Implementing Antimicrobial Stewardship in Companion Animal Practice
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A Brief History

<table>
<thead>
<tr>
<th>1920s</th>
<th>1928</th>
<th>1960s</th>
<th>2014</th>
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<tbody>
<tr>
<td>Bacterial infections are often deadly</td>
<td>Penicillin is discovered</td>
<td>Predictions that infectious disease will soon be conquered</td>
<td>Warning by WHO that &quot;post-antibiotic era&quot; is near</td>
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Objectives

- Understand issues of antibiotic resistance
- Be able to describe antimicrobial stewardship
- Know how to access available resources
- Envision stewardship in your practice
Two Overarching Questions

- Why is antibiotic resistance an important issue for my practice?
- How can I create an environment of proactive and responsible use of antibiotics?

Introduction

- There is a dilemma in using antibiotics:
  - Antibiotics cure bacterial infections
  - Antibiotics put pressure on bacteria that selects for resistance

Antibiotics cure bacterial infections

- We rely on antibiotics to help reduce infection and disease
- Patients’ lives are improved
- Clients expect us to use antibiotics for their pets
Antibiotics put pressure on bacteria that selects for antibiotic resistance

Development of Antibiotic Resistance

MDR Infections in Companion Animals

- methicillin-resistant Staphylococcus pseudointermedius (MRSP)
- *Escherichia coli* producing extended-spectrum β-lactamase (ESBL)
- *Pseudomonas aeruginosa*
- *Klebsiella*
- Others
Results of MDR Infections

- Potential difficulty treating infection
- Psychological impact on client
- Potential for toxicity to patient
- Possible transmission to other animals or humans
- Possibility of greater cost to client
- Potential for therapeutic failure/ euthanasia
- Possibility of transmission to other animals or humans
- Potential for psychological impact on client

What can we do as a profession?

- Acknowledge our role
- Accept responsibility for being part of the solution
- Be proactive
  - Adopt “best practices”
  - Become educated and educate others
  - Continually improve

Become an Antibiotic Ally

Fight resistance. Preserve resources. Save lives.

Being an Antibiotic Ally means understanding that:

- Resistance anywhere means resistance everywhere
- Antibiotics are an essential tool to combat the threatening infectious diseases, but they are precious medications that can cause harm side effects.
- Reducing resistance starts by reducing inappropriate and excessive antibiotic use
- Antibiotic resistance is not just a problem for the person with the infection. Resistant bacteria have the potential to spread to others
- Encourage others to listen to the pledge to stop! Share on Facebook or Twitter by using the web share button on the upper right hand corner of this page.

Make the pledge to become an Antibiotic Ally today!

- Members of the public
- Healthcare professionals
- Veterinarians & animal owners
What is being done?

- Task Force for Antimicrobial Stewardship in Companion Animal Practice
  - Gain understanding of issues
  - Create recommendations
  - Compile resources
  - Provide guidance around stewardship

AVMA Task force Survey

Veterinarians Concerns about Antibiotics

- Concerned about antibiotic resistance: 86%
- Guidance for first choice: 79%
- Guidance for duration: 84%

AVMA Task Force Survey

Barriers to Appropriate Antibiotic Prescribing

- Unaware of guidelines: 86%
- Recommendations affected by cost of culture and susceptibility: 84%
- Feel pressure to prescribe antibiotics: 54%
Banfield Antibiotic Usage

Moving Towards More Appropriate Antibiotic Usage

How can we create a voluntary culture of forward thinking antibiotic use within the companion animal veterinary community?

Antimicrobial Stewardship

Antimicrobial stewardship is a coordinated program that promotes the appropriate use of antimicrobials (including antibiotics), improves patient outcomes, reduces microbial resistance, and decreases the spread of infections caused by multidrug-resistant organisms.

- Association for Professionals in Infection Control and Epidemiology
Antimicrobial Stewardship Program (ASP)

Active, dynamic process

Multi-faceted approach

Improved antimicrobial use

Maintain clinical efficacy of antibiotics

Creating an Antimicrobial Stewardship Program

Core Elements

Core Elements of ASPs

Practice commitment

Resources and education

Responsibility and authority

Surveillance

Action for judicious use
Practice Commitment

- Communicate and educate clients
- Recognize and convey concepts
- Review prescribing behaviors
- Use a team approach
- Learn and improve

Responsibility and Authority

- Designate a program leader
- Promote stewardship activities
  - Training opportunities
  - Identification of resources
- Foster relationships with experts to support stewardship

Action

- Develop written clinic-specific policies
- Adopt protocols that promote appropriate use of antibiotics
- Include other therapeutic strategies
- Create an incremented plan
Surveillance

- Internal review
- Use resources from laboratories and electronic medical records when available

Resources and Education

- Seek to promote team knowledge
  - Continuing education
  - Internet resources
- Use guidelines and texts in creating protocols
- Stay informed about changing trends

Creating an Antimicrobial Stewardship Program

Available Resources
Educational Materials

COUGH. SNORT. SNIFFL. SNEEZE.
CAREFUL WITH ANTIBIOTICS, PLEASE.

You want your pet to feel better.
Antibiotics may or may not be the answer. Antibiotics don’t fight viruses,
the most common cause of flu-like signs. What will?
Good supportive care while your pet’s immune system does its job. Find out
when antibiotics work—and when they don’t. Talk with your veterinarian.

Training Resources

ANTIMICROBIAL RESISTANCE LEARNING SITE

http://amrls.cvm.msu.edu/

ISCAID
Putting it All Together

What might this look like in your practice?

**Initial Strategies**

- Consider practice resources
- Include entire veterinary team
- Focus on areas for success
- Create a written plan
- Draw on outside resources
All Friends Veterinary Clinic

- Two doctor practice
- Eight additional employees
- Rural/suburban location

Dos and Don’ts Lists: Surgery and Dentistry

Surgery and Dentistry

PERI-OPERATIVE USE
- Adhere to best practices for infection control in the operating room
- Avoid prophylactic antimicrobials for routine surgeries
- If prophylactic antimicrobials are used, administer them before surgery and do not administer them beyond the perioperative period

DENTAL DISEASE
- Avoid antimicrobial use for routine dental procedures in healthy patients
- If indicated (e.g., tooth root abscess), choose antimicrobials likely to be effective against known oral pathogens
- Antimicrobials are not a substitute for appropriate dental management
Infection Control Focus

Model Infection Control Plan for Veterinary Practices, 2015

National Association of State Public Health Veterinarians (NASPHV)
Veterinary Infection Control Committee (VICC)

This plan should be adapted to your practice in keeping with local, state, and federal
regulations. A downloadable version is available on the NASPHV Website
(www.nasphv.org). Please refer to the full Compendium of Veterinary Standard Precautions
for complete information and guidance (also available at www.lavc.org).

Clinic:

Date of Plan Adoption:______________________________
Date of Next Review:______________________________
Infection Control Officer:____________________________

This plan will be followed as part of your practice’s routine procedures. The plan will be
reviewed at least annually and as part of new employee training.

Making use of Resources

Stewardship is Active

Regularly review activities and adherence to plan
Expand program when feasible
Refine plan and activities
Celebrate and communicate success
**Two Creeks Animal Hospital**

- Five doctor practice
- Twenty-two additional employees
- Suburban location

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**Dos and Don'ts Lists: Dermatology**

**Dermatologic Disease**
- Recommend cytologic evaluation of lesions in all cases of suspect pyoderm
- Microbial culture and susceptibility should be performed in conjunction with other diagnostics to investigate recurrent or refractory pyoderm
- Use topical antimicrobials and medicated shampoos as an alternative to systemic antimicrobials when possible

**Urinary Tract Disease**
- Avoid diagnosis of strictures based on tests of urine samples
- Continue treatment with quaternary salt forms

**Dental Disease**
- Avoid antimicrobial use for dental prophylactic procedures in healthy patients
- If electrolyte or yeast overgrowth is present, treatment should be directed according to the specific condition

**Respiratory Disease**
- In dogs and cats, use of

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**Dos and Don'ts- Dermatology**

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Team Education

ANTIMICROBIAL RESISTANCE LEARNING SITE

1. Antibiotics Use for Canine Pyoderma

Objectives:
1. Learn how antibiotics are frequently used in treatment of canine pyoderma, and what factors need to be considered when choosing antibiotics.
2. Learn the evidence of using an appropriate antibiotic with treatment values.
3. Learn the evidence of treatment intake and susceptibility testing, and effective communication with the client.
4. Learn how different human health can be both affected by antibiotic resistance.

Cytology-Staff Training

Microbial Culture and Susceptibility- Client Education
Topical Antimicrobials and Shampoos - Using Alternatives

Next Steps-Making Use of Further Resources

Veterinary Dermatology

Guidelines for the diagnosis and antimicrobial therapy of canine superficial bacterial folliculitis (Antimicrobial Guidelines Working Group of the International Society for Companion Animal Infectious Diseases)

ISCAID Appendix
Every Practice is Different

- Create an antimicrobial stewardship program that works for your practice
- ASPs contribute to the solution in whatever form they take
- Approach this using your interests, team strengths, and practice personality

Conclusion

- Antimicrobial resistance is a medical and societal challenge
- Veterinarians must be part of the solution and can contribute through ASPs
- ASPs can and should be tailored to the individual practice

Questions?

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