



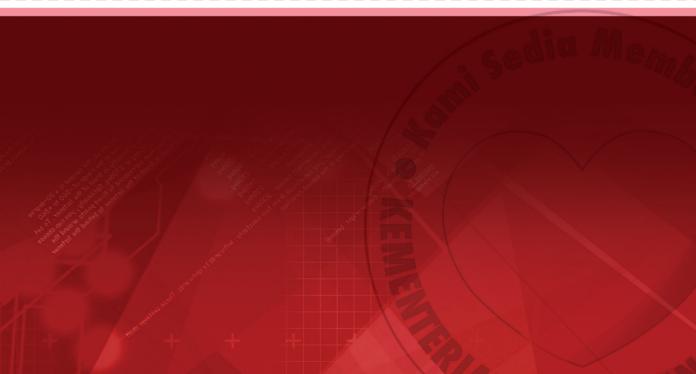


This policy was developed by:
National Committee On Resuscitation Training (NCORT)
Ministry of Health Malaysia









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#### POLICY ON RESUSCITATION TRAINING FOR MINISTRY OF HEALTH HOSPITALS

#### Procedures were coordinated by:

Surgical and Emergency Services Unit, Medical Services Development Section, Medical Development Division, Ministry of Health Malaysia.

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#### FOREWORD BY DIRECTOR GENERAL OF HEALTH



Datuk Dr. Noor Hisham Bin Abdullah

Director General Ministry of Health Malaysia In Malaysia, based on the Ministry of Health's (MOH) 'Health Facts 2015', diseases of the circulatory system accounts for 23.34% of all deaths in MOH hospitals and remains the leading cause of deaths in our hospitals. Moreover, diseases of the circulatory system are also among the ten principal causes of hospitalisation in Ministry of Health hospitals.

Clearly, then, the development and maintenance of effective resuscitation skills is essential in all healthcare workers especially to those working in acute settings. MOH aims to train possibly all the healthcare workers with the basic to advance resuscitation techniques based on recommendations and standard practices worldwide. All house officers are required to be formerly trained in Basic Life Support and they are encouraged to undergo the Advance Life Support Training following that.

To achieve this, efforts must come from everyone in the Ministry of Health from every level of the organisation. We are of course mindful that the steps and procedures in cardiopulmonary resuscitation may change with time as new evidence emerges. Both trainers and trainees must therefore make special effort to keep themselves updated on the latest development pertaining to this life saving technique.

I would like to thank and congratulate the National Committee of Resuscitation Training for their achievement in developing the Policy on Resuscitation Training for Ministry of Health Hospitals and for monitoring and planning the development of resuscitation training in MOH. I hope with the development of this policy, the resuscitation training in all MOH hospitals will be carried out in a standardised manner and the training and awareness of the importance of cardiopulmonary resuscitation can be extended to the lay public in the future.

## FOREWORD BY DEPUTY DIRECTOR GENERAL OF HEALTH (MEDICAL)



Datuk Dr. Jeyaindran Tan Sri Sinnadurai

Deputy Director General of Health (Medical) Ministry of Health Malaysia It gives me great pleasure to pen a few words for the launch of this Policy on Resuscitation Training for Ministry of Health hospitals.

To the public and our patients, saving lives is the number one expectation from a health care provider. Saving lives is exactly what cardio-pulmonary resuscitation (CPR) is about.

Formal CPR training was introduced in the Ministry of Health in 1986 using the American Heart Association CPR guidelines. Medical and nursing schools began introducing CPR training in the 1990s. Our senior colleagues may not have been trained in this skill during their medical school days.

CPR training should be one of the core businesses of healthcare providers. The need for this training cuts across the board for all categories of health care personnel and from all disciplines. This policy hopes to address this with the formation of multi-disciplinary committees and the involvement of top managers and directors.

The organisation, training guidelines and the quality assurance have been areas of concern that this policy will address.

I sincerely hope that the introduction of this policy will set the path to a more credible, systematic and well organised CPR training in MOH hospitals.

Lastly my deepest appreciation to the technical committee for working tirelessly in drafting this policy.

## FOREWORD BY CHAIRMAN, NATIONAL COMMITTEE ON RESUSCITATION TRAINING



#### Dr. Sabariah Faizah Binti Jamaluddin

Head of National Emergency Medicine and Trauma Services

Chairman of National Committe on Resuscitation Training (NCORT)

Ministry of Health Malaysia

As Chair of the National Committee on Resuscitation Training (NCORT), it is my duty and honour to write this foreword to this latest edition of the Policy for Resuscitation Training for MOH Hospitals. This policy document aims to provide guidance in the delivery of resuscitation training and ensure performance in achieving key quality assurance targets. Concurrently, this policy lays the foundation for further and future developments in resuscitation training including increasing the pool of trainers, standardization of course contents and building the resource capacity to achieve these goals.

This latest edition takes into consideration the latest release of the ILCOR 2015 CPR Guidelines and it is a culmination. of months of intensive work by the various sub-committees in resuscitation training. Resuscitation science has indeed progressed much in the last 15 years. With a greater reliance of science and evidence-based knowledge, strong technological advances and international collaborations, CPR guidelines now incorporate treatment guidelines, best practices, training standards and system changes that bring improvements in outcomes following cardiac arrest. Success has been reflected by the improvements in survival rates, especially those with neurologically intact survival, in many countries. In trying to further emulate these successes, this policy document together with other on-going initiatives, seeks to develop all parts of the Chain of Survival. We believe that in strengthening every link of that chain, we can together improve survival from both in-hospital and out-of-hospital cardiac arrest.

The healthcare facilities of the KKM hospitals are the largest single provider of healthcare and hospitalization services for the people of Malaysia. It is therefore expected that this policy provide the framework, guidance and standards for all healthcare facilities in Malaysia, for both the private and public health sectors. It is similarly necessary for all trainers in resuscitation training to adhere and comply with the training standards that are laid out in this policy document. It is only

when we have all met the stipulated standards can we hope to achieve our common goal of improving survival.

I would like to record my appreciation to the team from the Ministry of Health Medical Development Division who have supported our endeavours to produce this updated policy document. I would especially like to express my sincere gratitude to all members of the NCORT and its various subcommittees for their work and effort in researching, writing and checking of the document.

Lastly I will take this opportunity to exhort all trainers and facilitators in resuscitation and life support courses to reenergize their efforts, keep up the good work, maintain their high standards and experience the joy of being able to make a difference.



#### LIST OF ABBREVIATION

**ACLS** Advance Cardiac Life Support

**AED** Automated External Defibrillator

AHA American Heart Association

**ALS** Advance Life Support

**AMO** Assistant Medical Officer

**APLS** Advance Paediatric Life Support

**ATLS** Advance Trauma Life Support

**BLS** Basic Life Support

**CPR** Cardiopulmonary Resuscitation

**DVD** Digital Video Disc

**eFAST** Extended Focus Assessment with Sonography in Trauma

**FAST** Focus Assessment with Sonography in Trauma

**GIRN** Government Integrated Radio Network

**HCW** Healthcare Worker

**HCWs** Healthcare Workers

**LMA** Laryngeal Mask Airway

**MALS** Malaysia Advance Life Support

**MCQ** Multiple Choice Questions

**MOH** Ministry of Health

**N/A** Not Applicable

**NCORT** National Committee on Resuscitation Training

**NRP** Neonatal Resuscitation Programme

**PLS** Paediatric Life Support

**TLS** Trauma Life Support

**US** United State

**TV** Television

#### INTRODUCTION

#### 1.0 INTRODUCTION

Resuscitation in hospitals and health care facilities refers to prompt actions aimed at preventing death and providing the best possible chances for human survival. The immediate actions by the health care worker (HCW) can make the difference between life and death. Regular, updated and effective resuscitation training course for HCWs are therefore crucial.

- 1.1 **Cardio pulmonary resuscitation (CPR)** refers to efforts aimed at restoring the functions of the heart and lungs to maintain oxygenation and for survival of the brain. These core skills can be broadly divided into:
  - 1.1.1 Basic Life Support (BLS): resuscitation efforts incorporating mask ventilation and Automated External Defibrillator (AED).
- 1.1.2 Advanced Life Support (ALS): resuscitation efforts incorporating Advanced Life Support equipment and drugs. These courses were introduced into Ministry of Health (MOH) Hospitals in 1986 by the American Heart Association (AHA). The anaesthetists initially took the lead role in running these Programmes. Specialists and paramedics from other disciplines provided support and more recently Emergency Care Specialists have begun to play an important role. The advanced component was initially modelled after the AHA and called Advanced Cardiac Life Support
- 1.2 **Resuscitation for specific patient groups** requires additional knowledge and skills. HCWs are also required to continually update knowledge and attend regular courses. The following is a non-exhaustive list of Programmes addressing these groups.

(ACLS). In 2001, this was simplified and modified and called the Malaysia Advanced Life Support (MALS) course.

- 1.2.1 Neonatal Resuscitation Programme (NRP). This is an on-going Programme manages by the paediatric fraternity based on guidelines from United States (US). It was introduced in Malaysia in 1996.
- 1.2.2 Paediatric Life Support (PLS) and Advanced Paediatric Life Support (APLS) which focus on emergency care for the paediatric age group.
- 1.2.3 Trauma Life Support (TLS) for the victims of trauma. It is targeted at doctors and paramedics involved in emergency medicine and trauma care to ensure a coordinated and skilful approach to management of trauma victims.
- 1.2.4 Advanced Trauma Life Support (ATLS) is a trauma course initiated by the American College of Surgeon. It offers advanced training for personnel involved in the direct management and resuscitation of trauma victims in emergency departments or other similar setting. Many institutions worldwide adopted their training module and curriculum as a requirement for personnel working in these setting.
- 1.2.5 Anaesthesia, Medical, Surgical, Obstetric and Psychiatric Emergency updates are also carried out by the individual hospitals. There are specific emergency update courses for Nurses and Assistant Medical Officers (AMOs).
- 1.3 All the above resuscitation training programmes for HCWs require the following resources.
  - 1.3.1 Instructors and Instructors Trainers.
  - 1.3.2 Skills lab and manikins.
  - 1.3.3 Finances.

#### **POLICY STATEMENT**

#### 2.0 POLICY STATEMENT

- 2.1 This policy document covers key areas of resuscitation training for Ministry of Health Malaysia such as organisation, planning, resources including components of human capacity building and equipment and quality assurrance.
- 2.2 This document shall serve to provide guidance to health care providers, hospital administrators, policy makers and stake-holder on the concept and philosophy of the resuscitation training for Ministry of Health Malaysia and NCORT organization with reference to its development, requirements, operational policies and direction.
- 2.3 This policy document shall outline the quality standards for the health care facilities.
- 2.4 This policy document shall be used by all level of hospitals and every effort should be made to achieve the goals of this document with respect to individual hospital's structural and human resource capability.
- 2.5 This policy shall be reviewed at least every 5 years or when the need arises.

#### **ORGANISATION**

#### 3.0 ORGANISATION

#### 3.1 **COMMITTEE STRUCTURE AND FUNCTION**

- 3.1.1 Committees on Resuscitation Training shall be formed at national, state and hospital levels, with membership and terms of reference as listed in Appendix 1.
- 3.1.2 Resuscitation training for hospital HCWs shall be the shared responsibility of the following departments, where available and appropriate.
  - 3.1.2.1 Emergency
  - 3.1.2.2 Anaesthesia and Intensive Care
  - 3.1.2.3 Paediatrics
  - 3.1.2.4 General Medicine
  - 3.1.2.5 Cardiology
  - 3.1.2.6 General Surgery
  - 3.1.2.7 Orthopaedics
  - 3.1.2.8 Obstetrics and Gynaecology
  - 3.1.2.9 Others

#### **TRAINING**

#### 4.0 TRAINING

#### 4.1 **COURSES**

- 4.1.1 The core resuscitation training Programme shall be made up of the following courses:
  - 4.1.1.1 Basic Life Support
  - 4.1.1.2 Advanced Life Support
  - 4.1.1.3 Paediatric Life Support
  - 4.1.1.4 Trauma Life Support
- 4.1.2 All hospital HCWs working in critical areas such as Emergency and Trauma Department, Operating Theatre, Intensive Care Unit and acute care wards shall undergo training and be certified in BLS and ALS.
- 4.1.3 All other departments shall undergo relevant life support training.
- 4.1.4 All HCWs with the life support certification shall be privileged to perform the skills they learnt.
- 4.1.5 There shall be sharing of training equipment, instructors and other resources between hospitals.
- 4.1.6 Recertification shall be done every 3 years for both BLS and ALS courses.

#### 4.2 TRAINING MANUALS

- 4.2.1 Guidelines and course materials for resuscitation training require endorsement of the relevant subcommittee of National Committee on Resuscitation Training.
- 4.2.2 Where possible, standard course materials produced by this committee shall be used. The materials shall be produced by the various sub-committees, based on international guidelines where available or nationally accepted guidelines with modification for local usage in hospitals.
- 4.2.3 Materials shall be revised when major guideline changes occur.

#### 4.3 **HUMAN RESOURCES**

#### 4.3.1 **Course Coordinators**

Hospitals shall appoint coordinators for the various life support Programmes. The coordinators must be certified life support instructors.

#### 4.3.2 **Hospital Secretariat**

Hospital shall appoint a secretariat to provide clerical assistance. The Secretariat may come from the administrative department of the hospital.

#### 4.3.3 **Instructors**

4.3.3.1 Instructors shall be certified by the National Committee on Resuscitation Training for MOH hospitals.

- 4.3.3.2 All instructors are required to conduct at least 3 courses within 5 years (for BLS 2 times per year) to maintain their instructor status. Instructors who do not fulfil this criterion shall be required to re-sit the Instructor Course.
- 4.3.3.3 Hospitals shall recognise instructors for their services and provide the following incentives where appropriate:
  - 4.3.3.3.1 Time off or allowance for after-hours service.
  - 4.3.3.3.2 Meals and refreshments during the course.
  - 4.3.3.3.3 Funding for resuscitation related refresher courses.
  - 4.3.3.3.4 Appreciation of service (e.g. certificate, badge, uniform).
- 4.3.3.4 There shall be a Training Equipment Manager who maintains the manikins and training equipment used in all training activities.

#### 4.4 **SKILL LAB/TRAINING CENTRE**

Resuscitation training equipment shall be housed in a skill lab or training centre which may act as a venue for training. The components of skill lab will vary according to the category of hospitals. Refer Appendix 4.

#### **QUALITY ASSURANCE**

#### 5.0 OUALITY ASSURANCE

- 5.1 The following output indicators are proposed for the core courses.
  - 5.1.1 100% of house officer (HOs) who have completed 2 years of house officer training shall have valid BLS certification.
  - 5.1.2 At least 70 % of all hospital HCWs has BLS training as of 1st January the following year.
  - 5.1.3 At least 70% of Medical Officer working in critical area such as Emergency and Trauma Department, Operating Theatre, Intensive Care Unit and acute care wards shall have ALS certification. All House Officers are encouraged to have ALS certification.
  - 5.1.4 At least 70% of Medical Officer and Paramedics working in Emergency and Trauma Department shall have TLS certification. Medical Officer and Paramedics working in surgical disciplines are encouraged to have TLS certification.
  - 5.1.5 100% of house officer (HOs) who have completed 2 years of House Officer training shall have valid NRP certification.
- 5.2 Computerised data on resuscitation training activities shall be maintained by the respective hospital secretariat. This shall be transmitted to the secretariat of the state and eventually the National Committee on Resuscitation Training for Ministry of Health Hospitals at annual basis and to be completed by February. (January to December), as in Appendix 5.
- 5.3 The National Secretariat shall produce a yearly report on training activities and performances of all hospitals. This report shall be made available to all hospitals and state resuscitation training committees.

## APPENDIX 1 ORGANISATION

#### 1.0 COMMITTEE ON RESUSCITATION TRAINING FOR MINISTRY OF HEALTH MALAYSIA : NATIONAL LEVEL

#### National Committee on Resuscitation Training for Ministry of Health (MOH) Hospitals

#### 1.1 Committee Members

#### 1.1.1 Chairman

A senior consultant appointed by the Deputy Director-General of Health (Medical) for a period of 3 years.

#### 1.1.2 **Secretariat**

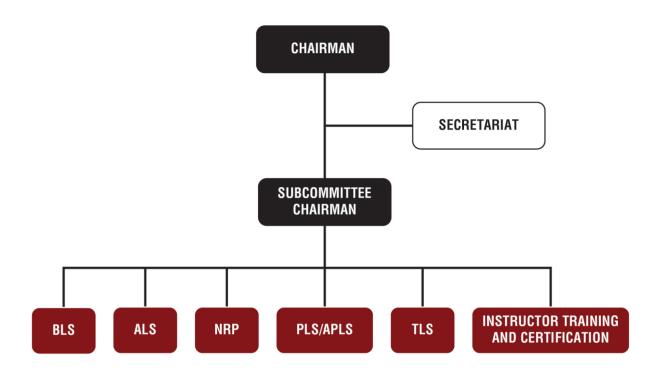
Senior Principal Assistant Director, Principal Assistant Director and Assistant Director of Medical Development Division (Emergency Services Unit)

1.1.3 **Subcommittee's** chairpersons representing various training modules.

They will be appointed by the Deputy Director-General of Health (Medical) on advice of the National Chairman and the National Advisor of each discipline.

- 1.1.3.1 BLS
- 1.1.3.2 ALS
- 1.1.3.3 NRP
- 1.1.3.4 PLS/APLS
- 1.1.3.5 TLS
- 1.1.3.6 Instructor training and certification.
- 1.2 Frequency of meeting shall be at least twice a year.
- 1.3 Terms of reference for National Committee and each Subcommittee
  - 1.3.1 Review the policy on resuscitation training for MOH Hospitals at least every 5 years or when needed arise.
  - 1.3.2 Update and standardize evidence based training guidelines and material for use in MOH hospitals.
  - 1.3.3 Plan the needs for trainers, posts, equipment and budget for MOH Hospitals.
  - 1.3.4 Coordinate the certification of Instructors and resuscitation providers in MOH Hospitals.
  - 1.3.5 Monitor resuscitation training activities in MOH Hospitals.
  - 1.3.6 Submit annual reports on training activities and performance of all hospitals/states to the Director of Medical Development Division, MOH and Deputy Director General of Health (Medical).

#### ORGANISATION CHART FOR NATIONAL COMMITTEE LEVEL



#### 2.0 COMMITTEE ON RESUSCITATION TRAINING FOR MINISTRY OF HEALTH MALAYSIA: STATE LEVEL

#### 2.1 State Level Committee on Resuscitation Training

#### 2.1.1 **Chairman**

State Deputy Director of Health (Medical)

#### 2.1.2 Vice-Chairman

Specialist actively involved in resuscitation training at state level appointed by Chairman every 2 years or as felt necessary.

#### 2.1.3 **Secretariat**

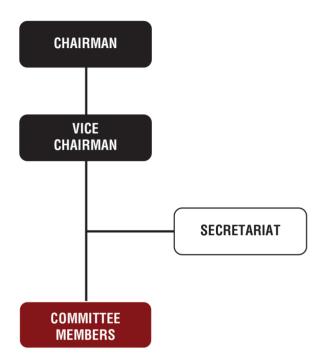
Officer from State Medical Division.

#### 2.1.4 **Committee members**

Representatives from resuscitation training committee of all Hospitals in the state.

- 2.2 Frequency of meetings shall be at least twice a year.
- 2.3 Terms of reference
  - 2.3.1 Plan the needs for trainers, posts, equipment and budget for resuscitation training in all hospitals in the state
  - 2.3.2 Coordinate the certification of instructors and resuscitation providers in the state.
  - 2.3.3 Monitor resuscitation training activities at the state level.
  - 2.3.4 Submit annual reports on training activities and performance of all hospital in the state to the National Committee on Resuscitation Training.

#### ORGANISATION CHART FOR STATE LEVEL



#### APPENDIX 1.3

#### 3.0 COMMITTEE ON RESUSCITATION TRAINING FOR MINISTRY OF HEALTH MALAYSIA: HOSPITAL LEVEL

#### 3.1 **Hospital with Specialist**

#### 3.1.1 **Chairman**

Hospital Director or Deputy Hospital Director (Clinical).

#### 3.1.2 **Vice- Chairman**

Specialist involved in resuscitation training.

#### 3.1.3 **Secretariat**

Officer not necessarily involved in resuscitation training.

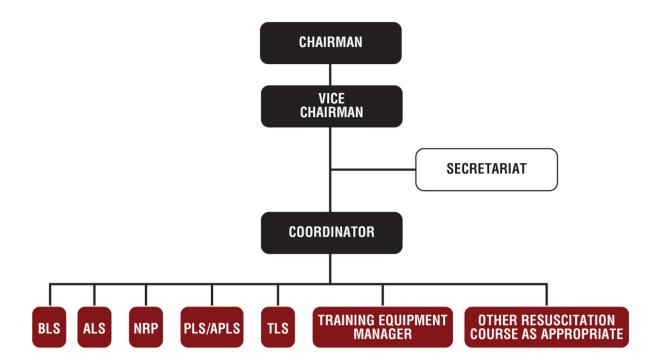
#### 3.1.4 Coordinators for the following Programmes.

- 3.1.4.1 BLS
- 3.1.4.2 ALS
- 3.1.4.3 NRP
- 3.1.4.4 PLS/APLS
- 3.1.4.5 TLS
- 3.1.4.6 Training Equipment Manager
- 3.1.4.7 Other resuscitation courses as appropriate

#### 3.2 Terms of Reference

- 3.2.1 To plan and submit appropriate budget request to meet Quality Assurance indicator set by the National Committee.
- 3.2.2 Coordinate all resuscitation training activities/courses in the hospital.
- 3.2.3 Maintain data on resuscitation training activities in the hospital.
- 3.2.4 Responsible for the maintenance of all training manikins/equipments.
- 3.2.5 Responsible for the certification of resuscitation providers.
- 3.2.6 Submit annual reports on training activities and performance of the hospitals to the state committee on resuscitation training.

#### ORGANISATION CHART FOR HOSPITAL WITH SPECIALIST LEVEL



#### 3.3 Hospitals Without Specialists

#### 3.3.1 **Chairman**

Hospital Director or Medical Officer involved in resuscitation training.

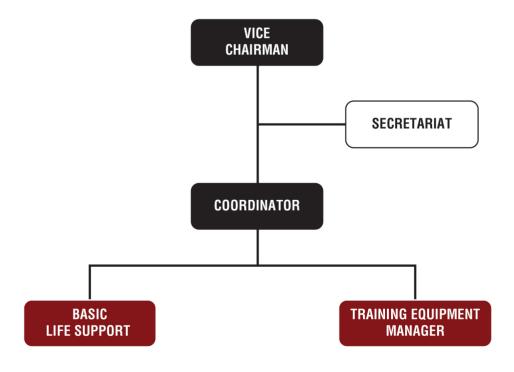
#### 3.3.2 **Secretary**

Officer involved in resuscitation training in the hospital.

#### 3.3.3 **Coordinators for**

- 3.3.3.1 BLS
- 3.3.3.2 Training Equipment Manager
- 3.4 Frequency of meeting shall be at least twice a year.
- 3.5 Submit annual reports on training activities and performance of the hospital to the state committee on resuscitation training.

#### ORGANISATION CHART FOR HOSPITAL WITHOUT SPECIALIST LEVEL



# APPENDIX 2 PROVIDER TRAINING FOR LIFE SUPPORT TRAINING

#### **APPENDIX 2.1**

#### **BASIC LIFE SUPPORT COURSE**

- 1.0 Minimum Modules
  - 1.1 Adult
    - 1.1.1 Adult CPR
    - 1.1.2 Conscious adult choking
    - 1.1.3 Mask Ventilation
    - 1.1.4 AED
  - 1.2 Infant
    - 1.2.1 Infant CPR
    - 1.2.2 Conscious Infant choking
- 2.0 Instructor to trainee ratio shall not be more than 1:6.
- 3.0 Assessment
  - 3.1 MCQ

20 questions, minimum 15 correct

- 3.2 Skill assessment
  - 3.2.1 One (1) man CPR
  - 3.2.2 Two (2) man CPR
  - 3.2.3 Infant CPR
  - 3.2.4 Infant Choking
  - 3.2.5 Mask ventilation
- 4.0 Suggested Programme

**Note:** Useful for hospitals with enough manikins and enough space for all participants to be trained simultaneously.

TIME	PROGRAMME
08:00 - 08:15	Registration
08:15 – 08:35	Introduction to Basic Life Support Course
08:35 – 09:15	Video/Lecture
09:15 - 09:30	Tea Break
09:30 - 11:30	Simultaneous CPR skill station
11:30 - 13:00	Practical Assessment
13:00 - 14:00	Lunch
14:00 - 15:30	Defibrillation/AED and mask ventilation
15:30 – 16:00	MCQ
16:00 - 17:00	Practical Session Revision

- 5.0 Certification
  - 5.1 All Candidates will be given a certificate of attendance or a certificate of successful completion of the course.
  - 5.2 Validity period shall be for 3 years.

#### **ADVANCED LIFE SUPPORT COURSE**

- 1.0 Minimum Modules
  - 1.1 Airway management
  - 1.2 Arrhythmias and ECG (rhythm) recognition
  - 1.3 Cardioversion/Defibrillation
  - 1.4 Algorithms for ventricular fibrillation / pulseless ventricular tachycardia / pulseless electrical activity / asystole
  - 1.5 Intravenous access
  - 1.6 Drugs in resuscitation
  - 1.7 Ethical Issues

The proposed Advanced Life Support course is a continuation of the proposed Basic Life Support Course and is aimed at all patients who have a cardiac arrest irrespective of the underlying illness although many of these patients might have the cardiac arrest from Acute Coronary Syndrome.

#### 2.0 Assessment

- 2.1 The participant is assessed on the following essential skills:
  - 2.1.1 Bag valve mask technique
  - 2.1.2 Endotracheal Intubation/ Supra-glottic Airway
  - 2.1.3 Oxygen therapy
  - 2.1.4 Mega code
- 2.2 The participant should have all the sequence correct and if an action is missed, the instructor needs to decide whether that action will cause serious harm and death to the victim.
- 3.0 Theory Assessment: MCQ 40 questions, passing mark 30.
- 4.0 Minimum training ratio, instructor: participant is 1 : 6.
- 5.0 Suggested Programme

DAY 1		
TIME	PROGRAMME	
08:00 - 08:15	Registration	
08:15 – 08:55	Airway Management	
08:55 - 09:30	Drug	
09:30 - 10:15	Algorithms in Resuscitation	
10:15 – 10:30	Tea Break	
10:30- 11:15	Skill Station: ECG Recognition	
11:15 – 12:00	Skill Station: Defibrillation and Cardioversion	
12:00 - 12:45	Skill Station: Intubation / Airway Adjuncts / Intravenous access	
12:45 - 14:00	Lunch	
14:00 – 14:15	Mega Code Demonstration	
14:15 – 17:00	Mega Code Practice	

DAY 2		
TIME	PROGRAMME	
08:15 - 08:30	Putting It Together	
08:30 - 10:00	Mega Code Practice	
10:00 – 10:15	Tea Break	
10:15 – 12:00	Mega Code / Airway Management	
12:00 - 13:00	Theory Paper	
13:00 - 14:00	Lunch	
14:00 - 16:30	Mega Code / Airway Test	

#### 6.0 Certification

- 6.1 A II Candidates will be given a certificate of attendance or a certificate of successful completion of the course.
- 6.2 Validity period shall be for 3 years.

#### PAEDIATRICS LIFE SUPPORT / ADVANCED PAEDIATRICS LIFE SUPPORT

- 1.0 Paediatrics Life Support (PLS)
  - 1.1 Target group was Nurses, Assistant Medical Officer and junior doctors.
  - 1.2 Bound by the rules and regulations of the Advanced Life Support Group United Kingdom and this is to ensure a consistent and internationally recognized standard.
  - 1.3 PLS instructors have to be APLS (Advanced Paediatric Life Support) Instructors.
- 2.0 Advanced Paediatric Life Support (APLS)
  - 2.1 Target group: medical officers and specialists working in emergency and paediatric wards in contact with children.
  - 2.2 Total number of APLS courses is 12 per year.
- 3.0 Criteria to be an APLS and PLS Instructor:
  - 3.1 Be selected as an Instructor potential after attending an APLS course
  - 3.2 Attend a Generic Instructor Course (GIC)
  - 3.3 Teach as a candidate instructor on 2 APLS courses under supervision
  - 3.4 Qualify as a full instructor and can teach in APLS and PLS courses
- 4.0 Paediatrics Life Support Course Contents
  - 4.1 Before the course, candidate must pass the pre course MCQs on line.
  - 4.2 Contents of the One day PLS course
    - 4.2.1 Lectures
    - 4.2.2 Skills teaching
      - 4.2.2.1 Airway and spine protection,
      - 4.2.2.2 Basic Life Support,
      - 4.2.2.3 Vascular access
      - 4.2.2.4 Defibrillation
    - 4.2.3 Workshop
    - 4.2.4 Simulation
  - 4.3 Testing on airway, basic life support and defibrillation
  - 4.4 Total number of instructors per course: 1 per 6 candidates (min)
  - 4.5 Number of candidates for each PLS course: 24
- 5.0 Instructor Course
  - 5.1 The Generic Instructor course is a 3 day course and is conducted by a medical educator and 4 GIC instructors.
  - 5.2 Number of candidate instructors per course is 12.
  - 5.3 Course contents:
    - 5.3.1 Adult Learning
    - 5.3.2 Mentoring with equipment familiarisation

- 5.3.3 Giving Feedback
- 5.3.4 Presentation skills
- 5.3.5 Skills teaching and demonstration
- 5.3.6 Simulation teaching
- 5.3.7 Group dynamics: small group teaching, practice and assessment
- 5.3.8 Demonstration of closed and open discussion
- 5.3.9 Assessment of skills teaching, simulation and presentation
- 6.0 Total number of GIC: 2 per year

#### TRAUMA LIFE SUPPORT

#### 1.0 General Principle

- 1.1 To provide the minimum standardized modules for Trauma Life Support training.
- 1.2 Each centre/states can come out with their own manual provided the minimum standard set by NCORT has been met. The training programme and manual should be endorsed by the TLS subcommittee, NCORT.
- 1.3 There should be clear objectives outlined for each topic.
- 1.4 Pitfalls associated with each of the topics should be discussed.
- 1.5 Additional topics and skills stations outside the minimum module can be added.
- 1.6 Suggested duration of the course should not be less than 2 days and not more than 3 days.
- 1.7 To ensure good quality training, the minimum ratio of instructor to participant is 1:5.

#### 2.0 Minimum module

TOPICS	CONTENT THEORY	SKILL OBJECTIVE
INTRODUCTION TO	1. Tri-modal distribution of death	N/A
TRAUMA	2. Biomechanics of injury	
INITIAL	The principles of primary and secondary surveys	Initial assessment and management
ASSESSMENT AND MANAGEMENT	2. Adjunct to the primary and secondary surveys	of trauma patient
IVIANAGEIVIENT	Recognition of patients who require transfer for definitive care	
AIRWAY AND	1. Signs and symptoms and recognition of airway	1. Delivery of Oxygen
VENTILATORY MANAGEMENT	and ventilator compromise	- various oxygen mask
IVIANAGLIVILINI	Techniques to maintain airway; adjuncts and definitive	2. Opening the airway:
	Indications for Rapid sequence induction	- oropharyngeal airway insertion
	intubation	- nasopharyngeal airway insertion
	4. Oxygen therapy and adequacy of oxygenation	3. Bag valve mask ventilation
	5. Difficult airway algorithm.	4. Adult and infant endotracheal intubation
		5. Insertion of supraglottic airway
		6. Cricothyroidotomy
CIRCULATORY	1. Definition, pathophysiology and recognition of	Recognise shock state
ASSESSMENT AND MANAGEMENT OF SHOCK	shock	2. Type of fluid
	2. Estimation of blood loss	3. Venous access and catheter
	3. Initial management and control of haemorrhage	4. Intraosseous insertion
	4. Vascular access and initial fluid and blood therapy	5. Pelvic binder
	5. Response to initial fluid resuscitation	6. Compression bandage
		7. Central line insertion (optional)

TOPICS	CONTENT THEORY	SKILL OBJECTIVE
THORACIC TRAUMA	1. Identify and initiate treatment of the life	1. Needle thoracentesis
	threatening injuries during primary survey	2. Chest tube insertion
	2. Identify the potential life threatening injuries during	3. Pericardiocentesis (optional)
	secondary survey	4. X-ray stations
		5. (optional)
ABDOMINAL AND	1. Mechanism of injury and suspected injury patterns	1. FAST / eFAST(optional)
PELVIC TRAUMA	Diagnostic procedure to identify on-going	2. Pelvic Binder
	haemorrhage	3. Pelvic X-ray station (optional)
HEAD TRAUMA	Indication for surgical intervention     Basic intracranial physiology	N/A
TILAD ITAOWA	Evaluation and management of patients with head	IWA
	trauma	
	3. Prevention of secondary brain injury	
SPINE AND SPINAL	1. Basic anatomy of the spine	Cervical collar application
CORD TRAUMA	2. Evaluation and appropriate treatment of patient	2. Manual in-line immobilization
	with suspected spinal injury	3. Helmet removal (optional)
	3. Neurogenic shock vs spinal shock	4. Log roll
	4. Principles of spine immobilization	5. X-ray station (optional)
MUSCULOSKELETAL	Identification of potential life-threatening	1. Application of splints
TRAUMA	extremities injuries	2. Fasciotomy (optional)
	2. Identification of limb-threatening injuries	3. X-ray station (optional)
	Principle and initial management of musculoskeletal injuries	
BURN INJURIES	1. Types and depth of burn	N/A
	Initial assessment , management and complication of burn	
	3. Criteria for burn centre referral	
PEDIATRIC TRAUMA	Unique anatomic and physiologic characteristic in children as compared with adults	N/A
	2. Common types and patterns of injury in children	
	Patterns of injury associated with child maltreatment	
GERIATRIC TRAUMA	Unique anatomic and physiologic characteristic of elderly patients and co- morbidities	N/A
	Common types and patterns of injury in elderly trauma	
	3. Signs of elderly maltreatment	

TOPICS	CONTENT THEORY	SKILL OBJECTIVE
TRAUMA IN	1. Anatomic and physiologic alteration of pregnancy	N/A
PREGNANCY	2. Common mechanisms of injury	
	Treatment priorities and assessment methods for both patients (mother and foetus)	
	4. Potential isoimmunisation and the need for immunoglobulin therapy (optional)	
TRAUMA TEAM	1. The need and objectives for Trauma Team	N/A
	2. The Trauma Team concepts	
COMMUNICATION	Emergency communication system	Proper use of communication set
(optional)	2. Communication methods and devices	(walkie-talkie, GIRN) (optional)
FIELD TRIAGE AND	1. Triage definition	Triage scenarios
	2. Principles of triage in multiple casualties and mass casualties event	
DISASTER MANAGEMENT	Define and explain the differences between multiple casualty incident (MCI) and mass casualty event (MCE)	Triage scenarios
	Describe the "all hazards" approach to disaster management	
	Phases of disaster and key elements of each phases	
	4. Incident command system	
TRANSFER FOR CRITICALLY ILL TRAUMA PATIENT	Identify injured patients who require transfer from a primary care institution to a facility capable of providing the necessary level of trauma care	N/A
	Initiate procedures to optimally prepare trauma patients for safe transfer to a higher-level trauma care facility via the appropriate mode of transportation	
	3. Monitoring and management during transfer	
	4. Handing over	

#### 3.0 Assessment

- 3.1 Consist of 2 components, written format and skills station format.
  - 3.1.1 Written exam
    - 3.1.1.1 Consist 40 questions. Choose best one format.
    - 3.1.1.2 Passing mark was 28/40 for paramedic and 32/40 for Medical Officers.
  - 3.1.2 Skills Station
    - 3.1.2.1 Candidates must pass the entire skill test.

3.1.2.2 Minimum module for Skill stations assessment:

3.1.2.2.1 Oropharyngeal / Nasopharyngeal Airway insertion

3.1.2.2.2 Bag Valve Mask ventilation

3.1.2.2.3 Needle Thoracentesis

3.1.2.2.4 Cervical Collar Application

3.1.2.2.5 Shock recognition and Types of Fluids

3.1.2.2.6 Initial Assessment

3.2 Participant must pass both components in order to pass this course.

4.0 Suggested Programme Duration: 3 days

DAY 1		
TIME	PROGRAMME	
07:30 - 08:00	Registration	Organizer
08:00 - 08:20	Topic 1: Introduction to Trauma	Speaker
08:20 - 09:00	Topic 2: Initial Trauma assessment and management	Speaker
09:00 - 09:30	Topic 3: Airway and Ventilatory management	Speaker
09:30 - 10:00	Topic 4: Circulatory assessment and management of shock	Speaker
10:00 - 10:20	Topic 5: Thoracic Trauma	Speaker
10:00 - 10:30	Breakfast	
10:30 - 12:30	Skill Station 1: Airway	Facilitator
	Skill Station 2: Circulation	
12:30 - 13:45	Lunch	
13:45 - 14:15	Topic 6: Abdominal and Pelvic trauma	Speaker
14:15 - 14:40	Topic 7: Head Trauma	Speaker
14:40 - 15:00	Topic 8: Spine and Spinal Cord Trauma	Speaker
15:00 - 17:00	Skill Station 3: Emergency Procedure	Facilitator
	Skill Station 4: Immobilization	

DAY 2		
TIME	PROGRAMME	
07:30 - 08:00	Registration	Organizer
08:00 - 08:30	Topic 9: Musculoskeletal Trauma	Speaker
08:30 - 09:00	Topic 10: Burn	Speaker
09:00 - 09:30	Topic 11: Paediatrics Trauma	Speaker
09:30 - 10:00	Topic 12: Geriatric Trauma	Speaker
10:00 - 10:30	Tea Break	
10:30 - 12:30	Skill Station 5: Initial Trauma assessment and Management	Facilitator
	Skill Station 6: Triage Scenarios/Communication	
12:30 - 13:45	Lunch and Zohor	
13:45 - 14:15	Topic 13: Trauma in Pregnancy	Speaker
14:15 - 14:45	Topic 14: Transfer of critically ill trauma patient	Speaker
14:45 - 15:15	Topic 15: Field Triage and Disaster Management	Speaker
15:15 - 15:30	Tea	
15:30 - 17:00	Skill Station 7: X-ray	Facilitator
	Practical: Trauma Moulage	

DAY 3		
TIME	PROGRAMME	
07:30 - 08:00	Registration	Organizer
08:00 - 09:30	Exam:	
	Group A: Skill Station	
	Group B: Theory	
09:30 - 10:00	Tea Break	
10:00 - 11:30	Exam:	
	Group A: Theory	
	Group B: Skill Station	
11:30 - 12:00	Interactive Session	
12:00 - 13:00	Course Evaluation and Certificate Distribution	Course Director
1300H	End of Course	

#### 5.0 Certification

- 5.1 All Candidates will be given a certificate of attendance or a certificate of successful completion of the course.
- 5.2 Validity is for 3 years.

# APPENDIX 3 INSTRUCTOR TRAINING FOR LIFE SUPPORT TRAINING

#### INSTRUCTOR TRAINING FOR LIFE SUPPORT TRAINING

- 1.0 Definition
  - 1.1 Instructor Person who conducts courses to train Life Support Providers.
  - 1.2 Instructor Trainer Person who conducts courses to train instructors. The person is also an instructor.
- 2.0 Strategies to identify and train an instructor
  - 2.1 Potential instructors shall be identified during the course. Potential instructors shall be required to 'tag' with senior instructors and help facilitate resuscitation course.
  - 2.2 All instructors potential shall attend a formal instructor course approved by National Committee on Resuscitation trai ing for MOH Hospitals.
  - 2.3 The new instructor will be required to be involved in at least 2 courses per year for BLS and 3 courses within 5 years for ALS.
  - 2.4 Certification will then be provided by the National Committee on Resuscitation training for MOH Hospitals on advice from the individual Hospital Committee chairpersons.
  - 2.5 All current Instructors will be approved by National Committee on Resuscitation training for MOH Hospitals on a vice of the individual Hospital Committee chairpersons without the requirement of attending a formal instructor course.
- 3.0 NCORT shall come out with the module for instructor course in :
  - 3.1 BLS
  - 3.2 ALS

# APPENDIX 4 EQUIPMENTS

#### 4.1 MINIMUM EQUIPMENTS FOR SKILL STATION

	Skill Station	Mannequin / Equipment	Minimum Number Required
1	1 man / 2 man CPR	Half Torso CPR Mannequin	3
2	Infant CPR	Infant CPR Mannequin	3
3	Adult Choking — Choking	Adult Choking Mannequin	1
	Adult Choking — Unconscious		1
4	Infant CPR / Choking	Infant CPR Mannequin	3
5	Airway	Airway Mannequin Bag and Valve Mask Device	2
6	Video show	TV and DVD / Media Player	1
7	Lecture	Computer and Projector	1 set each
8	Consumables and disposable		

	Skill Station	Skill Station Mannequin	
1	Mega code	ALS Mannequin	3
2	Airway station	Airway set	2 sets – Adult
3	Lectures	As above	

#### 4.2 MINIMUM EQUIPMENTS FOR SKILL LAB

Course	Equipment	Requirement for Hospital with Specialists	Requirement for Hospital without Specialist
	Adult manikin	6	2
	Adult choking manikin	3	1
Doois Life Cupport	Infant manikin	4	2
Basic Life Support	Infant choking manikin	4	1
	AED trainer	2	1
	Bag valve mask	6	2

Course	Equipment	Requirement for Hospital with Specialists	Requirement for Hospital without Specialist
	Infant manikin with skill guide for CPR	2	0
Neonatal	Infant intubation head	2	0
Resuscitation Programme	Neonatal manikin for umbilical	2	0
	Laryngoscope with different blades	2	0

Course	Equipment	Requirement for Hospital with Specialists	Requirement for Hospital without Specialist and Hospitals with minimal Specialist
	ALS trainer	3	0
	Airway Management Trainer	3	0
	Cardiac rhythm simulator	2	0
Advanced Life	Laryngoscope	3	0
Support	Laryngeal Mask Airway (LMA)	3	0
	Defibrillators	3	0
	Oxygen masks of different types	3 each	0
	Sim Man with Chest Drain Insertion Module	3	0

Course	Equipment	Requirement for Hospital with Specialists	Requirement for Hospital without Specialist and Hospitals with minimal Specialist
	ALS mannequin with trauma modules	1	0
	Trauma Mannequin	1	0
	Intermediate Life Support Mannequin	2	0
	Venepuncture and Injection Training Arms	3	0
	Intra-osseous Trainer	2	0
	Leg Replacement Pads	2	0
	Chest Drain Trainer (Complete Set)	1	0
	Chest Wall / Rib Cage with Replacement	1	0
	Pneumothorax Kit with Replacement	3	0
	Replacement Pericardiocentesis Kit	3	0
Trauma Life	Pleura Aspiration Kit	3	0
Support	Central Venous Catheterization Insertion Trainer	1	0
	Immobilization		
	Foldable Spinal Board	3	0
	Adult adjustable collar	4	0
	Paediatrics adjustable collar	10	0
	Rigid cervical collar set (4 sizes: tall, regular, short neck, no neck)	5	0
	Upper limb immobilizer (3 sizes)	3	0
	Lower limb immobilizer (3 sizes)	3	0
	Lower limb traction splint	3	0
	Pelvic immobilizer	3	0

# APPENDIX 5 REPORT

LAPORAN LATIHAN RESUSITASI **BASIC LIFE SUPPORT** PERINGKAT NEGERI

TAHUN:

NEGERI:

Jumlah Kumulatif Yang Mengikuti Latihan BLS Sah Tahun Semasa (%)	0Н	
	0W	
Jumlah Mengik Sah Tal	Pakar	
ang an BLS asa	0Н	
Bil. Doktor Yang Aengikuti Latihan BLS Tahun Semasa	0W	
Bil. Mengik Tal	Pakar	
tor	0Н	
Jumlah Doktor	0W	
ш	Pakar	
Jumlah Kumulatif Yang Mempunyai Sijil Yang Sah (Dan %)		
Bil. Anggota Jumlah Anggota Yang Mengikuti Di Hospital Latihan BLS Tahun Semasa		
Nama Hospital		

Isu / Masalah yang ingin dibangkitkan kepada Jawatankuasa Latihan Resusitasi Kebangsaan (National Committee on Resuscitation Training, NCORT)

Tandatangan Pelapor:

Nama / Jawatan:

LAPORAN LATIHAN RESUSITASI *ADVANCED LIFE SUPPORT* PERINGKAT NEGERI

TAHUN:

NEGERI :

Jumlah Kumulatif Yang Mengikuti Latihan ALS Sah Tahun Semasa (%)	Н0	
	MO	
Jumlah Mengik Sah Tah	Pakar	
ing an ALS sa	9	
Bil. Doktor Yang Mengikuti Latihan ALS Tahun Semasa	MO	
Bil. Mengik Tah	HO Pakar	
tor	HO	
Jumlah Doktor	MO	
Jul	Pakar	
Jumlah Kumulatif Yang Mempunyai Sijil Yang Sah (Dan %)		
Bil. Anggota Yang Mengikuti Latihan ALS Tahun Semasa		
Jumlah Anggota Di Hospital		
Nama Hospital		

Isu / Masalah yang ingin dibangkitkan kepada Jawatankuasa Latihan Resusitasi Kebangsaan (National Committee on Resuscitation Training, NCORT)

Tandatangan Pelapor:

Nama / Jawatan :

LAPORAN LATIHAN RESUSITASI **paediatric life support** peringkat negeri

TAHUN:

NEGERI :

tif Yang an PLS asa (%)	Н0	
Jumlah Kumulatif Yang Mengikuti Latihan PLS Sah Tahun Semasa (%)	MO	
Jumlah Kumulatif Yang Mengikuti Latihan PLS Sah Tahun Semasa (%)	Pakar	
ang an PLS asa	Н0	
Bil. Doktor Yang Mengikuti Latihan PLS Tahun Semasa	MO	
Bil. Mengik Tak	Pakar	
tor	0Н	
Jumlah Doktor	MO	
Jul	Pakar	
Jumlah Kumulatif Yang Mempunyai Sijil Yang Sah (Dan %)		
Bil. Anggota Yang Mengikuti Latihan PLS Tahun Semasa		
Jumlah Anggota Di Hospital		
Nama Hospital		

Isu / Masalah yang ingin dibangkitkan kepada Jawatankuasa Latihan Resusitasi Kebangsaan (National Committee on Resuscitation Training, NCORT)

Tandatangan Pelapor :

Nama / Jawatan :

LAPORAN LATIHAN RESUSITASI *advanced paediatric life support* peringkat negeri

TAHUN:

NEGERI:

tif Yang an APLS asa (%)	Н0	
Jumlah Kumulatif Yang Mengikuti Latihan APLS Sah Tahun Semasa (%)	MO	
Jumlah Kumulatif Yang Mengikuti Latihan APLS Sah Tahun Semasa (%)	Pakar	
ing n APLS sa	유	
Bil. Doktor Yang Mengikuti Latihan APLS   N Tahun Semasa	MO	
Bil.   Mengikı Tah	Pakar	
tor	유	
Jumlah Doktor	MO	
Jun	Pakar	
Jumlah Kumulatif Yang Mempunyai Sijil Yang Sah (Dan %)		
Bil. Anggota Yang Mengikuti Latihan APLS Tahun Semasa		
Jumlah Anggota Di Hospital		
Nama Hospital		

Isu / Masalah yang ingin dibangkitkan kepada Jawatankuasa Latihan Resusitasi Kebangsaan (National Committee on Resuscitation Training, NCORT)

Tandatangan Pelapor:

Nama / Jawatan :

LAPORAN LATIHAN RESUSITASI *Neonatal resuscitation programme* peringkat negeri

TAHUN:

NEGERI :

tif Yang an NRP asa (%)	НО	
Jumlah Kumulatif Yang Mengikuti Latihan NRP Sah Tahun Semasa (%)	MO	
Jumlah Mengik Sah Tah	HO Pakar	
ang an NRP isa	Э	
Bil. Doktor Yang Mengikuti Latihan NRP Tahun Semasa	MO	
Bil. Mengik Tah	Pakar	
tor	Н0	
Jumlah Doktor	MO	
Jun	Pakar M0	
Jumlah Kumulatif Yang Mempunyai Sijil Yang Sah (Dan %)		
Bil. Anggota Yang Mengikuti Latihan NRP Tahun Semasa		
Jumlah Anggota Di Hospital		
Nama Hospital		

Isu / Masalah yang ingin dibangkitkan kepada Jawatankuasa Latihan Resusitasi Kebangsaan (National Committee on Resuscitation Training, NCORT)

Tandatangan Pelapor :

Nama / Jawatan :

LAPORAN LATIHAN RESUSITASI **TRAUMA LIFE SUPPORT** PERINGKAT NEGERI

TAHUN:

NEGERI:

Jumlah Kumulatif Yang Mengikuti Latihan TLS Sah Tahun Semasa (%)	Н0	
	MO	
Jumlah Mengik Sah Tah	Pakar	
ang an TLS isa	유	
Bil. Doktor Yang Mengikuti Latihan TLS Tahun Semasa	MO	
Bil. Mengik Tał	Pakar M0	
tor	유	
Jumlah Doktor	MO	
Jul	Pakar	
Jumlah Kumulatif Yang Mempunyai Sijil Yang Sah (Dan %)		
Bil. Anggota Yang Mengikuti Latihan TLS Tahun Semasa		
Jumlah Anggota Di Hospital		
Nama Hospital		

Isu / Masalah yang ingin dibangkitkan kepada Jawatankuasa Latihan Resusitasi Kebangsaan (National Committee on Resuscitation Training, NCORT)

Tandatangan Pelapor:

Nama / Jawatan :

## APPENDIX 6 TEMPLATES OF CERTIFICATES

#### TEMPLATES OF CERTIFICATES FOR INSTRUCTOR COURSE





### NATIONAL COMMITTEE ON RESUSCITATION TRAINING MINISTRY OF HEALTH MALAYSIA

 	• • • • • • • • • • • • • • • • • • • •	

This is to certify that

has successfully attended

### XXXX LIFE SUPPORT INSTRUCTOR COURSE (name of the course e.g. ALS/BLS)

From until (date)	
at	
(place)	

Deputy Director General of Health Malaysia (Medical)

Chairman of National Committee on Resuscitation

Chairman of Advanced Life Support Sub

#### TEMPLATES OF CERTIFICATES FOR PROVIDER COURSE





### NATIONAL COMMITTEE ON RESUSCITATION TRAINING MINISTRY OF HEALTH MALAYSIA

This is to certify that				
has successfully completed/attended				
XXXX LIFE SUPPORT PROVIDER				
COURSE (name of the course e.g. ALS/BL	S)			
From till (date)				
at				
at				
(place)				
Hospital Director	Hannital Caurea Director			

#### TECHNICAL COMMITTEE

#### **National Committee and Resuscitation Training**

#### 1. Dr Sabariah Faizah Binti Jamaluddin

Head of National Emergency Medicine and Trauma Services

Chairman of National Committee and Resuscitation Training (NCORT)

Emergency and Trauma Department

Hospital Sungai Buloh

Selangor

#### 2. Dr Luah Lean Wah

Chairman of Advanced Life Support Sub-Committee Consultant Anaesthesiologist Department of Anaesthesiology and Intensive Care Hospital Pulau Pinang Pulau Pinang

#### 3. Dr Thohiroh Binti Abdul Razak

Consultant Anaesthesiologist
Department of Anaesthesiology and Intensive Care
Hospital Kuala Lumpur
Wilayah Persekutuan Kuala Lumpur

#### 4. Dr Ridzuan Bin Dato' Mohd Isa

Chairman of Trauma Life Support Sub-Committee Consultant Emergency Physician and Head Emergency and Trauma Department Hospital Ampang Selangor

#### 5. Dr Neoh Siew Hong

Chairman of Neonatal Resuscitation Programme
Consultant Paediatrician (Neonatology)
Paediatric Institute
Hospital Kuala Lumpur
Wilayah Persekutuan Kuala Lumpur

#### 6. Dr Mohd Lotfi Bin Hamzah

Chairman of Basic Life Support Sub-Committee Emergency Physician and Head Emergency and Trauma Department Hospital Sultanah Nur Zahirah, Kuala Terengganu Terengganu

#### 7. Dato' Dr Teh Keng Hwang

Chairman of Paediatric Life Support/
Advanced Paediatric Life Support Sub-Committee
Consultant Paediatrician
Paediatric Department
Hospital Sultan Abdul Halim, Sungai Petani
Kedah

#### And members of:

- 1. Basic Life Support Sub-Committee
- 2. Advanced Life Support Sub-Committee
- 3. Paediatric Life Support/Advanced Paediatric Life Support Sub-Committee
- 4. Trauma Life Support Sub-Committee
- **5. Neonatal Resuscitation Programme**

#### **SECRETARIAT**

#### 1. Dr Kasuadi Bin Hussin

Senior Principle Assistant Director Emergency Services Unit Medical Development Division Ministry of Health

#### 2. Dr Nor Mashitah Binti Hj Jobli

Principle Assistant Director Emergency Services Unit Medical Development Division Ministry of Health

#### 3. Mohd Arif Bin Mohd Yusoff

Senior Assistant Medical Officer Emergency Services Unit Medical Development Division Ministry of Health

#### 4. Mohd Faiz Bin Johari

Senior Assistant Medical Officer Emergency Services Unit Medical Development Division Ministry of Health



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