MALAYSIAN MEDICAL COUNCIL

SPECIALTY-SPECIFIC REQUIREMENTS (SSR)

(TRANSFUSION MEDICINE)

Prepared By:

Specialty Education Subcommittee (SEC)

of the Medical Education Committee (MEC),

Malaysian Medical Council

Approved by the Malaysian Medical Council:

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Preface

1. The Specialty-Specific Requirements (SSR) pertain to requirements within each specialty and specify the minimum requirements pertaining to the training curriculum, trainers, educational resources and head of programme.

2. The Specialty-Specific Requirements (SSR) are intricately linked to the MMC Malaysian Standards for Medical Specialist Training 2019, and the Standards and SSR must be read and applied together.

Attachment 2

Specialty-Specific Minimum Requirements for Training Curriculum (Based on Area 1.2.4 of Malaysian Standards for Medical Specialist Training) - Transfusion Medicine

<table>
<tr><th>Specialty-Specific Requirements
(Reference Standard)</th><th>Criteria</th></tr>
<tr><td>1) Minimum entry requirements for postgraduate training

(Standard 3.1.)</td><td>1. Fully registered with the Malaysian Medical Council with a current annual practicing certificate

1. Successful entry evaluation into the program</td></tr>
<tr><td>2) Minimum duration of training programme

(Standard 1.2.4 - Table 2)</td><td>Completion of a minimum of 48 months of specialized training in the specialty program.</td></tr>
<tr><td>3) Structure of training (rotation/modules)

(Standard 1.2.4 - Table 3 & Table 4)

Training overview

Training rotation/modules and case mix</td><td>The training shall cover the core areas which include clinical and technical aspects of Transfusion Medicine as follows:

i. Blood procurement and donor management
ii. Component processing and plasma fractionation
iii. Blood inventory management
iv. Clinical Transfusion
v. Immunohaematology
vi. Transfusion Microbiology
vii. Laboratory Haematology
viii. Quality Assurance
ix. Haemovigilance
x. Tissue typing and Cellular therapy
xi. Regenerative medicine

The clinical training shall include rotations in the following disciplines for a total duration of at least 18 months (inclusive in the 192 weeks), with a minimum of 10 weeks in each Area below:

<table>
<tr><th>Area</th><th>Duration</th></tr>
<tr><td>Haematology and Oncology</td><td>10 weeks</td></tr>
<tr><td>Accident & Emergency</td><td>10 weeks</td></tr>
<tr><td>Anaesthesiology</td><td>10 weeks</td></tr>
<tr><td>Obstetric & Gynaecology</td><td>10 weeks</td></tr>
<tr><td>Paediatrics</td><td>10 weeks</td></tr>
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<table>
<tr><td></td><td>
<table>
<tr><td>Surgery (e.g Hepatobiliary, Vascular, Cardiothoracic Surgery or Neurosurgery)</td><td>10 weeks</td></tr>
<tr><td>Medical (e.g Nephrology, Gastroenterology)</td><td>10 weeks</td></tr>
</table>
*Effective learning period per year or 12 months is 48 weeks
</td></tr>
<tr><td>4) Assessments

(Standard 2.2.1)</td><td>Assessments should
i. Employ appropriate methods and levels that are well-aligned with learning outcomes. These include a variety of methods and tools such as written assessments, clinical assessments, supervisor’s report, logbook, attendance, training attended, practice diary, research report, communication skills including methods appropriate to assess ethics and professionalism.
ii. Include formative and summative assessments throughout each rotation, semester, or year of study.
iii. Include clear criteria for progression to next year of study.
iv. Include an exit evaluation/assessment.</td></tr>
<tr><td>5) Additional requirements for completion of training

(Standard 1.2.4)</td><td>i. Completion of graduate-level research or clinical audit project.

ii. Satisfactory completion of required certification as follows:
a. Good Clinical Practice (GCP) certification</td></tr>
<tr><td>6) List of competencies to be acquired upon completion of training

(Standard 1.1.4)</td><td><u>Generic competencies</u>

Able to:

i. Diagnose, investigate and manage common Transfusion Medicine related cases and donors whilst considering social, health economics and preventive aspects.
ii. Anticipate and manage complications.
iii. Work independently and in teams competently and professionally.
iv. Practise good ethical conduct.
v. Practise good and effective communication skills.
vi. Perform critical review, plan and conduct scientific research.
vii. Exemplify self-advancement through continuous academic and/or professional development including digital health.
viii. Apply evidence-based medicine in the field of Transfusion Medicine
ix. Demonstrate exemplary leadership qualities in the multi-disciplinary team management of Transfusion Medicine cases.
x. Demonstrate an entrepreneurial mindset, creative problem-solving and resilience.</td></tr>
</table>

	Specific specialty competencies i. Provide consultation on clinical transfusion. ii. Report clinical immunohematology cases. iii. Report and provide consultation on transfusion reaction. iv. Provide consultation in transfusion microbiology. v. Report and manage adverse donor reaction. vi. Manage blood procurement and inventory. vii. Lead quality Management initiatives in transfusion laboratory.

Note : These criteria represent the minimum standards. Each educational programme provider may exercise their autonomy to state criteria above and beyond these minimum standards.

Attachment 4

<table>
<tr><th colspan="3">Specialty-Specific Minimum Requirements for Training Centres and Head Programme (Based on Areas 3-6 of Malaysian Standards for Medical Specialist Training) - Transfusion Medicine</th></tr>
<tr><th>Item no</th><th>Specialty-Specific Requirements
(Reference standard)</th><th>Criteria</th></tr>
<tr><td>4</td><td>Trainer-to-trainee ratio

(Standard 3.1.3)</td><td>1:4</td></tr>
<tr><td>5</td><td>Minimum qualifications and experience of trainers

(Standard 4.1.2)</td><td>i.Registered with National Specialist Register
ii.Completed training-of-trainer course/equivalent</td></tr>
<tr><td>6</td><td>Minimum requirements for educational resource

(Standard 5.1.1)</td><td>Training centres must collectively provide services, equipment and a case mix as follows:

i.Physical facilities:
a. Educational resources shall include adequate:
<table><tr><th>Facilities</th></tr><tr><td>Lecture Hall</td></tr><tr><td>Seminar Room</td></tr><tr><td>Medical Officer Room</td></tr><tr><td>Clinical Laboratory</td></tr><tr><td>On-Call Call Room</td></tr><tr><td>Meeting Room</td></tr><tr><td>Library</td></tr><tr><td>Internet Access</td></tr><tr><td>Multipurpose Laboratory</td></tr></table>b. There should be facilities for special needs such as lifts, toilets for the disabled, ramps for easy access and parking for the disabled.

ii.Services Areas

The laboratory(ies) must be accepted or accredited by the relevant body for transfusion medicine laboratory or equivalent services.

<table><tr><th>Service Areas</th><th>Details</th></tr><tr><td></td><td>Blood Procurement</td></tr></table></td></tr>
</table>

Blood transfusion services	Component Processing and Plasma Logistics
	Blood Inventory
	Transfusion Microbiology
	Clinical Transfusion
	Immunohematology
	Quality Assurance
	Haemovigilance
	Transplant Immunology
	Regenerative Medicine and Cellular therapy
Clinical service	Haematology
	Oncology
	Accident & Emergency
	Anaesthesiology
	Obstetrics & Gynaecology
	Paediatrics
	Surgery
	Medicine
	Orthopedics

iii.Equipment

Equipment	
Areas	Details
For Blood Procurement	Height and weight measurement machine
	Haemoglobinometer
	Blood transport box
	Temperature monitoring system
	Apheresis machine
	Blood donation chair/bed
	Blood tube sealer
	Blood mixer
For Blood Component Processing and Inventory	Blood bag Centrifuge
	Blood bag separator
	Blood bag weighing scale
	Plasma thawer
	Blood refrigerator
	Sample refrigerator
	Plasma storage freezer
	Ultra-low temperature freezer

			Blast freezer
			Platelet agitator and incubator
			Label printer
			Sealer
			Sterile Docking Machine
			Blood irradiator/X ray
		For Clinical Transfusion	Immunohaematology analyzer
			Incubator
			Centrifuge for sample tube
			Water bath
			Gel card centrifuge
			Gel card incubator
			Blood fridge
			Plasma freezer
			Platelet agitator
		For Quality Control	Ph meter
			Residual white blood cell analyzer
			Coagulation factor analyzer
			Hematology analyzer
			Low plasma hemoglobinometer
			Temperature logger
		For Stem Cells Unit	Liquid nitrogen storage and refill tank
			Storage Freezer
			Flow cytometry
			Cell culture incubator
			Cell culture inverted microscope
			Biological Safety Cabinet
		For Transfusion Microbiology	Blood screening analyzer (serology)
			Blood screening analyzer (nucleic acid testing)
			Blood freezer for sample archiving
			Sample centrifuge
			Biohazard Safety Cabinet
			Deionized water equipment
			Rotators
			Autoclaves for sterility purposes (for reactive blood bag)
			Vortex
			Thermometer infrared
			Temperature monitoring system
		For DNA Extraction	Vortex
			Minispin
			Centrifuge

		Thermomixer
		Refrigerated centrifuge
		Analytical balance
		DNA quantification analyser
	For Molecular Analysis	Thermal cycler
		Vortex
		Minispin
		Centrifuge
		UV- cleaner box
	For HLA antibody	HLA antibody analyzer/detection system
		Vortex
		Minispin
		Shaker
	For Cell Isolation	Centrifuge
		Vortex
		Automated Cell counter
		Automated cell washer
	For Flow Crossmatch	Flow cytometer
		Vortex
		Centrifuge

iv. Number of patients transfused

a. Number of patients transfused for each institute/hospital/training center: At least 2, 000 patients per year.

v. Case Load (Case Mix)

The case load of the programme training centres must **collectively** be able to accommodate the following minimum requirements:

Areas	**Minimum Quantity (cases/trainee/year)**
Blood centre	1,000 donations
Immunohematology laboratory	500 cases for routine and specialized tests
Blood Component preparation	1,000 preparations
Viral screening	1,000 samples

7	Minimum qualifications and experience of Head of Programme (Standard 6.2.2)	i. 5 years or more of working experience after national specialist registration. ii. Experience in administration and/or academic management.

Note : These criteria represent the minimum standards. Each educational programme provider (ETP) may exercise their autonomy to state criteria above and beyond these standards.

Glossary for Lab Based

*Relevant body(ies) refers to Department of Standards Malaysia, SIRIM and etc.

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