

Guidelines
For
Credentialing of Cardiovascular Technologist
Approved by
Malaysian Society of Cardiovascular Technologist
And
National Heart Association of Malaysia



Notice:

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This guidelines also can be reviewed through our website <http://www.mscvt.com/>

Background

The role of the cardiovascular technologist (CVT) is increasingly complex and demanding. Not only must the CVT be familiar with approved clinical protocols for each type of cardiovascular examination he or she performs, the CVT also must be able to analyze the patient's clinical history fully, in order to identify the purpose of the examination, frame the clinical question(s) that the examination is intended to answer, and expand the examination as necessary to answer the clinical question(s).

A CVT also plays an integral role in the treatment process, applying independent judgement, problem solving skills, analytical thinking and the ability to obtain and integrate accurate diagnostic information whilst supporting the clinicians in performing the treatment. Therefore credentialing of the practicing CVT is imperative to ensure appropriate standards and patient's safety is upheld at all times.

The Malaysian Society of Cardiovascular Technologist (MSCVT) and the National Heart Association of Malaysia (NHAM) have cooperated to establish, maintain and promote appropriate standards of service quality of CVTs in Malaysia. The purpose of these guidelines is to ensure all practicing CVTs meet the minimum standard of academic qualification and fulfill the required training or work experience in this field to ensure the standards of service quality is maintained. These guidelines also ensure that the job scope of CVTs is only be carried out by appropriate and qualified personnel.

1. Introduction

The Malaysian Society of Cardiovascular Technologist (MSCVT) is a non-profit organization, founded in year of 2009. MSCVT has been under the auspices of National Heart Association of Malaysia (NHAM) and being the only leading association representing cardiovascular technologist (CVT) in Malaysia. The mission of MSCVT is to establish CVT profession, promotes higher standard of service quality, excellent structured CVT training program and continuous education for CVT thus producing a very dynamic CVT in the future.

In view of the profession of Cardiovascular Technology in Malaysia has yet to have its own governing body to oversight and regulate the profession, the Malaysian Society of Cardiovascular Technologist (MSCVT) is entrusted to take the lead role in establishing standard that outlined the scope of practice, educational pre-requisites, training requirements and also the clinical experiences before a person will be recognised as a Cardiovascular Technologist (CVT).

Since two years ago MSCVT has worked with several parties including its fraternity, the National Heart Association of Malaysia (NHAM) and several members of cardiovascular technology profession from various geographic locations to come out with these credentialing guidelines.

The purpose of these guidelines is to ensure the personnel who carrying out the CVT duties are to meet or exceed the minimum educational standard outlined in this guideline. This in the end will be translated into the quality of services delivered to the service users are assured and will ultimately safeguard the public interest as well as the members of the profession.

These guidelines is under the purview of the MSCVT with the guidance from the NHAM. It may from time to time will be revised and amended in order to meet the need of the dynamic environment.

The members of Cardiovascular Technology profession are advised to take this opportunity to forward their application together with all of the required documents as outlined in these guidelines in order to obtain the credential.

These guidelines has also outlined a working group called MSCVT Credentialing Council that entrusted to take responsibility to review and scrutiny all credentialing applications and other related documents before the credential is awarded to the successful applicants. The

appointment and tenure of the members of this council areas per outlined in the Term of Reference (TOR) of this council and it is bound to the approval by the MSCVT Committee.

** This CVT credentialing is a dynamic document; it will be updated as needed to incorporate new profession changes or to revise the qualification standards. MSCVT should ensure that they are using the most recent version of this guide. Contact MSCVT directly or log in to the website to obtain the most recent version of this guideline*

2. Professional Statement

Cardiovascular Technology

Profession Statement

Published by

The Malaysian Society of Cardiovascular Technologist (MSCVT)

Description of Profession

Cardiovascular technology is an allied health profession which specifically focuses in diagnosis and treatment of patients with cardiac and vascular diseases. Through the use of specific high-technology equipment and at the direction of a qualified physician, a cardiovascular technologist (CVT) performs cardiovascular examination and therapeutic procedures to create an easily definable data, from which correct anatomic and physiologic diagnosis may be developed for each individual patient. The cardiovascular technologist therefore is a highly specialized diagnostician of the various presentations of cardiovascular diseases.

The profession of cardiovascular technology encompasses four sub specialty areas which include:-

- 1) Non-Invasive cardiovascular
- 2) Invasive cardiovascular
- 3) Non-invasive vascular
- 4) Cardiac pacing and electrophysiology

Scope of Duty

CVTs are dealing with patients with heart diseases and are at high risk of cardiopulmonary arrest. Therefore, all CVTs must be competent in performing emergency resuscitation procedures. CVTs are also required to competently perform intravenous access and administer medication as instructed by clinicians during the procedure.

The scope of duty of CVTs should include, but are not limited to, these subspecialty areas:

1) Noninvasive cardiovascular

The CVT independently performs the following noninvasive cardiovascular investigation procedures and analyzes the data in order to create easily definable information which can be used by the clinicians for the patients' management. The procedures include, but are not limited to:-

- 1.1. Electrocardiography (ECG)
- 1.2. Stress Testing
- 1.3. Ambulatory ECG monitoring
 - 1.3.1. Holter
 - 1.3.2. King of Heart
 - 1.3.3. Rhythm Card
- 1.4. Ambulatory Blood Pressure monitoring
- 1.5. Cardiopulmonary Exercise Testing (VO₂ Max)
- 1.6. Nuclear Medicine
- 1.7. Echocardiogram
- 1.8. Exercise Stress Echocardiogram
- 1.9. Pharmacological Stress Echocardiogram
- 1.10. Transesophageal Echocardiogram (TEE) -assisting physician or performing the procedure under supervision of physician
- 1.11. Venipuncture and intravenous drug administration
- 1.12. Emergency resuscitation procedure whenever needed

2) Invasive cardiovascular

In an invasive cardiovascular laboratory, CVTs have collaboration with other allied professionals such as Cardiac Angiographers and Catheterization Lab Nurses in supporting Cardiologists to perform the diagnostic and interventional cardiac catheterization procedures.

The roles of CVTs in invasive labs include, but are not limited to:-

- 2.1. Monitor patient's haemodynamic & vital signs
- 2.2. Analyzing blood sample for blood gas analysis (ABG) and Intracardiac shunt study
- 2.3. Performing Transesophageal echocardiogram (TEE) under supervision of cardiologists
- 2.4. Performing Transthoracic Echocardiogram
- 2.5. Preparing and assisting Intravascular Ultrasound (IVUS) procedure
- 2.6. Preparing and assisting Intra-Aortic Balloon Pump (IABP) insertion
- 2.7. Preparing and assisting the Rotational Atherectomy (PTCRA) procedure
- 2.8. Performing vascular access removal & Groin management
- 2.9. Assisting diagnostic Cardiac Catheterization Procedures
 - 2.10.1 Assisting various Transcatheter Cardiovascular Interventions such as (but not limited to):-
 - 2.10.1 Coronary Angioplasty
 - 2.10.2 Occluder devices implantation
 - 2.10.3 Valvuloplasty of heart valves Prosthetic valve implantation (TAVI)
 - 2.10.4 Vascular angioplasty
 - 2.10.5 Removal of foreign materials
 - 2.11 Venipuncture and intravenous drug administration.
 - 2.12 Performing Tilt Table Test

2.13 Emergency resuscitation procedure when necessary

3. Noninvasive Peripheral Vascular

CVTs specialized in this area are capable of independently performing various vascular procedures, which include, but are not limited to:

- 3.1. Coronary Angioplasty
- 3.2. Occluder devices implantation
- 3.3. Valvuloplasty of heart valves
- 3.4. Prosthetic valve implantation (TAVI)
- 3.5. Vascular angioplasty
- 3.6. Removal of foreign materials
- 3.7. Ankle- Brachial Index (ABI) study
- 3.8. Carotid Ultrasound Duplex study
- 3.9. Peripheral Artery Ultrasound Duplex study
- 3.10. Peripheral Vein Ultrasound Duplex study
- 3.11. Thermography and Plethysmography Procedures
- 3.12. Compression procedure of peripheral vascular access pseudo aneurysm and hematoma
- 3.13. Emergency resuscitation procedure when necessary

3. Cardiac Pacing & Electrophysiology

The duties of the CVTs in this subspecialty area are divided into invasive electrophysiology laboratory and non-invasive electrophysiology lab. In invasive electrophysiology laboratory, CVTs collaborate with other allied professionals such as Cardiac Angiographers and Cardiac Catheterization Lab Nurse in supporting electrophysiologists to perform various invasive electrophysiological diagnostic and therapeutic procedures, and implantation of rhythm management devices. The roles of CVTs in invasive electrophysiology laboratory include, but are not limited to:-

- 4.1. Cardiac Pacing
 - 4.1.1 Support Permanent Pacemaker Implantation
 - 4.1.2 Support Implantable Cardiac Defibrillator (ICD) Implantation
 - 4.1.5 Support Biventricular Pacemaker Implantation
 - 4.1.6 Support Temporary Pacemaker Implantation and programming
- 4.2. Electrophysiology
 - 4.2.1 Support Invasive Electrophysiology Study
 - 4.2.2 Support Radiofrequency Ablation Support
- 4.3. Emergency resuscitation procedure when necessary

In the non-invasive electrophysiology laboratory, CVTs who are specialized in this area are capable of independently performing various procedures that include, but are not limited to:-

- 4.4. Ambulatory electrocardiography monitoring
 - 4.4.1 Holter monitoring
 - 4.4.2 Rhythm Card
 - 4.4.3 King of Heart

- 4.5. Conducting the follow-up clinic for interrogation, programming and reprogramming of the implantable devices such as:-
 - 4.5.1 Pacemaker
 - 4.5.2 Implantable defibrillator
 - 4.5.3 Biventricular pacemaker
- 4.6. Emergency resuscitation procedure when necessary