MASTER OF MEDICINE (FAMILY MEDICINE) EXAMINATION FORMAT

PART 2

"The Master of Medicine (Family Medicine) Examination will undergo the definitive change in 2023. This document outlines the format of the Clinical Examination from 2023."

CONTENTS

CHAPTER 1 - COMPONENTS OF THE MASTER OF MEDICINE (FAMILY MEDICINE) EXAMINATION

I. Part 1 (Family Medicine Applied Knowledge Test)

The **Family Medicine Applied Knowledge Test** (FM AKT) consists of 180 single best answer multiple choice questions (MCQs). It will be conducted in 2 examination sections with 90 MCQs per examination section. Candidates are given up to 2 hours to complete each examination section. For more information on FM AKT, please click **here**.

II. Part 2 (Clinical)

This is a Multi-Station Clinical Examination, consisting of **14** stations.

Table 1. Master of Medicine (Family Medicine) Exam Format

Component	Format		Testing Time
Part 1 (Written)			
FM AKT	MCQ	180 questions	240 min
Part 2 (Clinical): Multi-Station Clinical Examination			
Logbook-based viva assessment (20 cases)	Questions on 3 domains	Acute Chronic Preventive	30 min
Slides-based short answer questions	15 slides	15 slides	45 min
12 Clinical Skills Assessment Stations	12 Stations	12 Consultation Stations	20 min (x12) **Includes 4-minutes reading time*
Total testing time (Clinical)			**315 min**

CHAPTER 2: ELIGIBILITY CRITERIA AND FORMAT OF THE MULTI-STATION CLINICAL EXAMINATION

2.1 Eligibility Criteria for Sitting the FM Examination (Part 2)

- A Pass result in Part 1, which is the FM AKT. A Letter of Admission for MMed (Fam Med) Examination (Part 2) will be issued upon verification of the pass result for Part 1.
- For CFPS MMed Trainees – no more than three (3) years (36 months) after completion of training programme, as stated in the end-of-training letter.
- For Residents – within the candidature period, which includes the completion of training and passing of the requisite examinations.

2.2 Overview of the Examination Format

The clinical stations will be conducted over several days. Each Consultation Station will take 16 minutes, with an additional 4 minutes of reading time between stations. There will be 1 examiner per station.

2.3 Multi-Station Clinical Examination Blueprint

The candidate will be assessed across all disciplines relevant to family medicine practice, and across all pediatric, adult, and geriatric age categories.

In the consultation station, a candidate may be required to obtain the history from the parent or caregiver present instead of directly from the patient.

Candidates will be assessed on a variety of management scenarios, ranging from acute or emergency management, to chronic or palliative management. In addition, stations may have a greater focus on certain domains, such as physical examination.

In situations where physical examination is required but could not be carried out e.g. per rectal examination, candidates may ask for the findings. Alternatively, mannequins may be used.

Table 2 shows the Blueprint matrix for the clinical stations. Table 3 shows the Blueprint matrix for the questions in the Slides-based Station.

Table 2. Multi-Station Clinical Examination Blueprint

	Viva	CS*	CS*	CS*	CS*	CS*	CS*	CS*	CS*	CS*	CS*	CS*	CS*
Cardiovascular													
Respiratory													
Gastro, Renal & Urology													
Neurology, Psychiatry & Sensory Organs													
Musculoskeletal, Rheumatology & Dermatology													
Endocrine & Haematology													
Male & Female Reproductive System													
Ethics, Practice-based													
Paediatric (<18yrs)													
Adult													
Geriatric (>=65yrs)													
Acute/ Emergency													
Chronic / Preventive/ Palliative													

**CS denotes – Consultation Station*

Table 3. Slides-Based Short Answer Questions Blueprint

Slides	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Cardiovascular															
Respiratory															
Gastro, Renal & Urology															
Neurology, Psychiatry & Sensory Organs															
Musculoskeletal, Rheumatology & Dermatology															
Endocrine & Haematology															
Male & Female Reproductive System															
Ethics, Practice-based															
Pediatric (<18yrs)															
Adult															
Geriatric (>65yrs)															
Acute/ Emergency															
Chronic / Preventive/ Palliative															

2.4 Domains of Clinical Skills tested

The Clinical examination will incorporate assessment in **9** clinical domains. Description of competency in each clinical domain is included below. Table 4 demonstrates how the different stations test across the domains.

1. History Taking Skills

Obtaining a focused history in a thorough, systematic, and fluent manner.

2. Relevance of History

Following appropriate cues and eliciting positive and negative details important to the assessment and management of the patient.

3. Physical Examination Skills

Having appropriate, systematic, and fluent technique of physical examination.

4. Identifying Physical Signs

Eliciting physical signs correctly and not finding absent signs.

5. Problem Definition

Identifying problems or coming up with a list of relevant differential diagnoses.

Prioritizing physical, psychological, and social issues involved in the context of family and community.

6. Investigations

Offering evidence-based investigations that are relevant, context-specific, and cost-effective, with consideration for patient safety and comfort, and interpreting results correctly.

7. Management

Dealing with issues in an appropriate order, defining further steps, and offering choices of therapy (inclusive of referrals) in a timely manner.

Customizing management to the patient, involving family and community where relevant.

8. Communications & managing patient concerns

Responding appropriately to verbal and non-verbal cues.

Using effective non-verbal strategies, including silence, and an appropriate mix of open-ended and close-ended questioning.

Explaining diagnoses, rationale for investigations, test results, and planned management to the patient in an effective way, avoiding medical jargon.

Communicating clearly with colleagues, using appropriate medical terminology.

Seeking, detecting, acknowledging, and addressing patient's or caregiver's concerns.

Responding appropriately to the patient's emotional state.

9. Professionalism & Ethics

Treating patient respectfully and with sensitivity, and ensuring comfort, safety, and dignity in the context of their culture.

Demonstrating awareness of ethical issues as they relate to the consultation.

Table 4. Domains assessed in the Multi-Station Clinical Examination

	VIVA	Slides	Consultation Stations
History taking skills			X
Relevance of history	X		X
Physical examination skills#			X
Identifying physical signs#	X		X
Problem definition	X		X
Investigations	X		X
Management	X		X
Professional communication	X		
Communication & managing patient concerns			X
Professionalism & Ethics	X		X
Overall Performance	X	X	X

#*Mental state evaluation will be scored here*

If a domain will not be scored in a particular station, candidates will be informed in the Candidate Instructions for that station

2.5 Assessment scale

Assessment will be on a 4-point scale. A general description of what constitutes a "Fail" and "Pass" for each clinical domain is included in the following section and will be included in the marksheets.

Fail **Borderline** **Pass** **Good Pass**

In addition to the clinical domains, candidates will be assessed on their overall performance for each station. The performance in each clinical domain will be assessed independently of the overall assessment.

CHAPTER 3 - DESCRIPTION OF STATIONS IN THE MULTI-STATION CLINICAL EXAMINATION

3.1 Overview of the Logbook-based Viva Assessment

The logbook-based viva assessment will be conducted by one examiner per candidate, and will comprise **2** parts:

A. Assessment of written submission (undertaken by the examiner prior to the viva assessment)

B. Viva examination based on cases from the candidate's logbook, focusing on acute, chronic, and preventive care

Assessment of the Written Submission (Log of 20 cases)

Candidates are required to submit a log of 20 cases seen during the training period.

The written submission of the 20 cases will be marked on succinctness and relevance of medical documentation and absence of gross clinical practice errors.

Logbook-Based Viva Examination (30 minutes total)

The viva examination aims to clarify and obtain further insight into the candidate's ability in the following areas:

1. Acute care (e.g., emergencies, ill-defined symptoms)
2. Chronic care (e.g., polypharmacy, use of community resources)
3. Preventive care (e.g., health screening, self-monitoring, health promotion)

A **minimum** of **2 cases** will be selected from the candidate's logbook that fall into **each of the 3 categories** (**minimum of 6 cases in total**). These cases will provide the basis for discussion of management in each of the areas. The cases that are selected may include cases with issues in problem definition, investigation, and/or management.

In situations where the examiner feels many cases require discussion, the examiner will prioritize and select the MOST appropriate cases for discussion during the viva.

If a case that deals suitably with preventive care cannot be identified, an acute or chronic case will be selected for discussion on preventive care.

Candidates are required to complete a matrix table and include it as part of the submission of the 20 cases practice diary.

Candidates are required to include:

1. at least 1 case in each system
2. at least 5 cases in each age group

Individual cases can be a mix of case types (i.e., Acute, Chronic and Preventive) and there should be a range of case types. A sample of the completed matrix table can be found below:

MASTER OF MEDICINE (FAMILY MEDICINE) EXAMINATION
LOGBOOK-BASED VIVA - FORMAT FOR 20 CASES PRACTICE DIARY

VIVA Blueprint Template. Below is a **sample matrix** for your **reference only**.

Patient	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
System																				
Cardiovascular, respiratory			x		x							x							x	
Gastro, renal, urology		x											x							
Neurology, eye, ENT				x										x	x					
Musculoskeletal, Rheumatology & Dermatology							x									x				
Endocrine, Haematology & ID	x							x	x								x			
Male & Female Reproductive System										x	x							x		
Psychiatry, ethics-based						x														x
Age group																				
Paediatrics (<18yrs)	x	x	x	x	x															
Adults						x	x	x	x	x	x	x	x	x						
Geriatrics (>=65yrs)															x	x	x	x	x	x
Case Type																				
Acute/ emergency	x	x						x		x		x		x		x				x
Chronic/ palliative			x		x	x	x		x		x		x		x			x	x	
Preventive				x			x			x		x				x				

Please refer to the attached files below for the 20 cases practice diary format and template.

[Updated 2022] Format for 20 cases p

2023_VIVA_[NAME AS PER NRIC OR PAS

3.1.1 Declaration of Veracity

Candidates are required to sign a declaration of veracity form^ to declare that the practice diary submitted is a true submission and that the cases in the practice diary:

- are real patients in his/her practice,
- have been personally managed by him/her as described, and
- were managed for the conditions described in the practice diary.

Candidates will be subject to random verification of authenticity check by their Programme Directors.

^Fraudulent declaration is a reflection of unprofessional behavior, and the University reserves the right to disciplinary actions.

Table 5. Written Logbook Submission: Mark Scheme

	Fail	Borderline	Pass	Good Pass
Relevance of history	Details inadequate or irrelevant	Checklist-type history with little prioritisation	Details are relevant	Succinct, relevant details, in most cases
Physical signs	Important details omitted	Checklist-type documentation	Relevant positive and negative signs are documented in most cases. Some non-essential findings	Relevant positive and negative signs are documented in most cases. Few non-essential findings
Problem definition	Important differentials not considered. Problems not prioritized	Some differentials are considered	Sensible differentials or problem list. Problems prioritized according to context	The appropriate relevant issues are considered in context in most cases
Investigation	Inappropriate/inadequate investigations. Incorrect interpretation	Choice of tests lacks discrimination. Over-investigated. Generic interpretation without context	Choice of tests and interpretation are cost-effective, appropriate, and in context	Choice of tests and interpretation well-considered and customized to clinical question and context, in most cases
Management	Inappropriate management. Inaccurate information or elaboration	Formulaic, ignoring context. Checklist-driven, such as generic patient education/ advice	Cost-effective, appropriate, and patient-centered. Information given takes into account patient's health literacy/understanding and practices	Comprehensive, prioritized plans that consider patient's context, understanding, practices and preferences, in most cases. Appropriate use of family and community resources, where appropriate
Professional communication	Inappropriate or ineffective language	Poor editing and grammar	Ideas are effectively conveyed. Professional language used, as expected in professional writing	Ideas are effectively and accurately conveyed, and in a polished manner, in most cases
Professionalism & Ethics	Lapses in ethics and/or professional considerations	Formulaic adherence to principles, without context	Appropriate ethical and/or professional sense, generally	Appropriate ethical and/or professional sense, in most cases
Overall performance	**Important issues not identified, or management is inappropriate**	**Issues defined and managed without considering patient context**	**Issues defined and managed in context**	**Holistic evaluation and management in most cases**

Table 6. Logbook-based Viva Structured Questions: Mark Scheme

	Fail	Borderline	Pass	Good Pass
Problem definition	Does not consider important differentials. Does not prioritize	Considers some differentials	Sensible differentials or problem list. Prioritizes according to patient context	Prioritizes well. Considers relevant issues in context, in most cases
Investigation	Inappropriate/inadequate investigations. Incorrect interpretation	Choice of tests lacks discrimination. Over-investigated. Generic interpretation without context	Choice of tests cost-effective and interpretation appropriate, and in context	Choice of tests and interpretation well-considered and customized to clinical question, in most cases
Management	Inappropriate management. Inaccurate information or elaboration	Formulaic, ignoring context. Checklist-driven, e.g. generic patient education/advice	Cost-effective, appropriate, and patient-centered. Information given considers patient understanding and practice	Comprehensive, prioritized, patient-centered, in most cases. Appropriate use of family and community resources
Professional communication	Fails to articulate clinical reasoning or rationale for investigation and management	Demonstrates some logical thinking, with effort. Inappropriate appearance or mannerisms	Clearly articulates logical clinical reasoning and has appropriate rationale for investigation and management	Conveys logical clinical reasoning effectively, accurately in a polished manner, in most cases
Overall performance	**Fails to identify important problems or provide clinically sound and timely management**	**Defines and manages issues without considering patient context**	**Defines problems and offers appropriate management with sound clinical reasoning**	**Holistic evaluation and management, for most cases. Rapidly grasps issues and concerns**

3.2 Slides-Based Short-Answer Questions Station (45 minutes)

There will be 15 short answer questions in total, each based on a clinical scenario. Questions can be based on:

- Picture / Video clip of a clinical sign or condition
- Radiological investigations e.g. x-rays
- Investigation results e.g. laboratory investigations, audiograms, histological reports
- Electrocardiograms

Questions will be based on a clinical stem and will test candidates on interpretation of the sign or investigation, problem definition, and/or further investigation/management. Table 3 shows the blueprint. Each slide question may contain 2 to 4 parts.

3.3 Consultation Station

There will be 12 Clinical Stations designed to determine proficiency of clinical knowledge and skills of the candidate in the practice of family medicine. Each station is 20 minutes long[1]. Table 2 shows the blueprint for the clinical systems, age groups and types of management that will be assessed.

Reading Time	Exam Time	Total Testing Time
4 minutes	15 minutes + 1-minute clarification with Examiner	**20 minutes**

The consultation station assesses the candidate's ability to take a focused history, perform a relevant physical examination, formulate an appropriate problem list, recommend an evidence-based, patient-centered management plan, and communicate effectively with patients and colleagues. Being able to integrate these skills effectively is a key element of this assessment.

Candidates will be given instruction sheets before entering the examination room, to be read in the 4-minute interval before entering the room. These can take the form of medical notes related to the patient's current visit and relevant investigations (if any). Facilities and equipment available for that station will be specified in the instruction sheet.

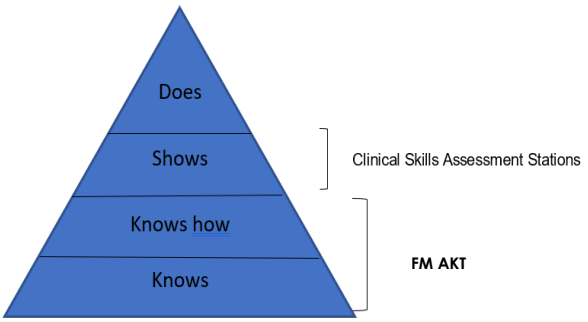
The stations are designed to resemble an actual consultation in primary care. Real patients, standardized patients, and mannequins may be used. Candidates will be assessed by a single examiner at each station.

[1] At least 1 Consultation station will be PE focused, i.e., there will be a focused weightage towards physical examination for the station.

APPENDIX A - PRINCIPLES OF ASSESSMENT APPLIED TO THE MULTI-STATION CLINICAL EXAMINATION

CONSTRUCT VALIDITY

A variety of testing methods will be employed to measure the various aspects of clinical competence. An adaptation of Miller's Pyramid of Assessment is shown below.



The logbook-based viva assessment has been retained as it allows for an evaluation of cases seen in candidates' actual clinical practice. In addition, it also allows assessment of medical writing skills and communication with colleagues.

The slides-based short answer questions station allows assessment of the interpretation and management of clinical signs and investigations.

CONTENT VALIDITY

The Multi-Station Clinical Examination format (see Table 2) will include assessment of competency across:

i. **8 systems**
ii. **3 age groups**
iii. **3 categories of management**

Broad sampling of cases will be carried out to ensure content validity. Please refer to the clinical examination blueprint in Table 2 for the sampling framework.

RELIABILITY

The number of stations contributes to reliability.

STANDARD SETTING

Candidates are expected to perform at the level of a proficient family physician. The examination has been mapped to cover the 6 medical competencies as defined by the Family Medicine Residency:

1. **Medical knowledge**
2. **Patient care**
3. **Systems-based practice**
4. **Practice-based learning**
5. **Professionalism**
6. **Interpersonal & Communication skills**

Candidates will be assessed in **9** clinical skills domains:

1. **History taking skills**
2. **Relevance of history**
3. **Physical examination skills**
4. **Identifying physical signs**
5. **Problem definition**
6. **Investigations**
7. **Management**
7. **Communication skills &Managing patient concerns**
9. **Professionalism and Ethics**

Criterion-referenced methods will be used for standard setting:

1. Borderline Regression Method: Clinical Skills Assessment Station and Logbook based viva
2. Modified Angoff Method: Slides based short answer questions and FM AKT

APPENDIX B - AIM OF THE MULTI-STATION CLINICAL EXAMINATION

The aim of the clinical examination is to determine proficiency in the clinical knowledge and skills expected of a trained Family Medicine Physician.

Proficiency in 6 Medical Competencies

Candidates are expected to demonstrate proficiency in 6 medical competencies as defined by the ACGME-I framework:

i. Medical Knowledge

Demonstrate knowledge of established and evolving biomedical, clinical, epidemiological, social and behavioral sciences, as well as the application of this knowledge to patient care through the domains of:

- ✓ **History taking skills**
- ✓ **Relevance of history**
- ✓ **Physical examination skills**
- ✓ **Identifying physical signs**
- ✓ **Problem definition**
- ✓ **Investigations and management**

ii. Patient Care

Demonstrate appropriate and effective treatment of health problems and the promotion of health through the domains of:

- ✓ **Problem definition**
- ✓ **Investigations and management**
- ✓ **Communication skills**
- ✓ **Managing patient concerns**

iii. Systems-based Practice

Demonstrate an awareness of and responsiveness to the larger context of the healthcare system, coordinate patient care within the healthcare system, incorporating considerations of cost awareness and risk-benefit analysis in patient care, through the domain of:

- ✓ **Investigations and management**

iv. Practice-based Learning

Demonstrate the ability to evaluate the care of patients through identifying strengths, deficiencies and limits in one's knowledge and expertise and incorporating feedback. Locate, appraise and assimilate evidence from scientific studies related to their patient's health, through the domains of:

- ✓ **Problem definition**
- ✓ **Investigations and management**

v. Professionalism

Demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles. Demonstrate compassion, integrity and respect for others, respect for patient privacy and autonomy. Be sensitive and responsive to a diverse patient population, with issues not limited to gender, age, culture, race, religion, disability, and sexual orientation, through the domains of:

- ✓ **Professionalism and ethics**
- ✓ **Communication skills**

vi. Interpersonal & Communication Skills

Demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families and health professionals through the skills of communication and rapport:

- ✓ **With the patient and families (if applicable)**
- ✓ **With other physicians or health professionals**
- ✓ **Via written medical documentation**