

EQUINE INFLUENZA SEMINAR

December 2007



QUESTIONS ABOUT EQUINE INFLUENZA [EI]

- How would an EI outbreak effect you?
- How would an EI outbreak effect your business?
- How would an EI outbreak effect your horses?
- How can you minimise the risk of EI?
- What do you do if you suspect your horse has EI?

TODAY'S PRESENTATIONS

- **Equine veterinary specialist; (25 minutes)**
 - Signs of equine influenza
 - Transmission, treatment and vaccination
 - Immediate on-farm response
 - Impact of training programmes
- **Equine industry representative, NZRB (25 minutes)**
 - Consequences of equine influenza
 - Likely MAF response cycle
 - Lessons from Australia
 - Mitigation strategies
- **AsureQuality (70 minutes)**
 - Practical training in biosecurity and disinfectant techniques
 - Equipment and supply requirements.

ABOUT EQUINE INFLUENZA

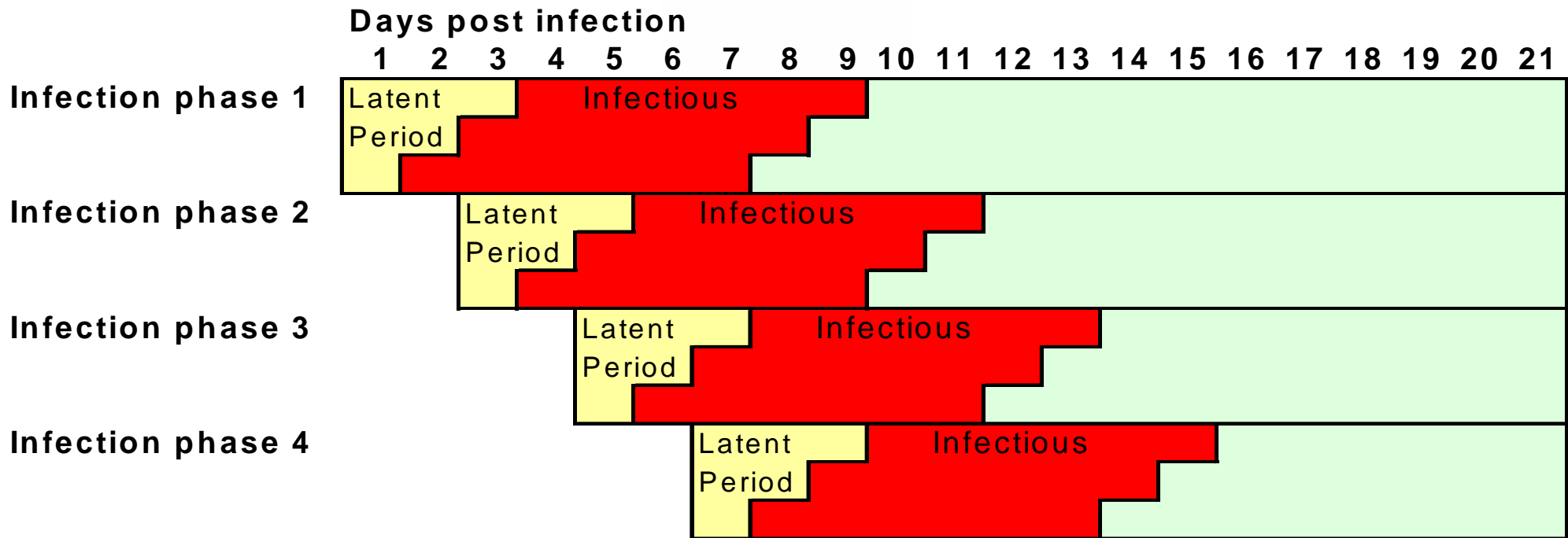
- Equine influenza is a **highly contagious** airborne respiratory virus which effects horses (and other equine species)
- Effects horses **respiratory** tract
- Almost **all horses** exposed to the virus are likely to become infected
- Naive horse populations in **Australia and New Zealand** are particularly susceptible to rapid epidemic spread
- Horses sick from the virus are highly susceptible to **secondary infections**
- **Low death rate**, though some strains can be high than others
- **Vaccinated horses** can still contract and transmit the virus
- Does not effect **humans**

TRANSMISSION OF EI

- **Aerosol from coughing horses – may travel 32m**
- **Direct and indirect horse-to-horse contact (shared paddock, feeders, waterers, horse dung, bedding straw)**
 - **Urine 5 days**
 - **Environment 8-36 hours**
 - **Water 18 days at 22°C**
- **Equine influenza can be carried by humans, on cloths, skin and possibly in respiratory secretions;**
 - **Cloth 8-12 hours**
- **Transmission by infected equipment (shared bits, bridles, thermometers, stethoscopes, rasps, twitches, rugs)**
 - **Equipment 24-48 hours**

TRANSMISSION POSSIBLE BEFORE CLINICAL SIGNS

- Transfer of infection often before a horse shows signs of the virus
- Very short incubation period.



CLINICAL SIGNS OF EI

- Fever (often 40 - 41°C)
- Dry un-productive, explosive cough
- Nasal discharge; absent → clear → mucus
- Depressed and lack appetite
- Lung sounds harsh; no crackles unless secondary infection
- Sore muscles & reluctant to move
- Occasionally incoordinated with muscle spasms
- Clinical signs for 3-6 days

Short video clip of a sick horse

Equine Influenza

Clinical signs in Queensland horses

September 2007

Chris Pollitt -UQ

INTENSITY OF INFECTION

- **Australian experience indicates intensity of clinical signs due to:**
 - **The initial “viral load” or ‘contamination dose’**
 - High load → bad signs
 - Low load → few signs
 - **Environmental factors**
 - small, poorly ventilated stables worse than open well ventilated stables
 - paddocked horses did better than stabled horses
- **Foals and older horses are most susceptible**

TREATMENT OF EI

- No treatment for virus once horse infected
- Natural immunity developed within days
- Treatment regimens aimed at signs and secondary infections:
 - Hydration – fluids and electrolytes
 - NSAIDs
 - Antibiotics for secondary infections?
- Horse still sick >4-6 days indicates possible secondary infection

TREATMENT OF EI

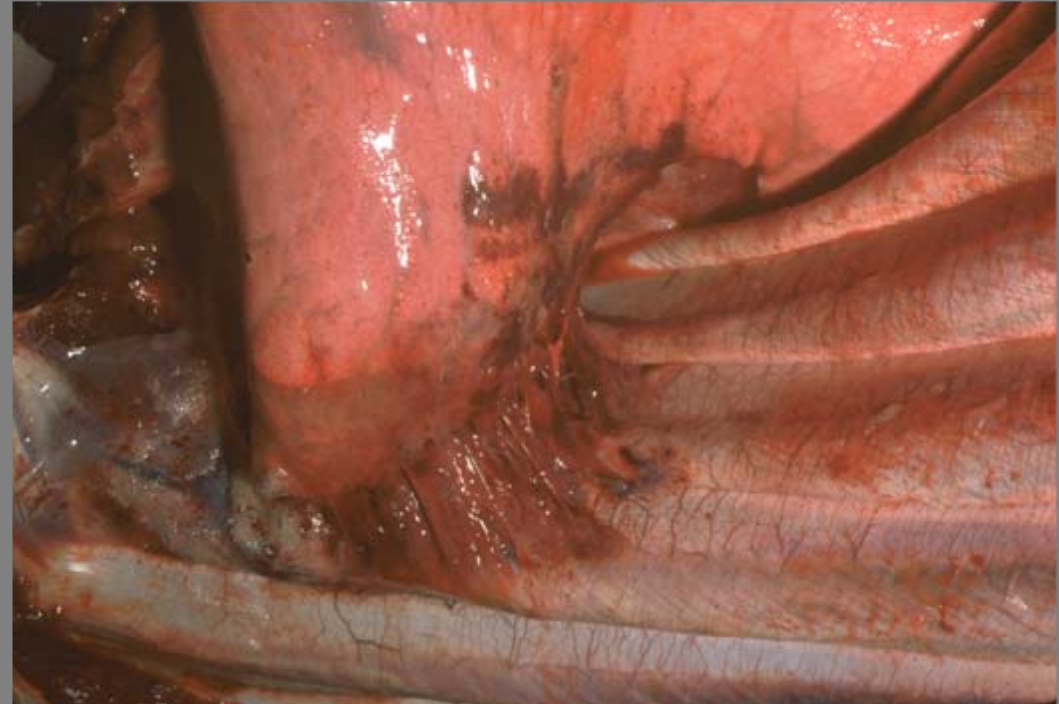
- Horse still sick >4-6 days indicates possible secondary infection



RECOVERY FROM EI

- Full recovery can be prolonged
- Complications in young foals or horses stressed or worked during EI
- Can be fatal
- Rule of thumb: rest for one week for each day of fever:
 - 4 days fever → 4 weeks rest
 - 6 days fever → 6 weeks rest
- Prior to returning horses into training most Australian racing stables:
 - blood tests + fibrinogen levels – for evidence of active inflammation
 - Scoping of lungs for fluid and damage
 - Most respected trainers are taking a conservative approach

RECOVERY FROM EI



WHAT IF MY HORSE STARTS COUGHING?

- Call veterinarian – if suspect EI then call MAF on **0800 80 99 88**
- Use the procedures outlined later
 - ensure appropriate biosecurity
 - washing hands
 - washing boots
 - disinfecting cars and floats
 - changing cloths and showering

This concludes the veterinary presentation of the seminar

Any questions?

WHY ATTEMPT TO ERADICATE EQUINE INFLUENZA

- MAF response plan to equine influenza based around eradication and containment of any incursion within New Zealand;
- Eradication costs, despite the high short term cost and associated disruption, is likely to be less costly than living endemically with EI;

Living with Equine Influenza means:

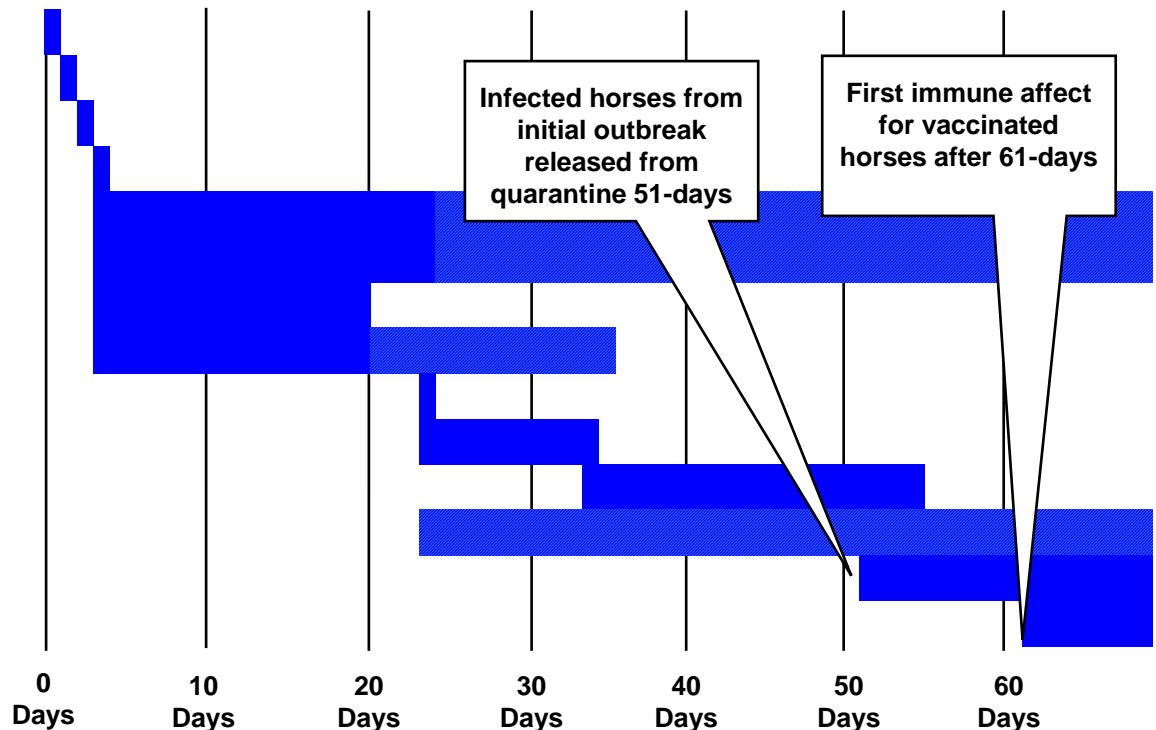
- Unpredictable, sometimes major disruption to racing and competition with material impact on breeding industry;
- Disruption and/or cessation of New Zealand participation in international racing and events (including Australia);
- Virus likely to alter (both drift and shift);
- Dependency and cost of ongoing vaccination programmes which are variably effective;
- Trade and industry benefits from official freedom including cost of quarantine.

WHAT WILL HAPPEN UPON REPORT OF AN OUTBREAK?

- MAF approach based on containment and eradication;
- Immediate ban (of at least 21-days) on all horse movements, race meetings, events, shows and sales throughout New Zealand following confirmation of initial infection;
- Decision to undertake vaccination programme to contain outbreak made after 21-days after assessing acceleration rate of spread;
- Intervet contracted to deliver vaccine to veterinarians 11-days after written order placed;
- Movement and activity bans extended within the island/region of outbreak, permitted movements considered on other island/region;
- Process to continue whilst ever eradication viewed as practical.

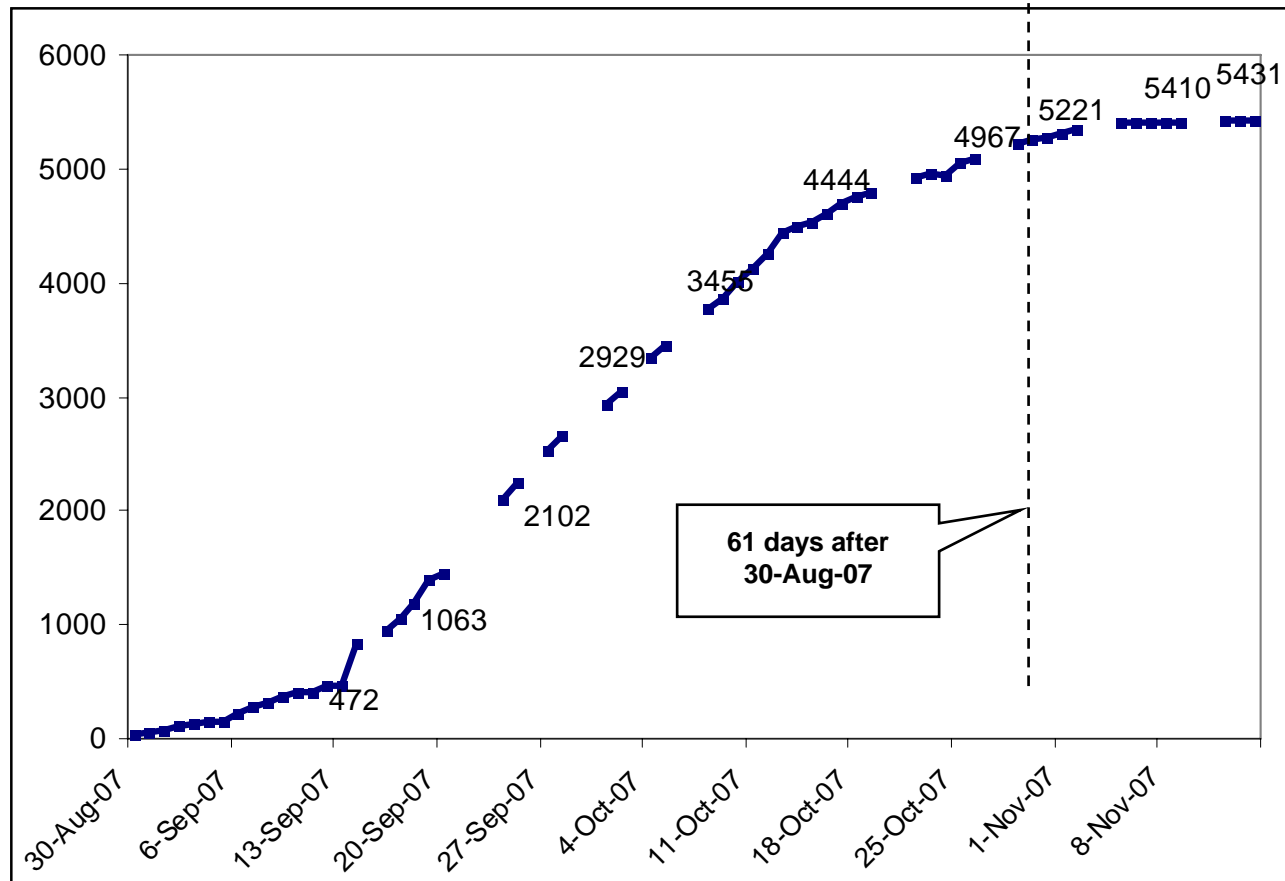
SUMMARY OF MAF RESPONSE CYCLE

- Veterinarian called to sick horse
- Veterinarian suspects equine influenza
- MAF officers arrive from Wellington
- MAF laboratory reports positive test
- Ban on all horse movement across NZ
- Ban on all race meetings, events and sales
- Tracing horses to source of outbreak
- Virus cultured and strain identified
- Decision to vaccinate made by MAF
- Vaccination assessed from Intervet
- Vaccinations commence
- Travel permits issued outside affected areas
- Infected horses from initial outbreak released
- Immune response to vaccine



Source: NZRB analysis

NSW EQUINE INFLUENZA INFECTED PROPERTIES



Under the current MAF response cycle the earliest immune response from vaccinated horses will be approximately 61-days after the first positive confirmation of infection, a time by which the virus is likely to have undertaken rapid epidemic spread.

AUSTRALIAN SITUATION

- Australian authorities remain committed to attempt to eradicate equine influenza, however it is likely to be at least 5-to-6 months before the success of the eradication strategy will be known.
- Australian Commonwealth Government has committed \$217m in funding to date, the NSW government has spent more than \$19m on its eradication response, similar to that spent in Queensland.
- On 9-Nov-07 in NSW alone 41,046 horses are known to have contracted the virus, 15,682 horses have been vaccinated, 5,408 infected properties, 36 dangerous and suspected properties, 3,233 quarantine orders have issued, 5,577 movement permits have been issued and 4,849 rectal thermometers and information packages have been mailed.
- Australian Racing Board (ARB) is introducing a rule of racing requiring a positive immune status for all horses to be eligible to race in Australia (through either vaccination or infection).

IMPACTS OF EQUINE INFLUENZA

- Disruption to racing activity and associated wagering revenues;
- Disruption to competitions, shows and events;
- Disruption to breeding industry;
- Horse movement bans and restrictions may prove as damaging as the effects of the equine influenza virus itself;
- Major disruption to earnings streams of industry participants, many of which live week to week;
- Change to NZRB product offering and customer habits;
- Imposition of five week quarantine regime for all horse exports travelling from New Zealand to Australia.

VACCINATION

- There are three categories of equine influenza vaccines:
 - Dead vaccines (e.g. Prequenza)
 - Multiple stains
 - Immune effect 28-48 days after initial dose
 - Live vaccines (e.g. Flu-Avert)
 - Narrow strains
 - Quick immune effect
 - Recombinant vaccines (e.g. Proteq Flu)
 - Multiple strains
 - Immune effect 10-14 days
- Each vaccine will have a variability of effect depending upon the strain of the equine influenza virus.

VACCINATION

- Only “dead vaccines” are currently registered in New Zealand, with use restricted to:
 - Emergency use at the direction of MAF; or,
 - Use on horses to be exported.
- MAF has contracted with Intervet to hold a supply of 50,000 doses of equine influenza vaccine for MAF’s exclusive use for a period of 12-months;
- NZRB has contracted with Intervet to hold a supply of 70,000 equine influenza vaccines for NZRB’s exclusive use for a period of 12 months;
- New Zealand Equine Health Association is recommending the conditional registration of the recombinant vaccine “Protect Flu”.

QUARANTINE

- All international equine influenza incursions have been traced to a quarantine failure, New Zealand and Iceland are now the only countries that haven't incurred an outbreak of equine influenza;
- Last year about 1,500 horses were imported from Australia to New Zealand;
- Currently there is a total ban on horse imports from Australia to New Zealand, with a 5-week quarantine period likely from March 2008, quarantine import restrictions are expected to continue to at least June 2009;
- Existing New Zealand equine quarantine facilities currently have a 20-horse capacity;
- Privatised quarantine facilities in New Zealand will be dramatically expanded at a time of greatest risk of incursion.

QUARANTINE

- Last year about 3200 horses were exported from New Zealand to Australia;
- As New Zealand is currently free of all significant equine diseases, including equine influenza, horse exports to Australia remain free of quarantine.



COMPENSATION

- New Zealand Government is liable to pay compensate under section 162A of the Biosecurity Act 1993 when a loss has been suffered, as a result of the exercise of powers to manage or eradicate organisms, including losses as a result of the damage or destruction of a person's property or restrictions on the movement of a person's goods;
- Compensation provisions are generally limited to those directly effected, i.e. horse owners but not necessarily jockey's, float companies, NZRB, etc;

WHAT IS NZRB AND EQUINE INDUSTRY DOING?



- Support of equine influenza avoidance;
- Awareness, education and training of veterinarians and equine industry participants;
- Developing protocols for participants returning from races, events and competition outside New Zealand;
- Developing whole of equine industry approach to quarantine facilities.
- Establishing crisis management plans within each equine sector, including:
 - Development of proposals under which, commensurate with prevailing risk and under agreed bio-security protocols, may allow “closed” race meeting consisting of only horses from the racecourse precinct at which the race meeting is conducted.



WHAT IS NZRB AND EQUINE INDUSTRY DOING?

- Seeking conditional registration of recombinant vaccine
- Assessing the current MAF response plan including response times, movement control, vaccination and quarantine
- Assessing the cost/benefit of pre-emptive vaccination strategies
- Seeking clarification on the legal application of compensation provisions under the Biosecurity Act 1993
- Evaluating current relief programmes provided through Work and Income and testing the applicability of existing policies and procedures.

This concludes the equine industry specialist section.

Any questions?

BIOSECURITY

WHAT TO DO IF AN OUTBREAK IS REPORTED IN NEW ZEALAND

- Minimise visitations to your property for the period of the outbreak
- Most infections come about through unintended and unknowing human transmission
- Undertake personal biosecurity and hygiene practices (showering, changing clothes and cap) when entering and leaving your property
- Insist high risk visitors undertake thorough biosecurity practices when entering (and leaving) your property
 - People who are likely to have contact with other people's horses or visit other properties (these include farriers, veterinarians, float drivers, jockeys, drivers, owners, dentists, chiropractors, feed merchants, etc)

BIOSECURITY

- When thinking biosecurity ensure you consider:
 - Personnel
 - Place
 - Vehicles
 - Equipment

EQUIPMENT

- Most important to clean the gear that comes in direct contact with horses, e.g. bridles, tack, thermometers, ultrasound probes, stethoscope, hoof gear;
 - spray leather items
 - dunk steel items,
 - use disinfectant wipes on delicate items such as ultrasound and digital thermometers
- Have a bucket of water containing disinfectant, e.g. 2% Virkon – for the farrier / vet / technician so gear can be dunked and cleaned at the end of the visit
- Have a spray bottle made up for spraying gear
- Keep a container of alcohol wipes handy.

VEHICLE – NORMAL PRACTISE

- Minimise vehicles coming onto the property
- Create a parking area that is well away from the horses
- Clean floats/trucks between trips
- Hose out then spray with Tri-Gen or Virkon, allow 10 minutes contact then rinse off.

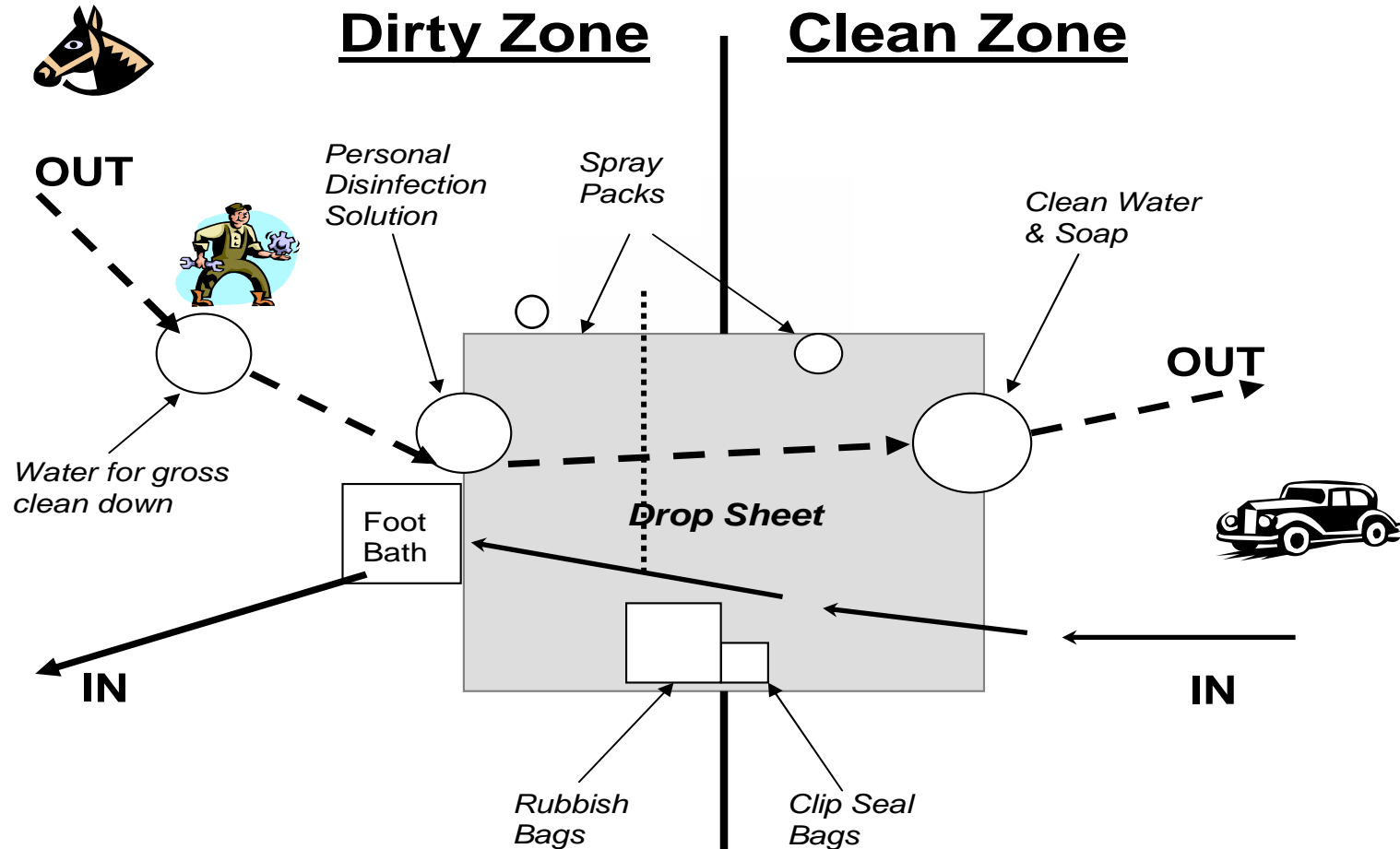
VEHICLE – EI PRESENT OR SUSPECTED

- Spray tyres and wheel arches with TriGene Advance and water
- Minimise horses coming onto property
- Use disinfectant wipes on steering wheel and gear lever, handbrake, i.e. all places your hands come into contact inside the vehicle
- Put car through an automated car wash once weekly.

PERSONAL DISINFECTION

- Personal disinfection assists in the prevention of carrying the virus on your hands, clothing or person in some manner
- Working closely with horses means that some viruses will transfer onto humans
- Equine influenza is highly infectious so even a small amount of the virus can infect another horse
- Equine influenza is not hard to kill – soap and water will do it!
- Hands, boots, clothing and headwear are things to keep in mind.
- If possible, wear a set of overalls that are left on the property and washed weekly
- No special disinfectant is needed for EI; soap on hands and laundry powder for clothes is effective

SUGGESTED LAYOUT FOR PERSONAL DECONTAMINATION SITE



POSSIBLE DISINFECTANTS

- **Virkon S** – best disinfectant but is a possible carcinogen and corrosive – not good for hands or metal
- **Trigene Advance** – good everyday disinfectant for vehicles and equipment. The clear is not perfumed, and is more effective
- **Dettol** – safest for use on a regular basis, not a wide range of activity but is suitable against EI

MAKING UP DISINFECTANT

- Use a bucket with a known volume marked on the side; 2L, 4L etc
- Use a liquid measuring cylinder / vial to measure the correct amount of disinfectant
- Depending on use, decide frequency of replacing with a fresh batch – daily, every other day, weekly.

PRACTICAL DEMONSTRATION

- *This concludes the biosecurity specialist section.*
- *Any questions?*

