

Science and Practice

Gaps in Knowledge/Translation

How Do We Find the Answers to What We Don't Know?

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It was on a short-cut through the hospital kitchens that Albert was first approached by a member of the Antibiotic Resistance.



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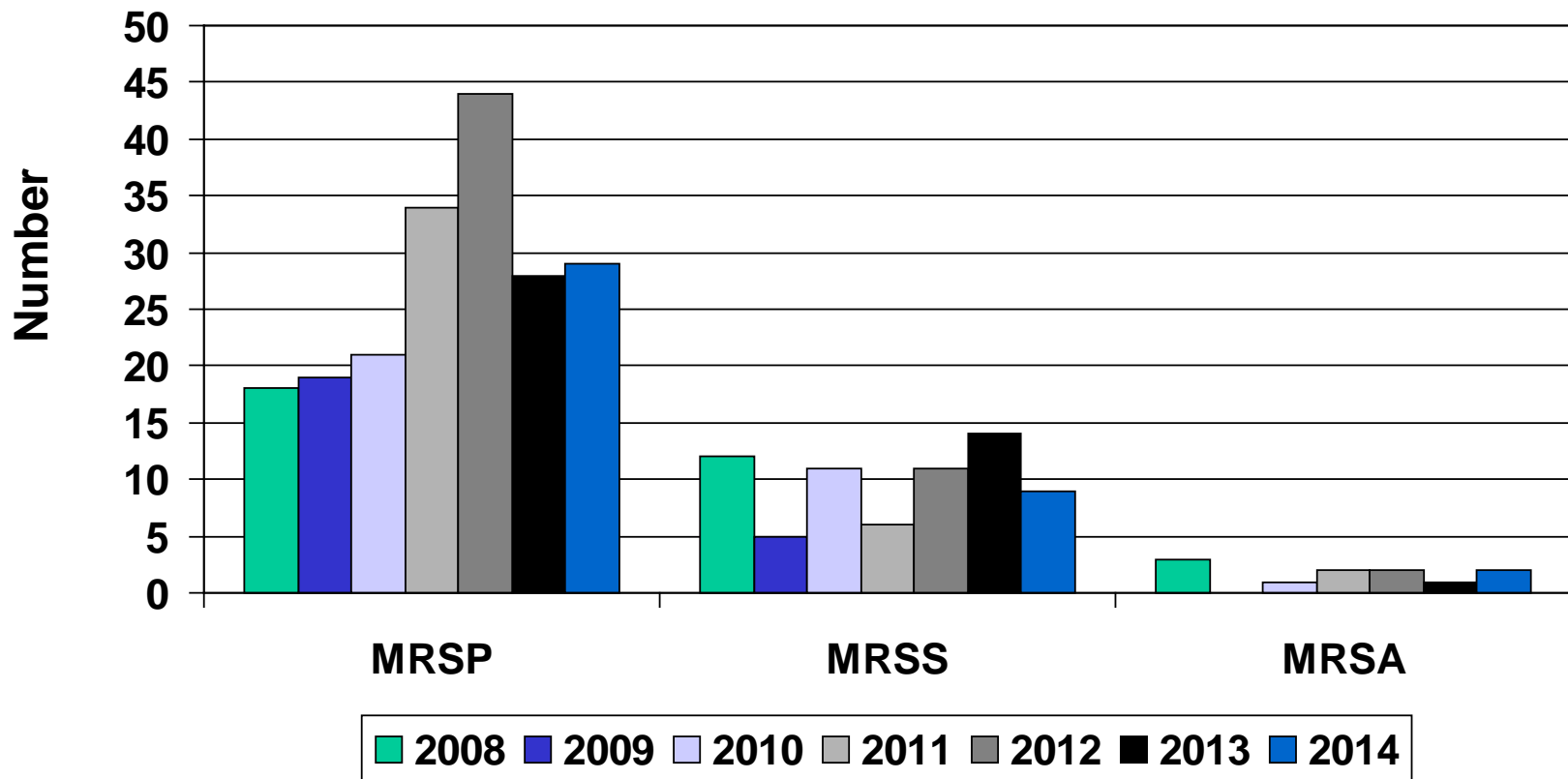
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Overview

- View from a hospital epidemiologist and a public health veterinarian
 - Infection control/prevention and biosecurity
 - Antimicrobial use
 - Stewardship programs
 - Education and outreach
 - Global policies



Clinically related *Staphylococcus* sp. identified through the Dermatology Service University of Minnesota VMC, 2008-2014



Infection Prevention/Control

- What are best practices to prevent infections?
- Support for clinical decision making?
 - When to treat?
 - How long to treat?
 - What to treat with?



Antibiotic Use and Clinical Practice Guidelines

- International Society for Companion Animal Diseases
- Consensus
- Global expertise

Veterinary Dermatology

Vet Dermatol 2014

DOI: 10.1111/Adv.12118

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)

Andrew Hillier*, David H. Lloyd†, J. Scott Weese‡, Joseph M. Blondeau§, Dawn Boothe¶, Edward Breitschwerdt**, Luca Guardabassi††, Mark G. Papich**, Shelley Rankin‡‡, John D. Turnidge§§ and

SAGE-Hindawi Access to Research
Veterinary Medicine International
Volume 2014, Article ID 263768, 9 pages
doi:10.4236/2014.263768

Research Article

Antimicrobial Use Guidelines for Treatment of Urinary Tract Disease in Dogs and Cats: Antimicrobial Guidelines Working Group of the International Society for Companion Animal Infectious Diseases

Journal of Veterinary Internal Medicine

ACVIM
American College of Veterinary Internal Medicine

Open Access

Guideline and Recommendation

J Vet Intern Med 2017;31:279–294

Antimicrobial use Guidelines for Treatment of Respiratory Tract Disease in Dogs and Cats: Antimicrobial Guidelines Working Group of the International Society for Companion Animal Infectious Diseases

M.R. Lappin, J. Blondeau, D. Boothe, E.B. Breitschwerdt, L. Guardabassi, D.H. Lloyd, M.G. Papich, S.C. Rankin, J.E. Sykes, J. Turnidge, and J.S. Weese

Respiratory tract disease can be associated with primary or secondary bacterial infections in dogs and cats and is a common reason for use and potential misuse, improper use, and overuse of antimicrobials. There is a lack of comprehensive treatment guidelines such as those that are available for human medicine. Accordingly, the International Society for Companion Animal Infectious Diseases convened a Working Group of clinical microbiologists, pharmacologists, and internists to share experiences, examine scientific data, review clinical trials, and develop these guidelines to assist veterinarians in making antimicrobial treatment choices for use in the management of bacterial respiratory diseases in dogs and cats.

Key words: Bronchitis; Pneumonia; Pyothorax; Rhinitis.



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Antibiotic Usage in Alignment with Recommendations?

- 67% of non-recurrent UTI and 44% of recurrent UTI received guideline recommended antibiotics
- 80% of URI and 22% of bronchitis episodes were treated according to guidelines



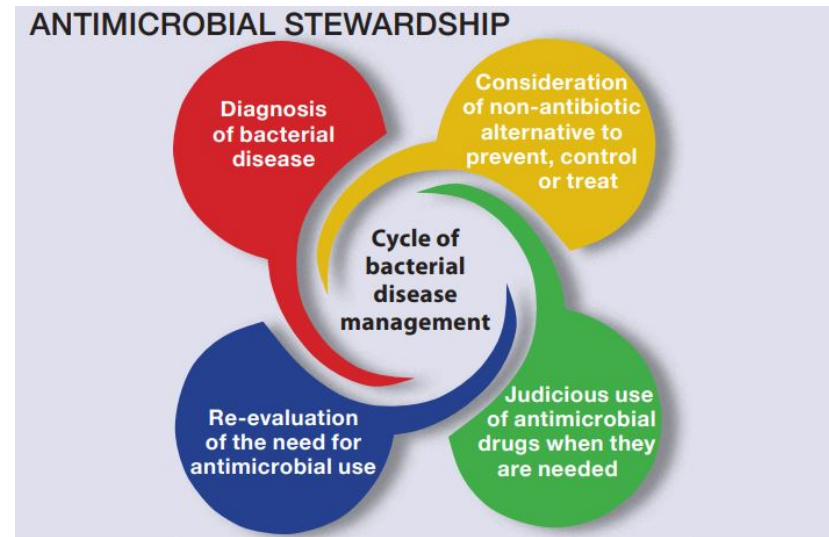
Needed Supporting Materials for Clinicians

- Development and evaluation of rapid diagnostic tests
- Regional antibiograms
- Best practices for improved biosecurity/infection control
- Supporting clinical tests
 - Procalcitonin tests in humans



Antimicrobial Stewardship

- Antimicrobial stewardship is the commitment to reducing the need for antimicrobial drugs by preventing infectious disease in cattle, and when antimicrobial drugs are needed, a commitment that antimicrobials are used appropriately to optimize health and minimize selection of antimicrobial resistance



Core Elements for a Companion Animal Stewardship Program

- Clinic/practice commitment
- Responsibility and authority
- Implementing actions to improve antibiotic use
- Surveillance: tracking, monitoring and measurable outcomes
- Resources and education



Antimicrobial Stewardship Programs

- Which practices work?
- What is the impact on patient health?
- Economics – is it cost effective?
- Need to monitor and evaluate interventions



Education and Outreach

- Web-based training modules
 - Species specific/Case-based (<http://amrls.umn.edu/>)
 - USDA – accreditation modules
- AVMA client focused materials
- Public education!

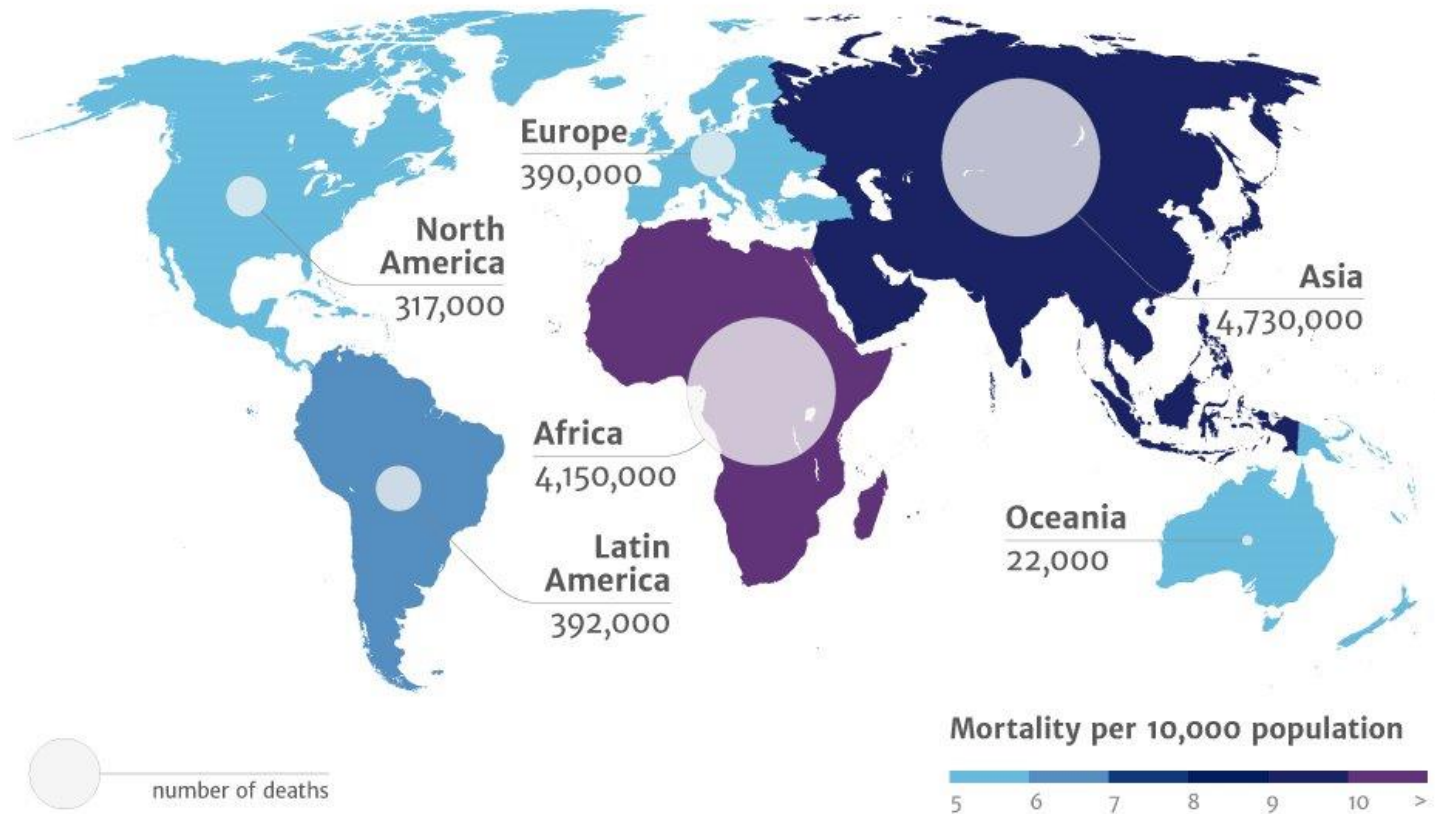


Global Policies

- “Need to discover new antibiotics and alternative therapies...and commit resources on preserving effectiveness of existing antibiotics by reducing inappropriate use” (Prof Dame Sally Davies, Chief Medical Officer for England)



Annual Estimates of Death Attributable to AMR by 2050



AMR National Action Plans (NAPs)

- 85% of countries are developing or have developed NAPs
- 52% of countries have developed a plan that addresses the One Health spectrum of animal, human, and environmental sectors
- 52% of LMICs have national level measures in place on infection prevention and control in human healthcare, but just 7% have national surveillance systems for AMR in animals and food

Global Research Needs

- Harmonization of laboratory techniques
- Evaluation of the impact of national programs
- Document current antimicrobial use and resistance in countries with few resources and limited data
- Monitor implementation of education and outreach to producers/farmers



Summary

- Antimicrobial resistance continues to be a “Grand Challenge”
- A Global challenge
- Need to apply practical interventions
- Evaluate programs
- Identify best practices
- Develop key communication messages to practitioners, clients, and the public

