livestock Disease Control Act 1994, a person must report Strangles if they know or have reason to suspect that strangles is present in horses or horse products:
1. owned by that person or in the possession, control or charge of that person;
2. on land owned and occupied by that person; or
3. dealt with by that person as a veterinary practitioner, an inspector under the Meat Industry Act 1993 or the Export Control Act 1982, operator of a meat processing facility licenses under the Meat Industry Act 1993 where a quality assurance program is in force, the owner or person in charge of premises registered as a veterinary diagnostic laboratory, knacker, stock agent or other person dealing with livestock products or hives by way of a profession, trade or business.

Notification can be made by telephone to the District Veterinarian or Animal Health officer at your local Department of Primary Industries office or to the Disease Watch Hotline on 1800 675 888.

Notifiability assists horse exports and international horse movements, as many countries to which Australia exports horses require certification that the property of origin has been free from strangles for a period prior to export.

There is no regulatory action in the event strangles is detected on your property. Properties are not placed under quarantine, rather bio-security measures are put in place to prevent further spread.

Confidentiality of Information

All notifications to the Department of primary Industries are normally dealt with in the strictest confidence unless the owner authorises the release of the information.

Information about the disease status of a property or livestock can only be released if the Secretary of the Department determines that release of the information is in the public interest, e.g. if public health or international trade is compromised.

Further References


DPI Victoria Agricultural Note AG0753 - Diseases of Horses Notifiable in Victoria for full list of Diseases

DPI Victoria Agricultural Note AG1285 - Health and Biosecurity Guidelines for Transport of Horses

DPI Victoria Agricultural Note AG1360 – Equine Biosecurity and Best Health Practice – For Equine Owners

DPI Victoria Agricultural Note AG1361 - Equine Biosecurity and Best Health Practice – For Holding Equestrian Activities

DPI Victoria Agricultural Note AG1362 - Equine Biosecurity and Best Health Practice – For Equine Service Providers

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