Relevant Terms

**Medically Important Antimicrobial Drug (MIAD)**

- Antibiotics identified by the FDA as **significant to human health**

**Guidance For Industry (GFI)**

- Federal Documents published by the FDA Center for Veterinary Medicine (GFI 209, 213, 152 specifically address antibiotic use in livestock feed and water)

**SB 27**

- Senate Bill 27(Hill) was signed into California law *(FAC, Division 7, Chapter 4.5, Sections 14400-14408)* in 2015; restrictions effective **Jan 1st, 2018**

**Livestock**

- “All animals and poultry, including aquatic and amphibian species, that are raised, kept, or used for profit. Livestock does not include bees or those species that are usually kept as pets, such as dogs, cats, and pet birds.” - *excerpt from Food and Agriculture Code §14400*
Antimicrobial Resistance

1. Lots of germs. A few are drug resistant.

2. Antibiotics kill bacteria causing the illness, as well as good bacteria protecting the body from infection.

3. The drug-resistant bacteria are now allowed to grow and take over.

4. Some bacteria give their drug-resistance to other bacteria, causing more problems.
Review of National Regulations

Veterinary Feed Directive (VFD) for MIADs in Livestock Feed

- A written statement issued by a licensed veterinarian (in the State where it is used) for the use of VFD drugs or combination VFD drugs in or on feed.

Limitations on Use

- Must be used according to the label (no extra-label use)
- Only for treatment, control or prevention of disease (not for growth promotion)

Requirements

- Valid Veterinarian-Client-Patient Relationship (VCPR)
- New VFD if feeding continues beyond expiration of VFD document
- All parties, including the client and the veterinarian, must maintain a copy of the VFD for a minimum of 2 years

Medications in Water → Require Prescription (not a VFD)

For links related to the Federal Mandate and Veterinary Feed Directives: https://www.cdfa.ca.gov/ahfss/AUS/AboutAUS.html
Livestock: Use of Antimicrobial Drugs

CA Law for all MIADs in Livestock

• Effective Jan. 1st, 2018, over-the-counter injectable and all other forms of MIADs must be given with a prescription or VFD ordered by a California licensed veterinarian.
Limitations of Use

- Permitted when deemed necessary by the professional judgement of a California licensed veterinarian for any of the following:
  - Necessary to **treat** a disease or infection
  - Necessary to **control** the spread of a disease or infection
  - Necessary in relation to surgery or a medical procedure
- **Not for growth promotion** or improved feed efficiency
- Necessary for **prophylaxis** to address an **elevated risk** of contraction of a particular disease
  - Not administered in a “**Regular Pattern**”

Requirements

- Valid **VCPR**
- Prescription or VFD
# What’s the difference?

<table>
<thead>
<tr>
<th>Source</th>
<th>USA</th>
<th>California Republic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Drugs</strong></td>
<td>Medically Important Antibiotics</td>
<td>Same</td>
</tr>
<tr>
<td><strong>Formulations</strong></td>
<td>Medicated feed and water</td>
<td>All (injectable, intra-mammary, feed, water, etc)</td>
</tr>
<tr>
<td><strong>New Systems</strong></td>
<td>Feed: VFD w/VCPR Water: Rx w/VCPR</td>
<td>Rx or VFD w/VCPR</td>
</tr>
<tr>
<td><strong>Indications</strong></td>
<td>Treatment, control and prevention</td>
<td>Same</td>
</tr>
<tr>
<td><strong>Limitations</strong></td>
<td>No use for growth promotion or feed efficiency</td>
<td>Same, plus “regular pattern” preventative use</td>
</tr>
<tr>
<td><strong>Effective Date</strong></td>
<td>Jan 1, 2017</td>
<td>Jan 1, 2018</td>
</tr>
</tbody>
</table>
Need to use a livestock drug?

Antimicrobial Drugs

Non-Medically Important

- **Federal/California Status:** Over-the-counter
- **Where to Purchase:** Restricted livestock drug licensed retailer
- **Types:** Various
- **Label:** “Restricted Drug(s) (California)”

Medically Important (MIADs)

- **Federal/California Status:** Veterinary Feed Directive (since 1/1/2017)
- **Where to Purchase:** Feed manufacturer, feed distributor, or participating restricted livestock drug licensed retailer
  - **Type:** Feed
  - **Label:** “Caution: Federal law restricts medicated feed containing this veterinary feed directive (VFD) drug to use by or on the order of a licensed

- **Federal/California Status:** Prescription-only
- **Where to Purchase:** Veterinarian or pharmacy
  - **Types:** Water (since 1/1/2017)
  - **Label:** “Rx, Only”

- **Federal Status:** Over-the-counter
  - **California Status:** Prescription-only starting 1/1/2018
- **Where to Purchase:** Veterinarian, pharmacy, or participating restricted livestock drug licensed retailer
  - **Types:** Injectable, Oral, Topical
  - **Label:** “Restricted Drug(s)”
# Medically Important Antibiotic Drugs

## Antibiotic Livestock Drugs in California

<table>
<thead>
<tr>
<th>Not Medically Important</th>
<th>Medically Important Prescription or VFD required after January 1, 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aminocoumarins</strong></td>
<td>Aminoglycosides</td>
</tr>
<tr>
<td>Navicoumarin (only available in combination with a MIAD in California)</td>
<td>Dihydrostreptomycin**</td>
</tr>
<tr>
<td></td>
<td>Gentamicin** (Garamycin, Gent-Gard)</td>
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<tr>
<td></td>
<td>Hygromycin B** (Hygromycin)</td>
</tr>
<tr>
<td></td>
<td>Neomycin** (Neo-Sol 50, Neovet)</td>
</tr>
<tr>
<td></td>
<td>Spectinomycin* (L-500, Spectinomycin)</td>
</tr>
<tr>
<td><strong>Glycolipids</strong></td>
<td>Amphenicols</td>
</tr>
<tr>
<td>Bambermycin (Gampro 10, Flavomycin)</td>
<td>Florenticin*** (Nuflox)</td>
</tr>
<tr>
<td><strong>Ionophores</strong></td>
<td>Cephalosporins</td>
</tr>
<tr>
<td>Laidimycin***</td>
<td>Cephalothin*** (Naxcel, Exacta, Exactel)</td>
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<tr>
<td>Laskoloid (Avatec, Bovatec)</td>
<td>Cephradin (Today, Tomorrow)</td>
</tr>
<tr>
<td>Monensin (Rumensin, Coban)</td>
<td>Diaminopyrimidines</td>
</tr>
<tr>
<td>Narasin (Maruban, Monilab)</td>
<td>Oxytetracyclin (Brentalin, Sonetary)</td>
</tr>
<tr>
<td>Salinomycin* (Soox, Bucovax)</td>
<td>Fluoroquinolones</td>
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<tr>
<td></td>
<td>Danofloxacin***</td>
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<tr>
<td></td>
<td>Enrofloxacin***</td>
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<tr>
<td><strong>Pleuromutilins</strong></td>
<td>Lincosamides</td>
</tr>
<tr>
<td>Tiamulin (Danaquad, Triamulin)</td>
<td>Lincosamid (Liposan, Lincomax)</td>
</tr>
<tr>
<td></td>
<td>Polymyxins</td>
</tr>
<tr>
<td></td>
<td>Polymyxin B (Terramycin)</td>
</tr>
<tr>
<td><strong>Polypeptides</strong></td>
<td>Macrolides</td>
</tr>
<tr>
<td>Bacitracin (Penicillin, BMD)</td>
<td>Erythromycin* (Erythrocin)</td>
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<tr>
<td></td>
<td>Erythromycin* (Erythrocin)</td>
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<tr>
<td></td>
<td>Tylosin* (Tylosin, Tylovet, Tyloved)</td>
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<tr>
<td></td>
<td>Tylosin* (Tylosin, Tylovet, Tyloved)</td>
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<tr>
<td></td>
<td>Erythromycin* (Erythrocin)</td>
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<td></td>
<td>Erythromycin* (Erythrocin)</td>
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<tr>
<td></td>
<td>Tildipirosin**</td>
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<td></td>
<td>Tilmicosin (Polymyxin AC)</td>
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<tr>
<td></td>
<td>Tylosin* (Tylosin, Tylovet, Tyloved)</td>
</tr>
<tr>
<td><strong>Quinoloxalines</strong></td>
<td>Penicillins</td>
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<tr>
<td>Carbadox (Mecadox)</td>
<td>Amoxicillin***</td>
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<td></td>
<td>Ampicillin***</td>
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<tr>
<td></td>
<td>Cloxacillin***</td>
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<tr>
<td></td>
<td>Penicillin***</td>
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<tr>
<td></td>
<td>Streptogramins</td>
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<tr>
<td></td>
<td>Virginiamycin* (V-max, Stafer)</td>
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<tr>
<td><strong>Sulfonamides (Sulfas)</strong></td>
<td>Sulfaethidone (Sulfadiazine, Amin, Sulfamed)</td>
</tr>
<tr>
<td></td>
<td>Sulfamethazine* (Sulfamerazine, Polymyxin)</td>
</tr>
<tr>
<td></td>
<td>Sulfamethazine* (Sulfadiazine, Amin, Sulfamed)</td>
</tr>
<tr>
<td></td>
<td>Sulfamethazine* (Sulfadiazine, Amin, Sulfamed)</td>
</tr>
<tr>
<td></td>
<td>Tetracyclines</td>
</tr>
<tr>
<td></td>
<td>Chlorotetracycline* (Chloromax, Panocillin)</td>
</tr>
<tr>
<td></td>
<td>Oxytetracycline (LA-200, Duramycin, Bim-Amycin)</td>
</tr>
<tr>
<td></td>
<td>Tetracycline** (Duramycin, Tetramed)</td>
</tr>
</tbody>
</table>

* Feedwater drugs must follow FDA VFD and water prescription requirement as of 1/1/2017.
** May be used in feed
*** Federally labeled as prescription-only (regulatory restrictions unchanged by SB 27)

To download this drug list go to: [https://www.cdfa.ca.gov/ahfss/AUS/Outreach.html](https://www.cdfa.ca.gov/ahfss/AUS/Outreach.html)
Veterinary Oversight

**Veterinarian-Client-Patient Relationship (VCPR)**

- Veterinarian assumed responsibility
  - Communicated with client
- Client authorized
- Knowledge of animal(s)
  - Examination of patient OR
  - Medically appropriate and timely visits

As defined by the California Veterinary Medical Board

For links related to VCPR see:
https://www.cdfa.ca.gov/ahfss/AUS/AnimalHealth.html
Veterinary Shortage

Timely Access to Treatment

• Identify ‘rural’ areas with a limited access to veterinary care
• Consult with livestock producers and licensed veterinarians

Working on solutions in the following areas:

• Feed Stores
• Treatment protocols
  • Within an existing valid VCPR
• Supplemental education for all veterinarians
  • Herd Health (Preventative Medicine)
  • Responsible antimicrobial use

Subscribe to the AUS Listserv for updates by email:
https://www.cdfa.ca.gov/subscriptions/#Animal
Complexities re: Veterinary Access

Regions with urban populations

- **Backyard** or small hobby farms
- Livestock kept as **pets**
- **Youth** agriculture groups

Not rural, but limited access to veterinary care

- Veterinary **workshops**
- **Database** of veterinarians
  - Links to similar resources
- Veterinary **consultants**
Changes in Antimicrobial Sales

**CDFA Objectives**

- Targeted *education and outreach* to licensed retailers ensuring compliance in 2018
- Collection of drug sales logs to provide *baseline compliance data*
- Facilitate *timely access* to antibiotics necessary to care for livestock
  - federally labelled as over the counter (OTC)
  - prescribed by CA veterinarians within a valid VCPR
Restricted Livestock Drug Retailers

Requirements

- Additional procedures may be applied in order to sell MIADs beyond what is currently required of a CDFA Restricted Livestock Drug Retailer licensee
- Stakeholders will be informed as soon as regulations are finalized

CDFA currently has 319 licensed Restricted Livestock Drug Retailers located in 49 counties

For information related to license applications see: https://www.cdfa.ca.gov/is/ffldrs/LivestockDrug.html
Antimicrobial Use & Stewardship

**Stewardship**

- Reduce the need for antimicrobial drugs with infectious disease prevention
- Use antimicrobials appropriately to optimize livestock health and minimize selection for antimicrobial resistance.

**Surveillance**

- Gather information on
  - Sales & use of MIADs
  - Livestock management practices (including animal health outcomes)
  - Trends in antimicrobial resistance

Confidentiality protected by law
Antimicrobial Stewardship

Objectives

• **Judicious Antimicrobial Use** Principles
• Herd Health Guidelines and Best Management Practices
  • Existing **Quality Assurance** programs
• Antibiotic Alternatives
  • Scientifically proven to be **effective and practical**
AUS Information Gathering

Current methods to collect information

- Voluntary, anonymous surveys
  - Mail-out
  - Online
- Leverage Federal efforts
- Contracted research studies

Although voluntary, participation is crucial!

- Information direct from the source (no assumptions made for the industry)
- Helps the Antimicrobial Use & Stewardship program provide useful resources
- Deliver tools for California livestock producers to take an active and progressive role in the fight against antimicrobial resistance

https://www.cdfa.ca.gov/ahfss/AUS/CAHMS.html
Three C’s of Antibiotic Use in California

**Connect** - **Conserve** - **Collaborate**

**Connect.** Establish or maintain a working relationship with your local livestock veterinarian.

**Conserve.** Keep medically important antibiotics effective through diligent animal stewardship and judicious use of these valuable tools.

**Collaborate.** You deserve a program to address your needs. By participating in our voluntary surveys and studies, we can help you address use, resistance and husbandry practices.
Additional Resources

Antimicrobial Use and Stewardship
Contact Information

- CDFA_AUS@CDFA.CA.GOV
- https://www.cdfa.ca.gov/ahfss/AUS/
- (916) 576-0300
- Follow us @AUSforCA