



Helping people with pets suffering from MRSA

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Registered UK Charity 1122246

[www.thebellamossfoundation.com](http://www.thebellamossfoundation.com)

[www.pets-mrsa.com](http://www.pets-mrsa.com)

[www.veterinarynursestrainingonline.org](http://www.veterinarynursestrainingonline.org)

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### **The Bella Moss Foundation.**

**A charity concerned with cross infection of MRSA and other serious infections in pets.**



Bella Louise Moss (Kennel club name: "Pricilla Princess"), a Samoyed, was 10 years old when she ruptured a cruciate ligament and underwent surgery at a London multi-chain veterinary clinic. What should have been routine surgery ended her life as during the operation her wound was infected with MRSA and later with Pseudomonas. Misdiagnosis allowed the infection to become systemic and with earlier detection and better hygiene Bella's surgery would have been successful. Today the foundation has helped hundreds of animals to recover from MRSA and other serious post operative infections. We do this by raising awareness and educating both veterinary professionals and pet owners about the

risks of cross infection and good hygiene practice.

*"What happened to Bella shouldn't happen to a dog."*

*Jill Moss.*

**Jill Moss, President and Founder of Bell Moss**

#### **Foundation:**

"As a result of seeing my beloved companion and best buddy die in the most traumatic way, a charity has been born that helps thousands of animals and people. At the time of Bella's death there was no information on MRSA in animals and I felt isolated. **I began** an information website: [www.pets-mrsa.com](http://www.pets-mrsa.com), initially to tell my story and to provide information on MRSA in animals for other pet owners. Soon I was inundated by people all over the world whose pets had been diagnosed with MRSA infections. Through extensive media coverage in the national, local, veterinary and animal press the topic of MRSA and Bella's death was brought for the first time into the public domain. The Bella Moss Foundation became a registered charity in 2007, three years after its existence helping so many people and their pets.

I am proud today to be the president of an international charity that provides support and information for pet owners and helps promote education for veterinary staff. Our work is crucial in ensuring that we as a society prevent the spread of MRSA from humans to animals. Through raising awareness the foundation has helped hundreds of animals worldwide recover from MRSA infections due to early detection and the correct treatment. We have a network of pet owners who help each other and

specialist veterinary teams who intervene with vets when they require help with cases. We raise money through corporate sponsorship to facilitate training programmes for vets and nurses and we raise awareness amongst pet owners at animal shows.

The Bella Moss Foundation provides direct input into the MRSA (animals) sub group of the DEFRA antimicrobial resistance committee and DEFRA's consumer engagement committee on animals welfare and BMF is an associate member of the parliamentary all party group on animal welfare.

Bella suffered and died unnecessarily but she has left behind a legacy, and for me personally this has meant her death was not in vain. Bell was the first recorded dog to die of MRSA for her it was too late, the infection was misdiagnosed and staff responsible for caring for her refused her treatment on the grounds they were scared of becoming infected.

It is our duty as a carer's for an animals or health professional's to get up to date with

*Research shows Staphylococcus aureus colonisation which causes MRSA can be carried without any ill effects by people and animals that are healthy and not in a position of vulnerability. Transmission from dog to dog seems particularly difficult though not impossible. Observing good personal hygiene is the most effective way of preventing healthy people and animals from becoming colonised with MRSA.*

infection control and transmission of bacteria and help us educate the public and medical professions. Together we can work at preventing cross infection."

### What is MRSA?

Over the past decade there has been a substantial increase of MRSA infections in people and more recently in animals. This leaflet is designed to empower pet owners to take steps to protect animals and acquire important knowledge that helps make choices in selecting the right veterinary care for your pet.

**Methicillin-resistant *Staphylococcus aureus* (MRSA)**; four letters that arouses deep feelings of fear or suspicion or both, is referred to as the killer superbug. MRSA is implicated in the deaths of around 5,000 human patients per year; in the animal world there is limited information due to the lack of data collection.

*Staphylococcus Aureus* is one of the most common germs that we encounter each day. Typically harmless to healthy people and healthy pets but it is carried on our skin and in our noses. Infections may occur when the organisms get into breaks in the natural skin barrier (such as deep cuts, open wounds, surgical incisions or catheters)

**MRSA stands for Methicillin-resistant *Staphylococcus aureus*.** MRSA is a resistant form of the *Staph.* bacteria that has been a serious problem in hospitals since the 1960's, when the increasing usage of antibiotics caused the microbe to become more resistant. New strains have recently emerged and research clearly shows that MRSA is spread from human to animal and has the potential of being exchanged in either direction.

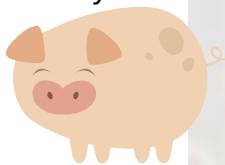
Over the past decade there has been a substantial increase of MRSA infections in people and more recently in animals. Outside of the hospital MRSA infections are spread by close personal contact, this may include shaking hands, sharing exercise

equipment or participating in close contact sports. We will talk about prevention of spread of MRSA later in this leaflet.

When people first hear about MRSA they may sometimes panic because they believe it will kill the infected person or pet and all of the family. **THIS IS NOT THE CASE!** **Healthy people and animals are at minimal risk; in most cases**, especially when detected early, we see animals fully recover from MRSA infections. **The key to survival is early detection and targeted treatment.**

### Different Strains

MRSA can be CA-MRSA or HA-MRSA (community acquired or hospital acquired) and in the human world both are equally prevalent. In the animal world research has shown that most strains are HA-MRSA identifying that animals are more at risk in the veterinary hospital environment than in a healthy community environment. There are emerging strains however such as USA300 which is becoming widespread in the USA and Canada. This strain is the most common cause of CA-MRSA in people in the US and is now becoming common in hospitals. It mainly causes skin infection in healthy people and pets but can cause serious, including fatal, infections in otherwise healthy individuals.



You may have read in the press about a strain called ST398 found in farm animals in Europe. The strain has been found in Belgium and Holland in pigs [it's now been found in many other countries including Germany, Belgium, Singapore, Canada and the US] and pig farmers and 3 cases of this strain discovered in humans in a Scottish hospital. It is no more serious than other strains but ST398 has the potential to pass back and forth between human and animal, and for this reason the European Commission will be releasing research findings on a UK prevalence study of breeding pigs in the spring of 2009. For more on this [www.defra.gov.uk/animalh/diseases/zoonoses/mrsa.htm](http://www.defra.gov.uk/animalh/diseases/zoonoses/mrsa.htm) or <http://www.cdc.gov/eid/content/15/3/452.htm>

Courtesy of Dr Scott Weese [www.wormsandgermsblog.com](http://www.wormsandgermsblog.com)

**Methicillin-resistant *Staphylococcus pseudintermedius* (MRSP, sometimes misidentified as methicillin-resistant *S. intermedius* (MRSI))** is an increasing problem in dogs and cats. This highly drug-resistant bacterium is a particularly problem in skin and ear infections, and the number of infected animals appears to be increasing significantly. A related bug, **methicillin-resistant *S. aureus* (MRSA)** has been a major problem in people for decades, and MRSA is now being found with increasing frequency in animals as well. Sometimes people get confused when they are dealing with methicillin-resistant staph, and it's important to realize some of the **differences between these two related bugs:**

- ☒ **MRSA is a huge problem in people and can be transmitted between animals and people.** The role of animals in human disease is unclear, but there is concern that people can develop infections due to contact with infected or colonized animals.
- ☒ **MRSP is rarely identified as a cause of infection in people.** Transmission of MRSP between animals and people has been reported. However, this is much less concerning than with MRSA because people are much less likely to carry, transmit or develop infection from MRSP than MRSA.
- ☒ The recommendations that have been made for management of animals with MRSA largely involve **improving general household infection control practices.** These guidelines are only based on expert opinion (i.e. there are no studies (yet) to back them up), but they are reasonable and practical.
- ☒ Even less information is available regarding MRSP, mostly because it's not considered a major human health issue. That being said, **you don't want to get a multidrug-resistant bacterial infection, even if it's uncommon.** Therefore measures to reduce the risk of transmission of MRSP from pets to people is should still be considered.

**Strict isolation of infected pets is probably excessive.** General infection control practices (e.g. handwashing after contact with the animal, avoiding contact with the infected site, limiting contact overall) are probably adequate, especially in households with no high-risk people with weakened immune systems, infants or elderly individuals.

Courtesy of Dr Scott Weese [www.wormsandgermsblog.com](http://www.wormsandgermsblog.com) (for more visit this website)

### Signs of MRSA

Any species of animals may exhibit the same signs of MRSA as in people, and the same strain of MRSA may be passed to the pet. If your pet has repeated skin infection that are not responding to broad spectrum antibiotics, ask your vet to take swabs. If the site of a surgical wound is not healing and looks red, inflamed or hot to touch, report this immediately to your vet. The carrier state may be much more difficult to detect. MRSA exhibits the same signs as any infection.

### How is MRSA spread?

MRSA is spread by direct contact or by air currents or by sneezes or coughs, and can be conveyed by people going from one environment to another. Research shows that it moves from the environment to people, from person to person, person to animal, or animal to person or environment. Pets can become carriers through the close physical contact they have with people who are themselves carriers. Surgical sites can become infected by bacteria falling from the skin into the wound, from contaminated hands or instruments or by droplets from an uncovered mouth or nose. The greatest risk from the environment seems to be from items that are handled by many people or used on more than one animal. It has been estimated that less than 10% of the population carry MRSA without knowing it and without any effects, but there is also research that shows that those who work in health settings, including vets and veterinary practice staff, may have a higher risk of carrying MRSA than the general population. If you are concerned you may be a carrier then ask your GP for a nasal swab to be taken. Many species of animals as are people are vulnerable to MRSA infections. However animals carry their own species of bacteria. MRSA is the bacteria that naturally hosts itself to dogs but has of recent become resistant to some

antibiotics. MRSA (Methicillin resistant *staphylococci Intermedius*) is highly drug resistant bacteria more common in the US and continental Europe than the UK. MRSA can be far more difficult to treat than MRSA in humans and risks of cross infection can occur in the same way

The greatest risk of infection of pets tends to occur in veterinary practices, and research at the Royal Veterinary College, London has found that almost 20% of veterinary staff can carry the bug. Good clinical practice can prevent infection and colonisation, and effective screening can reduce the risk further. These depend upon veterinary staff being well trained and skilled, and on pet owners understanding how to work with their vet in an effective and knowledgeable way. People who work in healthcare settings are likely to have a higher risk of carrying MRSA, and should take the same hygiene precautions at home that they do at work when dealing with an unwell pet. (See BMF hygiene at home information sheet)



### **Antibiotic or Not ?**

The excessive use of broad spectrum antibiotics in humans has been acknowledged to be a major factor in the development of antibiotic-resistant “Superbugs”. Now that MRSA has crossed over to pets, prudent antibiotic use is essential in reducing the spread of MRSA.

GP’s and other doctors to minimize the inappropriate usage of antibiotics (such as for virus infections like the common cold and the Flu) have been successful in reducing some unnecessary antibiotic use. Veterinary teams and pet owners need to understand that every time you give your animal an unnecessary antibiotic, it is being placed in possible jeopardy for acquiring a resistant organism. It is up to the pet owner and their pet’s veterinary surgeon to Reserve antibiotic use for serious infections.

### **Targeted treatment and early detection is the key to surviving MRSA**

An antibiotic should generally not be given without knowing that it will kill the bacteria against which it is used, and repeated courses should not be given without microbiological analysis of the infection. Early identification of the bacteria and its resistance is the best way of preventing the appearance of a resistant strain.



BMF photo of a cat with MRSA

If your vets suspect an infection: YOU MUST ask for swabs to be taken and the culture of that swab to be sent to a diagnostic laboratory for analysis. Sometimes the culture (isolate) has to be grown in the laboratory to determine resistance and this can take a few days. Lab results will identify which bacteria are present and which antibiotic is the

correct one to kill those bacteria. The microbiology report will list each antibiotic as resistant or sensitive to the bacteria. When a vet swabs and cultures suspected infections they are correctly targeting the treatment if your vet is prescribing repeated courses of antibiotics without lab reports, be alarmed and question this methodology.





**Good hygiene is the KEY to preventing the spread of all bugs no matter what they are called!!!!**

### **FAQ's**

#### **What Should I Do If I Think My Pet May Have An Infection?**

Don't wait! If you suspect your pet is not recovering after an operation, the wound seems red or irritated or skin lesions are breaking out or not healing with broad spectrum antibiotics then TELL YOUR VET. Ask for a clear indication of what they think might be the problem and how they will deal with it. Ask for swabs to be taken for culture immediately. Ask your vet to be honest about what he or she does and does not know about resistant strains of bacteria . These are just some of the things you can ask; many more may occur to you. The important thing is BE INFORMED and don't be afraid to let your vet know that you are not ignorant. If he or she doesn't like that, then they are not worth staying with. Print off our information on the websites and let your vet know about our MRSA veterinary experts who will happily talk with them if need be. Never give your pet medicine prescribed for humans.

#### **I have MRSA and my pet has licked my open wound**

It is bad practice to allow a pet to lick an open wound, not just because of the risk to the pet, but also because of the risk from the bacteria that a pet may carry. However, such a scenario may result in the pet becoming colonised with MRSA, but they are unlikely to become infected unless the bacteria is able to enter the tissue.

#### **My daughter has MRSA and our family pet ate her vomit or stained bandages – is my pet now infected?**

Probably not: The action of stomach acids will probably kill any bacteria, and the greatest risk is probably from the ingestion of a long length of bandage.

#### **Will The Infection Return After It Has Been Treated?**

If the infection has been treated successfully then reoccurrence is unlikely. In the short term reoccurrence can result from inadequate clearing of the infection, when the animal seems better but if the infection is not completely cleaned away then bacteria can start to grow again. Reoccurrence of an infection after a long time is very uncommon. However if your pet has had orthopaedic surgery and implants then pockets of bacteria can remain around the site of the wound particularly in

deep joint infections. It is very important to keep an eye on your pet closely and report any concerns to your vet immediately.

### **Are some animals more likely to become MRSA carriers than others?**

There is no clear-cut answer to which species may be more vulnerable, but current thinking is that dogs are probably less likely to become carriers than other animals because the common strain of Staphylococcus found in dogs is not *Staph. Aureus*, but *Staph. intermedius*, and this seems to make it harder for *Staph. Aureus* (and MRSA) to get established. Vulnerability may depend much more on issues of health than on issues of species; ill, old or very young animals may be much more at risk than healthy mature animals.

### **What Questions Should I ask If My Pet Has To Undergo Surgery?**

Ask what antibiotic cover your pet is likely to need prior to any surgery, and what bacteria these antibiotics will kill. Ask what steps they take to minimise the possibility of an infection getting into the surgical wound (such as cleaning the area with iodine and surgical alcohol). Ask whether your vet will be fully gowned and masked and whether a trained person will be in charge of anaesthesia. Ask how much your pet will be monitored after the operation, whether the wound will be dressed or not and whether your pet will be in an area with other animals. Ask what signs will tell the vet that an infection is present in the operation wound and what action will be taken if one should occur. Ask if they are aware of any facility that is more expert or familiar with the operation your pet has to undergo, and ask what the policy on referring to specialist centres is. Ask what the normal recovery period is and what signs might indicate a post-operative infection.

### **What Can I Do To Ensure My Pet Is Safe For The Future?**

Talk to your vet about your concerns, especially if your pet is to undergo surgery, particularly if you or anyone in your household has close contact with a risk area such as a hospital. Avoid keeping your pet any longer than necessary in a veterinary hospital as this may increase the likelihood of it becoming colonised, and don't allow your pet to be exposed to known carriers of MRSA. Ask if your vet is aware of the guidelines issued by the RCVS and whether the practice adheres to them. If your vet admits to not knowing much about MRSA or they are dealing with a first case, we offer team of MRSA veterinary experts to liaise with your vet (there is no charge for this) or your vet could contact the nearest veterinary teaching hospital for specialist advice. The Bella Moss Foundation will put veterinarians in touch with experts whenever it is necessary to ensure the best outcome for animal health.

### **What Can I do to protect my pet from MRSA?**

**Remember healthy animals are at minimal risk** but if your pet is to undergo surgery, make sure the vet is up to date with MRSA and understands how to reduce the risk of transmission. If they would like more information, ask them to get in touch with the Bella Moss Foundation and contact one of our liaison officers. You can keep your pet healthy and less vulnerable to infection with a good diet and a healthy immune system. Avoid unnecessary hospitalisations as this increases the risk of transmission. Please also talk with your veterinarian to ensure that they have good infection control protocol in place. Prudent measures for your vet include the use of gloves when handling animals, washing hands correctly, working under high aseptic conditions and keeping veterinary surgeries clean.

**What should I do about cleaning the house and bedding; if my pet is infected how often do I wash bedding and at what temperature to kill the bacteria**

It is unlikely that MRSA germs will survive a standard washing cycle in a laundry machine when adequate detergent is applied. Any regular items in close contact with the infected pet should be laundered. Pet toys and other non-permeable materials can be scrubbed with a household disinfectant.

**How long can MRSA live on a dry surface?**

Various reference sources described MRSA strains being able to survive on dry surface for as long as weeks to months to even a full year. Topical germicidal solutions can easily kill MRSA strains on the surfaces very readily, however.

**Holistic veterinary medicine and the role it can play in supporting weak immune systems and help wound healing.**

The emergence of bacteria resistant to modern medicines has made doctors and vets look for other ways of dealing with these infections. The owners of pets with chronic infections frequently look to complementary therapies to help them but often find their vet has little interest or knowledge beyond conventional medicine and owners find the information available to them sketchy and confusing.

Several non-antibiotic wound dressings have shown good effect against MRSA. Honey (and not only Manuka) has been shown to kill MRSA, several essential oil containing herbs (such as thyme, tea-tree and lavender) have worked well in MRSA colonised wounds and silver impregnated dressings are commonly used. Such dressings are very useful, but should be used under veterinary supervision. Essential oils should be avoided in cats as they are toxic to them.

Holistic Medicine offers more than just wound dressings. By improving your pet's immune system through good nutrition, attending to his mental wellbeing and using herbal medicines known to improve immune function he has the best chance of recovery.

Before treating your pet with essential oils or alternative medicine always consult with a professional holistic vet. For more information on registered holistic vets contact the Bella Moss Foundation.

## Links for further information



[www.veterinarynursetrainingonline.org](http://www.veterinarynursetrainingonline.org) (Infection control)



[www.thebellamossfoundation.com](http://www.thebellamossfoundation.com) (Charity)



[www.pets-mrsa.com](http://www.pets-mrsa.com) (blog)



[www.hpa.org.uk](http://www.hpa.org.uk)



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