**Australian Veterinary Prescribing Guidelines – Cattle and Horses**

The information provided sets out prescribing guidelines to guide veterinarians in the use of antimicrobials for cattle and equine medicine and surgery. Designed as a portable flipbook.

**Page 1 (front cover):**

**Australian Veterinary**

**Prescribing Guidelines - Cattle and Horses**

Developed and designed by Agriculture Victoria, the University of Melbourne, the Asia-Pacific Centre for Animal Health and the National Centre for Antimicrobial Stewardship.

For more information and further resources visit

**www.fvas.unimelb.edu.au/vetantibiotics**

**Page 2 (inside front cover):**

**Play your part in preventing antibiotic resistant infections.**

For more information visit **agriculture.vic.gov.au/amr**

**Agrticulture Victoria logo**

**We all have an important role to play in the fight against antimicrobial resistance.**

As part of our commitment to the implementation of the National Antimicrobial Resistance Strategy 2015-2019, AgVic and The University of Melbourne have created education materials about antimicrobial resistance (AMR) and antimicrobial stewardship (AMS). The resources aim to provide a practical guide for the prescribing of antimicrobials that can help start the conversation about AMR with clients.

FREE RESOURCES

• A5 antibiotic category cards for dogs and cats

• A5 antibiotic category cards for cattle, horses and sheep

• A3 waiting room posters • A5 prescribing tearaway pads

• DL Double-sided prescribing leaflets • A6 sticker sheets

• Antibiotic Guardian lapel pins

You can order our resources by emailing **animal.biosecurity@djpr.vic.gov.au**

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**Cattle Dose Rates**

For more information and further resources visit

**www.fvas.unimelb.edu.au/vetantibiotics**

**Dose rates**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ANTIMICROBIAL AGENT** | **RECOMMENDED****DOSE** | **ROUTE** | **INTER-DOSING****INTERVAL** | **WITHHOLDING****PERIOD (days)** |
| **Procaine penicillin (**Many of the recommendations in this guide represent off-label use of antimicrobials.Compliance with the legal requirements of your jurisdiction is your responsibility.) | **22,000 IU/kg** | **IM** | **12 - 24 hours** | **Not established, test** |
| **Oxytetracycline** | **10 mg/kg** | **IV or IM** | **12 - 24 hours** | **Milk: 5 Meat: 14** |
| **Oxytetracycline long acting** | **20 mg/kg** | **IM** | **72 hours** | **Milk: 7 Meat: 28** |
| **Amoxycillin/clavulanate**(pre-ruminant calves) | **10 mg/kg** | **PO** | **12 hours** | **Meat: 4** |
| **Trimethoprim/sulphonamide** | **24 mg/kg** | **IM** | **12-24 hours** | **Milk: 3 Meat: 28** |
| **Tulathromycin**(beef and dairy heifers) | **2.5 mg/kg** | **SC** | **Once** | **Meat: 35** |
| **Florfenicol**(not in dairy cattle) | **40 mg/kg****20 mg/kg** | **SCIM** | **Once48 hours** | **Meat: 55****Meat: 36** |

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**Cattle Surgical prohylaxis**

For more information and further resources visit

**www.fvas.unimelb.edu.au/vetantibiotics**

**Surgical prohylaxis**

|  |  |  |
| --- | --- | --- |
| **SURGICAL CONTAMINATION LEVEL** | **ANTIMICROBIAL RECOMMENDATION** | **DURATION OF THERAPY** |
| **CLEAN, NO MITIGATING FACTORS** | **NONE** | **N/A** |
| **CLEAN, MITIGATING FACTORS** | **Oxytetracycline** | **Stop within 24 hours** |
| **CLEAN CONTAMINATED** | **Oxytetracycline** | **24-48 hours** |
| **CONTAMINATED** | **Choose antimicrobial****appropriate for infection** | **Treat till cured** |

**MITIGATING FACTORS**

• Surgical duration >90 mins.

• Rumenotomy.

• Unsanitary conditions.

• Periparturient.

**TIMING**

Tissue levels are required at the time of incision to confer protection

from surgical site infection.

* IV antimicrobials: 30-60 minutes prior to surgery.
* IM oxytetracycline: 8 hours prior to surgery.
* IM penicillin: 2 hours prior to surgery.

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**Cattle Foot disease**

For more information and further resources visit

**www.fvas.unimelb.edu.au/vetantibiotics**

**Foot disease**

**FOOTROT**

* **DIAGNOSTICS**
	+ Diagnosis can be made from clinical signs alone.
	+ The foot must be lifted for examination in all cases.
	+ Ensure no foreign body is present in the interdigital space.
* **TREATMENT**
	+ Topical therapy with antibacterial disinfectant.
	+ Procaine penicillin is highly effective.
	+ Florfenicol is a suitable alternative in beef cattle.
* **DURATION OF THERAPY**
	+ A single dose of florfenicol or 3 days of procaine penicillin is generally sufficient.
	+ Treat until lesions have resolved.

**FOOT ABSCESS**

* **DIAGNOSTICS**
	+ Diagnosis can be made from examination of the foot.
* **TREATMENT**
	+ Antimicrobials are not indicated.
	+ Establishing drainage is the critical factor.

**DIGITAL DERMATITIS – “Hairy Heelwart”**

* **DIAGNOSTICS**
	+ Diagnosis can be made from examination of the foot.
* **TREATMENT**
	+ Topical therapy with tetracycline is most effective.
	+ Bandaging maintains tetracycline contact with lesions.

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**Cattle Respiratory**

For more information and further resources visit

**www.fvas.unimelb.edu.au/vetantibiotics**

**Respiratory**

**PNEUMONIA**

* **DIAGNOSTICS**
	+ Most common pathogens are *Mannheimia haemolytica, Pasteurella multocida, Histophilus somni* and *Mycoplasma* spp, often in conjunction with viral pathogens.
	+ Although diagnostics are rarely pursued, they should be considered for valuable animals or in outbreaks.
	+ Culture and susceptibility testing can be performed from transtracheal wash, bronchoalveolar lavage or post-mortem specimens.
	+ *Mannheimia* can be associated with pleuropneumonia, which carries a very poor prognosis.
* **TREATMENT**
	+ Oxytetracycline most appropriate.
	+ Florfenicol is a suitable alternative (not in veal calves or dairy cattle).
* **DURATION OF THERAPY**
	+ Dependent on severity. 2-3 days may be adequate in mild cases.
	+ Treat until disease resolved, which may take > 1 week in severe cases.

**CALF DIPTHERIA**

* **DIAGNOSTICS**
	+ Diagnosis usually based on clinical signs.
	+ ***Consider underlying disease (persistently infected with BVD) or foreign body.***
* **TREATMENT**
	+ Procaine penicillin is preferred.
	+ Oxytetracycline is a suitable alternative.
	+ ***Severe cases may require tracheotomy.***
* **DURATION OF THERAPY**
	+ 5 days of procaine penicillin or 2 doses of long acting oxytetracycline (3 days apart) is generally sufficient.

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**Gastrointestinal**

For more information and further resources visit

**www.fvas.unimelb.edu.au/vetantibiotics**

**Gastrointestinal**

**CALF DIARRHOEA**

* **DIAGNOSTICS**
	+ Rapid (patient side) diagnostics, performed on faeces, are available and should be utilised to confirm bacterial origin as most are not. *E. coli* (< 3 days of age) and *Salmonella* are possible bacterial causes.
* **TREATMENT**
	+ Antimicrobial therapy is not indicated for diarrhoea caused by viruses or *crytosporidia.*
	+ Systemic antimicrobials are indicated when:
		- Documented bacterial aetiology.
		- Sepsis.
		- High-risk of sepsis.
	+ Trimethoprim/sulphonamide or oxytetracycline are suitable choices.
* **DURATION OF THERAPY**
	+ 5 days is generally considered adequate.

**ENTERITIS IN ADULTS**

* **DIAGNOSTICS**
	+ Faeces should be submitted for culture and susceptibility testing if salmonellosis is suspected.
* **TREATMENT**
	+ Antimicrobial therapy is not indicated for enteritis in cattle that are systemically well.
	+ Systemic antimicrobials are indicated when:
		- Invasive salmonellosis is suspected.
		- Signs of sepsis.
	+ Trimethoprim/sulphonamide or oxytetracycline are suitable choices.
	+ Consider vaccination in herds with salmonellosis problems.
* **DURATION OF THERAPY**
	+ 5 days is generally considered adequate.

**PERITONITIS**

* **DIAGNOSTICS**
	+ Abdominocentesis is recommended for cytological evaluation at a minimum and preferably also for culture and susceptibility testing.
	+ Consider origin of bacterial contamination as this affects prognosis.
* **TREATMENT**
	+ Broad-spectrum coverage is required as a mixed population of bacteria are usually present, including anaerobes.
	+ Oxytetracycline is preferred.
	+ Trimethoprim/sulphonamide is a suitable alternative.
	+ Both should be used twice daily.
* **DURATION OF THERAPY**
	+ Dependent on severity. Mild cases (post-surgery) may respond in 5 days.
	+ GI contamination (i.e. following rupture of an abomasal ulcer) may require 2-3 weeks of therapy.

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**Cattle Mastitis**

For more information and further resources visit

**www.fvas.unimelb.edu.au/vetantibiotics**

**Mastitis**

**GRAM NEGATIVE, SEVERE**

* **DIAGNOSTICS**
	+ Diagnosis is generally made from clinical signs alone.
	+ Milk samples should be obtained for culture and susceptibility testing.
* **TREATMENT**
	+ Antimicrobial therapy should be initiated immediately following sample collection as the disease progresses rapidly, and is often fatal.
	+ Oxytetracycline should be administered intravenously as perfusion of the muscles is often poor so drug absorption is reduced.
	+ Intramammary therapy has poor penetration.
	+ Supportive therapy is strongly recommended (fluid therapy and non-steroidal anti-inflammatory drugs).
* **DURATION OF THERAPY**
	+ 5-7 days generally required.

**GRAM POSITIVE**

* **DIAGNOSTICS**
	+ Milk samples should be obtained for somatic cell count and for
	+ culture and susceptibility testing, especially in an outbreak.
	+ Samples can be frozen, for later submission, if empirical
	+ treatment fails.
	+ ***Training of farmers on aseptic milk collection techniques***
	+ ***is critical.***
* **TREATMENT**
	+ Intramammary antimicrobials are preferred as they exert less pressure on resistance development at a farm level.
	+ Antimicrobial selection should be guided by culture and susceptibility results. Preparations containing cloxacillin
	+ or amoxycillin are generally effective against *Streptococcus* spp. (most frequently cultured organisms).
	+ *Staphylococcus aureus* is associated with biofilm formation, which worsens the prognosis. Treatment during lactation may not be successful.
	+ If indicated, preferred systemic antimicrobials are penethamate hydrochloride and trimethoprim/sulphonamide.
* **DURATION OF THERAPY**
	+ Treat until clinical signs resolve and milk somatic cell count is normal. 2-3 days may be sufficient for mild cases.

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**Cattle Neurological**

For more information and further resources visit

**www.fvas.unimelb.edu.au/vetantibiotics**

**Neurological**

**LISTERIA**

* **DIAGNOSTICS**
	+ Diagnosis is generally made from clinical signs.
	+ CSF can be collected for cytological evaluation, culture is rarely successful.
* **TREATMENT**
	+ Intravenous oxytetracycline or crystalline penicillin is strongly recommended.
	+ Twice daily dosing is advised.
* **DURATION OF THERAPY**
	+ 5-7 days is generally recommended.

**THROMBOEMBOLIC MENINGOENCEPHALITIS**

* **DIAGNOSTICS**
	+ Pneumonia is generally present concurrently, or in other in-contact
	+ animals, helping to differentiate this disease from listeriosis.
* **TREATMENT**
	+ Intravenous oxytetracycline is strongly recommended.
	+ Twice daily dosing is advised.
* **DURATION OF THERAPY**
	+ 5-7 days is generally recommended.

**OTITIS MEDIA**

* **DIAGNOSTICS**
	+ Frequently secondary to pneumonia in calves kept in poorly ventilated areas.
	+ Diagnosis can be made from clinical signs alone.
* **TREATMENT**
	+ Oxytetracycline is preferred.
	+ Tulathromycin is a suitable alternative.
* **DURATION OF THERAPY**
	+ 3-5 days of oxytetracycline is generally required.
	+ A single dose of tulathromycin is sufficient.

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**Cattle Miscellaneous**

For more information and further resources visit

**www.fvas.unimelb.edu.au/vetantibiotics**

**Miscellaneous**

**METRITIS**

* **DIAGNOSTICS**
	+ Diagnosis is generally made from clinical signs alone.
* **TREATMENT**
	+ Systemic antimicrobials should only be used when severe systemic illness is present.
	+ Antimicrobial therapy is not indicated in cattle that are clinically well.
	+ Oxytetracycline is preferred.
	+ Supportive therapy may be required (fluid therapy and non-steroidal anti-inflammatory drugs).
* **DURATION OF THERAPY**
	+ 3 days is generally sufficient but longer may be necessary in severe cases.

**NEONATAL SEPTOCAEMIA**

* **DIAGNOSTICS**
	+ Diagnosis is generally made from clinical signs.
	+ Consider bacterial aetiology (enteritis, omphalophlebitis/naval ill) or failure of passive transfer.
* **TREATMENT**
	+ Oxytetracycline can be used but care should be taken with hypovolaemic animals as renal toxicity can occur.
	+ Trimethoprim/sulphonamide is a suitable alternative.
* **DURATION OF THERAPY**
	+ 5-7 days may be sufficient in uncomplicated disease.
	+ Longer durations are necessary when omphalophlebitis or septic arthritis develop.
	+ Up to 2 weeks may be necessary.

**PINKEYE**

* **DIAGNOSTICS**
	+ Diagnosis is generally made from clinical signs.
* **TREATMENT**
	+ Topical therapy with cloxacillin is generally effective.
	+ Use of ophthalmological formulations is preferred as the duration of action is longer.
	+ Subpalpebral administration of penicillin is useful in severe cases.
	+ ***Covering the eye with a patch aids in recovery and reduces transmission of disease.***
* **DURATION OF THERAPY**
	+ One application of cloxacillin ointment may be sufficient.
	+ Severe cases may need treatment every 48 hours (1-2 additional applications).

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**Horses Dose Rates**

For more information and further resources visit

**www.fvas.unimelb.edu.au/vetantibiotics**

**Dose rates**

|  |  |  |  |
| --- | --- | --- | --- |
| **ANTIMICROBIAL AGENT** | **RECOMMENDED****DOSE** | **ROUTE** | **INTER-DOSING****INTERVAL** |
| **Procaine penicillin (**Many of the recommendations in this guide represent off-label use of antimicrobials.Compliance with the legal requirements of your jurisdiction is your responsibility.) | 22,000 IU/kg | IM | 12 - 24 hours |
| **Gentamicin (**Many of the recommendations in this guide represent off-label use of antimicrobials.Compliance with the legal requirements of your jurisdiction is your responsibility.) | 7.7-9.7 mg/kg | IV or IM | 24 hours |
| **Trimethoprim/sulphonamide** | 30 mg/kg | PO or IV | 12 hours |
| **Doxycycline (**Many of the recommendations in this guide represent off-label use of antimicrobials.Compliance with the legal requirements of your jurisdiction is your responsibility.) | 10 mg/kg | PO | 12 hours |
| **Oxytetracycline (**Many of the recommendations in this guide represent off-label use of antimicrobials.Compliance with the legal requirements of your jurisdiction is your responsibility.) | 6/6 mg/kg | Slow IV | 12 hours |
| **Metronidazole (**Many of the recommendations in this guide represent off-label use of antimicrobials.Compliance with the legal requirements of your jurisdiction is your responsibility.) | 20 mg/kg | PO | 12 hours |

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**Horses Surgical prophylaxis**

For more information and further resources visit

[**www.fvas.unimelb.edu.au/vetantibiotics**](http://www.fvas.unimelb.edu.au/vetantibiotics)

**Surgical prophylaxis**

|  |  |  |
| --- | --- | --- |
| **SURGICAL CONTAMINATION LEVEL** | **ANTIMICROBIAL RECOMMENDATION** | **DURATION OF THERAPY** |
| CLEAN, NO MITIGATING FACTORS | NONE | N/A |
| CLEAN, MITIGATING FACTORS | Penicillin and Gentamicin | Stop within 24 hours |
| CLEAN CONTAMINATED | Penicillin and Gentamicin | 24-48 hours |
| CONTAMINATED | Choose antimicrobialappropriate for infection | Treat till cured |

**MITIGATING FACTORS**

* Surgical duration >90 mins.
* Surgery involving and implant
* Surgical site infection would be a major threat to the patient.

**TIMING**

* Tissue levels are required at the time of incision to confer protection from surgical site infection.
* IV antimicrobials: <30-60 minutes prior to surgery.
* IM procaine penicillin: 3.5 hours prior to surgery.

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**Australian Veterinary Prescribing Guidelines**

**Horses Skin/Feet**

For more information and further resources visit

**www.fvas.unimelb.edu.au/vetantibiotics**

**Skin/Feet**

**WOUNDS**

* **NO SYNOVIAL STRUCTURES INVOLVED**
* No antimicrobials therapy indicated, even if contamination of the wound is present.
* Systemic antimicrobials only when:
	+ - Systemically unwell.
		- Potential synovial involvement (see below).
		- Immunosuppressed patient.
* **SYNOVIAL STRUCTURE INVOLVED**
* Lavage is almost always required for successful outcome.
* Systemic antimicrobials always indicated.
* Therapy should be based on culture and susceptibility testing.
* Empirical therapy with penicillin and gentamicin should be initiated pending culture results.

**FOOT ABCESS**

* No antimicrobial therapy indicated.
* Curette to establish drainage.
* If recurrent consider underlying disease.
* Radiographs should be taken to investigate for pedal osteitis & ACTH measured to investigate for equine
* Cushing’s disease (PPID).
* Systemic antimicrobials only when:
	+ Immunosuppressed patient.
	+ If severe cellulitis is present.
* ***Ensure horses are vaccinated for tetanus.***

**CELLULITIS**

* **PRIMARY**
	+ No obvious underlying cause.
	+ Often more severe than secondary cases.
* **SECONDARY**
	+ An underlying cause can be identified (surgery, joint injection, wound, blunt trauma).
* **DIAGNOSTICS**
	+ Fine-needle aspirate should be collected for culture and susceptibility testing.
	+ Care is needed for cellulitis occurring over synovial structures.
* **TREATMENT**
	+ **IVRP:** Gentamicin 1/3 systemic dose.
	+ **Systemic antimicrobials:** Penicillin & gentamicin (adjust dose if IVRP performed) or oxytetracycline.
	+ **Topical therapy:** Cold water hosing and pressure bandage.
	+ Analgesia especially if non-weight bearing as risk laminitis in contralateral limb.

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**Horses Respiratory**

For more information and further resources visit

**www.fvas.unimelb.edu.au/vetantibiotics**

**Respiratory**

**STRANGLES**

* **DIAGNOSTICS**
	+ Notifiable disease, samples should be submitted for serology, culture or PCR to confirm diagnosis.
* **TREATMENT**
	+ No antimicrobial recommended.
	+ Most cases resolve quickly once drainage has been established.
	+ A small percentage continue to shed (carriers).
	+ Systemic antimicrobials only when:
		- * Respiratory compromise.
			* Metastatic disease (Bastard strangles).
	+ In these cases, penicillin is first line therapy.

**SINUSITIS**

* **DIAGNOSTICS**
	+ A sample of fluid from the sinus should be obtained to confirm the diagnosis.
	+ ***Assess underlying disease (dental or equine Cushing’s) especially if recurs.***
* **TREATMENT**
	+ Sinus lavage alone may be sufficient and is almost always required for successful outcome (minimally invasive technique in the field can be used).
	+ Systemic antimicrobials when:
		- * Recurrent disease.
			* Systemically unwell.
	+ In these cases, penicillin or trimethoprim/sulphonamide is first line therapy.

**PNEUMONIA**

* **DIAGNOSTICS**
	+ Transtracheal wash, or endoscopic tracheal wash with a triple guarded catheter, should be performed for cytological evaluation.
	+ Culture and susceptibility testing should be performed in all cases.
	+ Culture of bronchoalveolar lavage specimens is never appropriate as these samples are contaminated by the upper airway.
* **TREATMENT**
	+ Should be based on culture and susceptibility results.
	+ Empirical therapy with penicillin & gentamicin should be initiated pending
	+ results.
	+ Metronidazole should be added if anaerobes are suspected (foul smell to tracheal fluid).

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**Australian Veterinary Prescribing Guidelines**

**Horses Foals**

For more information and further resources visit

**www.fvas.unimelb.edu.au/vetantibiotics**

**Foals**

**PNEUMONIA**

* **DIAGNOSTICS**
	+ *Streptococcus zooepidemicus* and *Rhodococcus equi* are equally common.
	+ Transtracheal wash is required for cytological examination and culture and susceptibility testing in all cases.
* **TREATMENT**
	+ Based on culture and susceptibility results. Empiric therapy can be initiated
	+ while results pending.
	+ If *S. zooepidemicus* is suspected penicillin is appropriate.
	+ If *R. equi* is suspected clarithromycin and rifampin is recommended.
* **DURATION OF THERAPY**
	+ Varies by pathogen.
	+ 1 week generally adequate for *S. zooepidemicus.*
	+ 4-6 weeks generally recommended for *R. equi.*

**SEPSIS**

* **DIAGNOSTICS**
	+ Sepsis score can be used to assess risk (see website).
	+ Blood for culture and susceptibility should be collected but false negatives are common.
* **TREATMENT**
	+ Based on culture and susceptibility results if possible. Empiric therapy can be initiated while results pending.
	+ Penicillin & gentamicin is recommended.
	+ Care with gentamicin if renal function is compromised. Intravenous trimethoprim/sulphonamide is alternate.
* **DURATION OF THERAPY**
	+ 2 weeks is generally considered to be adequate, unless focal infection develops (i.e. septic arthritis).

**SEPTIC ARTHRITIS**

* **DIAGNOSTICS**
	+ Arthrocentesis should be performed to obtain fluid for cytological evaluation and for culture and susceptibility testing in all cases.
	+ Radiographs should be taken to investigate bone involvement.
* **TREATMENT**
	+ Based on culture and susceptibility results.
	+ Empiric therapy can be initiated while results pending.
	+ Penicillin & gentamicin is recommended.
	+ Oxytetracycline is an alternative, especially if osteomyelitis is diagnosed.
* **DURATION OF THERAPY**
	+ Treat for 1 week past resolution of clinical signs, longer if osteomyelitis is present.

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**Australian Veterinary Prescribing Guidelines**

**Horses Foals**

For more information and further resources visit

**www.fvas.unimelb.edu.au/vetantibiotics**

**Foals**

**PATENT URACHUS**

* **DIAGNOSTICS**
	+ Ultrasound evaluation should be performed to rule out omphalophlebitis.
	+ If no enlargement of the umbilical remnants is identified antimicrobial therapy is not indicated.
* **TREATMENT**
	+ No antimicrobial therapy indicated.
	+ Frequent topical antibacterial therapy with chlorhexidine is recommended until patency resolves.

**OMPHALOPHLEBITIS (NAVEL ILL)**

* **DIAGNOSTICS**
	+ Ultrasound evaluation should be performed to define the infected structure and to allow for monitoring with treatment.
* **TREATMENT**
	+ Penicillin & gentamicin is most effective but often not tolerated well.
	+ Trimethoprim/sulphonamide or doxycycline are suitable alternatives that can be given orally.
* **DURATION OF THERAPY**
	+ Serial ultrasonographic examination should be performed and therapy continued until 1 week after resolution of disease.

**HIGH-RISK FOALS**

* Premature foal and those with neonatal encephalopathy (’Dummy Foal Syndrome’) are at increased risk of sepsis.
* Failure of passive transfer should be addressed with plasma transfusion.
* There is no evidence for any benefit from prophylactic antimicrobials in place of plasma transfusion.
* **DIAGNOSTICS**
	+ Serial haematologic evaluation and
	+ sepsis score may guide necessity for
	+ antimicrobial therapy.
* **TREATMENT**
	+ Prophylactic therapy is warranted
	+ when leukopaenia is present or sepsis
	+ score is high.
	+ Penicillin & gentamicin is most
	+ appropriate but care should be taken
	+ in foals with impaired renal function.
	+ Trimethoprim/sulphonamide IV is an alternative.

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**Australian Veterinary Prescribing Guidelines**

**Horses Gastrointestinal**

For more information and further resources visit

**www.fvas.unimelb.edu.au/vetantibiotics**

**Gastrointestinal**

**DIARRHOEA**

**ACUTE DIARRHOEA**

* **DIAGNOSTICS**
* Culture should be performed for *Salmonella*. Diagnosis of clostridial disease requires toxin test.
* **TREATMENT**
* Antimicrobial therapy rarely indicated.
* Only if:
	+ - Confirmed clostridial cause.
		- Severe leukopaenia and neutropaenia.
* **If clostridial:** Metronidazole.
* **If leukopaenic:** Penicillin & gentamicin.
* **DURATION OF THERAPY**
* **Clostridial:** Until diarrhoea resolves.
* **Leukopaenic:** Until leukopaenia resolves.

**CHRONIC DIARRHOEA**

* Antimicrobial therapy rarely indicated.

**PERITONITIS**

* **DIAGNOSTICS**
	+ Abdominocentesis should be performed to collect fluid for cytological evaluation and culture and susceptibility testing.
	+ Differentiation between primary and secondary origins is critical as secondary peritonitis is typically due to leakage from the gastrointestinal or reproductive tracts and surgery should be considered.
* **TREATMENT**
	+ Systemic antimicrobial therapy should be instituted immediately following sample collection.
	+ Penicillin & gentamicin & metronidazole are appropriate.
* **DURATION OF THERAPY**
	+ Resolution of clinical signs and serial abdominocentesis should guide therapy.
	+ Treat for one week past resolution of disease.

**LAWSONIA (PROLIFERATIVE ENTEROPATHY)**

* **DIAGNOSTICS**
	+ Diagnosis can be made via serology (ELISA) or by faecal PCR.
* **TREATMENT**
	+ **Mild to moderate disease:** Doxycycline PO.
	+ **Severe disease:** Oxytetracycline IV.
* **DURATION OF THERAPY**
	+ **Mild to moderate disease:** Generally 3 weeks is recommended.
	+ **Severe disease:** 3-4 weeks.

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**Australian Veterinary Prescribing Guidelines**

**Horses Reproduction**

For more information and further resources visit

**www.fvas.unimelb.edu.au/vetantibiotics**

**Reproduction**

**RETAINED PLACENTA**

* **DIAGNOSTICS**
	+ Diagnosis can be made on clinical signs alone.
* **TREATMENT**
	+ Large volume uterine lavage is critical for stimulating placental detachment and removing endotoxins thereby preventing absorption.
	+ Systemic antimicrobials are always required.
	+ Penicillin, gentamicin and metronidazole should be administered.
	+ NSAIDs are also critical.
* **DURATION OF THERAPY**
	+ 1 week past resolution of clinical disease.

**PLACENTITIS**

* **DIAGNOSTICS**
	+ Ultrasonographic examination of the placenta is necessary.
	+ Samples should be collected for culture and susceptibility testing if the cervix is open.
	+ There is no evidence for prophylactic or pulse therapy for placentitis.
* **TREATMENT**
	+ Trimethoprim/sulphonamide is preferable.
	+ Gentamicin may not cross the placenta.
* **DURATION OF THERAPY**
	+ 1 week past resolution of ultrasonographic and clinical disease or until foaling.
	+ Generally requires therapy until foaling.

**ENDOMETRITIS**

* **DIAGNOSTICS**
	+ Cytological evaluation and culture and susceptibility testing is required for diagnosis.
	+ ***Consider underlying disease.***
* **TREATMENT**
	+ There is no evidence for routine treatment of mares post-service.
	+ Therapy should be guided by culture and susceptibility results.
	+ Intrauterine penicillin and aminoglycoside appears effective in most cases.

**Page 19 (inside back cover):**

**Prescription/treatment information – Large animals – Left hand column**

The information provided sets out information for vets to discuss with clients about the treatment that has been provided to their animals.

**Your pet received antibiotics today – this means your vet:**

Check box - Found evidence of a bacterial infection that may not improve without antibiotics.

Check box - Investigated and treated any underlying non-bacterial diseases.

Check box - Considered other treatment options.

Check box - Took a sample to identify the bacteria and the effective antibiotics.

Check box - Selected the appropriate drug, dose and duration to treat the infection.

Check box - Referred to Australian antibiotic prescribing guidelines.

**It is important that you:**

* Give the antibiotics as prescribed on the label even if symptoms improve.
* Monitor your animal/s closely and contact your vet if it does not improve or have side effects.
* Schedule vet revisits if requested.
* Understand that further tests and treatments may be required if the condition does not improve.

**Play your part in preventing antibiotic resistant infections.**

For more information visit **agriculture.vic.gov.au/amr**

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**Prescription/treatment information – Large animals – Right hand column**

**Why didn’t your pet receive antibiotics today?**

Check box – Your vet has assessed your animal/s and decided antibiotics are not necessary right now.

Check box – Many conditions, like viral infections, will get better without antibiotics.

Check box – Further tests may be required to decide which antibiotic to use, if any.

**It is important that you:**

* Give any medications as prescribed and follow your vet’s advice.
* Monitor your animal/s closely and contact your vet if they do not improve or has side effects.

**Why animals should only receive antibiotics when absolutely necessary?**

* Antibiotic use can cause ‘resistance’, where the bacteria adapt so the antibiotic no longer works.
* You can catch antibiotic resistant bacteria from your animal/s, meaning antibiotics may not work next time you get sick.
* Antibiotics can upset the natural balance of good bacteria in the body and cause negative side effects.
* Some antibiotics can also cause negative side effects or allergic reactions.

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