SPECIAL FEATURE

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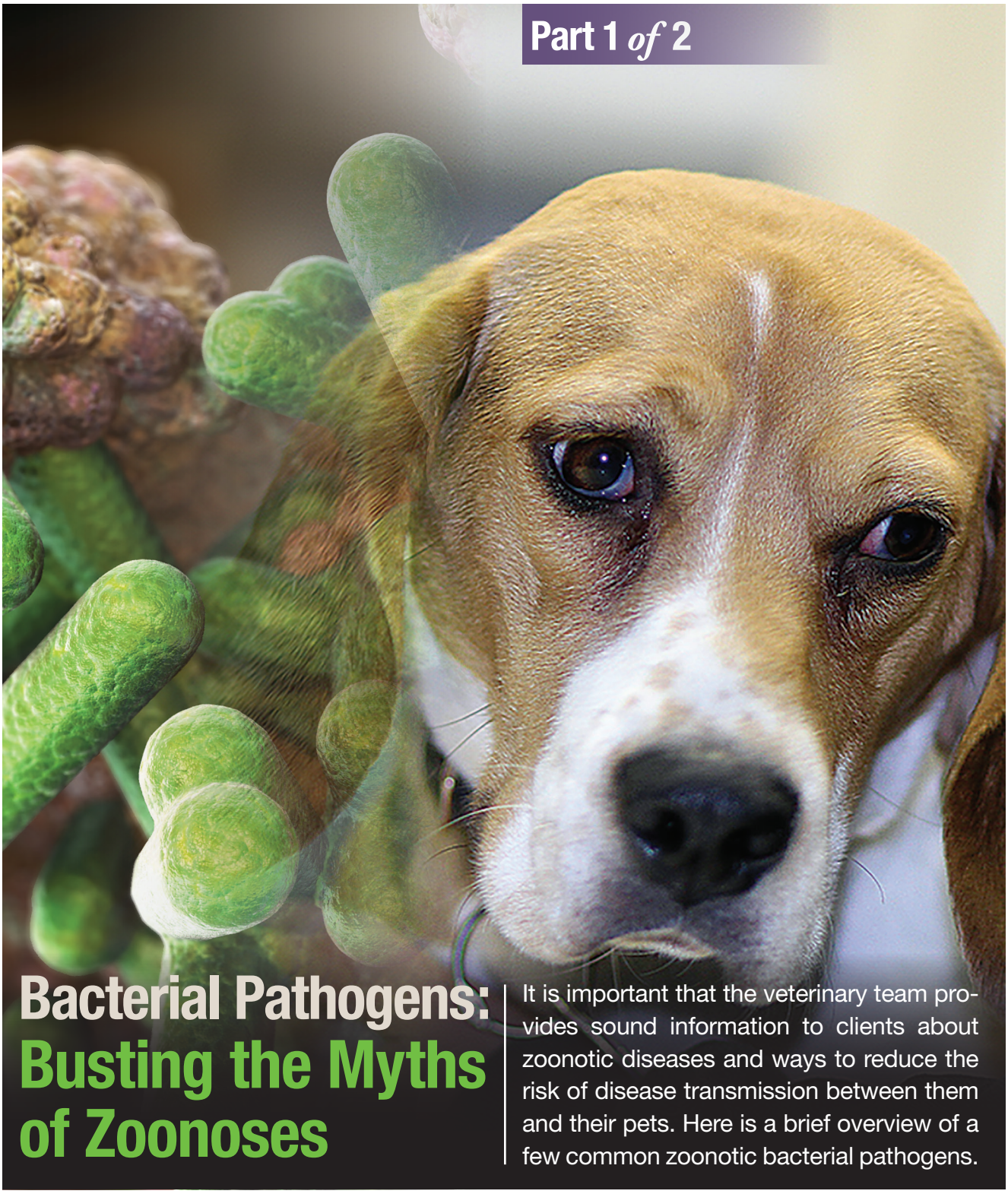

Part 1 *of* 2

Bacterial Pathogens: Busting the Myths of Zoonoses

It is important that the veterinary team provides sound information to clients about zoonotic diseases and ways to reduce the risk of disease transmission between them and their pets. Here is a brief overview of a few common zoonotic bacterial pathogens.

Comparison of MRSA & MRSP as Zoonotic Pathogens of Companion Animals

	MRSA	MRSP
Primary reservoir	Humans	Dogs
Zoonotic potential	High	Low
Carriage potential in pets	Generally short-term	Long-term or possibly lifelong
Common types of infection	Skin, wounds, surgical sites	Skin, wounds, surgical sites

Methicillin-resistant *Staphylococci*

In the past decade, methicillin-resistant *Staphylococcus aureus* (MRSA) has appeared in companion animals. A well-recognized and troublesome pathogen in humans for decades, this antibiotic-resistant "superbug" can be problematic, especially in individuals (both animal and human) with compromised immune systems, skin wounds, or surgical incisions. It is also relatively easily transmitted between people and pets—it likely originally spread to animals from humans.

MRSA typically circulates at a low level in the population; however, its "cousin," methicillin-resistant *S pseudintermedius* (MRSP), is becoming more common, especially among dogs. Both the methicillin- and nonmethicillin-resistant versions of *S pseudintermedius* are well adapted to living on dogs, whereas MRSA and nonmethicillin-resistant *S aureus* are better adapted to living on humans.[1]

MRSP infection is rare in humans, even in clients with dogs, so the risk of MRSP transmission from pet to client appears to be much lower than with MRSA.[2] Nonetheless, MRSP infection does sometimes occur in humans,[3] so if an animal is MRSP- or MRSA-positive, clients should be advised to avoid high-risk contacts (eg, with the mouth, nose, infected skin lesions), practice good hand hygiene after handling the pet, and keep their wounds and skin lesions covered. High-risk individuals, including the immunocompromised, the elderly, and very young children, need to be particularly diligent about these measures and should not put themselves at increased risk by performing procedures such as bandage changes, if possible. However, an MRSA or MRSP infection by itself is not an indication for surrendering a pet.

Capnocytophaga canimorsus

Capnocyto-what? Many are unfamiliar with this bacterium, which healthy dogs and cats often carry in their mouths. *C canimorsus* occasionally makes dramatic news when it causes a devastating or even fatal infection after seemingly innocuous contact with a dog, but the bacterium actually poses little risk to healthy, immunocompetent humans. Factors such as immunosuppression, alcoholism, and lack of a functional spleen can increase the risk in humans.[4] Infection has been associated with minor bites or a pet licking an area of broken skin,

READ ALL ABOUT IT

These resources offer a wealth of information about zoonotic diseases:

- Zoonotic Diseases. Center for Food Security & Public Health: **cfsph.iastate.edu/Zoonoses/index.php**
- Compendium of Veterinary Standard Precautions for Zoonotic Disease Prevention in Veterinary Personnel (2010). National Association of State Public Health Veterinarians: **avmajournals.avma.org/doi/pdf/10.2460/javma.237.12.1403**
- Infection Prevention and Control Best Practices for Small Animal Veterinary Clinics (2008). Canadian Committee on Antibiotic Resistance: **wormsandgermsblog.com/uploads/file/CCAR%20Guidelines%20Final%282%29.pdf**
- Worms & Germs Blog: Promoting Safe Pet Ownership. University of Guelph & Centre for Public Health and Zoonoses: **wormsandgermsblog.com**

and has even been reported after just "close contact" with a dog.[5] The infection can progress quickly, and delay in treatment may result in gangrene of the digits or limbs, or even death. It is therefore crucial that clients tell their physicians about contact with pets or other animals so that zoonotic pathogens like *C canimorsus* are given early consideration. In cases of animal bites or scratches, a client should always immediately and thoroughly wash the affected area with soap and water. Always protect broken skin from contact with pets.

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Strep throat

Strep throat (streptococcal pharyngitis) is caused by the bacterium *Streptococcus pyogenes*, also known as Group A *Streptococcus* (GAS). Humans are sometimes prone to recurrent strep throat episodes, and some may eventually try to blame their dog. Researchers decades ago implicated dogs as a potential source of GAS,[6] but their culture methods did not differentiate GAS from Group G streptococci, which include the common canine commensal *S canis*. More recent studies have failed to find GAS in dogs or cats, even those living with children suffering from strep throat.[7,8]

When humans have recurrent infections, the Infectious Disease Society of America recommends testing their human contacts, not their pets, because no current evidence shows pets as a source of GAS.[9] If a client wants his or her pet tested for a particular pathogen at a physician's request, the veterinarian should discuss the request with the physician to ensure that testing will provide meaningful results that can be used for the management or treatment of the client, the pet, or both. Communication is always key.

The entire veterinary team must be knowledgeable about the myths and realities of these bacteria. For more information, use the resources provided (see **Read All About It**, page 21) to both inform clients and initiate conversations about this important topic.

See Aids & Resources, back page, for references & suggested reading.

Editor's note: *Part 2 will be published in an upcoming issue.*