

## SKILLS LIST CARDIOLOGY CANDIDATE

All qualified candidates will have demonstrated basic veterinary technician skills such as but not limited to:

- a. Proper animal restraint
- b. Peripheral catheter placement
- c. Venipuncture
- d. Basic bandage application
- e. Administration of oral and parenteral medications
- f. Calculation of IV fluid drip rates
- g. Calculation of basic drug administration
- h. Knowledge of various routes of drug administration,
- i. Aseptic surgical area preparation
- j. Surgical supply sterilization preparation
- k. Recording of vital signs (Temp, Pulse, Resp, and Pain Asses.)
- l. Performance of basic laboratory tests (PCV, TP, UA, cytology staining, fecal analysis)
- m. Maintenance of proper medical records and knowledge of computer skills
- n. Surgical scrubbing and gowning
- o. Administration of Cardio-Pulmonary-Cerebral Resuscitation

These skills do not need to be verified individually and are only examples of base skills expected of all candidates.

AIMVT Cardiology candidates must demonstrate mastery of **80%** of the following skills for the application packet. Therefore at least 24 of the skills, as numbered, must be verified by acknowledgement by a doctor or VTS. Also please cross reference as many skills as possible to your case logs by noting the case log number. As of 2009, at least **50%** of the verified skills must be cross referenced in the case log. Therefore at least 13 of the verified skills must appear in the log. You are encouraged to cross reference more of the skills if possible.

Mastery is defined as “consistently being able to perform with great skill and/or knowledge without being coached or directed”.

Each skill should be verified and signed by the DVM or VTS who is the most qualified to verify the skill; in order of preference: Diplomate or VTS in ANY specialty of ACVIM or AIMVT, Diplomate or VTS in Anesthesia or Emergency & Critical Care, or a Diplomate in Practice or Surgery. If none of these Diplomates or VTS is available the Academy will accept verification by a licensed DVM with a letter from them stating that no Diplomate or VTS is easily available for the candidate to utilize.

All skills are to be performed in a small animal species unless otherwise indicated. Candidates may go “outside” their own practice to locate the images or equipment necessary to complete the skills list. Supply or “pull lists” will be submitted with the candidate application package.

	Case Log #	Task	Initials
1.		Characterize cardiac murmurs in five patients of two different species. Include grade (1-6), location (right or left hemithorax; apex or base) and timing, (systolic, diastolic or continuous)	
2.		Identify two patients with a gallop rhythm, split sound or mid-systolic click	
3.		Identify the following arrhythmias on auscultation	
		Respiratory sinus arrhythmia	
		Atrial fibrillation	
		Ectopic beats	
		Paroxysmal tachycardia	
4.		Demonstrate the ability to utilize the following devices:	
		Central venous pressure manometer	
		Noninvasive blood pressure device (Doppler or Oscillometric)	
		Nasal oxygen delivery system	
		Pulse Oximeter	
5.		Calculate and administer a prescribed CRI	
6.		Collect an arterial blood sample	
7.		Place an indwelling central venous line or venous access catheter introducer using a modified Seldinger technique	
8.		Produce diagnostic quality thoracic radiographs:	
		Cat	
		Dog	
9.		Identify on a VD radiograph:	
		Pericardial effusion	
		Pleural effusion	
		Pulmonary edema	
		Pulmonary artery enlargement	
		Right ventricular enlargement	
		Pacemaker lead	
10		Identify on a lateral thoracic radiograph the following:	
		Calculate a Vertebral Heart Sum/Score	
		Pleural effusion	

		Pericardial Effusion	
		Pulmonary edema	
		Left atrial enlargement	
		Left ventricular enlargement	
		Bronchus	
		Pulmonary arteries	
		Pulmonary veins	
		Caudal vena cava	
		Aorta	
11		Acquire and print a 10 lead ECG including:	
		6 lead frontal + 4 chest	
		A 50mm/sec strip for measurement	
12		Acquire and print a rhythm strip	
13		Record a base-apex lead electrocardiogram in a large animal species	
14		Calculate the Mean Electrical Axis (MEA) of one normal and three abnormal ECG's. At least one ECG should be of a cat.	
15		Calculate the following ECG measurements of one normal and two abnormal ECG's:	
		P-R interval	
		Q-T interval	
		P wave amplitude and duration	
		QRS complex duration	
		R wave amplitude	
		T wave amplitude	
16		Identify the following artifacts on ECG:	
		Motion (may be from respiration, shiver or limb movement)	
		Poor electrode contact	
		AC current interference	
17		Identify the following arrhythmias on electrocardiography:	
		Supraventricular tachycardia	
		Atrial fibrillation	
		Sinus arrest	
		Sinus arrhythmia	
		Atrial premature complexes	
		First degree Atrioventricular block	
		Second degree Atrioventricular	

		block	
		Complete or 3rd degree Atrioventricular block	
		Right Bundle Branch Block	
		Left Bundle Branch block	
		Left Anterior Fascicular Block	
		Ventricular premature complexes	
		Ventricular escape complexes	
		Ventricular tachycardia	
		Ventricular fibrillation	
		Right ventricular enlargement	
		Left ventricular enlargement	
18		Demonstrate the application of Holter and/or Event monitors	
19		Identify the following echocardiography features:	
		Pulmonary artery dilation in the short axis basilar view	
		Pericardial effusion	
		Pleural effusion	
		Valvular regurgitation/ insufficiency on Color Flow (CF) Doppler	
		Aliasing on pulsed wave Doppler	
		Aliasing on CF Doppler	
		Spontaneous echo contrast	
		Heartworms	
		Mitral valve thickening and prolapse	
		Cardiac mass such as hemangiosarcoma or chemodectoma	
		Systolic dysfunction or ventricular hypokinesis	
		Ventricular hypertrophy	
		Left atrial enlargement	
		Subvalvular aortic stenosis	
		Pulmonic valve stenosis	
		Patent ductus arteriosus	
		Ventricular septal defect	
		Cor pulmonale or right sided pressure overload	
20		Demonstrate the ability to record the following echocardiography views in a dog and identify the chambers or major vessels visible in each view:	

		Right parasternal four chamber long axis view	
		Right parasternal long axis five chamber or left ventricular outflow view	
		Right parasternal short axis view at the chordae tendineae level	
		Right parasternal short axis mitral valve level view	
		Right parasternal short axis view of the aorta/left atrium	
		Right parasternal short axis view of the pulmonary artery	
		M-Mode of the left ventricle from either a long or short axis view	
		M-Mode of the mitral valve from either a long or short axis view	
		M-Mode of the aorta and left atrium from either the long or short axis view	
21		Demonstrate the ability to measure M-modes of	
		Left ventricle fractional shortening (shortening fraction)	
		Aorta and left atrium ratio	
		Mitral valve E-point to septal separation (EPSS)	
22		Demonstrate the ability to measure spectral Doppler velocity profiles	
23		Set up and calibrate physiographic transducers to measure direct intracardiac and intravascular pressures	
24		Demonstrate the ability to identify the following cardiac catheters used for interventional and catheterization techniques and discuss their uses:	
		Pigtail	
		Multipurpose	
		Judkins style	
		Balloon valvuloplasty	
		Vascular introducers	
		NIH	
		Berman	
		Heartworm retrieval systems	
25		Identify normal cardiac structures on angiography	
26		Identify a Patent Ductus Arteriosus on	

		angiography	
27		Identify Pulmonic Stenosis on angiography	
28		Develop a list of equipment needed (“pull list”) for each of the following procedures:	
		Abdominocentesis	
		Thoracentesis	
		Pericardiocentesis	
		Balloon valvuloplasty	
		Micro-bubble air contrast echocardiogram	
		Transvenous Temporary pacing	
		Pacemaker	
		PDA embolization (with coils and/or Amplatz devices)	
29		Demonstrate the ability to interrogate a pacemaker to determine battery life	

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Please print – Full name and title(s) of person(s) completing this form, sign your initials

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Additional names, titles, initials

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Additional names, titles, initials