

## ABCDs of a Cardiology Referral: When and how to involve a cardiologist in your practice

### What Constitutes a Referral?

A cardiology referral can be defined as the involvement of a cardiology specialist to assist in the diagnosis and treatment of suspected cardiac disease in a patient that has been examined by a primary care veterinarian.

The decision to refer a patient for a cardiac evaluation is not straightforward. The nature of the case, the pet owner's expectations, and the practitioner's comfort with diagnosis and treatment of cardiac disease are important factors to consider. The types of cases that are typically referred vary widely, from pre-anesthesia assessment and routine murmur evaluations to management of congestive heart failure or more emergent scenarios such as severe tachyarrhythmias and pericardial effusion. Some cases may be referred specifically for interventional procedures for congenital heart disease or pacemaker placement. In the majority of cases, however, the decision to refer is dependent on the combination of a practitioner's desire to include a cardiologist to aid them in their care of the patient and the family's willingness to accept the referral.



### Types of Consultations with a Cardiologist

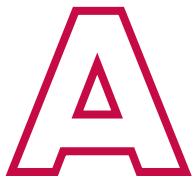
The types of consultations have grown in recent years, and can range from a simple phone call inquiry to a review of clinical data collected by the referring DVM, to a case referral with direct examination of patient... sometimes all three are involved.

- ▶ **Phone Consultation //** This is a frequently used form of consultation during which simple questions can be answered such as: What would be the next, most appropriate diagnostic test? What should I be watching for to decide if a patient needs further evaluation or case referral? What is the recommended therapy for a particular disease process? In some cases, a short discussion of case history and subsequent management suggestions are all that are needed to complete the consult. This is not an appropriate method of consultation to make major diagnostic and treatment decisions. In unstable patients, phone consultation with a cardiologist can be helpful prior to referral.
- ▶ **Review of Clinical Data (Telemedicine) //** When diagnostic tests have been performed, but help is needed in the accurate interpretation of these tests, sending the information to a cardiologist can greatly enhance the diagnostic potential of the information already collected. Faxing of medical records and ECG recordings has been a routine practice for many years. Recent technological advancements have allowed for rapid digital transmission of ECGs, radiographs, echocardiographic and ultrasound images. Telemedicine has emerged as an important tool for collaboration between primary care practitioners and providers of specialty services. In many cases, this form of communication is sufficient to provide appropriate recommendations, but in some cases, the patient is best managed by case referral to a cardiologist, where the opportunity to examine a patient, interview a pet owner, and personally perform diagnostics/acquire images in real time provide the best option for a given patient.

- ▶ **Patient referral to a cardiologist //** Referral to a cardiologist is recommended when more detailed cardiovascular information is needed, to facilitate rapid and accurate diagnosis, or for patients that continue to deteriorate despite appropriate treatment. Providing all laboratory test results and diagnostic images already obtained can make a case referral less expensive for the family by eliminating the need to repeat laboratory and imaging diagnostics. Prior echocardiograms may be helpful, but clients should understand that cardiologists hold the greatest level of training and experience for the evaluation of the heart. Accordingly, most cardiologists will want to perform their own echocardiogram and not rely on images from non-cardiac specialists. Because repeated echocardiographic examinations can pose a financial burden to some clients, the referring veterinarian should consider case referral of stable patients to a cardiologist before obtaining an echocardiogram by non-cardiologists. The CEG recommends referral to a cardiologist in patients with suspected congenital heart disease. These patients may require advanced cardiac diagnostics and interpretation to ensure an accurate diagnosis, accurate prognosis, and optimal treatment options. In unstable patients, phone consultation with a cardiologist can be helpful prior to referral.

## How do I decide which patients to refer?

In 2009, an ACVIM consensus panel of cardiologists ([link to consensus paper](#)) published a classification scheme of heart disease to assist veterinarians in managing cardiac cases ([link to ABCD](#)). These guidelines can be used to help determine appropriate diagnostics, facilitate discussions with owners, and provide guidance regarding treatment decisions. This scheme can also be used to help a primary care practitioner make decisions regarding when and why referral of a case may be beneficial. In the classification scheme provided by the ACVIM consensus panel, patients were divided based on the presence or absence of heart disease, progression toward congestive heart failure, and eventual development of refractory disease. The **suspected** status of a patient can be useful when contemplating a cardiac referral.



**High Risk Patients (Stage A) //** These are patients that do not have heart disease, but are at risk based on genetics, familial history, or iatrogenic factors. Despite the presumed absence of heart disease in this group, the request for a cardiology consultation is reasonable for patients suspected of being disease-free for a variety of reasons. These would include pre-breeding or pre-anesthetic screening for certain breeds (Boxers, Dobermanns, Cavalier King Charles Spaniels, Maine Coon cats, etc), cardiac evaluation for patients with familial history of heart disease/sudden death, or to determine risk in conjunction with intended treatment, such as administration of steroids, fluids, or chemotherapy (e.g. doxorubicin).



**Heart Disease Without Clinical Signs (Stage B) //** Patients with heart disease that have not yet exhibited clinical signs of their disease comprise the largest and most diverse group of patients with heart disease. These individuals span a wide spectrum, from a patient with trivial underlying disease to one that is on the verge of congestive heart failure. The evaluation of patients suspected to be in this group is intended to answer some important and challenging questions. Important goals of a cardiac referral for these patients are to confirm the presence of heart disease, assess the degree of cardiac enlargement and exclude the existence of congestive heart failure. This can be difficult on both ends of the spectrum. Differentiating a patient that has mild heart disease from a normal animal is not as straightforward as it seems, especially in those patients suspected of having cardiomyopathy. Nonetheless, this is a critical distinction, and can determine whether a patient receives heart failure prevention therapy at an appropriate time. At the other extreme, the presence of clinical signs that may indicate congestive heart failure (e.g. respiratory signs, exercise intolerance, weakness, collapse) is an indication to consider referral.

# C

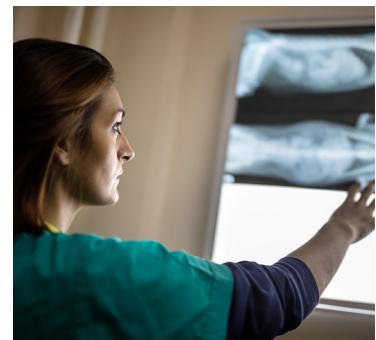
**Heart Disease with Clinical Signs (Stage C) //** These patients are exhibiting symptoms typical of congestive heart failure. In many cases, congestive heart failure is not an easy diagnosis, as concurrent respiratory disease is frequently identified in cardiac patients. Evaluation by a cardiologist of a patient suspected of being in Stage C can facilitate an accurate diagnosis of heart failure, thus confirming Stage C status. The identification of an alternate disease process (e.g. severe respiratory disease, pulmonary hypertension) may reclassify these patients as Stage B (or even A), and avoid the consequences of missing the true cause of clinical signs or administration of inappropriate therapy. In addition to helping establish an accurate diagnosis, involving a cardiologist for a Stage C patient can help optimize cardiac therapy, as well as serve as a baseline for future evaluation. Cardiology referral may also provide advanced medical support in patients presented in acute heart failure that require hospitalization.

# D

**Heart Disease with Refractory Clinical Signs (Stage D) //** Stage D patients are defined as having advanced, complicated or refractory heart failure. In the majority of cases, stage D patients have already had an established diagnosis of heart failure. It has been shown that human patients at this stage of heart failure benefit substantially from referral to a cardiologist, and the CEG believes that is also true in veterinary patients. Referral can help to reassure the client and to confirm that all treatment options have been explored for their dog or cat.

*Partnership between a primary care veterinarian and a cardiologist has value in the management of a wide variety of patients with suspected or known heart disease. The nature of the referral will depend on many factors, and clearly not all cases will nor should end up in the cardiologist's exam room.*

*The principal role of a cardiologist is to provide advice regarding diagnostics, therapy and optimal patient care.*



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