Praise for Where There Is No Pet Doctor
(as Wilderness Veterinary Companion):

Sailors headed out with pets can find all sorts of helpful information...
*Cruising World*

Unlike other pet care books, (it) takes it to the next level... totally unlike any other... We would highly recommend that before you ever set out to cruise again with pet in tow that this book goes on board as well. *Florida Dog Magazine*, Spring 2007

Finally, a manual for cruisers with pets. Not just another "Fifi Goes Sailing" book, but a book of practical skinny that you will need for emergencies. ...He even recommends drug dosages in a usable format. I’ve cruised with a cat aboard my boats for three decades, and this book will stay on my ready reference shelf. Bruce Van Sant
*Author of The Gentlemen’s Guide to Passages South*
Other books by Captain Doctor Dave:

*Pets On Board! Adapting Your Pet to Travel by Boat or RV*

*Cruising the Islands – Cheapie-Cheapie*  
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WHERE THERE IS NO PET DOCTOR

A Manual for Cruisers, RVers, and Backcountry Travelers

Written and produced by David W. LaVigne, B.S., D.V.M.
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IMPORTANT NOTICE:
The information contained in this book is intended to aid with the general care and maintenance of pets in order to assist in determining if and when professional veterinary care is advisable. It is not meant to be used for home diagnosis and treatment. The diagnostic and treatment information is provided to aid with decision-making when faced with a situation where no professional care is available, or within reasonable access.

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All photographs in this book, unless otherwise noted, are by Annie LaVigne.
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Cover-girl, ‘Minky,’ the Schipperke puppy, appears thanks to Kenny and Brycie aboard *S/V Smidgeon*. What a great boat dog! She has made me a Schipperke fan.

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Hopefully I haven’t forgotten anyone. If I have, it was inadvertent and I apologize.
FOREWORD

After a great deal of time and effort and a number of revisions, this book is now more or less in its final form. Although it was originally written and designed for sailors and cruisers aboard boats, I have been advised repeatedly that the book has a much broader base of appeal. As a result, since the impact of pet health issues in a wilderness environment has much less to do with how you got to where you are than with the fact that you have no available professional pet care, I have decided to focus more on individual problems and less on the circumstances of why the pet is where it is.

Only an occasional item or article in the book deals exclusively with water or boat related problems, illness, or injury. Yet whether as a former general practitioner and a current emergency clinician or as a cruising sailor, I am equally aware of the bureaucratic issues that you might encounter crossing an international border or of the health issues you could have while traveling in your RV through the Canadian northwest.

For the cruiser concerned about meeting the pet entrance requirements for a variety of foreign countries, I have updated the chapter on *Quarantines and Entrance Requirements* so that it contains useful advice on what you should do to prepare your pet for your cruise. The information contained in that chapter, combined with the suggested websites and other references, should give you everything you need to get ready.

A sort of spin-off from the above rewrite on entrance requirements resulted when I did further research into microchipping of pets. The microchip industry in the U.S. is extremely dynamic and the only thing that I have been able to find that seems to be constant is the continuous state of change. Many U.S. citizens will be surprised to find that their pet’s microchip may be essentially useless once they leave the United States. And those of you from outside the U.S. may not realize that your ISO chip is not likely to be identified by shelters here in the U.S. should your pet happen to be picked up by an animal control agency. Check my website for updates on the situation.
Where actual pathological conditions are discussed I have, where applicable, included a listing of *Symptoms* and *Treatment or Possible treatment* recommendations. By *Possible treatment* I am offering less than ideal solutions, usually a suggestion of ‘last resort’ ideas. Again, my solutions are not necessarily *recommended* under any conditions but are only provided for that situation where you feel you must *try* anything that might help.

There is a rating system for many of the procedures in the book along with a rating for the supplies to have on hand listed in the appendix. These ratings are based on user skill levels, amount of training, and expected duration of time away from readily available professional care.

I have attempted to make the index as comprehensive as I possibly can so that often you can search by breed, by region, by medication, and even sometimes by symptoms observed. Believe me, it is difficult to make your search simple but I have tried to make the index as exhaustive as possible.

Also I must stress again that, although the book is quite sizable, the contents merely scratch the surface. The problems that I cover include the likely to be encountered, the important to be aware of, and the easy to treat. But, as a lay person, nothing you run into is necessarily going to be easy *for you* to diagnose or treat. If there is any way you can do it, for your best friend’s benefit and to save yourself a lot of grief, get to a professional veterinarian if at all possible.
PREFACE

With its most recent revision and new title (previously it was called *Wilderness Veterinary Companion for Cruisers and Other Outbackers*), this book has been slightly modified to make the information more broadly applicable to anybody who might travel with their pets, anywhere in the world, by any means. However, this book was originally written for cruisers – primarily those cruising in a tropical environment. As a cruising veterinarian, I wrote the book while trying to keep in mind what might be useful if I were an educated layperson anchored on a remote island or in a third-world harbor and my pet had a sudden health problem. How could I deal with it?

In the summer of 2005, while holed up for hurricane season in Luperón harbor in the Dominican Republic, I was asked by some of my fellow cruisers to give a talk on cruising with pets. There was a local issue there concerning the poisonous toads in the area, one cruising couple actually having lost their dog to a case of toad poisoning. Therefore that was one of the principal topics of the talk. In preparation for that talk I went online to check the internet for reference sources and for information on cruising with pets. I was surprised to find myself fairly stymied in my search for similar regionally-specific topics that should be addressed. Either the information is not there or I’m just not very good at researching it. I was surprised at the paucity of information in regard to health issues in pets living in exotic environments. Therefore I was pretty much left with no recourse but to write my own. As a result I ended up with about twenty pages or so of information that I felt was pertinent for those folks. However, I also felt that I had not even scratched the surface.

(Since that time I have continued my internet search for similar locally relevant issues throughout the world. I know they exist but information is difficult to find. I would greatly appreciate any information regarding local dangers from individuals who are traveling throughout the world. E-mail me at topic@captdrdave.com if you would care to contribute any
Nevertheless, the end result of my continued elaboration on what began with that presentation is now in your hands. It has grown to be much larger than originally intended. I also realize I have not covered everything that could be covered. It is tough to address everything, so I’ve had to try to pick out the recognizable, the treatable, and the ‘get help now’ problems and attempt to sort them and present them in some semblance of a usable format.

Now, a few words about the book. I have as a veterinary practitioner never been a fan of veterinary ‘doctor books.’ I always responded with great trepidation to individuals who came to see me carrying a home veterinary guide or who spoke reverently and authoritatively about what they read, mainly because I felt that I could usually expect that they would pay more attention to the book than to my advice. I felt confident that when they had a problem due to ignoring my advice or, more likely, due to combining bits and pieces of my recommendations with what was in the book, that I inevitably would be the one considered to be at fault. For these reasons and more I plead with you not to use this book for home diagnosis and especially not for engaging in home treatment. Armed with this book and the little bit of information it contains and with even less in the way of practical skills, you are potentially a very dangerous pet owner.

Go to your veterinarian and get a professional opinion. If you feel that your veterinarian is not any good or cannot be trusted to make the best decisions for your pet then by all means get a different veterinarian. This is not a reason to put your pet’s health and/or life at risk by home treating. It is a reason, however, to go in search of a veterinarian in whom you can have confidence. And that veterinarian is not necessarily the one who agrees with everything in this guide or with what you happen to feel should be done. (Virtually any veterinarian you visit is going to know far more than you and this little handbook. You can take
that to the bank! And do not be offended if your veterinarian absolutely hates this book. I will too, if you bring your pet in where I happen to be practicing and you tell me you’ve been using this book instead of visiting an available doctor.) The correct veterinarian is the one who proceeds with your pet’s best interest at heart and is willing to work with you within whatever reasonable constraints you impose.

Yes, we live in tough economic times, but do not buy this book because you are too cheap to pay for quality veterinary care. If that is the case then you have too many pets or you simply do not understand that quality care is not cheap. As veterinarians, we would love veterinary care to be available and free for all animals. But that unfortunately is not the case. Drugs used to treat most disease conditions are reasonably inexpensive but the laboratory and diagnostic work which is often essential to arrive at a correct diagnosis of your pet’s condition is never cheap, nor is the cost of hospitalization and treatment. And frankly, Mr. Home Treatment Guy, it is very likely that the worst veterinarian you find is going to do a better job of diagnosing and treating your pets than you will.

So if you are buying this book for the wrong reasons, don’t. Plain and simple. The ‘do-it-yourself’ information in this guide is intended to be used by people who find themselves in that untenable position of ‘having no choice’ but to do something. And doing something that you don’t have a clue how to do, is at least a tiny bit easier if you have someone to hold your hand while you do it. This book is intended to serve as that someone.

And now the disclaimer – and this is one heck of a disclaimer. Frankly I do not recommend that you follow any of the diagnostic or procedural ideas or suggestions mentioned in this book. Furthermore, I do not recommend that you purchase or administer any of the medications listed in this book.

What I do recommend is that you steer a course to the nearest licensed, accredited, professional veterinarian and have
Where There Is No Pet Doctor

your pet examined, diagnosed, and appropriately treated by a knowledgeable expert. If that is not a realistic possibility at this particular moment and you feel reasonably certain that you have a problem, then by all means take a shot at it with the understanding that you may screw it up, you may misunderstand entirely what the text is trying to say, and, worst case scenario, you could end up killing your best friend.

Regardless of my rating system and the apparently detailed directions, there are still any number of ways that you can screw this up. You can use the wrong product. You can use the wrong dosage. You can miscalculate when trying to convert milligrams per milliliter into total milligrams or total milliliters. You can miscalculate when trying to make a dilution. Or you can simply totally misinterpret what I’m trying to say.

Where procedures or instructions are present, I have tried to be explicit. Do what I’m saying, not what you think I’m trying to say. If you are putting a lot of effort into trying to figure out what I mean, go back and start over again and take it a step at a time. In the unlikely but possible event that something is missing or you feel my instructions are not quite applicable to your case, use your common sense. And if you are someone who is commonly told by others that you do not have much common sense, then by all means beware and limit yourself to the basic simple stuff. I have met an unbelievable number of individuals who fit the ‘no common sense’ category.

I have a couple of videos available which can help you with some of the procedures mentioned in this book. I designed them for and aimed them at those of you who have no pre-existing veterinary skills. Get one or both of them if you feel deficient in the techniques described. It’s not likely you’ll need to save your pet’s life, but if the need should arise, the more help you have, the better.

Good luck and hopefully you’ll never need this book for anything more than doing a toenail trim. Thanks.

Doctor Dave
How to Use the Rating System in this Book

Where procedures that might be performed by the pet owner are described I have attempted to classify these procedures using a rating system to indicate the degree of difficulty and/or the likelihood of causing harm to the patient. These ratings are shown using the star (★) indicator system, the more stars displayed, the more difficult or dangerous the procedure, as follows:

★ Little risk to the patient and should present little in the way of difficulty for those with minimal or no medical or veterinary training or experience. Most procedures in the book fall into this category.

★★ Some medical or veterinary training or experience would be helpful if procedure is to be performed with any expectation of success. May entail some degree of risk to the patient if performed by unskilled persons.

★★★ Should probably not be attempted by individuals who are not experienced or skilled in medical or veterinary procedures. Could result in harm to the patient. Use caution.

★★★★ Not recommended – unless performed by a knowledgeable person with veterinary or medical training, experience, and understanding. More likely to result in harm, if not done properly. In other words, if you don’t have the training to understand what needs to be done if things don’t go as planned or if you mess up, then don’t try it.

Obviously this type of rating system is only a general indicator and common sense should prevail in all situations before undertaking any procedure that could cause harm. These ratings are not made to discourage you from trying something as a last ditch effort, but are intended to give you fair warning as to the degree of difficulty or complications that you might expect.
If no rating is shown for a procedure, although, as stated earlier, a veterinarian should be consulted for any significant problem, it should be understood that an unrated procedure 1) should be performed by a trained professional, or 2) should be properly and accurately diagnosed prior to any treatment, or 3) that subject may just be there for your information.

Also, keep in mind that I cannot rate the degree of danger to the pet owner in performing these procedures. Only you can judge your own pet and its level of tolerance for discomfort, pain, or intimidation. Read, understand, practice, and use the chapter on *Animal Restraint* to minimize any risk to yourself. Still, you must understand that there is always a degree of risk to persons performing medical procedures on any animal regardless of that animal’s apparently cooperative nature.
To Annie
This one’s for you.
Thank you for your time,
for your patience,
and for your love
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‘Thornless path’ cruising guru Bruce Van Sant with his longtime cruising companion, ‘Pussycat’, aboard *Tidak Apa* in Bahía Luperón, Dominican Republic.
INTRODUCTION

The most important things to keep in mind when reading this material is that it is NOT written from the point of view of someone residing in a house on land in an urban/suburban environment. And, I am not a specialist in tropical diseases, or any other subject for that matter.

This book is aimed mainly at those who are in a temperate or tropical climate. Other than a short discussion of cold-related emergencies it does not really deal with cold weather issues. It is a guidebook. Many of the suggestions made herein are bad advice, IF you are at home sitting in your living room and have a veterinary facility down the street.

Actually much of the advice in this publication is not even appropriate for someone on an extended trip or cruise, IF you happen to be on the Great Lakes, any of the east, west, or Gulf coasts, or other relatively populous areas. In other words don’t follow my instructions if a better alternative is available.

I am trying to apply my veterinary expertise and some common sense to what you need to do while living aboard your boat and cruising in the tropics or living and traveling by other means away from what you and I have become accustomed to considering ‘conventionally available’ products and services. These recommendations are written with the idea that products and services that you might normally consider to be readily available may be difficult or impossible to find. Therefore many of my recommendations in this brochure for you as a cruiser or wilderness traveler might be the antithesis of what they would be if you were visiting me in Baltimore, Maryland or on the Gulf Coast of Florida, my two most recent practice locations.

That said, if you cruise aboard a boat or travel anywhere exotic or remote by any means with one or more pets along, or if you are thinking about it, this is probably a handy guide to take along. Don’t use it as a guide for self-treatment. Use it as a guidebook to help see if something is potentially serious.

Maybe you’ll find something in here that will help you make that decision of whether or not to turn around and go back with just a little more confidence. It’s all relative, guys. If you are
cruising the Bahamas for three months and a problem arises, if you feel it’s serious you can cut the trip short and head for the States. You’re only a couple of days away. If it’s not serious maybe you can do some temporary treatment and the more permanent solution can wait until the trip is over. Maybe it might be something that will respond to some simple therapeutic rest. I’m trying to help you make these types of decisions.

Certainly none of these ‘here is what you might try’ ideas are intended to apply if you have a professional veterinarian at your disposal. Even in places where you might feel (or might have heard) that the veterinarians are not well-trained or not knowledgeable about treating pets, check around. Find out the details. Many people only repeat scuttlebutt without having firsthand knowledge.

From my own experience I know that there are very good veterinarians available in the Virgin Islands and Puerto Rico. There are also good veterinarians available in Australia, New Zealand, and some of the tropical Pacific islands. And when I say ‘good’ I am trying to apply what I consider to be reasonably conventional standards of practice from the point of view of a practitioner who hails from the U.S.

When you have been out for a substantial period of time and it’s been a while since the dog or cat was examined and had a thorough workup, take advantage of all that a ‘civilized’ port of call has to offer. Listen to all of the recommendations regarding the local veterinarians and find out all you can about who is available and what he or she has to offer.

Then pack up Spot or Fluffy, grab a stool sample, and go see the doctor. Get the vaccinations updated. Have a stool sample tested as completely as possible. Have a heartworm blood test done. Be certain to take a list of questions and discuss any possible problems you might have had or might presently be having. (Keep a list updated aboard the boat so that when this opportunity arises, you aren’t stammering and stuttering and wasting the doctor’s time and patience trying to remember things that happened six months ago.)
Provide a detailed list of every place the pet has been ashore and every place you have visited so he has an idea how diverse the possibilities are when trying to consider disease possibilities. Talk about where you are going and what to watch out for when you get there.

Get surgery done if it’s needed. Tumors are much safer and easier (and also cheaper) to remove when they are small. Surgery is much safer to do when there is gas anesthetic available.

Consider getting anything at all that might be necessary – such as flea control products (Frontline or Advantage or Advantix or Program or Sentinel) and heartworm preventative products. What about restocking your shipboard pharmacy? (Check those expiration dates.) Get any prescriptions that you might need refilled. Now is the time. It may be a year or more before you have this opportunity again.

If you are uncertain of the quality of medicine available, yet you are in need of a veterinarian and one is available, go to the veterinarian for an exam and consultation, commonality of language permitting, making it clear up front that you will not be treating the pet on that visit. Do not commit to anything. Then go home and talk about it.

If what you find out doesn’t make sense, or your common sense tells you that this practitioner is from another age or does not understand your concern for your pet, then don’t go back and don’t take the advice.

Much of what you read in this book may be dangerous to your pet. If you can find a physician or nurse or other health professional, seek help. Have them read what I have provided. The first tenet of health care is to do no harm. Be careful with medications. Any medication that has the potential to help also has the potential to do harm.

Remember, no medication is EVER completely without risk. If it were completely benign, it wouldn’t do anything.
Practicing any type of medicine or surgery is a dangerous business. If you can at all avoid using many of these procedures and/or drugs, then run for help. Most of the two and three star procedures are more difficult than you may expect. If you mess it up and there’s nobody around to bail you out, what will you do?

Know your pet. Do not look to a veterinarian or other animal ‘expert’ to tell you if your pet is happy or sad, or in pain, or uncomfortable, or ready to be put to sleep. Veterinarians and animal ‘experts,’ are knowledgeable about health issues, breed problems, diseases and their transmission, symptoms, treatment, and so forth. Only YOU are an expert on your own pet. Only you have the ability to pick up on those subtle nuances in your cat’s or your dog’s behavior and habits that may suggest that something is not quite right.

This can be the most difficult challenge facing a diagnostician. If a physical exam shows no abnormalities, the best we can say under those circumstances is that everything appears to be fine. We can find no evidence of pathology. My suggestion is usually that we wait a week or a month or two (or more, or less) and rerun the diagnostic workup. Very often, it’s just a matter of waiting for the condition to manifest itself in a more identifiable way. If the doctor can’t find anything wrong, it doesn’t necessarily mean you have a bad doctor. If the doctor wants to reexamine at a later date, that’s probably a good thing, not an excuse to make more money.

Everybody knows the story of someone who ‘just didn’t feel right.’ Every test under the sun was run and all results were normal. Then somewhere down the road the person is diagnosed with cancer or some major condition and all is finally revealed. Similar diagnostic problems occur in animals, often with a similar course and outcome.

If you are absolutely certain that your pet is acting different, less active, changing its bowel and/or bladder habits, its appetite, etc., even slightly, don’t let anybody convince you that everything is fine. That could certainly be the case. But I have
seen too many instances where eventually a pathologic cause is finally discovered.

Beware of people who ‘know’ what the problem is. Look for a veterinarian and take his or her advice. Most of the time a health problem does not present with ‘typical’ symptoms. If it did, we could all treat ourselves using a home treatment manual in the same way we can read about how to repair a lawnmower or an outboard motor. A person who instantly recognizes your health issue as a particular problem may very well be someone who has never bothered to take a pet to a veterinarian. If you cannot find a veterinarian who seems to care about cats and dogs or who can communicate adequately with you, then maybe you might want to follow the treatment advice in this book.

Remember, I’m not there. I can’t tell you what is wrong with your pet. You have to do that, using whatever resources are at your disposal, including this book. NO doctor can tell what is wrong with a patient with any degree of confidence without having that patient in his or her presence, without being able to see, touch, ask questions, draw blood and perform other tests on the actual patient. So using this book is definitely a long shot and should be your last resort.

I once received an e-mail from someone in the middle of the Pacific Ocean whose cat was seriously and unfortunately terminally ill, and they didn’t have a copy of my book aboard their boat. They contacted a veterinary hospital in Hawaii and were given the stock response: ‘Bring it in and we’ll check it out.’ A thousand miles away and several days travel by sailboat, they might just as well have been calling from the moon. Unfortunately such travel is not always realistic, yet it does not change the fact that help is still needed. I provided these people with some personalized assistance by e-mail and hopefully we together helped to keep their cat comfortable during its last days. I agree that this book is a poor substitute for a veterinary visit, but, should you suffer a similar misfortune, hopefully you will find something useful in here.

This book deals with dogs and cats. It does not cover birds
or ferrets or other exotics. You may do fine traveling with a ferret, but they are officially not recognized in most places. That may be good for your ferret and it may not, as it leaves the matter to the discretion of local officials who have the power to treat it however they see fit.

Birds could encounter problems getting into any country if a major avian epidemic occurs while you are traveling. In addition, you could very well have serious difficulties getting back into your home country when you return should such an outbreak occur while you are gone. If you choose to travel with a bird, it should be microchipped for identification purposes, and be certain that you are carrying some sort of documentation showing how and where it was obtained (preferably with an official health certificate endorsed by a federal veterinarian from your home country). Otherwise local officials may attempt to confiscate the bird. The trade in illegally poached birds in the tropics is still rampant and some officials do actually try to enforce the rules. I am familiar with at least one individual who was faced with this issue.

Good luck and, if you have difficulty understanding this book or otherwise have suggestions for its improvement, please contact me.

Do No Harm –
Hippocrates
YOUR VETERINARIAN

You’re getting ready to head out. Where to? Perhaps it’s an exotic sailing voyage or dream circumnavigation, or maybe a wilderness RV trek into Alaska or Canada’s Yukon territory. Whatever the case, in all the excitement of taking off to fulfill your travel fantasy, don’t forget about ‘Fluffy’ and ‘Spot.’ Your enjoyment of your wilderness dream may relate directly to their health and contentment as companions or passengers on the trip.

Before you leave, have a good working relationship with a competent veterinarian. This needs to be someone in whom you can have trust and confidence.

When I was working in Baltimore where I practiced while living aboard my boat, I had contact with many cruisers. I would see the snowbirds come through each year on their way north in the Spring and then again on their way south in the Fall. I made an effort, as I did with all of my clients, to treat each patient and client as an individual. I also understood the cruising lifestyle and did not expect these pets to require the same type of professional care that my local clients needed. Most cruisers have a ‘preferred’ veterinary care provider that they know and trust. Other veterinarians need to understand that, except for the occasional emergency, they are just stops along the way.

Some veterinary hospitals function like the super instant oil change place, where you drive in for a simple oil change and they try to sell you everything from a transmission fluid cleansing to new windshield wipers. These are not the kind of places you want to deal with. They are much less concerned with your and your pet’s needs than they are with performing a surgical excision of a large piece of your checking account.

I had a good client years ago who lived in Detroit. She had moved from the small Michigan town where I had my practice but she still made a point of driving the 100 miles to see me whenever any of her cats (of which she had many) needed any veterinary attention........
THE IDIOSYNCRATIC REACTION

There is a rather obscure category of occurrences in medicine that is generally referred to as the ‘idiosyncratic reaction’ or sometimes simply ‘unexpected complications,’ which includes things that happen that we simply lack the means to predict. For lack of a more descriptive term we’ll call it ‘crap happens,’ or maybe it’s just plain ‘bad luck.’

I’m sure that Jim Henson of Muppet fame did not anticipate that the routine respiratory infection that he acquired was going to take his life. Nor is it likely that the attending physicians saw it coming. After all it was just a ‘routine’ strep infection. And you can safely bet that Andy Warhol, the famous artist, probably had no clue when he entered the hospital for a ‘routine’ gall bladder surgery that he would die of anesthetic complications. Sometimes all of the advanced laboratory tests and all of the state-of-the-art facilities available are not enough to keep Humpty Dumpty from falling off the wall, let alone allow us to put Humpty-Dumpty back together again.

If you take your pet to the veterinarian for a vaccination, the dog has a violent anaphylactic reaction to the vaccine and, in spite of efforts to treat it the dog dies, that’s a tragedy. But it is not the veterinarian’s fault if your dog has never before suffered a vaccine reaction. If your dog has had a reaction in the past, and you inform the doctor, and she fails to inform you that this time a much more severe reaction is possible, then that doctor has serious communication problems, or lacks a fundamental understanding of the immune system. On the other hand, if you were aware of a history and forgot to tell the doctor, then shame on you – how could she know?

I always tried to give my clients some idea of the risk involved for any procedure. It’s the old ‘This could blow up in our face’ spiel. I always tried to question the client in advance of any procedure to find out if there were preexisting conditions or a history that might be relevant.

If the doctor is not going to open the lines of communication
when he/she is about to treat your pet, you should go the extra distance. This can be frustrating when a language barrier is present, but even that is not an excuse for withholding potentially vital information.

Advance notification notwithstanding, it is important to understand and know ahead of time that there is the potential for any patient to react in an unknown, totally unpredictable way to any procedure, injection, drug, or chemical exposure. This can happen with aerosols, inhalants, injectables, topicals, or what have you and it can happen whether it’s used by you or by a medical professional. The unexpected response may be mild and transient, or it can be a severe life-threatening anaphylactic reaction resulting in death.

Most of the time it is not.....
Don’t forget the leash. Nothing else you can do can make a greater contribution toward saving your dog’s life. If you are lucky you will never know how many times your dog’s life will be saved just by keeping him on a leash.
THE STRESSES OF TRAVEL

You may think that your pet loves traveling or loves life aboard a boat as much as you do. And for pets that were raised or grew up in this kind of unusual situation, that could very well be true. Keep in mind however that stresses that you take for granted may bother your pet more than you think.

Slippery decks and cabin soles, steps to negotiate in order to climb into and down from a cockpit or into and out of an RV (especially for older and/or larger dogs), and summertime or tropical heat and humidity are everpresent factors to be aware of. New noises and smells, constant changes in diet – not to mention the unpleasantness of the occasional inevitable rough passage – everything plays a role.

Aboard a boat, the constant threat of a pet overboard should always be high on your list of priorities. Always know where the pet is – always! However do not be bound by guilt. Pets die every day in houses, cars, farms and fields. Life on the road or living aboard a boat has never been the cause of any pet’s death. Quality, not length, of life should be your main concern.

Your pet has the same senses you have. Most of its senses are similar to yours, even though they are often more sensitive. They have a highly developed sense of smell and their hearing tends to be more acute than our own. Sight seems to be quite acute, while their sense of taste remains something of a question mark.

The sense that we know the least about in animals is the one we know the least about in humans too – what is commonly referred to as the ‘sixth sense.’ Animals seem to have the ability to pick up on many things that we miss. Stories of animals sensing imminent danger and reacting to it and thereby saving an owner’s life never fail to amaze us. The sensing of an impending earthquake, volcanic eruption, or tsunami by wild and domestic animals has been repeatedly.....
QUARANTINES and ENTRANCE REQUIREMENTS

Quarantines and entrance requirements may vary depending upon whether you are traveling by private yacht or by a more conventional travel method. For obvious reasons, most of the following information pertains to pets aboard yachts. However, I will attempt to address both scenarios.

If you are cruising, quarantines are likely to be a factor for you in some ports, particularly in countries that are present or former members of the British Commonwealth. Because it is quite easy to keep rabies out of a relatively small, remote island, many island nations (even the state of Hawaii in the U.S.) are free of rabies. In order to maintain that status you can expect strict rabies quarantine regulations and vaccine requirements.

Pet entrance requirements are one of those ever-present concerns of the cruising pet owner and are likely to be a significant issue in many countries that you visit. Remember that official regulations in most places are directed at pets entering via commercial means (aircraft, etc.) whereas pets entering aboard a private vessel are likely to be subject to interpretation of the rules by the particular official you happen to encounter at whatever port of entry you use.

Should you have occasion to travel with your pet by air or motor vehicle into and out of countries around the world, you should investigate the rules and requirements pertaining to pet import/export, quarantine regulations, and so forth and expect to follow them to the letter. Once you are traveling by conventional means and not by private yacht, you instantly become one of those travelers for whom the regulations were written. Visit a local veterinarian and make certain that everything is kosher. Do not complain or make comments such as “But I didn’t have to do this when I checked in with Rex at such and such port.” You’ll only serve to cause yourself (and possibly some pleasantly accommodating local official) more grief.

Many cruisers are accustomed to governments with regulations and rule books that assure relatively standardized procedures. Out cruising you may find other factors to be far
more significant – different official, different day, different cruiser, different pet, or, in other words, the luck of the draw. Be prepared for the likelihood that standardized treatment is apt to be the exception rather than the rule. In my encounters with cruisers in the Caribbean, probably the single most consistent finding regarding entry requirements for pets is the gross inconsistency in the application of those rules within each given jurisdiction. Frequently formal requirements that are listed by official (and unofficial) sources are as likely to be disputed as they are to be honored by the local authorities. To make matters worse, it may actually seem that the more aggressively you question and attempt to understand the regulations, the more complicated they become.

To help limit those kinds of disputes, my suggestion is that, prior to your arrival, you should try to fulfill the most stringent requirements listed below and then simply present your paperwork when you arrive at each destination country. It would be nice if you could call in advance and speak to the authorities over the phone, but unfortunately it’s pretty unlikely that you will be able to speak with someone who will actually be present when you finally get there. Remember, in most cases, at the very worst, your pet will simply not be allowed ashore and, if anything is amiss, it is possible that you may be permitted to bring a local veterinarian aboard to remedy any problem.

Some places it is conceivable that quarantine requirements might be waived by contacting a local veterinarian who may be able to examine the pet and, for an appropriate fee, authorize its entry. Proceed quietly and gently with the local authorities and veterinary officials and you may find that avenues open more readily than by citing regulations and making demands.

In many countries the authorities may not even bother to ask if you have pets aboard. Opinions among cruisers are mixed as to whether the information should be volunteered in the event that no one asks. Although I cannot outright recommend it, a number of cruisers with whom I have spoken have successfully followed a ‘don’t ask, don’t tell’ policy. This seems to be particularly common among cat owners and those who routinely anchor out rather than tying up in marinas. Knowing the
regulations in advance should give you some realistic insight into whether significant penalties (such as fines, imprisonment, or impounding of your vessel) might be in store if you choose to follow this approach.

If you are entering the European Union, check on the requirements .....
Procedures Needed to Meet Entrance Requirements

For the majority of countries do the following:

- Physical exam with stool sample check (and heartworm test in dog)
- Distemper/Parvo combination vaccination booster in dog
- Feline distemper/respiratory virus combination booster in cat
- *Fresh rabies vaccination booster (3-year vaccinations are not generally recognized for more than one year) and certificate
- *Veterinary health certificate stating that all of the above procedures have been completed

The following additional procedures should get your pet ashore in the BVI and most other countries where this is possible, and will also aid in meeting any quarantine requirements:

- Lyme disease and leptospirosis vaccination in your dog
- Combination heartworm/ehrlichia/Lyme disease test in dogs
- Feline leukemia vaccination in your cat
- FeLV/FIV test in cat
- Topical treatment with Frontline for skin parasites and a Droncit treatment for tapeworms
- Microchip implant (Many countries only recognize chips which meet the ISO standard; NOT the Avid or Home Again chip; check regulations; I unequivocally recommend that you get a second chip)
- Rabies antibody titer test (Check regulations to determine exact timing between rabies vaccination and blood titer test)
  - Make certain you have the certificate stating the results
- USDA international veterinary health certificate or other country’s equivalent, endorsed by government veterinarian

Always check the most currently available specific information for those countries you intend to visit.
Remember that the above additional procedures are only necessary if you desire to take your pet ashore.
*These represent the absolute minimum requirements
Where There Is No Pet Doctor
Typical veterinary health record folders provided by most veterinarians. These are fine for your own use in keeping track of what has been done, but without any official papers they are of no ‘official’ use for documenting procedures.
KEEPING RECORDS

Make certain that you have medical records for all of your pets. ‘Pet passports’ have now become quite popular. You can assemble your own formalized ‘pet passport’ (You can order a commercial version online from www.pettravel.com or you can design your own.) or you can just keep all of your papers inside the little vaccine record folders that the veterinarian gives you when you first come in. What you choose to use is not important so long as they are updated regularly to reflect the current status of what has been done. Remember that what constitutes a so-called ‘pet passport’ is not that cute little booklet. Your pet’s passport is its microchip number combined with all of the legal papers that list that microchip number. Together, these articles prove your pet’s identity. Your pet’s papers should be complete, detailed, up to date, and always signed by the appropriate veterinary and civil authorities.

Your pet’s papers must always show your pet’s microchip number and must be complete, detailed, up to date, and signed by the proper veterinary and civil authorities. These papers prove your pet’s identity and comprise your pet’s passport.

Try to keep track of every veterinary visit and know what the purpose for the visit was and what was actually done. It is important to know and understand what is being done so that you know how and where to keep track of it.

If you have a pet that has had significant health issues, try to get a copy of the medical record every time you visit a doctor, so that you have complete information for the next doctor along the route. This medical information is separate and distinct from your pet’s passport information and should be kept in a separate medical record. Explain your needs to the doctor so that she/he can put it all down in a format that the next doctor will find complete and informative. Laboratory findings, medications used, treatments undergone, vaccinations administered – everything is important. I always tried....
BONES and OTHER TOYS

You may be encountering a situation where a serious emergency can mean the end of the road for your pet. At home, a situation requiring a major emergency surgery, although dangerous, may be a greater threat to your bank account. Out in the middle of nowhere it can mean the death of your pet. Even if you can find someone to do a major surgery, adequate facilities for doing that type of procedure may be few and far between, and your ability to make a fast emergency trip under pressing conditions is probably essentially nonexistent.

Unsupervised chewing of bones is NEVER a good idea (knick-knack paddywhack to the contrary). If you feel you simply must give your dog a bone, make certain it is a large, freshly cooked bone. Never give poultry or steak or chop bones or the small circular, roundsteak-type or splintery bones. And never give old or uncooked bones. (Bones picked up from the ground or from a dead carcass can harbor botulism spores [Clostridium botulinum]! Very deadly and virtually untreatable.)

Be prepared to closely supervise any bone chewing (If you can't supervise it or your pet growls when approached, don't give him the bone. Simple solution to a complex problem.) and when you hear the first solid crack of breaking bone, immediately take the bone away and permanently dispose of it. Chewed up bone can be deadly to your dog and may require surgical removal to avoid serious complications if it lodges in the intestinal tract.

At the very least, a major and complicated enema (or series of enemas) may be necessary – something for which you do not have the experience (nor the desire). Your dog may chew bones routinely its whole life with no problem and then suddenly require $2000 worth of surgery to save its life (Out here that might as well be $2 million because you probably won’t be able to find a place where you can get that sort of major surgery done, period – end of discussion.) all because of a totally unnecessary bone.....
The typical wound or rolled rawhide chew bone gets a lot of bad press but can actually be a very useful and effective chew toy, provided your dog is not a compulsive chewer. As with so many things, moderation is the key.
VACCINATIONS

Vaccinations should be kept current. Remember, now that you are visiting some pretty exotic places, in addition to the exotic new disease threats you might be wondering about, all of the old familiar ‘favorites’ are still likely to be there also. Distemper (both feline and canine versions), parvovirus, rabies, feline leukemia and FIV infections, even kennel cough – they’re all probably out there wherever you’re traveling. These diseases are pretty much world-wide in distribution.

Naturally, in both cats and dogs you should never allow your rabies protection to lapse. This is of the utmost importance not only for you and your pet’s protection, but also for reasons involving entry into virtually any country. It is of particular importance for those pets entering most islands or any countries with present or past affiliations with the British Commonwealth.

Quarantines are common in many countries and, particularly with a cruising lifestyle where deadlines are difficult to keep and travel times are difficult to estimate, these quarantines will be very difficult to avoid. Even the state of Hawaii has extremely detailed requirements for entry, entailing a quarantine period that will probably keep your pet locked up for your entire stay.

Also important for dogs is your distemper/parvovirus combination (5-way up to 8-way) vaccination. Parvovirus is a threat when dogs are exposed and/or stressed. In tropical and warm weather regions heat is a major contributing stress factor that is always present. Parvovirus risk is a possibility wherever you go, but since treatment facilities will be questionable in many areas you might visit, it will be to your dog’s advantage to make certain that parvovirus immunity is at its greatest.

Although yearly boosters are still a good idea if your dog handles vaccinations well, it is now widely accepted that vaccination once every two or three years is probably adequate protection for most dogs and cats, and should be a good rule of thumb for pets that have some difficulty handling vaccinations and for those that live aboard a boat and never go ashore.

Try to keep these basic vaccines current. Some countries
may require them. On the other hand, if your pet suffers vaccine reactions or is in any medical way sensitive to vaccination, then you must weigh treatment ‘benefit versus risk.’ (‘Sensitive,’ is not to be interpreted as finding vaccinations ‘unpleasant.’ This type of sensitivity refers to medical complications or an adverse vaccine reaction.)

For cats, periodic distemper combination (3-way or 4-way) boosters are a good idea and some countries may require them. In addition, since some authorities may require it, if you anticipate taking your cat ashore in most places you should have a feline leukemia vaccination done. My suggestions regarding frequency and possible sensitivities and vaccine reactions also apply to cats.

I recommend against having your cat vaccinated for feline immunodeficiency virus (FIV). In my opinion, until.....
DISEASES

Aside from when your pet is obviously ill, you should always be on your toes for signs of disease. Weight loss, vomiting and/or diarrhea, changes in eating habits or in bowel or urinary habits, changes in the skin and coat, discharge from the eyes or ears, lethargy and depression; all are evidence of a possible health problem.

If there is a noticeable change in your pet's behavior or appearance, you should find a veterinarian. Do not bathe your pet before the examination, particularly if it has a skin problem. And bring in a fresh stool sample (and even a urine sample) for testing.

Hopefully the facility you visit will be able to do diagnostic procedures to help determine the problem. Bloodwork and radiographs (x-rays), just like at the doctor's office, are often the only way to get the important clues needed to make an accurate diagnosis. And, just like with health problems in people, early detection and treatment usually means a much better likelihood of successful treatment and a quick return to health.

Many pet owners are familiar with the names of the common diseases of cats and dogs, but knowledge of these diseases does not reach much beyond an awareness of the names. If your pet is properly immunized, as it should be for traveling, then it is not likely you will run into any of the more familiar diseases.

Actually in the first world environment from which most readers of this book will come, vaccination has all but eliminated many of these deadly and difficult-to-treat illnesses so that most people, even veterinarians to some degree, are only familiar with the names rather than the actual diseases. However, for your general information I have included a brief description of them.

The primary thing that most of these illnesses have in common is their potential severity and their lack of a cure. Symptomatic treatment is the only course of therapy with virtually all of these infections. That is what makes prevention via vaccination so important for all of them. I cannot stress enough the importance of avoidance and of remaining current on
your pet’s vaccine protection. For more relevant information, read the section on vaccinations.

**Canine distemper** is caused by a virus which is related to the human measles virus. This disease is usually found in young puppies and is characterized by a fever in two phases (initial spike 3-6 days after infection then another after several days, lasting a week or more), low white blood count, GI and respiratory symptoms, and often pneumonia and CNS symptoms. It affects virtually all species of canines, along with some non-canines (ferrets, mink, skunk, raccoon, coati mundi, binturong). The main route of infection is via aerosol droplets.

It is not unusual for distemper to have the appearance of a ‘cold’ with mattery eyes (conjunctivitis) or a mild case of gastroenteritis, especially in puppies. At some point, sometimes while the other symptoms are still present or sometimes after apparent ‘recovery,’ CNS symptoms will appear. These may include anything from mild twitching to full-blown seizures. All of the above or only a few symptoms may appear.

The disease may run a course of only a week to ten days, or it may run weeks to months with periods of improvement followed by relapse. You need to consider distemper in a puppy any time any of the above symptoms, especially fever and/or respiratory symptoms, are present. There is no effective treatment other than symptomatic therapy and good nursing care and many dogs do not successfully recover. Remember that exposure of your dog to any wild canids (or the above more exotic critters) could result in infection. Vaccine is usually very effective and should be started in puppies at a young age (6-8 weeks) and continued through the recommended series.

Infectious **Canine hepatitis** is another of the serious viral diseases of dogs (and other canids, skunks, and bears) and often resembles distemper....

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**Rabies vaccine should be administered by a licensed veterinarian, as the certificate, which can only be completed by a licensed veterinarian, is a legal document.**
THE PHYSICAL EXAMINATION

First of all, understand that it is highly unlikely that you will be able to do a physical examination of your pet comparable to even the most cursory examination that might be performed by an educated professional veterinarian or veterinary technician. Face it, the experience of having seen thousands of normal, healthy patients is a lifetime of education in and of itself. No matter how often you examine your pet you will not gain this type of proficiency. However, if done frequently you should begin to gain an understanding of what is ‘normal’ for your pet.

Below I have given a fairly detailed approach to examining your pet. You do not need to be this involved if you don’t want to. What you can do is pay attention to your pet’s normal behavior and habits and, when you are petting or otherwise attending to your pet look closely on a regular basis at how your pet looks. Smell closely on a regular basis how your pet smells. Read the paragraph about bowel and bladder habits and the paragraph about examining the head, the mouth, and the ears. And look under your pet’s tail once in a while. Just doing these things on a regular basis will give you a good deal of insight into many potentially common problems.

Before you do your physical examination consider the obvious. Loss of appetite, unexplained weight loss, unexplained fever, a sudden change in the skin and coat – all of these are suggestive of a possible problem. Even if everything else seems to be fine I am always suspicious of a disease problem whenever any of these conditions exist. If something is not right and you know it’s not right, keep looking, repeatedly.

When you examine your pet, whether as a routine checkup or because there appears to be a problem, try to use a systematic approach and try to be as thorough as possible. Do not be drawn immediately toward the obvious. Check the apparent problem to be as certain as possible that it is not in need of immediate attention, but then examine the rest of the pet. I always explained to my clients that we save the obvious problem for .....
This chapter includes a variety of procedures and ideas that you may be able to use in a pinch with little fear of causing any harm. In general, these procedures and ideas are safe to use virtually any time.

Some of the procedures or techniques are difficult in certain pets. Soaks are difficult in cats and many dogs, and holding an ice pack in place for an hour may require the patience of Job (on the part of both you and your pet). Do not struggle with the animal or you may do more harm than good. Do what you can, but if you cannot come close to the required amount of time or frequency of application it’s not likely you will see much improvement.

EPSOM SALT SOAKS – This is one of my favorite general treatments. To help reduce the swelling from sprain and strain injuries you can soak the affected limb in a solution of Epsom salts and warm water. Put enough warm water in a container deep enough to cover the affected site and dissolve enough Epsom salt to make a saturated solution (1 cup or more in a gallon of clean, fresh water). Soak for 10 to 20 minutes twice a day for a couple of days to reduce swelling and inflammation. Important: always remember to rinse with plenty of fresh water and dry when finished. (Dried on salt will irritate and keep the skin moist.)

Also, Epsom salts are sometimes of value for drawing out infection in small, oozy wounds on the bottom of the feet, such as cysts between the toes, or suspected splinters, thorns, or even glass in the foot. Do not use Epsom salts in larger, open wounds that are or might become infected. You may read on the Epsom salts container that it can be used as an intestinal cathartic, but I do not recommend that you use it for that.

BETADINE SOAKS – Betadine (and its generic povidone-iodine copies) is another solution that is of universal value. It is one of the best antiseptics that you can have aboard. I advise using it to soak open wounds such as bites or lacerations to reduce the likelihood of infection or to help eliminate an
infection. If you cannot soak the wound you can put your 
Betadine in a plastic bottle (or improvise using a plastic baggie 
with a pinhole, then squeeze) and vigorously flush the affected 
site. For a soak or flush, put enough Betadine into your water to 
make it the color of strong tea, but not opaque. Swish the 
affected limb in the soak (or irrigate the site) for 10 minutes and 
repeat once or twice a day for as long as necessary.

Be certain to get Betadine solution. Betadine is also 
available as a mouthwash, a douche, an ointment, and as a 
surgical scrub; you want the solution. It is my general purpose 
antiseptic of choice except where seawater organisms are 
involved. In those cases I prefer chlorhexidine solution, but even 
then Betadine is still far better than other products.

You can even add Betadine to some baby shampoo to help 
treat a dermatitis condition. Lather up and let stand five to ten 
minutes, then rinse thoroughly. Understand that Betadine is 
iodine and it does stain (Use with caution on pets with white 
coats – they’ll turn yellow or yellow-brown – but the coat should 
eventually grow back out white.) so be careful; and fyi it turns 
starch dark blue, almost black (such as paper towel when you 
wipe up) so don’t be alarmed.

DOMEBORO SOLUTION – Handy astringent solution for 
treating areas of moist dermatitis where the skin has that oozy, 
gooey appearance. Helps dry things up. Soak in it or apply as a 
mist pack for 10 to 15 minutes twice a day for a couple days 
until things dry up. Rinse lightly and dry. A tea soak can be used 
in a pinch.

TEA SOAK – Use traditional tea, not the herbal type. Make 
a strong tea solution and allow to cool before using, then use as 
described above for Domeboro. Makes a weakly astringent 
solution.

TEA BAG – Again, use traditional, not herbal, tea. Take a 
cool, used tea bag and squeeze a few drops into a painful eye to 
help relieve pain until ....
INTERNAL PARASITES

★ This is one topic that people understand very little about and, for a number of incorrect reasons, the one problem they always want to jump in and treat when an animal is sick. At the very first evidence of illness, the usual response is, “It must be worms. Let’s get some worm medicine.” Remember, most illnesses are not caused by worms, and deworming an animal that is sick can often do more harm than good.

In a well-cared-for pet, worms are not likely to be the cause of a health problem. Do not treat for worms without a thorough evaluation of the problem.

Parasites are one of those reasons to consider confining your pet to the boat and never letting him go ashore. This problem could prove to be one of several potential medical nightmares that I consider very possible.

Intestinal parasites are one of the most significant threats with which you must cope while cruising in foreign waters, especially so in the tropics where warm, moist climates support the growth of many organisms and provide an excellent medium to facilitate the growth and development of worm eggs.

Many species of worms which are parasitic to mammals require an ‘intermediate host’ to complete the development of the life cycle. This host could be a fish or frog (some flukes), a crab or other shellfish (some lungworms), a beetle or other bug of some type (esophageal and stomach worms), some type of small mammal (many tapeworms and some stomach worms), or even a large mammal such as a pig (trichinosis) or cow (flukes).

Never clean fish in the presence of your pet and never give any type of raw meat or fish. Even tiny pieces may be enough to transmit something that otherwise might be easily avoided and may represent a major health problem in the making....
Panacur (fenbendazole) and Strongid-T (pyrantel), two different deworming products which are manufactured for use in farm animals. They can also be useful and effective in small animal treatment if given properly and at the correct dosage. Not all large animal products can be used safely in dogs and cats. Fenbendazole is one of the most broad-spectrum deworming drugs on the market, meaning that Panacur is effective against a wide array of parasites. It combines a wide safety margin with its very broad spectrum. Pyrantel, the active ingredient in Strongid-T, is quite safe and is reasonably effective against hookworms and roundworms in dogs and cats and puppies and kittens.
Above are combination products that cross over the line and are effective against both intestinal worms and heartworms. For dogs, Sentinel will prevent hookworms, roundworms, and whipworms in addition to providing heartworm prevention and protection against flea reproduction, all with a single monthly tablet. Revolution works great in cats (It’s also available for dogs, but I think Sentinel gives you more oomph for your money in dogs.), provides some control of intestinal roundworms, and also great protection against heartworms. And you don’t need to fight with your cat to get him to eat something. Just apply it to the skin at the base of the neck once each month.
HEARTWORMS

PAY ATTENTION! If you are in the tropics, you are now in the land of the heartworm. This is where heartworms were invented. Not in the tropics you say? In twenty years of clinical practice in Michigan, heartworms was one of the most common parasitic infections of adult dogs that I encountered. If you are traveling in anything warmer than subarctic conditions it is potentially one of the biggest health threats to your dog. (Even cats are at risk for heartworm infection. The more we learn on this subject, the more significant the cat disease becomes.) The heartworm is such a specialized and important internal parasite that we are giving it a chapter all its own.

Heartworms are, without a doubt, the single greatest threat to your dog’s long term health while you are cruising in the tropics.

There are actually two kinds of heartworm. One is quite small (the French heartworm, *Angiostrongylus*), and evidently so far seems to be medically insignificant. The one we are concerned about is the long-recognized, conventional heartworm (*Dirofilaria immitis*).

These heartworms are carried by mosquitoes and are deadly. A simple mosquito bite is all it takes for your dog or cat to acquire several heartworms. The mosquito bites a dog that has adult heartworms in its heart, picks up the microscopic larval form (known as microfilaria – you can actually see these under a microscope swimming around in a drop of blood). The microfilaria undergoes a developmental period inside the mosquito and when the mosquito bites a dog, the now-developed larval form is transferred to the dog. It then migrates through the dog’s skin and eventually, after about 6 months, to the large blood vessels of the heart and lungs where it attaches itself to the lining of the heart with its curlicue tail. At this point the worm is about 5 to 7 inches long and about the size of thin spaghetti and
is able to begin reproducing.

Before microfilaria can be produced, both a male and a female worm must be present. Once microfilaria are produced, the dog is infective to any mosquitoes that bite it and can pass along the disease to other dogs or cats. The disease must be carried by a mosquito. Dogs cannot infect each other directly.

The adult worms live inside the chambers of the heart in the flow of the blood and clog things up like gobs of hair can clog up plumbing. I have seen dog hearts that are so solidly packed with worms that the wonder is not why the dog died, but rather how the dog lived.

If you do not have your dog on heartworm preventative medicine and it gets heartworms they CAN be treated – but it is expensive to treat, should be done by a professional veterinarian, and, in the advanced stages, not very rewarding. In a tropical environment, where mosquitoes are abundant and active, an unprotected dog could conceivably contract enough heartworms in less than a year to be fatal.

Possible symptoms in the dog: There is a difference between a dog having heartworms and a dog having heartworm disease. In a large dog, one or two or even a few heartworms may cause mild symptoms or sometimes won’t cause any symptoms at all. On the other hand a large dog with 20 or 30 (or more) heartworms in the heart, or a small dog with just a very few, even just one or two (The heart of a Yorkshire Terrier is not much bigger than a chicken heart.), will generally show symptoms of heartworm disease. Coughing, shortness of breath, exercise intolerance, and sometimes loss of body condition and even increased respiratory effort are often evident in the advanced disease....

Possible treatment: Should be done by a veterinarian. If your dog should happen to test positive even though you have been giving medication regularly, it is very likely that the infection is very mild and not likely to be fatal. It can then be treated in one of several ways: 1) by a veterinarian using the newer form of arsenic that is available. Much safer than the older stuff which was not terribly unsafe but still ....
GRUBS

Here I want to talk about a parasite (usually a *Cuterebra* species) of the temperate climates but similar parasites may exist elsewhere. This is a disease condition that can occur in both dogs and cats, but frankly in over twenty years of practice in a rural area and several years in an urban setting I have only ever seen it one time in a dog.

This condition is caused by a fly larva. The fly lays its eggs around the entrance to a burrow – usually a rodent or rabbit burrow. Eggs are deposited on vegetation, and hatching is triggered by the proximity of body heat from an animal. The larva usually enter the host animal via the mouth or nasal passages or via an open wound and then burrow to some location under the skin. There they take up residence and make a small hole which they use only for breathing. After about a month of development, the now large grub (about the size of the last digit of an adult’s little finger) opens up the hole, drops onto the ground and forms a cocoon, then emerges as a fly. Almost always the lesion is located around the face or neck region. I do not recall ever seeing one further back than the shoulder area.

★Possible symptoms: If you see one, it will very likely present as a small, well-circumscribed hairless area about 1 to 2 cm in diameter. In the center of the hairless circle is a small 1-2 mm diameter hole in the skin, usually with some mild drainage present. If you observe closely you will probably see movement under the hole. Sometimes, squirting a small amount (1 cc or so) of 2-3% hydrogen peroxide into the hole will force the larva to show itself. Do not squeeze the hole and crush the larva. This can cause the release of a large amount of antigen and possibly an anaphylactic reaction.

★★Possible treatment: What needs to be done is immobilization (or possibly sedation) of the patient, then ....
The cane toad or marine toad (*Bufo marinus*), found commonly in the tropics. They are poisonous in all their forms, even the eggs and tadpoles. All toads are potentially toxic to some degree, but the cane toad can be extremely deadly, especially to small dogs. They also are poisonous to humans. The secretions can even be irritating to the skin when handled. The severity of their toxicity can vary substantially depending upon your geographical location. Play it safe and assume they are deadly.
LOCAL and REGIONAL DANGERS

★ When you are visiting an area with your pet, try to learn the risks and dangers peculiar to that area. Toads, lizards, snakes, spiders, scorpions, and even aquatic life can all be a risk to your pet. Even the fleas and ticks may carry something new and exciting that you don’t want your pet to acquire. Bites by insects and spiders will usually take care of themselves. In severe instances, you may want to clip the area with clippers and treat topically with an antibiotic/corticosteroid cream or ointment (like Panolog) several times a day after soaking in a domeboro or other astringent solution (tea will work in a pinch). You might also try an oral antihistamine such as diphenhydramine (Benadryl) or chlorpheniramine.

TOADS – Most toads are toxic to some degree. The marine or cane toad (Bufo marinus), commonly found in the tropics, can be deadly. They tend to be more active at dawn and in the early evening. Keep your dog on a leash and watch closely. A toad can be in his mouth before you realize it has even happened.

Possible symptoms: The toad secretes a toxin from glands located behind the head. Look for profuse salivation, shaking of the head, pawing at the mouth, vomiting and retching, and possibly seizures and/or cardiac arrhythmias. The gums may become pale, or with some toads (e.g. commonly in Florida) may become bright red. Small dogs may die in a matter of just a few minutes while larger dogs also are at risk. Toad poisoning tends to wreak havoc with the heart.

Possible treatment: Consider carrying a treatment kit with you whenever you have your dog ashore (and know how to use it BEFORE you need it), but, at the very least, carry a quart or more of fresh water in a squirt bottle. Far and away the most effective treatment is immediate and profuse flushing of the oral cavity (by far the most important part of treatment) with copious amounts of fresh water. Flush the....
FOODS AND FEEDING

Things (bacteria included) grow rapidly and profusely in the heat and humidity of the tropics. Keep food and water bowls religiously clean. (A weak solution of bleach [about 1 tbsp in a gallon of water] makes an excellent sanitizer for bowls.) That said, let’s get on with the subject of this chapter.

Pet food. Like the preceding chapter on medications, in earlier versions of this book this chapter was a longwinded exposé on the pet food industry and how I feel pets should be fed. My views on the subject have evolved over the years and are not in agreement with many of my colleagues. But you didn’t buy this book to listen to me rant and rave. So, for purposes of cruising and living in remote areas, I will address the issue from a practical and mostly conventional standpoint.

Before we go any further though, let’s cover the unconventional part. First, I need you to put aside all of the pet food hype and all of the advertising and promotional advice that you have heard from media advertising, from pet shops, the pet food manufacturers, and even from your veterinarian. What! How can I say that? The simple truth is that all pet food vendors, pet stores, and even the vast majority of veterinarians get their pet food advice and information just about entirely from the pet food industry.

Virtually all of the nutritional information that your veterinarian has received in his or her career, including much of what he or she was taught in veterinary school and at all of those professional seminars and conventions, has been provided courtesy of the pet food industry. Iams, Purina, Hill’s, Waltham and other companies provide the background information, the materials, and sometimes even the speakers at just about any of these venues. This is done in a manner not unlike the way your physician gets his pharmaceutical advice from the drug manufacturers. In fact virtually all of our nutritional research is performed, directly or indirectly, by the pet food industry – a multi-billion dollar industry run by some of the world’s largest multi-national corporations. Hardly unbiased information, right?

I know I can’t get any credible, research-based nutritional
information other than from these sources, and I have searched diligently for it. For someone who does not seriously challenge the validity of this data, he or she does not stand a chance of having an unbiased opinion.

To a large degree the information they provide is valuable and beneficial to everyone concerned, including your pet. And obviously we would love to imagine that these multi-national corporations have our baby’s best and most healthy interests at heart, but let’s just keep our minds open on that. So wipe your pet food slate clean and open up your mind just a little bit.

In their advertising spiels these companies (and your veterinarian reenforces their advice) tell you that, if you want your pet to live life to its fullest and be the best he can be, then he should only be fed on expensive premium diets (even though the same companies also manufacture many of the routine grocery store pet foods – kind of a win-win situation for them!). That is something akin to *Toyota* telling you that if you want to get back and forth to work every day and do it safely then you should buy their *Lexus* rather than a *Corolla*. You know as well as I do that the *Corolla* will get you everywhere the *Lexus* will, and it will do it just as safely (if you’re a careful driver). And it will do it all for a lot less money.

Some companies....
IDENTIFICATION

If you don’t already have one, get some type of identification tag with your name, boat name, home address, and phone number on it. Better yet is some sort of small, waterproof container on the pet’s collar containing a paper or card with as much information as possible to help get your pet back in the event it becomes lost. Include personal information, boat information, home contact information, (how about a boat card or personal card?), etc. – everything and anything that might help – particularly a functioning e-mail address. With all of our information age technology, this is still the simplest, most effective means of retrieving a lost pet.

If you are aboard a boat, it should contain information that will allow someone who finds your pet to understand that you actually LIVE aboard a boat and are cruising the area. Cruisers take their lifestyle for granted and tend to forget that most people have no idea whatsoever that people actually live aboard boats and travel the oceans. Even in the Caribbean, the average person on the street, unless he/she deals specifically with cruisers, generally assumes that you are from a resort or a cruise ship, not a private yacht. And, there is still no better insurance than a leash. Use it!

Tattoos are of little value in returning your pet to you, although may help in identifying it if you are trying to track it down when lost. Most people have no idea what a tattoo indicates, let alone how to contact the owner, even if they happen to find the tattoo. Even veterinarians and shelters have difficulty finding tattoo registries.

The system of choice is now microchip identification. If you intend to travel internationally or if you are cruising aboard a boat and intend to take your pet ashore at many places that you visit, most countries will require a microchip.

If you are considering microchipping your dog or cat, be certain that the microchip you use is the most universally identifiable one available in the region you are traveling. If you are doing Canada, Mexico, or anywhere else in the world, the chip should be an ISO compatible chip. This chip is the standard
chip throughout the world, but it can still be tough to find it in the U.S.A.

Understand that the microchip industry in the United States has for years been out of step with the rest of the world. During that time the AVID and Home Again brand chips have singularly dominated the United States market and, in their profit motivated attempts at trying to corner the U.S. market with their patented and often encrypted chips and their proprietary chip readers, they have resisted attempts in the U.S. at trying to adopt the universally readable world standard ISO microchip. As a result most people who have elected to have their pets microchipped have received chips that are of limited value even in Canada, let alone throughout the rest of the world.

If you are cruising outside of U.S. waters and you choose to have your pet microchipped, be certain the chip you get is an ISO compatible 134.2 KHz chip that can be read anywhere in the world.

If you have had your pet chipped in the U.S. it is very likely that your pet has received a Home Again or an AVID brand chip. The world standard chip (adopted by the ISO, an organization which establishes international standards in a variety of areas), which is the standard chip for Europe, Asia, Australia, Canada, pretty much the entire world beyond the borders of the United States, operates at 134.2 kiloHertz. Unfortunately.....
TICKS

SEE THE WORD OF CAUTION UNDER FLEAS

Ticks are a different story from fleas. As I write this, we have a boat here in the harbor that is infested with ticks. Compared to flea infestation, this is a fairly unusual situation, but it does happen. The owners are finding large ticks and small ticks of what appear to be at least two different types. They have ticks on themselves, in their beds, and throughout their boat. They even found a tick in a book when they opened it. Their circumstances are a little unusual in that they have two dogs and two cats aboard. Similar to a flea problem, having this number of animals aboard makes for infinitely greater complication of whatever treatment solution they pursue. These ticks could have come aboard in any number of ways, but at this point the problem is eliminating the infestation.

Ticks removed from a puppy. One was on the neck and the other was inside the ear.

Ticks are difficult to deal with because insecticides don’t work very well – they usually will work, just very slowly. Ticks are not insects, but belong to the spider family. In the above situation, these people need to check the animals several times each day (especially deep in the ears – ticks love the ears) and remove any ticks they find, vacuum the environment a couple times a day, clean the bilges, and just, in general, tear things apart and try to clean the place out – repeatedly. Flea and tick
collars should help some, but just plugging away is probably the biggest thing. Ticks are quite slow moving and quite slow to attach, so your most effective tool is repeated tick hunts to catch them as they try to attach to the host. Hopefully the problem will resolve soon for these people, but ticks have the capacity to go dormant and remain that way for fairly long periods so they may have a long fight ahead. One major concern with ticks is their tendency to carry disease (see the sections on *Tick Paralysis* and *Vector-Borne Diseases*). They are a health threat to pets and people alike.

I have generally found that ticks tend to occur in ‘pockets,’ and I have generally practiced in areas where widespread ticks were not a major problem. But, regardless of location, there always seems to be somebody in the area who has a tick problem. It might just be one street or one lot in a community. In Baltimore one time I had a dog come in that lived in a house in the inner city. The owner called and said she found a tick on the dog, so we told her to bring it in and we’d get the tick right off and send him home. When we looked we found two ticks, then three, then.... We ended up sedating the dog and removed over fifty ticks from that one dog! And this dog never left his yard. I advised the owner to get some yard spray or dust and treat the yard every couple weeks for the remainder of the summer and fall.

*Frontline* and *Advantix* (*Advantage* will not work at all for ticks) will work fairly well for ticks for up to two or three weeks after application. There are tick collars specially designed, containing amitraz (not safe in cats), a proven acaricide (tick poison), or you can use the conventional flea and tick collar. The standard flea and tick collar is worthless for flea control but it will do a reasonable job for ticks. Change the collar frequently – once every couple months. In addition, most products containing permethrin are quite effective (or most of the other related ‘-ethrin’ insecticides, other than pyrethrin), but most cannot be used safely in cats. I have always tried to convey to my clients that there is no product on the market that is great for ticks, but that, given time, just about anything that is....
SOFT TISSUE INJURY

WOUND REPAIR – If your pet gets a laceration or skin injury of some type, keep a level head and do not panic. Eliminate any likelihood of further injury and limit access to the wound to prevent licking. A stomach full of blood from licking a bleeding wound will result in vomiting and possible further gastrointestinal signs. Also, the vomiting of a substantial amount of bright red blood can incite further panic in you as an already concerned owner, as you may get the mistaken impression that the dog is bleeding to death internally.

★ First, control bleeding. If there is significant bleeding, apply direct pressure with a pressure dressing and hold it off until it stops. This may take anywhere from two minutes to fifteen minutes or longer. If, once you have successfully stanched the bleeding it happens to start again, just start over and repeat the entire procedure.

There is a product that I recommend you carry for the purpose of stopping bleeding when there is significant active hemorrhage. Don’t use it for simple routine stuff, but save it for that serious case of hemorrhage in your pet (or even in yourself). The product is called QuikClot (or their pet version, called PetClot) from a company called z-medica. You can check it out and even order it at www.z-medica.com. You can also find it at sports retailer Cabela’s.

Once active bleeding has been stopped, you should attempt to clean up the wound site and evaluate the damage. Gently irrigate the wound with water containing povidone iodine or chlorhexidine as an antiseptic. You can use a 20cc or 35cc syringe or use your bulb syringe. As you flush and your visibility improves, remove any large pieces of debris using forceps. Flush out dirt, hair, dried blood, and other debris. If you should disrupt the clot and bleeding recommences, apply pressure again, as before. If you can, it helps the healing process tremendously when you clip the hair for several centimeters away from the wound margins so that surrounding hair is not contacting and clotting or matting against the wound. This is especially important if you think you may need to close the wound.
Whether or not you intend to close the wound, you should still make an effort to avoid getting hair into the wound as you clip. Do NOT apply any ointments or creams to the wound at this time.

Once you have cleaned up the injury, you need to evaluate the extent of the damage. Check for damage to bone, ligaments, tendons, nerves, and blood vessels. At this point you must decide whether you want to: 1) close the wound, 2) bandage the wound, or 3) leave the wound to heal on its own. Assuming adequate circulation is present, virtually any wound will heal if kept clean and allowed enough time, regardless of how you choose to proceed. If in doubt, leave the wound open (that is, if you are in doubt about the cleanliness of the wound or your ability to repair it, or anything at all for that matter). You should give oral antibiotics for 5 days or more after a serious wound. Amoxicillin or cephalexin are good. The patient should stay out of the water until skin wounds are completely healed.

Remember, if you have any doubts about repairing a wound, leave it open. Virtually any wound will heal if kept sufficiently clean and given enough time.

Again, be certain you understand this: under most circumstances surgical wound closure is a cosmetic issue. This may seem foreign to you, as we have all grown up under the impression that any little laceration too large for a band aid needs to ‘get stitches.’ I have seen some massive wounds heal without suturing. I once had a dog brought to me that had had most of the skin torn off one of the forelegs from the foot to above the elbow. Within three months the leg was covered with scar tissue and skin and was fully functional. It required daily and then every other day changing of bandages, considerable antibiotic, and topical dressings for the first few weeks, but it is absolutely amazing what can be accomplished by the body, with only a very little help from us.

There are certain situations where wound closure is helpful (but still not essential). Again, if a wound is kept clean and is
attended adequately, closure is, for the most part, not essential. The exceptions to this would be a wound that penetrates the chest or abdomen, or a wound that penetrates the eye or the trachea. These types of wounds however are pretty much beyond the scope of do-it-yourself care. Among the common skin wounds encountered, a three-cornered tear or a flap-type avulsion where the skin is peeled or scraped back, might warrant consideration, particularly if in a location that cannot be wrapped adequately. A long, deep (skin thickness or greater) laceration might be a candidate if you feel cosmetics are important, but I would consider the procedure more difficult than what is justified by necessity and, if a sedative is needed, certainly more dangerous.

Wounds that are of any size and in a location where the animal cannot reach with tail or mouth may attract flies if not closed, so should be very closely monitored or should be dressed. Maggots are always a threat whenever there is an open wound and the weather is reasonably warm. Check frequently and watch for flies. The eggs look like little white flecks stuck to the hairs around the wound. You must keep things meticulously clean and change any bandages any time they become moist or smelly. If the patient can reach the wound easily with tongue or tail, maggots are less likely. If you happen to get maggots in spite of your best effort, the prognosis is not very good, but you must do your best to remove them by flushing, picking them out, and cleaning things up. Recheck frequently. Often they seem to come from nowhere.

Keep in mind that, in order to surgically close a wound with any degree of success, the wound must have reasonably well-defined margins that can easily be brought together with no tension (that means none, zero, zip, zilch). Abrasions (scrapes) generally cannot be closed. Traumatic amputations, such as the tail in the car door or the toe in the street grate are generally treated as open wounds. And never try to close bite wounds, puncture wounds, or dirty wounds, or any wound that is more than 12 hours old.

★ Treatment: By far and away the most....
FRACTURES

A suspected fracture requires professional attention. If none is available, you can try to carefully splint the limb, etc. as you would for a person, but be prepared for much resistance, biting, etc. and the likelihood that the pet will try to remove any device that you apply, sometimes causing a much more severe problem (e.g. an intestinal obstruction from chewing off and swallowing a bandage or splint – or, worse yet, chewing off the limb). Keep the patient quiet and inactive. You may need a muzzle while applying the immobilization device and then you should use your E-collar (follow directions for making one under ‘Skin and Coat Care’ above). If you have an ‘air splint’ among your human first aid supplies, you may be able to use it on a large dog. See the following paragraphs on fracture diagnosis and treatment for more specific information.

★ LAMENESS (i.e. limping or carrying the leg) is commonly associated with fractures. However, most cases of lameness are not caused by broken bones. Most lamenesses are associated with soft tissue injuries – cuts, bruises, punctures, foreign bodies, and especially sprains. Usually if I am faced with a mild to moderate lameness, my first inclination is to observe and do nothing else. Limit activity and watch how the leg is used. In most instances of mild soft tissue damage, the pet will favor the leg for a day or so, then gradually return to normal use. If the lameness is severe or there is vocalization and obvious distress, then the problem should be investigated and examined as described below for a possible fracture.

You should first check the feet, the pads, and the toenails for damage, before searching for other injuries. (Split, torn, or ripped off toenails are painful and can cause profound lameness.) If

With any type of lameness problem, the first order of treatment, regardless of cause, is to restrict activity.
after searching for a fracture, no definitive evidence of fracture is found, you can’t fix what you can’t find. Once again, restrict activity and monitor closely, possibly give some aspirin for pain, and see what happens. Always remember that restriction of activity is at least one of the answers whenever lameness or injury is present – and it never hurts. And when you are certain something is wrong and you cannot find out what it is, seek help.

Sometimes fractures are quite obvious; others are much more subtle. There are two major categories of fractures, open (compound), and closed (simple). In an open, or compound, fracture, one or more of the bone fragments penetrates the skin. This is potentially a very serious situation requiring immediate attention and antibiotic therapy. In a simple (closed) fracture the bone is broken but the skin is intact. There may be substantial bruising of the skin, but the integrity of the skin is preserved. A ‘greenstick’ fracture, or ‘cracked’ bone, may be undetectable without (sometimes extensive) radiographs, unless the bone is subsequently stressed to the point of complete fracture – a good reason in and of itself for enforcing rest and restriction of activity when a lameness is present.

Your main objective in treating a simple fracture should be to prevent the bone fragments from penetrating the skin and thus becoming a compound fracture.

A bone can be broken into two pieces, or it can be shattered (comminuted fracture) into numerous small pieces.

★★★ In an obvious fracture you will find a ‘joint’ where one doesn’t belong, or you may see an unusual angularity to the limb, or you may feel crepitation (crunching of bone on bone) when you move the limb. In a suspected fracture you should first muzzle the dog. If it is a cat, wrap the head in a towel to isolate the head from the body. (If you should inadvertently crunch bone on bone, understandably even the most cooperative patient may snap reflexively. This pain is extremely profound ....
Although applying a bandage may seem like a simple process, making a safe, effective bandage that will remain in place long enough to be of benefit can present a challenge. Many veterinarians and veterinary technicians have difficulty applying a good bandage. Even with photographs, it is difficult to describe how to properly apply a wrap. One thing that I always stress, whether I have applied the wrap myself, or someone else has done it, a wrap on an unsupervised animal is an invitation to disaster. An unrestrained, unsupervised dog or cat can chew off the most bulletproof of wraps, sometimes in just a matter of seconds. In some cases, dogs in particular, it frequently ends up being swallowed and, as such, serves as a new, usually more serious health threat. If it is worth applying a wrap, then it is worth the time and effort to properly apply an Elizabethan collar (see Skin and Coat Care chapter) to protect it. In addition, you should maintain close supervision as much as is humanly possible. That said, let’s cover a few of the basics of bandaging.

First, the most important rule of wraps – if it gets wet, change it. A wrap is generally put on to keep a wound clean and dry. A wet wrap is an invitation to infection. Change it. Don’t just wait for it to dry out. While you are waiting for the bandage to dry, the wound that it is covering is becoming infected. So change it now.

Second rule of wraps: if wrapping a leg, always monitor the portion of the leg distal to the wrap. If it feels cool compared to the other feet, or if there is visible swelling, remove the wrap until the foot returns to normal, then redo it a little less snugly. This is particularly a problem when using stretch gauze or stretch bandages.

★ I find that, unless they are applied....

Keep bandages, splints, and other wraps DRY. If it gets wet, change it without delay. A wet bandage is an invitation to infection.
FIRST AID

MOVING THE INJURED PATIENT – When an animal is injured you must give consideration to two priorities. First and foremost: do not get bitten or injured yourself. Concern for your own well-being aside, your capacity to render assistance may be severely impaired if you are injured. Second: try your utmost not to further injure the patient.

Try to remain calm and speak quietly and soothingly. Do not get the patient excited and anxious. Don’t be stupid. An injured animal, even the calmest most benign pet, may bite. Before attempting to move the victim, apply a muzzle, or, if the patient is panicky or snapping, use a long piece of small rope or shoestring to apply a temporary muzzle as described in the Animal Restraint chapter, then apply your commercial muzzle over that muzzle. Once the commercial muzzle is snapped in place, you can relax the makeshift muzzle. To move the patient, slide an improvised stretcher under the patient, supporting the patient as uniformly as possible while moving it onto the stretcher. In the absence of a stretcher, a piece of canvas, a blanket, or a heavy bath towel may be used.

For cats and small dogs, often you can simply cover your hands with a heavy towel or other piece of fabric to protect yourself from being bitten and lift as carefully as possible. Be prepared for crying, squealing, and possibly snapping. This may represent panic as much as pain. Above all, protect yourself!

Most first aid procedures in pets are essentially similar to those in people.

SENSITIVITY REACTIONS

★★ ANAPHYLACTIC SHOCK – This type of immediate shock reaction is very rare. With the exception of insect bites and stings (such as bees, wasps, and hornets), usually this type of
reaction is caused by the introduction of some sort of medication. Antibiotics, vaccines, medications, just about anything given by injection (or even orally), has the potential to stimulate this type of response. The reaction represents an abnormal response by the body, and does not necessarily indicate a problem with the inciting chemical, drug, or medication.

In a dog the most common signs seen are restlessness, often accompanied by diarrhea (which can be bloody), vomiting, circulatory collapse, seizure, coma, and death. Some or all of this can occur. In the cat you might see itching, drooling, vomiting, stumbling and incoordination, and respiratory difficulty, followed by collapse and death.

This is a difficult problem to treat. You don’t want to jump in and treat too quickly because it may be difficult to recognize, but, on the other hand, by the time you are certain the problem is serious, it may be well along. Once you are certain it is a problem, treatment needs to be immediate and aggressive.

**Treatment:** First, if there is any vomiting accompanied by loss of consciousness, turn the patient on its side or lower the head in such a way that there is no inhalation of vomit. Aspiration or inhalation of vomit is often deadly. So maintain a clear airway.

For treatment, my preference is to give, at the first indication of a reaction, diphenhydramine (*Benadryl*) at 1.0 to 2.0 mg/kg of body weight. I prefer to use about 1.5 mg/kg and give half of it intravenously (IV) and the other half in the muscle. An hour or two later (or longer) I will often give a second dose in the muscle (IM).

In the event of a severe or prolonged reaction, you can use an *Epipen* – use an *Epipen Jr* in a cat or small dog (under 25 pounds), or a regular *Epipen* in a larger dog. Give it into the muscle and wait. Don’t panic and get carried away here. Use your judgement and continue to evaluate. An overdose of epinephrine can induce heart problems, especially in a pet with cardiac issues. Follow up the first dose of epinephrine with dexamethasone sodium phosphate, if you have it, at 4 mg/kg body weight, half in the muscle, and the remainder under the skin. You can repeat that in three to four hours, if needed.
If things start to look better inside ten minutes or so, hopefully this is a good sign. If things continue to deteriorate, continue treating, but prepare for the worst. You should have the above dosages written down and calculated out specifically for your pet(s) somewhere in this book where they are easy to find should you happen to need them in an emergency. Check and double-check the dosages.

★ HIVES, SWOLLEN FACE/EARS (Urticaria) – Fancy term is angioneurotic edema and it is a milder and much more common version of the above reaction. Often caused by bee stings or insect bites, it can also be caused by contact with a chemical or substance or by ingestion of some type of food. Symptoms are usually characterized by swelling of the facial region, particularly thickening of the ear flaps and the skin around the eyes and the muzzle and/or lips. Affected animals (usually dogs, not common in cats) tend to paw at the face (or rub it on the floor or furniture) in response to the itching. In very short-coated dogs, such as boxers and Dobermans, raised ‘spots’ (hives) may become evident, usually on the sides of the chest (sometimes without any other symptoms).

**Treatment**: Generally consists of an injection (or even oral tablets or capsules) of diphenhydramine (*Benadryl*) at 1.0 to 1.5 mg/kg body weight, given in the muscle (IM) or under the skin (SC). Repeat, if needed, in six to eight hours. In mild cases you may just want to give an oral *Benadryl* capsule. You can also use dexamethasone sodium phosphate at 2 mg/kg body weight given once under the skin. An epinephrine injection is usually not necessary unless the swelling might cause respiratory impairment. If needed, use an injection of epinephrine, intramuscularly (IM) or under the skin (SC). You can use an *Epipen* in a large dog or an *Epipen Jr* in a cat or small (under 25 pounds) dog.

I have encountered mild cases of this that seem to come and go repeatedly over a period of a week or more. Usually oral diphenhydramine (*Benadryl*) is....
Aging is just part of mother nature’s plan for encouraging you to slow down a little bit. Heed the signs and don’t be in denial. Exercise is a good thing. Pounding a body to death is not. If you jog short distances with your pet, that’s good. If you choose to pound your own body beyond what’s reasonable, spare your pet.

Many cruisers have older pets aboard and they usually do remarkably well. There are many things that start to become more common with advancing age. Musculoskeletal issues, organ failure, and cancer probably top the list of the more likely maladies.

★ COGNITIVE DISORDER is a senility issue seen in old pets which resembles that often seen in people as they age. It has been recognized as a disease entity in dogs for some time now. The condition is a little less recognized in cats, but I did have a cat years ago that lived to be twenty-two years old and that I felt fit the description quite readily.

With cognitive disorder we see changes in behavior from normal patterns to patterns that sometimes seem to make no sense. The pet may walk to the food bowl and not realize why she is there. She may go to lie down in a corner and seem to ‘get lost.’ Dogs will sometimes get behind the window curtains in a house and not be able to find the way out. Bladder and bowel habits may change so that there seems to be a break away from established behavior to an attitude of ‘not caring.’ There may be an attitude of unusual apprehension or hesitancy toward what had been normal interests, or one of disinterest toward things that were once reliably entertaining or attractive. It can be dramatic, or it can be subtle.

**Possible treatment:** Sometimes this type of problem is untreatable or it may be a result of other seemingly unrelated health issues. However, it can sometimes be responsive to medical treatment with a drug called selegiline. The dosage is listed in the formulary. A complete diagnostic workup with blood and urine analyses is advisable prior to starting this medication, just in case.....
EUTHANASIA

None of the following discussion is fun, certainly not to do, but also not even to talk about or think about. It is here because someday you just might need it. If you don’t want to read it through at this time, then don’t. But I do recommend that you read it through well in advance of when you even remotely think you might need it. Certainly you should read it before you depart on any exotic trip or long term voyage.

Euthanasia is the ultimate treatment. I feel very fortunate that we as veterinarians have it available and at our disposal. A few veterinarians actually refuse to do it, as if they somehow feel that those of us who willingly do it, do it because we enjoy it. I find that attitude unjustifiable, but perhaps it offsets those veterinarians who see euthanasia as an easy way out when they are afraid to refer to a specialist and/or are unable to cope with a difficult problem.

It is never a pleasant task for anybody – yourself, your family, or your veterinarian. I have a considerable amount to say on the subject. In recent years it has become fashionable within the veterinary community to take euthanasia of a pet and turn it into a demonstration of how much they care. Some have taken it to extremes with a ‘euthanasia room,’ a euthanasia ‘specialist’ on staff, a euthanasia ‘counselor’, grief counselors, and so forth in an effort to show how much they care. In my opinion this extravaganza takes a rather simple but quite unpleasant procedure and elevates it to an event whose memory will stay with the pet owner far longer than many of the pleasant recollections that they would love to remember.

Many individuals have problems with the loss of a pet, often stemming from the unrealistic hope (of course, they know the reality) that we can somehow have our pets live forever. Sometimes this behavior borders on dependency. It is an unfortunate fact of life that ....
ANIMAL RESTRAINT

There are a number of ways to counter the resistance of an animal. Some of them work and some do not. Below I have tried to explain the correct methods, those used by animal care professionals, for physically restraining a cat or a dog. The purpose of learning proper animal restraint is threefold: 1) to allow you to perform a necessary treatment or procedure, 2) to do it without the pet injuring you, and 3) to get it done with minimal discomfort and no injury to the pet.

No matter how pleasant or even-tempered your pet is, if medical procedures are needed, it is likely that there will be some resistance. This resistance could possibly result in injury to you or the pet, but most likely it will result in the procedure being done incorrectly, inadequately, or not at all. This will very often lead to an exacerbation or at least a lack of improvement of the pet’s condition.

Learn and practice these procedures when your pet is healthy and cooperative. Hopefully you will never need them, but if you do, both you and your pet will know the program. Remember that good, effective physical restraint will often allow you to avoid chemical restraint (i.e. drugs), and that is always a good thing.

HOW TO RESTRAIN A CAT

Important! – With cats I always try to recommend the least amount of manual restraint necessary to get the job done. Many cats respond more to the restraint than they do to the actual procedure. I have had feline patients that would allow me to do just about anything, except physically restrain them.

Always continue to restrain a cat for at least ten to thirty seconds after any procedure (essentially, until it calms down again) when it is trying to resist. If there is any tendency to bite or scratch, they often will wait until they are released to get you (they remember, rather than simply react). Let the cat settle down before letting go, then release quickly and withdraw your hands.
Do not try to restrain a cat using the dog method.

When all done with the cat, let it go off and sulk. After all, that’s what cats do. Don’t try to hug him/her up right away. Separate doctor time from companion time, and allow ole Fluffball to have his attitude and get over it.

★ For simple procedures, grasp the cat firmly by the scruff of the neck and gently press the cat downward on the table or surface. For a cooperative cat and a very minor procedure, sometimes you don’t even need to grab the scruff. If there is more than mild resistance, one can place the other hand across the top of the back just in front of the rear legs and apply mild pressure there also. With this method we are simply pressing the cat down to keep it from using its feet, while the grabbing of the scruff gives you control of the cat’s head and mouth. If there is more than mild resistance, consider wrapping the cat in a towel, or taking a heavy, folded up towel or blanket and placing it over the top of the cat and pressing down behind the head and in front of the rear legs as described above.

★ ★ For the more resistant feline, consider scruffing by the back of the neck, behind the head, with one hand. With the other hand, grab both rear feet (With one finger ....
INJECTIONS and MEDICATING

There are basically three ways to medicate – enterally (orally, for absorption from the GI tract into the bloodstream), parenterally (by injection – under the skin, into the muscle, or intravenously), and topically (on the skin). To help you in your efforts should it become necessary, administering medications, both orally and by injection, is demonstrated in my pet care videos *Veterinary Care for Your Dog – When There Is No Veterinarian* (or in the cat version).

★ PILLING – Administering medication orally is usually the simplest method. A tablet or capsule is essentially poked down the throat. Depending upon the medication being administered and the particular pet, you may get by with hiding the medicine in the food, or by just sticking the tablet/capsule into the mouth and holding the mouth shut (and blowing on the nose, which sometimes helps get the animal to swallow).

Most cases however require that the medication be placed as far in the back of the mouth as possible and essentially poked over the back of the tongue and down the throat to really be certain that it is gone, and to minimize the taste sensation of whatever medication you are using (Over the back of the tongue you are past the tastebuds.), (See photo) If the pet gags, then you can usually be confident that the medicine has been swallowed. In a large dog, it is generally very easy. If you reach way back over the tongue you will actually feel the cartilage flap of the epiglottis. Put the pill somewhere back there, close the mouth and, voila, down it goes. In small dogs and cats it is often more difficult, due both to their squirminess and the intimidating sharpness and closeness of those little teeth.

Hiding your medication in some food or using a commercial pilling aid such as *Pill Pockets* may help make things easier if the pet has an appetite and is eating. However, most of the time when your pet is really sick, eating and an appetite for treats is a major part of the problem.

I always recommend to new kitten and puppy owners.....
WHEN YOU DON’T KNOW WHAT’S WRONG

Not every patient is an easy diagnosis. More often than not, upon presentation we are able to see that a patient is not well, but an obvious diagnosis may not be apparent upon initial physical examination. This type of patient is sometimes referred to by veterinarians as an ‘ADR,’ – short for ‘ain’t doing right.’ That’s a pretty accurate description with a sick animal that has been brought to the doctor because “She just isn’t herself, Doc” when, prior to physical exam and diagnostic workup, we don’t necessarily have a clue as to what is wrong.

Once the patient is on the exam table, we do a complete physical examination, then usually a blood workup, fecal exam, urinalysis, and any other laboratory work that might help reveal the problem – often including radiographs (x-rays) and perhaps even an ultrasound exam. Once a diagnosis is made, the ‘ADR’ designation is changed to ‘feline leukemia,’ ‘heartworm disease,’ ‘gastroenteritis,’ ‘kidney disease,’ or whatever problems the diagnostic workup uncovers.

Sometimes, upon examination we might get the impression that there is nothing wrong at all; but an astute pet owner who really knows his or her pet can tell that something just isn’t right. Occasionally it’s difficult to hammer down a diagnosis on this type of patient. Just as sometimes happens in human medicine a substantial amount of time can pass and the condition may progress significantly before our examination and any tests we run begin to pick up a change from normal to abnormal values.

In some circumstances we may be limited in our ability to make a diagnosis. The veterinary facility may be limited in its resources and not have the appropriate diagnostic equipment to make a diagnosis, and a referral hospital may be too far away or too expensive. If an owner imposes financial constraints, an expensive diagnostic workup may be out of the question, or extreme old age and debilitation of the patient may lead to reservations about it. In these cases we are forced to treat the patient without knowing exactly what we are treating. This makes things difficult and is never really a desirable way to
proceed. However, sometimes we are left with no choice. That kind of general treatment is called broad-spectrum treatment or ‘shotgunning.’ We do a little of this and a little of that and hope that we hit the problem. (Also read the section on Supportive Therapy.)

It is not unlikely that your pet, if it develops a problem, may present with vague, indeterminate signs. This is a very common problem. Many disease conditions start out that way. Should you be placed in that position, your best bet is to watch for a few days (maybe 3 or 4 days – so long as there is no obvious deterioration, you can afford to watch and wait). If there is no obvious problem to treat, then there really is nothing else to do other than run through your complete physical examination routine every day or two and watch eating, drinking, and elimination habits very closely. Frequently owners attribute these sorts of changes to ‘the heat,’ or a ‘change in diet,’ or ‘unfamiliar surroundings,’ or other possible environmental factors in an effort to dispel their concern. That could well be the case, but do not quit watching and examining.

★ If we are seeing obvious deterioration (not drinking and/or eating, weight loss, dehydration, fluid loss via vomiting and/or diarrhea, etc.) and if you are convinced that there is a problem, even if there is no fever you can usually safely start the pet on antibiotic therapy. This is not a time for the ‘big gun’ antibiotics. Amoxicillin is an excellent choice at a moderate twice a day dosage. Continue it for five days, or, if a noticeable improvement is noted, for three days after the patient seems better.

If intermittent vomiting and/or diarrhea occur, you can do symptomatic treatment orally using....
**SUPPORTIVE THERAPY**

What do you do when your pet is sick, there’s no veterinarian for two hundred miles, and you just haven’t a clue? We can’t just drop back and punt.

The answer is to treat the pet symptomatically, and then run like a son-of-a-gun for the nearest professional to try and get a diagnosis and specific treatment. That’s the best you can do. Don’t just treat symptomatically and hope for an improvement while the pet wastes away. Take action on both ends – treat the patient *while* you are running for help. If the patient recovers before you get to the doctor, then that’s great. But have it examined anyway. Describe the ordeal in detail along with any treatments given, and try to get an impression of what the problem was. Usually retrospective diagnosis is difficult and inaccurate, but have it checked while you are there. It may uncover something that is going to recur and might be successfully cured.

Supportive therapy means keeping the patient alive and treating the symptoms until diagnosis and specific treatment is undertaken or until the patient recovers. In the case of an injury, it may simply mean keeping the patient comfortable, restricting activity as much as possible, and perhaps administering some oral and/or topical antibiotic. In the case of illness, we treat whatever symptoms are present, such as vomiting and diarrhea, and replace fluids if necessary. (Also consult the previous section on *When You Don’t Know What’s Wrong*)

A typical scenario might be a patient that is simply not eating or drinking and is acting very depressed and dumpy. An unexplained loss of appetite for more than two or three days is definitely suggestive of a problem. Not drinking may be even more serious. If there is also fluid loss from vomiting and/or diarrhea, this seriously complicates things. (Monitor for dehydration using the information in the section on *The Physical Examination*).....
ANTIBIOTICS and MEDICATIONS

For many individuals, if you or your pet gets sick the first thought is – drugs!!! Welcome to Madison Avenue society! We have been indoctrinated by the advertising media to expect and demand instant gratification.

A day of diarrhea and/or vomiting may be unpleasant and it may be an inconvenience. It is a symptom of a problem. It is not a disease and it is not necessarily dangerous. Many health symptoms are just the body’s way of curing itself. Diarrhea and vomiting are nature’s way of eliminating toxins or irritants so that the GI tract can become healthy again. Medication to stop it prematurely can often simply prolong the actual illness.

A minor laceration does not require a major antibiotic. Minor pain and/or lameness does not require a muscle relaxant or a narcotic analgesic. Very often minor problems will resolve if we just treat them with common sense. Vomiting – take away the food for 24 hours, then very gradually reintroduce a bland diet and, over 2 or 3 days return to normal feeding. If your pet wants to consume large quantities of water, then vomits, limit the water to very small amounts but very frequently – 1/4 or ½ cupful every ½ hour. (For details on vomiting and diarrhea, see the section on Gastroenteritis.) A minor laceration should be cleansed and kept clean – maybe some Neosporin might be good, but not Cipro. Major antibiotics that worked miraculously just 20 years ago are now much less effective, because of indiscriminate use by both doctors and lay people. Save the major antibiotics for the major problems. A limp does not necessarily mean you need bone surgery or joint replacement, but it does mean that you should rest the body and/or the affected limb and watch it for 24 hours to see if it gets better. If it does, continue to rest it.

Our bodies and our pets’ bodies are designed to heal, if we just follow nature’s rules. If you jog 5 miles every day and have a lameness problem, the answer is not necessarily a joint replacement; perhaps it’s just a message from your body telling you that 1 or 2 miles is plenty. Get the picture?
A reasonable selection of antibiotics to have aboard: cephalexin and amoxicillin in the center – and carry either Baytril (enrofloxacin – on the left) OR ciprofloxacin (on the right)

Oh, a couple more things. If a little medication is good, a lot more is not necessarily better. Maybe more is just more, or maybe more is just more dangerous, and it doesn’t take a genius to know that more is always more expensive.

When using antibiotics, if there was a reason to start, then there is a reason to finish!

Don’t mix antibiotics. Just because Cipro is good and sulfathymethoprim is good does not mean that both given together are going to be better. Usually the opposite is ....

Remember, DO NO HARM
Appendix #1

*Warning*: Before dosing any medication, read and understand the section on *Dosage Calculation* in the *Injections and Medicating* chapter.

**DRUG FORMULARY:**

mg = milligrams, ug = micrograms; (D) = dog; [C] = cat
PO = orally, SC = subcutaneous injection (under skin);
sid = every 24 hours; bid = every 12 hours; tid = every 8 hours;
qid = every 6 hours; q = every...; PRN = as needed

*Caution*: Be careful when using over-the-counter and human medications. Be certain that they contain *only* the desired ingredient and that that ingredient is not in combination with some other undesired medicine(s).

Use higher end of dosage ranges for severe problems or as a loading dose.

NOTE THAT SOME DOSAGES ARE IN ESTIMATED MILLIGRAMS *TOTAL DOSE*, WHILE MOST DOSAGES ARE SHOWN IN MG OF DRUG *PER KG OF BODY WEIGHT*.

quinolones or fluoroquinolones (Baytril, Orbax, or Cipro) you only need one of these (Do NOT use in young, growing animals) (and do not give it as a routine choice)

*Baytril* (enrofloxacin) 5mg/kg PO sid (no higher) [C]; 5 - 20 mg/kg PO sid (D)
*Orbax* (orbifloxacin) 2.5 - 7.5 mg/kg PO sid (D,C)
*Cipro* (ciprofloxacin) 5 - 15 mg/kg PO bid
*Zenoquin* (marbofloxacin) 2.5-5 mg/kg PO q 12 hours (D)
acepromazine (acetylpromazine) 0.1-0.25 mg/kg (max 3mg) IM, SC (D); 0.05-0.1 mg/kg (max 1mg) IM, SC [C]; 0.5-2.2 mg/kg PO (D); 1.1-2.2 mg/kg PO [C]; for tranquilization

activated charcoal 1 gram/5 ml of water; give 10ml/kg of this slurry; or give 1-4 g/kg if using granules (D,C)

adrenalin See epinephrine

albendazole 50 mg/kg PO q 24 hours for 3-5 consecutive days (D,C)

alprazolam (Xanax) 0.125-0.25 mg PO q 12-24 hrs [C]; 0.01-1.0mg/kg (max 4mg/day) (D); for behavioral disorders

amoxicillin 10 -20 mg/kg PO q 6 to 12 hours (D,C) Use pediatric drops (from a pharmacy) for cats and small dogs. Also see Clavamox

apomorphine 0.25mg tablet placed inside the lower eyelid of either eye (D) (or dissolve in water and drop into the eye)

aspirin 10 - 20 mg/kg PO q 12-24 hr (D); 5-20 mg/kg PO q 72 hr [C]

atropine 0.2-2 mg/kg IM, SC for cholinergic insecticide poisonings

atropine ophthalmic ointment Topically q 24 hours (not preferred in cats - they drool)

Augmentin See Clavamox
Diluting Large Animal Ivermectin for Small Animal Use

These directions are for diluting commercial large animal ivermectin 1.0% solution. It is available by many brand names as a cattle and swine deworming agent.

I have included a slight built-in safety margin in these calculations, however it still has to be done correctly to be safe to use. Our measuring instruments being simple syringes limit our precision somewhat anyway. I have tried to be consistent in using milliliters (ml) rather than cubic centimeters (cc), but, in any event, remember that 1ml is equal to 1cc (1ml=1cc). Watch yourself with the grams (g), milligrams (mg), and micrograms (µg).

As a Dewormer

By definition a 1.0% solution is equivalent to 1 gram (or 1,000 mg, same thing) of active ingredient per 100ml of solution. That is equivalent to 10mg per milliliter (10mg/ml) of solution, which is the same as 10,000 micrograms per milliliter (10,000 µg/ml). That is:

\[ \frac{1 \text{ gram}}{100 \text{ ml}} = \frac{1,000 \text{ mg}}{100 \text{ ml}} = \frac{10 \text{ mg}}{\text{ ml}} = 10,000 \mu \text{g/ml} \]

It’s all the same.

Now if you put 1 ml (10mg or 10,000 µg; it’s the same) of this 1% solution into 10ml of saline or propylene glycol solution, you will get a solution that contains roughly 1 mg or 1,000 µg of ivermectin per milliliter (1 mg/ml or 1,000 µg/ml).

Carrying it further, if instead you ....
Appendix #4

LIST OF SUGGESTED DRUGS AND SUPPLIES

The following lists are rated to reflect ease of use, degree of training and knowledge needed to use them, and duration of your trip. Again, stars (★) represent those levels, while an asterisk (*) represents items that might be recommended but are optional. The one-star level is the simplest, the two-star level includes all of those on the one-star list in addition to the two-star list, and so on.

The lists are by no means exhaustive but I have attempted to include most of the items that I feel you will be able to use should you have a problem and find a need to treat it. Not everything on the lists is necessary and you need to consider circumstances, cruising area, your skill level, pet size and age, and any other factors that may determine or alter what you might need to have aboard. You should cross-check this list with your own pharmacy list and you very well may not need to duplicate products that are on both lists unless there is something that you expect to require much more of for the additional pet use.

Drug names provided are generic and are given in English. The names should be almost identical in French or Spanish and probably in other Romance languages. For other languages, you should have them translated.

★ Short trip (less than a month) and/or very limited skills; or a trip to areas where adequate facilities are within a day or so travel time.

The most important item of all (for everybody): carry adequate quantities of any medications that your pet currently requires or uses, such as insulin, anticonvulsants, prescribed prednisone or other corticosteroid for chronic inflammatory problem (skin allergy or other), dental care products, etc. And most important of all for most pets, don’t forget heartworm preventative. Assume that you will not be able to refill these
items for at least 60 days (90 days if on an extended trip). That allows adequate product on-hand for changes in cruising plans.

**Antibiotics**

- Amoxicillin 50mg tablets For cats and small dogs (under 15 pounds)
- Amoxicillin 100mg tablets For dogs 15 to 20 pounds (and cats 12-15 pounds)
- Amoxicillin 250 mg capsules For dogs 25 to 40 pounds
- Amoxicillin 500 mg capsules For dogs 50 pounds and up

Amoxi is a good general purpose antibiotic for preventative use and a good all purpose therapeutic treatment for general infections, usually dosed just twice daily; decent bang for the buck; drops are available for cats and small dogs. For cats and small dogs you can carry a few small bottles of the pediatric drops, available from your veterinarian or by prescription from a pharmacy.

Carry adequate oral antibiotic medication to allow 10 to 14 days of treatment for each pet aboard.

If you want to carry a big gun antibiotic for that unlikely but possible serious infection, you can carry a fluoroquinolone. Get *Baytril* (enrofloxacin) or *Orbax* (orbifloxacin), or *Zenoquin* (marbofloxacin) from your veterinarian and pay an arm and a leg for a drug that you hope you’ll never use and will eventually expire and need to be thrown away; OR, you can have your vet write a prescription for some *Cipro* (ciprofloxacin) which is the human equivalent and is now available .....
Appendix #5

SUPPLEMENTAL INFORMATION FOR MEDICAL PROFESSIONALS

For those persons who are experienced in human medical treatment, I offer the following information, which may allow you to go a step beyond some of the nursing procedures outlined in the text.

Intravenous catheters – IV catheters are normally placed in the cephalic vein, which runs along the dorsal surface of the front leg in both cats and dogs. The dorsal surface of the leg is shaved from just distal to the elbow to a point proximal to the carpus and prepped for catheter placement. While restraining the patient as described in the appropriate chapter, the holder should grasp the foreleg at the elbow with one hand, placing the thumb around the medial aspect just below the elbow. The skin and underlying vein is then “rolled” laterally across the top of the bone until the vein is visible on the dorsal surface of the foreleg and it is held there for the venipuncture. Under normal conditions, the vein should stand up nicely. This procedure is illustrated in my DVD’s Veterinary Care for Your Dog – Where There Is No Pet Doctor and Veterinary Care for Your Cat – Where There Is No Pet Doctor.

Appropriate size IV catheter would be:
- Large dog – 18 gauge 1 1/4"
- Medium dog – 20 gauge 1"
- Small dogs and cats – 22 gauge 3/4"
- Kittens and puppies - 24 gauge 3/4"

Fluid administration sets should be standard 15 to 20 drop per ml drip sets for medium to large dogs. For small dogs, cats, and smaller patients, a 60 drop per ml standard.....
Appendix #6

Table of Equivalents:

1 milliliter (ml) = 1 cubic centimeter (cc)
1 gram (g) = 1,000 milligrams (mg) =
                        1,000,000 micrograms (µg)
1 kilogram (kg) = 1000 grams (g)

 Metric conversion:
1 ounce (oz) = 28.4 grams (g)
1 fluid ounce = 29.6 milliliters
1 cup = 8 fluid ounces
                   = 237 milliliters (ml) = 16 tablespoons (Tbsp)
1 quart (qt) = 946 milliliters (ml)
1 grain (gr) = 64.8 milligrams (mg) (often rounded to 60 or 65 mg)
1 gram (g) = 15.43 grains (gr)
X% solution = X grams in 100 ml of solvent
              (2% solution = 2 grams in 100 ml of solvent)
1 teaspoon (tsp) = 5 milliliters (ml)
1 tablespoon (Tbsp) = 3 teaspoons (tsp) = 15 milliliters (ml)
1 pound (lb) is equal to 454.5 grams
1 kilogram (kg) is equal to 2.2 pounds (lb)
1 pound (lb) is equal to 0.454 kilogram (kg)

To convert body temperature from Fahrenheit to Celsius and vice versa:

\[ F^\circ = \frac{9}{5} C^\circ + 32 \text{ or } F^\circ = 1.8 C^\circ + 32 \]
\[ C^\circ = \frac{5}{9} (F^\circ - 32) \text{ or } C^\circ = 0.555 (F^\circ - 32) \]
Glossary

anterior – cranial or craniad; anatomical term of relative position meaning toward the head of the animal; the neck is anterior to the front legs and the forelegs are anterior to the rear legs

abrasion – scraping of the skin, usually due to trauma

anaphylaxis – a generalized allergic reaction, often severe or even lifethreatening

ataxia – stumbling or wobbliness; symptomatic of paresis

atopy – allergy, usually inhalant; hay fever

avulsion – traumatic tearing or peeling back of the tissues or pulling apart of a body part

axilla – space under the foreleg (‘armpit’)

b.i.d. or bid – given twice daily (usually every 12 hours)

canid – dog, fox, coyote, wolf, or other member of the dog family

carpus – the joint above the foot, analogous to the wrist in a human

caudal (or caudad) – posterior; anatomic relative position meaning toward the rear of the animal; the hips are caudal to the chest

cervical – in the neck region or the vertebra of the neck region

CNS – central nervous system

cranial (or craniad) – anterior; anatomic relative position
meaning toward the head of the animal; the chest is anterior to the abdomen

crepitus or crepitation – the crunching of bone on bone; usually felt rather than heard

cyanosis – turning blue, particularly the mucous membranes; a symptom of insufficient oxygen intake

depth – beneath or closer to the center of the body; the muscles are deep relative to the skin; opposite of superficial

distal – closer to the terminus; anatomic term of relative position; the rectum is distal to the small intestine and the tip of the tail is distal to the base of the tail

diurnal – active in the daytime

dorsal (or dorsum) – the top of the animal while in the standing position; the back; the part of the animal in contact with the floor when lying on its back

endemic – tendency of a disease, an agent, or a condition to occur within a specific geographical area

e.o.d. or eod – every other day (every 48 hours)

epiglottis – the cartilage flap in the back of the throat that covers the windpipe during the process of swallowing

esophagus – the tube which connects the mouth to the stomach

emesis – vomiting
felid – cat, lynx, bobcat, lion, tiger, puma or other member of the cat family

febrile – having a fever
flank – the area of the body just anterior to the hip, in front of the rear legs where, in a fit animal, the abdomen rises up and tucks in to meet the pelvis

fracture – broken bone; open or compound fracture - fracture in which one or more bone fragments penetrate through the skin; closed fracture - fracture in which the skin is not penetrated

glottis – the opening to the trachea (windpipe)

griego – term, often derogatory when used by locals, for an American or Canadian, or sometimes just for white people in general, in a Latin American country

gtts – abbreviation for ‘drops’ on a prescription or label

hemostasis – control of active bleeding; the process of clot formation or actively stanching bleeding

hepatic – of or pertaining to the liver

histopathology – microscopic examination of a tissue sample to determine its identity; e.g. to determine if a tumor is benign or to determine its degree of malignancy

IM – intramuscularly; into the muscle

impaction – clogging or blockage

incontinence – lack of either bowel or bladder control

inguinal – refers to the space inside the rear leg where the leg meets the body (rearleg version of ‘armpit’)

intramuscular (IM) – deep into the muscle; usually done in the
heavy muscle group in the caudal thigh region; generally used to describe injections

intracardiac (IC) – directly into one of the chambers of the heart

intravenous (IV) – directly into a vein; usually describes administration of injections of drugs or fluids

IV – intravenously; into a vein

laceration – a cut or slice of the skin by a sharp object

lateral – on or toward the side of the animal; away from the midline; anatomic term of relative position

ligament – fibrous tissue bands that support a joint

lumbar – the lower region of the back, between the last rib and the pelvis or sacrum

medial – toward the midline of the animal; inside or inward; anatomic term of relative position

nocturnal – active at night

NSAID - non-steroidal anti-inflammatory drug; aspirin, Tylenol, Aleve, or Celebrex in humans; Rimadyl, Deramaxx, Metacam and others in veterinary medicine are examples

nystagmus – visible movement of the eyes back and forth (lateral nystagmus), or circularly (rotary nystagmus) while the head is held still. Usually indicates a problem with the vestibular system (the balance system of the inner ear)

OTC - over-the-counter

palpation – feeling the body with the hands in an effort to
differentiate normal from abnormal, or in an effort to induce a desired response, e.g. pain, a cough, etc.

paralysis – complete loss of function of a nerve pathway; can be sensory, motor, or both; can be permanent or temporary; may be rigid or flaccid, depending on how and what nerves are affected

paresis – partial loss of motor function due to nerve damage usually signified by ataxia; stumbling or dragging of a leg is typical

parturition – giving birth; referred to as ‘kindling’ in cats and ‘whelping’ in dogs

pinna (pl pinnae) – the ear flap

PO – per os; orally

posterior – caudal; anatomic term of relative position meaning toward the rear of the animal; the tip of the tail is posterior to the hips

proximal – closer to the origin; term of anatomic relative position; the base of the tail is proximal to the tip of the tail; the esophagus is proximal to the stomach (closer to the mouth)

pruritus – itching

purulent – containing pus

q.i.d. or qid – four times a day (every six hours)

radiographs – x-rays

renal – having to do with the kidneys
rostral – toward the nose; anterior term of relative position; the nose is rostral to the eyes and the canine teeth are rostral to the molars

sacrum – the part of the spine that is attached to the pelvis

SC – subcutaneously; under the skin; same as SQ

sclera – the white of the eye

septicemia – blood poisoning

s.i.d. or sid - once a day (every 24 hours)

sternum – the breastbone

stifle – the thigh region; stifle joint is the knee joint, or the first joint on the rear limb below the hip

subcutaneous (SC, SQ, subQ, subcut) – into the space under the skin; often describes administration of injections of drugs or fluids

superficial – closer to the outside of the body; anatomic term of relative position; the skin is superficial to both the bones and the muscles; the muscles are superficial to the bone

suppuration – production of pus

tarsus – the hock joint; the very angular joint that points rearward above the rear foot; analogous to the ankle in the human

tendon – fibrous tissue portion at the ends of a muscle which attaches the muscle to the bone

thoracic – the part of the spine to which the ribs are attached; the chest region
thorax – the chest

t.i.d. or tid – three times a day (every eight hours)

trachea – the windpipe

ventral (or ventrum) – the bottom of the animal when in a standing position; the belly and chest; the part of the body in contact with the floor when lying on its belly
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About the Author

David W. LaVigne, D.V.M. (Captain Doctor Dave) received a Bachelor of Science degree with high honor from Michigan State University, and subsequently graduated from Michigan State University College of Veterinary Medicine with honor in 1979. He was recognized as a member of Phi Zeta, the veterinary honor society.

Captain Doctor Dave lived and cruised aboard his 37 foot sailboat, *Fidelis*, with his wife Annie for more than eight years. Before his cruising life he owned and operated a veterinary hospital in Michigan for twenty years. They sold the business, moved aboard the boat, and traveled from the Great Lakes to the east coast via the Erie Canal. In Baltimore they stopped in the Inner Harbor for a short, six month stopover that turned into an extended stay as he ran a veterinary practice in the Federal Hill neighborhood for four years before finally moving on down the east coast to Florida and then island hopping down to the Caribbean. They enjoyed cruising the islands of the northern Caribbean for four more years before heading back to Florida and moving back ashore. Doctor Dave now practices as an emergency and critical care clinician on Florida’s gulf coast.

In addition to *Where There Is No Pet Doctor*, Dr. LaVigne is also the author of *Pets On Board? Adapting Your Pet to Travel by Boat or RV* and he coauthored the book *Island Hopping to the Caribbean*, a beginner’s how and a narrative of their Caribbean trip, with wife Annie.

He is licensed in the states of Michigan, Maryland, and Florida, is a member of the AVMA and the Veterinary Emergency and Critical Care Society and he presently practices veterinary emergency and critical care medicine on Florida’s Gulf Coast. Dr. Dave is also a rear commodore in the Seven Seas Cruising Association, and holds a USCG master’s license.

He and Annie have gone from living aboard their sailboat to spending lots of time aboard their kayaks as they explore Florida’s coastal ‘skinny water.’ Contact him at captdrdave@captdrdave.com.