



PREVENTIVE MEDICINE

2026



بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

___ In The Name of Allah ___

PREFACE

- The primary goal of this document is to enrich the experience of postgraduate trainees by outlining the learning objectives and competencies necessary for them to become independent and competent practitioners.
- This curriculum may contain sections outlining training regulations; however, such regulations must be sought from the “General Bylaws of Training in Postgraduate Programs” and “Executive Policies” published by the Saudi Commission for Health Specialties (SCFHS), (15,16) which can be accessed online through the official SCFHS website. In case of discrepancies in regulation statements, the one stated in the most updated bylaws and executive policies must be considered.
- Because this curriculum is subject to periodic refinement, please refer to the electronic version posted online for an updated edition at www.scfhs.org.sa.

I. CONTRIBUTORS

This curriculum was prepared by the Specialty's Curriculum Development Committee:

- Prof. Rajaa Al-Raddadi
- Dr. Abdulhameed Alharbi
- Dr. Hani Almalki
- Prof. Abdulmohsen Alzalabani

Reviewed and approved by Specialty's Scientific Council Members:

- Dr. Abdulhameed Alharbi
- Prof. Rajaa M. Al-Raddadi
- Dr. Hani Almalki
- Dr. Nurah Alamro
- Dr. Riyadh Alghamdi
- Dr. Sami Almudarra
- Dr. Wael Alsufyani
- Prof. Mahmoud Abdulrahman
- Dr. Abdullah Alarifi

Reviewed by Advisory Committee Members (Curriculum Review Committee members):

- Dr. Mai AlAjaji, Msc.MedEd, PhD

Approved by Head of Curricula Review Committee:

- Dr. Ali Alyahya, MD, MME, FRCSC

Reproductive health and family planning:

- Dr. Randa Nooh
- Prof. Rajaa Al-Raddadi

Contributors of previous versions:

- Prof. Abdulmohsen Alzalabani
- Prof. Rajaa Al-Raddadi
- Dr. Mohammad Alghamdi
- Prof. Farah Mansouri

II. COPYRIGHT STATEMENTS

All rights reserved. © 2026 Saudi Commission for Health Specialties. This material may not be reproduced, displayed, modified, distributed, or used in any manner without prior written permission from the Saudi Commission for Health Specialties, Riyadh, Saudi Arabia. Any changes to this document must be endorsed by the Specialty Scientific Council and approved by the Central Training Committee. This document shall be considered effective from the date of publication of the updated electronic version of this curriculum on the commission's website, unless otherwise stated.

We also acknowledge that the Canadian Medical Education Directives for Specialists (CanMEDS) framework is a copyright of the Royal College of Physicians and Surgeons of Canada and that many of the descriptions' competencies have been acquired from their resources (Please refer to: CanMEDS 2015 physician competency framework; Frank JR, Snell L, Sherbino J, editors. *CanMEDS 2015 Physician Competency Framework*. Ottawa: Royal College of Physicians and Surgeons of Canada; 2015.).

Correspondence: Saudi Commission for Health Specialties P.O. Box: 94656
Postal Code: 11614 Contact Center: 920019393

E-mail: Curricula@scfhs.org.sa

Website: www.scfhs.org.sa

E-mail: Curricula@scfhs.org.sa

ISBN: 978-603-8624-05-0

III. TABLE OF CONTENTS

PREFACE	3
I. CONTRIBUTORS	4
II. COPYRIGHT STATEMENTS	6
III. TABLE OF CONTENTS	7
IV. INTRODUCTION	9
1. Context of practice	9
2. Goals and responsibilities of curriculum implementation	17
3. What is new in this edition?	18
V. ABBREVIATIONS	22
VI. PROGRAM ENTRY REQUIREMENTS	25
VII. LEARNING AND COMPETENCIES	26
1. Introduction	26
2. Program duration	33
3. Program rotations	34
4. Curriculum domains and courses overview	38
A. Field rotations	56
B. Academic rotations	99
C. Clinical rotations	136
D. Research	167
VIII. CONTINUUM OF LEARNING	170
1. Introduction	170
2. Stages of Learning	170

3. Transition to Practice	171
4. Continuous Professional Development	172
IX. TEACHING METHODS	173
1. Program-Specific Learning Activities:	173
2. Universal Topics	175
3. General Learning Opportunities	176
4. Simulation	176
X. ASSESSMENT AND EVALUATION	178
1. Purpose of Assessment	178
2 Formative Assessment	179
3. Summative Assessment	187
XI. PROGRAM AND COURSE EVALUATION	193
XII. POLICIES AND PROCEDURES	194
XIII. Appendices	195
Appendix A: Academic half-day	195
Appendix B: Field rotation assessment form	202
Appendix C: Mapping of core competencies to CanMEDS roles and formative assessment tools–competency mapping table (CanMEDS framework)	206
Appendix D: Universal topics distributed over the training years	210

IV. INTRODUCTION

1. Context of practice

“An ounce of prevention is worth a pound of cure” is an old proverb that remains true in the era of evidence-based medicine. This is supported by cost-effectiveness studies that have demonstrated that prevention programs significantly reduce long-term healthcare expenditures. The importance of preventive medicine residency program training in Saudi Arabia has been further amplified by the shift in the healthcare system toward a value-based healthcare model. This model, which prioritizes patient outcomes, disease prevention, and cost-effectiveness, establishes preventive medicine as the cornerstone of the nation’s health strategy. (13,14) Preventive medicine residency programs are essential for preparing physicians to implement and manage population health initiatives, conduct epidemiological research, and develop policies to mitigate health risks.

Preventing diseases is especially important in Saudi Arabia, which is currently experiencing a substantial increase in preventive, lifestyle-related, and noncommunicable diseases (NCDs). Additionally, outbreaks and sustained transmission of infectious diseases continue to plague the country, manifesting as a double-burden phenomenon in which communicable diseases and NCDs coexist and burden the health of the population.

1.1. Introduction

Preventive medicine is a unique specialty that integrates population health knowledge with clinical practice. This integration provides physicians with the necessary clinical insights to effectively address population-level health threats. Specialists work in diverse settings to promote, protect, and maintain health and well-being and to prevent disease, disability, and mortality. The Saudi Board of Preventive Medicine (SBPM) residency program is designed to

develop comprehensive competencies and train future leaders in the field. The program aims to equip residents with a solid and broad foundation in preventive medicine and to foster lifelong learning. Upon completion, residents will be equipped to lead health promotion projects across various sectors and disciplines, serving as frontline guardians against diseases.

1.2. Historical background

The teaching of concepts and applications of community medicine began in the last quarter of the past century within a program that merged community medicine with family medicine under the name "Family and Community Medicine." Training in community medicine as a stand-alone specialty began in Saudi Arabia in 1991 with the Arab Board of Community Medicine.

In 2009, the Saudi Board of Community Medicine (SBCM) was launched as one of the programs under the Saudi Commission for Health Specialties (SCFHS). It started with only one training center and later expanded to five other centers. In 2018, the program was renamed the "Saudi Board of Preventive Medicine (SBPM)," and a dedicated scientific council for the specialty was established. Since then, the number of training centers and units for preventive medicine has increased across various health facilities and institutions.

1.3. Training physicians in public health and preventive medicine

There are several ways in which physicians can be trained in public health and preventive medicine; however, the two main paths are residency programs and academic master's/PhD programs. Master's/PhD programs are provided by universities and are usually based on academic courses in public health or related fields such as health promotion or epidemiology. In contrast, residency programs focus on practical training and provide opportunities to engage in supervised hands-on practice and perform various professional activities related to the specialty of public health and preventive medicine. In addition, residency programs integrate clinical practices into resident training. Unlike

master's programs, in which most enrollees are non-physicians, residency programs worldwide almost always comprise physicians. The table below provides an example of the structure of residency programs in the selected countries.

Country	Specialty name	Training details and accrediting body	Duration of residency program
Canada	Public health and preventive medicine	Royal College of Physicians and Surgeons of Canada	5-year residency (clinical, Master of Public Health, practicum placements)
United States	Preventive medicine	Accreditation Council for Graduate Medical Education (ACGME)	3-year residency (one clinical, two rotations, Master of Public Health)
France	Public health and social medicine	French National Council of Doctors	4-year residency (master's, practicum placements)
Italy	Hygiene and preventive medicine	Italian Ministry of Education, University, and Research	4-year residency

* Adapted from Peik, Samuel M. et al., Medical Teacher 38.11 (2016): 1146 1151
(2)

In Saudi Arabia, various universities offer bachelor's and master's degrees in public health. These programs constitute the main educational path for graduate public health workers, as they prepare them for many public health sector roles. SBPM provides residency training for physicians in the field of public health and preventive medicine under the umbrella of SCFHS.

1.4. Nature and scope of the practice

Preventive medicine physicians work in various settings, including governmental agencies, occupational medicine, academia, public hospitals, and nongovernmental organizations. Furthermore, they can be involved in various roles, such as leadership and management, epidemiology, environmental health, global health, mental health, and prevention and control of communicable diseases and NCDs.

Owing to the multidisciplinary nature of the specialty, training centers require collaboration with other governmental agencies to facilitate the training of residents. Relevant agencies and training sites include infection control departments within hospitals as well as various public health-related departments within the Ministry of Health, Ministry of Municipal and Rural Affairs, Ministry of Education, Ministry of Agriculture, Ministry of Labor and Social Development, and the General Authority of Meteorology and Environmental Protection.

1.5. Preventive medicine workforce

There is no international standard defining the number of preventive medicine and public health physicians required by a country. The World Health Organization (WHO) recommends that national requirements be derived functionally by mapping the occupations, competencies, and volumes of work needed to deliver essential public health functions in the national context rather than by applying an external population ratio.^(5,6) Nevertheless, one published reference point indicates the order of magnitude involved. The United States, which maintains the largest preventive medicine workforce, had approximately two preventive medicine physicians per 100,000 people in 2018.⁽⁷⁾

Applied to Saudi Arabia, whose population was estimated at 35.3 million in 2024^(9,10), this corresponds to 700 preventive medicine and public health physicians. The number of certified SBPM specialists remain well below that level, while the functions of physician staff surveillance, emergency preparedness, NCD

prevention, clinical prevention, and population health are being expanded under Vision 2030 and the Health Sector Transformation Program.^(13,14) The precise determination of national requirements necessitates workforce mapping as outlined by the WHO; however, the direction and scale of the existing gap are clear, and addressing this gap is the primary objective of this residency program.

1.6. Current challenges

1.6.1. Training places for practical placement

Government public health departments conduct various field rotations; however, because several regions in the country have underdeveloped public healthcare services, the number of places available for the practical training of preventive medicine residents is limited. Additionally, public healthcare workers in the field may not be capable of providing adequate mentoring and training to residents. Thus, building partnerships and collaborating with various agencies that provide public healthcare services are vital for accomplishing educational goals.

1.6.2. Research

Research skills are an essential component of preventive medicine education; setting preventive medicine research priorities for the country as well as for specific regions, finding and/or creating opportunities to conduct research projects, and securing funding for those projects are only some of the challenges present in this field. The Saudi National Institutes of Health and Research Development and Innovation Authority are the main national research funding agencies in Saudi Arabia. Each issues an annual list of priorities for research.

1.6.3. Recruiting qualified academic staff

Over the last decade, there has been increased competition in the recruitment of qualified teaching staff; consequently, academic centers that provide courses for preventive medicine residents are now experiencing difficulty in recruiting and maintaining the required number of academic staff.

1.7. Options for career paths

Specialists in preventive medicine can choose to join the workforce as preventive medicine specialists/consultants in various settings or pursue further training in one of the subspecialties of preventive medicine, such as epidemiology, occupational health, environmental health, child and adolescent health, mental health, lifestyle medicine, or preventive cardiology.

1.8. The most prevalent conditions in Saudi Arabia

The conditions/diseases that are currently the most burdensome to the population health in Saudi Arabia are listed below. The lists show the top 10 causes of death, the top 10 causes of death and disability combined, and the emergency situations that preventive medicine residents should be prepared to address. However, these lists are not exhaustive and do not imply that trainees should master only the topics listed.

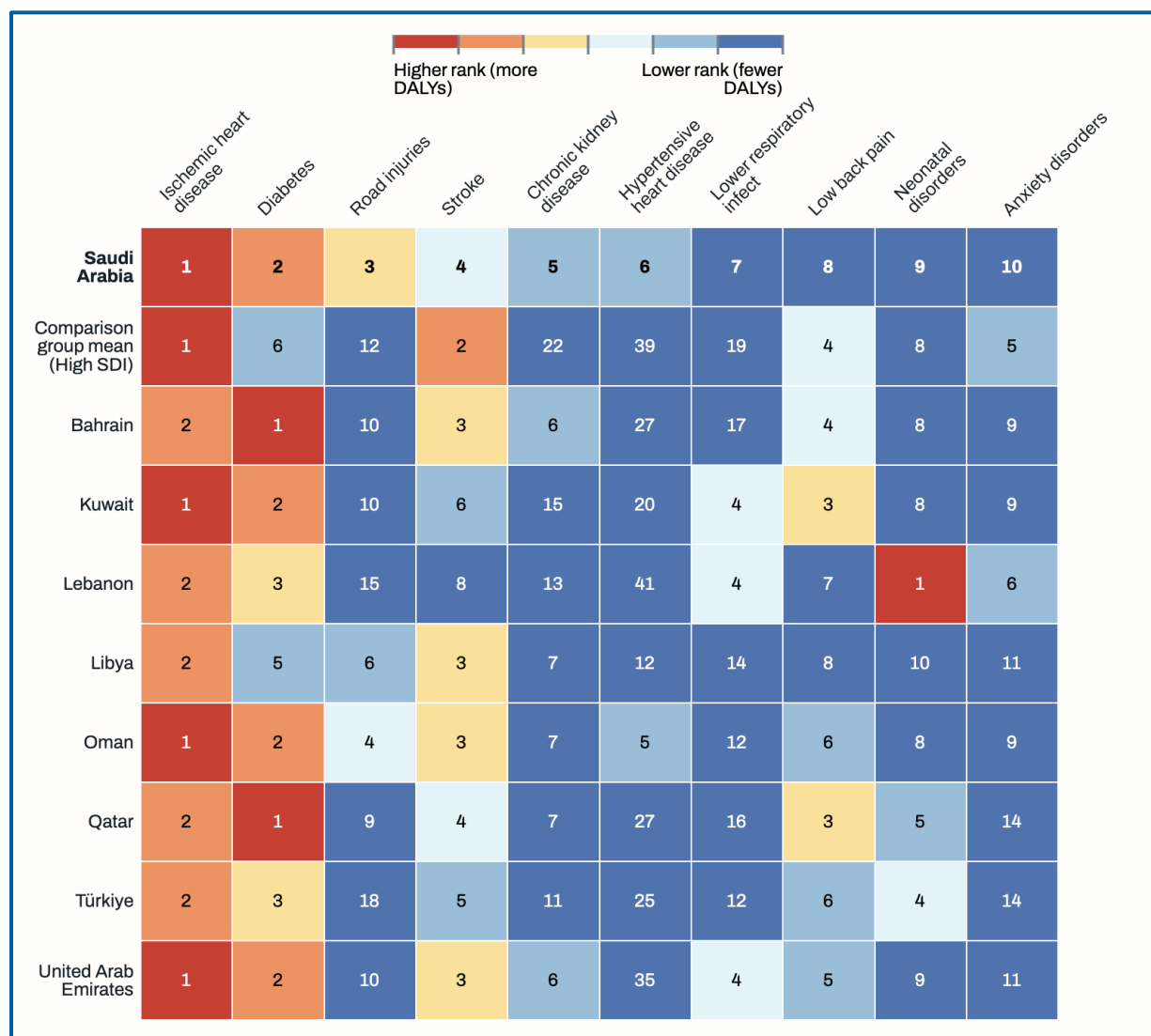
Top 10 causes of death

- Communicable, maternal, neonatal, and nutritional diseases
- Non-communicable diseases
- Injuries

Cause	2013 rank	2023 rank	Change in deaths per 100k, 2013-2023
Ischemic heart disease	1	1	↓ -6.2
Road injuries	2	2	↓ -14.6
Chronic kidney disease	4	3	↑ +2.5
Stroke	3	4	↓ -7.5
Diabetes	8	5	↑ +7.9
Hypertensive heart disease	5	6	↑ +0.1
Lower respiratory infect	6	7	↓ -0.5
Cirrhosis	7	8	↓ -3.5
Congenital defects	10	9	↓ -2.4
Alzheimer's disease	13	10	↑ +0.4

Source: Global Burden of Disease study (12) <https://rb.gy/sgvewl>

Top 10 causes of death and disability (DALYs) compared with other locations



Source: Global Burden of Disease study (12) <https://rb.gy/sgvewl>

Ten most common emergency situations

Emergency situations
Pandemics/Outbreaks
Natural disasters (volcanos, earthquakes, flash floods)
Chemical hazard-related emergencies
Radiation hazard- related emergencies
Bioterrorism
Needlestick injuries
Food poisoning
War
Refugees
Temperature extremes

2. Goals and responsibilities of curriculum implementation

Ultimately, this curriculum seeks to guide trainees to become competent in their respective specialties. Accordingly, this goal requires significant effort and coordination from all stakeholders involved in postgraduate training. As “adult-learners,” trainees must be proactive, fully engaged, and exhibit the following: a careful understanding of learning objectives, self-directed learning, problem-solving, eagerness to apply learning by means of reflective practice from feedback and formative assessment, self-awareness, and willingness to ask for support when needed. The program director plays a vital role in ensuring the successful implementation of this curriculum. Moreover, training committee members, particularly the program administrator and chief resident, have a

significant impact on program implementation. Trainees should be called upon to share the responsibility of curriculum implementation.

The strategic direction of the SCFHS applies a recognized competency model of training governance to achieve the highest quality of training, and postgraduate programs are required to cover research and evidence-based practices in their curricula. Additionally, academic affairs in training centers and regional supervisory training committees play major roles in training supervision and implementation. Specialty scientific council/committee guarantees that the content of this curriculum is constantly updated to match the highest standards in the postgraduate education of each trainee's specialty.

3. What is new in this edition?

The SBPM curriculum was first introduced in 2017 and was subsequently revised in 2022. Following 4 years of implementation of the revised curriculum—and 9 years since the original version—a comprehensive review identified several areas requiring refinement to better align the curriculum with current educational needs and advances in preventive medicine practice. This updated edition incorporates these refinements to enhance training experience, strengthen trainee competencies, and improve professional outcomes while maintaining alignment with national and international standards.

3.1. Curriculum core areas

The SBPM program has the following five main areas of activity:

- 1) Academic training
- 2) Clinical training (hospital rotations and clinical preventive clinics)
- 3) Field rotations (mandatory and elective)
- 4) Research activities
- 5) Weekly academic half-days (AHDs)

While these core areas remain unchanged, the update has reallocated the duration of each component to meet the residency training standards and improve outcomes based on expert recommendations.

3.2. Methods of curriculum update

The curriculum update was conducted in three stages using both qualitative and quantitative approaches.

Stage One:

- Objective: To confirm the need for an update and identify areas for improvement.
- Method: Focus group discussions were conducted with stakeholders (program directors, trainers, lecturers, examiners, and trainees).
- Outcome: We designed and distributed a questionnaire to experts and stakeholders. Opinions were collected, reviewed, categorized, and analyzed to identify gaps and areas for improvement.

Stage Two:

- Objective: To suggest and refine amendments to the curriculum.
- Method: An additional focus group discussion was held with experienced program directors. The Delphi Technique was used in two rounds with top experts in preventive medicine and public health to reach consensus on the proposed amendments.
- Outcome: We reviewed and categorized suggestions for curriculum amendments.

Stage Three:

- **Objective:** To align training with healthcare transformation.
- **Method:** A workshop was conducted with committee members, program directors, and experts from various health sectors to discuss training content and implementation.
- **Outcome:** We revised academic, clinical, and field training syllabi to incorporate updates based on expert and stakeholder feedback.

3.3. Key updates

- **Academic Training:** Reduced to two-thirds of the original duration, grouped into domains, and focused on the junior level. Two-thirds of the courses are in the first year, with the remaining third, including advanced courses, in the second year.
- **Clinical Training:** Duration doubled and spread over 4 years, with a full-time Clinical Preventive Medicine rotation replacing the previous half-day-per-week clinic. Rotations in obstetrics and gynecology and in the primary care clinic have been also included.
- **Field Training:** Realigned with the health transformation strategy and the Saudi Arabia vision 2030, incorporating rotations in population health, port of entry preventive health services, international health regulations (IHR), and preventive health programs. These rotations are distributed across the 4 residency years.
- **Program Structure and Duration:** The five core areas of activity remain unchanged, and the program remains a 4-year residency; however, the time allocated to each component has been redistributed. Academic courses are concentrated in R1–R2, while clinical and field rotations span all 4 years; a 4-week annual vacation is scheduled for every training year.
- **Learning and Competencies:** A competency-based framework has been introduced alongside the Canadian Medical Education Directives for Specialists (CanMEDS) roles, defining 12 core competencies across four

domains: clinical preventive medicine; population and public health practice; leadership, health systems, and policy; and scholarship and research supported by mapping of competencies to rotations and assessment tools, and graduation requirements expressed as competency levels achieved. A continuum of learning section has been added, covering the junior and senior stages, transition to practice, and continuing professional development.

- **Teaching Methods:** Simulation has been added as a formal teaching method, with guidance on scenario design and feedback. Universal topics and mandatory online courses are now formally distributed across the 4 training years, and practice-based learning opportunities, including conferences on morbidity and mortality, have been incorporated.
- **Assessment:** Formative assessment has been expanded from eight tools to more than 15, each with a defined annual frequency and mapped to program competencies. A four-level performance scale has been introduced. The blueprints for the first-part, final written, and final clinical (Objective Structured Clinical Examination [OSCE]) examinations are published within the curriculum for the first time, and a structured oral examination has been added to the final specialty examination.

V. ABBREVIATIONS

Abbreviation	Description
SCFHS	Saudi Commission for Health Specialties
R(1)	(First) year of residency
OSCE	Objective Structured Clinical Examination
OSPE	Objective Structured Practical Examination
Mini-CEX	Mini-Clinical Evaluation Exercise
DOPS	Direct Observation of Procedural Skills report
CBD	Case-Based Discussion
CME	Continuing medical education
ITER	In-Training Evaluation Report
SBPM	Saudi Board of Preventive Medicine
SBCM	Saudi Board of Community Medicine
SBIRT	Screening, Brief Intervention, and Referral to Treatment
DALY	Disability-Adjusted Life Year
RCT	Randomized controlled trial
AI	Artificial intelligence

Abbreviation	Description
M&M	Morbidity and Mortality
ACGME	Accreditation Council for Graduate Medical Education
AHD	Academic Half-Day
CanMEDS	Canadian Medical Education Directives for Specialists
CAT	Critically Appraised Topic
CAPs	Critically Appraised Papers
COT	Consultation Observation Tool
EBM	Evidence-Based Medicine
FITER	Final In-Training Evaluation Report
IHR	International Health Regulations
MOH	Ministry of Health
CVD	Cardiovascular disease
CKD	Chronic kidney disease
NCD	Noncommunicable Disease
PHA	Public Health Authority
PHC	Primary Healthcare
SOE	Structured Oral Examination

Abbreviation	Description
WHO	World Health Organization
HAIs	Healthcare-associated infections
STIs	Sexually transmitted infections
ED	Emergency Department
EYPT-Local	Promotion exam or progress test

VI. PROGRAM ENTRY REQUIREMENTS

For the updated program entry requirement, please refer to the executive policy of the SCFHS on admission and registration.

VII. LEARNING AND COMPETENCIES

1. Introduction

The preventive medicine residency program is designed to equip medical residents with the knowledge, skills, and attitudes necessary to become proficient in the field of preventive medicine. This curriculum is structured around the CanMEDS framework, which identifies and describes ⁽¹⁾ the key competencies required by physicians to effectively meet the healthcare needs of their patients and communities. The CanMEDS framework comprises seven roles: medical experts, communicators, collaborators, leaders, health advocates, scholars, and professionals. Each role is defined, described, and tailored to meet the specific requirements of the preventive medicine residency program.

I. Medical Expert

- Definition:

Medical experts integrate all CanMEDS roles by applying medical knowledge, clinical skills, and professional attitudes to provide patient-centered care.

- Description:

As medical experts in preventive medicine, residents are expected to demonstrate a comprehensive understanding of the principles of prevention, public health, and management of health and diseases in populations. They should apply this knowledge to promote health, prevent illnesses, and improve health outcomes.

- Competencies:

- Analyze population health data using epidemiological and biostatistical methods.
- Develop evidence-based prevention strategies based on comprehensive health assessments.
- Design and execute health promotion and disease prevention initiatives for clinical and community settings.
- Implement and evaluate screening programs and preventive interventions.
- Manage public health emergencies and communicable disease outbreaks.

II. Communicator

- Definition:

Communicators effectively facilitate the doctor-patient relationship and dynamic exchanges that occur before, during, and after medical encounters.

- Description:

In preventive medicine, communication extends beyond individual patient interactions and includes community engagement, health education, and advocacy. Residents must be adept at conveying complex health information to diverse audiences in a clear and culturally sensitive manner.

- Competencies:

- Communicate using a patient/community-centered approach that encourages patient/community trust and autonomy.
- Formulate persuasive written and oral arguments to advocate for public health initiatives to stakeholders and policymakers.
- Develop and deliver health education materials and programs tailored to various populations.
- Draft press releases and participate in simulated or live media interviews to disseminate accurate health information.
- Facilitate team meetings that encourage input from all members and mediate disagreements constructively.

III. Collaborator

- Definition:

Collaborators work effectively with other healthcare professionals to provide safe, high-quality, and patient-centered care.

- Description:

Preventive medicine requires interdisciplinary collaboration to address multifaceted determinants of health. Residents must work with various stakeholders, including other healthcare providers, public health officials, and community organizations.

- Competencies:

- Collaborate with multidisciplinary teams to design and implement public health programs.
- Engage with community partners to address social determinants of health.
- Participate in collaborative research projects aimed at improving population health.
- Facilitate interprofessional education and training opportunities.
- Resolve conflicts and negotiate effectively within teams and communities.

IV. Leader

- Definition

Leaders engage with others to contribute to the vision of a high-quality healthcare system and take responsibility for delivering excellent patient care through their activities as clinicians, administrators, scholars, or teachers.

- Description:

In preventive medicine, leadership involves guiding public health initiatives, managing resources, and advocating policies that promote health equity. Residents should develop skills in strategic planning, program management, and policy development.

- Competencies:

- Lead and manage public health programs and initiatives.
- Advocate for evidence-based policies and interventions that improve population health.
- Demonstrate effective management of healthcare resources and systems.
- Mentor and support the development of colleagues and trainees.
- Participate in quality improvement initiatives and health service research.

V. Health Advocate

- Definition:

Health advocates use their expertise and influence responsibly to improve the health and well-being of patients, communities, and populations.

- Description:

Preventive medicine physicians play a crucial role in advocating for the health of populations. Residents must identify and address the health needs of various populations, particularly the underserved and vulnerable groups.

- Competencies:

- Identify and address health inequities and social determinants of health.
- Advocate for policies and programs that improve access to preventive care.
- Engage with communities to identify health priorities and develop responsive interventions.
- Promote health literacy and empower individuals to take control of their health.
- Collaborate with policymakers to influence health-related legislation and funding.

VI. Scholar

- Definition:

Scholars demonstrate a lifelong commitment to reflective learning as well as the creation, dissemination, application, and translation of medical knowledge.

- Description:

Preventive medicine is a dynamic field that requires continuous learning and adaptation to new evidence and practices. Residents should be committed to ongoing professional development and should contribute to the advancement of public health knowledge.

- Competencies:

- Engage in continuous professional development and lifelong learning.
- Critically appraise and apply relevant research to practice.
- Contribute to the development and dissemination of public health research.
- Teach and mentor students, residents, and other healthcare professionals.
- Participate in academic and professional communities to advance preventive medicine.

VII. Professional

- Definition:

Professionals are committed to the health and well-being of individuals and society through ethical practices, professionally led regulations, and high personal standards of behavior.

- Description:

Professionalism in preventive medicine involves ethical practices, accountability, and commitment to the well-being of the population. The residents must uphold the highest standards of integrity and professionalism during their interactions.

- Competencies:

- Demonstrate ethical practice and professional behavior in all aspects of work.
- Maintain accountability to patients, communities, and the healthcare system.
- Balance personal and professional responsibilities to maintain personal health and well-being.
- Reflect on and address personal biases and their impact on professional practice.
- Commit to the principles of equity, diversity, and inclusion in all professional activities.

2. Program duration

This is a 4-year residency program.

3. Program rotations

3.1. General rotations:

Training Year	Mandatory core rotations*			Elective rotations**/Selective rotations***		
	Rotation name	Duration in Weeks	Setting	Rotation name	Duration in Weeks	Setting
R1	Epidemiology & biostatistics	9	Academic	N/A	N/A	N/A
	Preventive and public health	10	Academic			
	Healthcare management	4	Academic			
	Research methodology	5	Academic			
	Health program (communicable diseases)	8	Field			
	Clinical preventive medicine	8	Clinical			
	Emergency medicine	4	Clinical			
	Annual vacation	4	Vacation			
R2	Epidemiology & biostatistics	4	Academic	N/A	N/A	N/A
	Preventive and public health	4	Academic			
	Healthcare management	3	Academic			
	Research methodology	1	Academic			
	Internal medicine	8	Clinical			
	Pediatrics	8	Clinical			

Training Year	Mandatory core rotations*			Elective rotations**/Selective rotations***		
	Rotation name	Duration in Weeks	Setting	Rotation name	Duration in Weeks	Setting
	Clinical preventive medicine	8	Clinical			
	Public health operation (surveillance)	8	Field			
	Public health operation (vaccination operation)	4	Field			
	Annual vacation	4	Vacation			
R3	Clinical preventive medicine	8	Clinical	Elective in clinical rotations	4 weeks	Clinical
	Obstetrics & gynecology	8	Clinical			
	Psychiatry	4	Clinical			
	Occupational medicine	4	Clinical			
	Environmental health	4	Field			
	School health	4	Field			
	Infection control	8	Field			
	Mass gathering medicine & disaster management	4	Field			
	Annual vacation	4	Vacation			
R4	Clinical preventive medicine	8	Clinical	Elective	4 weeks	Field
	Primary Healthcare clinic	8	Clinical			
	Population health	12	Field			

Training Year	Mandatory core rotations*			Elective rotations**/Selective rotations***		
	Rotation name	Duration in Weeks	Setting	Rotation name	Duration in Weeks	Setting
	Health programs (chronic diseases)	8	Field			
	Rapid response in preventive and public health	4	Field			
	International health and port of entry	4	Field			
	Annual vacation	4	Vacation			

***Mandatory core rotation:** Set of rotations that represent program core component and are mandatory.

****Elective rotation:** Set of rotations that are related to the specialty, as determined by the scientific council/committee, and the trainee is required to do some of them.

*****Selective rotation:** Set of other rotations from which trainees can select (directed by mentor/program director) to enhance competency acquisition of the specialty.

3.2. Distribution of academic rotations

Domain	No	Course Name	Duration in Weeks	Residency level
(1) Epidemiology & biostatistics	1	Epidemiology principles & application	4	R1
	2	Biostatistics principles and methods	4	R1
	3	Demography	1	R1
	4	Advanced epidemiology	4	R2
(2) Preventive & public health	5	Introduction to clinical preventive services	1	R1
	6	Noncommunicable disease prevention	1	R1
	7	Communicable disease prevention	3	R1
	8	Infection control	1	R1
	9	Principles of environmental health	1	R1
	10	Principles of occupational health	1	R1
	11	Maternal & child health	1	R1
	12	Social & behavioral health	1	R1
	13	Health education & communication	1	R2
	14	Mental health	1	R2
	15	Nutritional health	1	R2
	16	International health	1	R2
(3) Health management	17	Healthcare management & leadership	1	R1
	18	Health systems & services	1	R1
	19	Planning & evaluation of health programs	1	R1

Domain	No	Course Name	Duration in Weeks	Residency level
	20	Introduction to health economics	1	R1
	21	Disaster management	1	R2
	22	Healthcare quality and patient safety	1	R2
	23	Principles of health informatics & artificial intelligence	1	R2
(4) Research methodology	24	Medical research designs & methods	2	R1
	25	Critical appraisal	1	R1
	26	Research ethics	1	R1
	27	Scientific writing skills	1	R2

4. Curriculum domains and courses overview

The curriculum is structured across three integrated domains: academic, clinical, and field training. The main characteristics include the following:

- Academic courses are concentrated in R1–R2, whereas clinical and field rotations span all years.
- Field training is aligned with the Vision 2030 health transformation priorities ^(13,14) (population health, surveillance, and emergency preparedness).
- Clinical training ensures integration of individual-level preventive care with population health principles.

Domain	Subdomains/Areas	Courses/Rotations Included
Academic domain	Epidemiology & biostatistics	Epidemiology principles & application Biostatistics principles & methods Demography Advanced epidemiology
	Preventive & public health	Introduction to clinical preventive services Noncommunicable disease prevention Communicable disease prevention Infection control Environmental health Occupational health Maternal & child health Social & behavioral health Health education & communication Mental health Nutritional health International health
	Health management	Healthcare management & leadership Health systems & services Planning & evaluation of health programs Health economics Disaster management Quality & patient safety Health informatics & artificial intelligence
	Research methodology	Medical research design & methods Critical appraisal Research ethics Scientific writing

Domain	Subdomains/Areas	Courses/Rotations Included
Clinical domain (hospital rotations)	Core clinical rotations	Clinical preventive medicine Primary care clinics Internal medicine Pediatrics Emergency medicine Obstetrics & gynecology Psychiatry
Field domain (population & public health rotations)	Public health operations	Surveillance Vaccination operations
	Health programs	Communicable disease programs Chronic disease programs
	Specialized field rotations	Environmental health Occupational health (field component) School health Infection control Population health
	Advanced public health practice	Rapid response in preventive medicine Mass gathering medicine & disaster management International health & port of entry

Competency-Based Framework

How the frameworks in this curriculum relate: Four structures are used in this document, each answering a different question. The CanMEDS framework defines the seven professional roles that a physician must fulfill and provides an international reference against which outcomes are expressed. The 12 core competencies, grouped into four competency domains, are the preventive medicine articulation of those roles that state what a graduate must be able to do, and they are the standards against which promotion and graduation decisions are made. The three training domains—academic, clinical, and field—describe the settings in which these competencies are acquired, and the five core areas of activity describe how training time is organized within them. In short, the CanMEDS roles define professional identity, the 12 competencies define the required outcomes, and the training domains and activity areas define where and how these outcomes are achieved. All assessments in this curriculum are mapped to 12 competencies, with the corresponding CanMEDS roles indicated for reference.

The preventive medicine residency program adopts a Competency-Based Medical Education framework designed to ensure that residents progressively acquire, integrate, and demonstrate the knowledge, skills, attitudes, and professional behaviors required for independent consultant-level practices.

The competency framework reflects the unique scope of preventive medicine by integrating the following:

- Clinical preventive care
- Population and public health practice
- Health systems and policy
- Leadership and management
- Research and evidence-based decision-making

The framework is aligned with the standards of the Saudi Commission for Health Specialties and informed by international competency-based models, including CanMEDS, ACGME, the UK Faculty of Public Health, and the Royal College of Physicians and Surgeons of Canada.^(1,3,4,8)

Competency development is assessed longitudinally across multiple learning environments, including clinical, field, academic, and research settings, to ensure that residents achieve progressive mastery during training.

Principles of competency-based education

The competency framework is guided by the following principles:

- Progressive development of competence over time
- Multiple assessment methods and assessors
- Integration of knowledge, skills, and professional attitudes
- Assessment across diverse contexts and settings
- Continuous feedback and reflective practice
- Alignment between training outcomes and real-world professional responsibilities

Core competency domains

The program defines 12 core competencies, organized into four major domains.

Domain I: Clinical preventive medicine

Competency 1: Conduct comprehensive preventive risk assessment

Perform a structured assessment integrating behavioral, clinical, occupational, environmental, and social determinants of health using validated risk-assessment tools.

Competency 2: Deliver evidence-based preventive interventions

Implement lifestyle, behavioral, screening, vaccination, and pharmacological preventive strategies tailored to individual and population risk profiles.

Competency 3: Apply a life-course preventive care approach

Provide preventive care across different stages of life by integrating reproductive, pediatric, adult, and healthy aging principles.

Competency 4: Integrate mental health into preventive care

Screen for mental health conditions, provide brief interventions, and coordinate multidisciplinary care in clinical and community settings.

Domain II: Population health and public health practice

Competency 5: Conduct surveillance and population health analysis

Collect, analyze, interpret, and utilize population health and surveillance data to identify trends, priorities, and public health risks.

Competency 6: Conduct outbreak investigation and public health response

Investigate outbreaks, assess risks, implement control measures, and coordinate public health emergency responses.

Competency 7: Design, implement, and evaluate preventive health programs

Develop, implement, monitor, and evaluate preventive and public health programs using evidence-based approaches and performance indicators.

Domain III: Leadership, health systems, and policy

Competency 8: Lead multidisciplinary teams and preventive programs

Provide leadership within clinical, public health, and community settings while facilitating collaboration across disciplines and sectors.

Competency 9: Apply quality improvement and patient safety principles

Identify system gaps, design improvement initiatives, monitor outcomes, and promote a culture of safety and quality.

Competency 10: Contribute to health policy and health system strengthening

Participate in policy development, strategic planning, guideline development, and health system improvement initiatives.

Domain IV: Scholarship and research

Competency 11: Apply evidence-based medicine and public health practice

Critically appraise scientific evidence and apply evidence-informed decision-making at both individual and population levels.

Competency 12: Conduct research and translate knowledge into practice

Design, implement, analyze, disseminate, and translate research findings into clinical practice, programs, and health policies

Competency Mapping Across Training Domains

Domain	Core Activities	Competencies
Clinical	Risk assessment, counseling, preventive care, follow-up	1, 2, 3, 4, 8, 9
Population Health	Surveillance, outbreak investigation, vaccination programs, field response	5, 6, 7, 8, 10
Academic	Teaching, curriculum activities, presentations	4, 7, 10, 11, 12
Research	Study design, analysis, publication	11, 12
Evidence-Based Practice	Critical appraisal, guideline implementation	11

Mapping Competencies to Rotations

Training Category	Training Component	Competencies Mapped
Clinical Rotations	Clinical Preventive Medicine	1, 2, 3, 4, 8, 9, 11
	Emergency Medicine	1, 2, 5, 6,8,9, 11
	Internal Medicine	1, 2, 3, 8, 9, 11
	Pediatrics	1, 2, 3, 5,8,9, 11
	Obstetrics & Gynecology	1, 2, 3, 7, 8,9,11
	Psychiatry	4, 7, 8, 9, 11
	Occupational Medicine	1, 5, 7, 8,9,11
	Primary Healthcare Clinics	1–12
Field & Public Health Rotations	Health Programs (Communicable Diseases)	5, 6
	Public Health Operations (Surveillance)	5, 6, 7
	Vaccination Programs	1, 5
	Environmental Health	7, 8
	School Health	1, 2, 9
	Infection Control	5, 6, 7
	Mass Gathering & Disaster Management	6, 8, 10

Training Category	Training Component	Competencies Mapped
	Population Health	5, 7, 8, 10, 12
	Chronic Disease Programs	1, 2, 3, 9
	Rapid Response (Public Health)	6, 10
	International Health & Port of Entry Health	5, 6, 8
Academic Courses	Epidemiology	5, 6, 12
	Biostatistics	5, 7, 9, 11, 12
	Research Methods	12
	Evidence-Based Medicine	11
	Health Promotion	2, 7
	Health Policy	10, 12
	Health Informatics & Artificial Intelligence	5, 10, 11, 12

Assessment Framework

Competency assessment is based on programmatic assessment using multiple tools and sources of evidence.

1. Workplace-Based Assessments

- Mini-Clinical Evaluation Exercise (Mini-CEX)
- Case-Based Discussion (CBD)
- Field Evaluation
- Direct Observation

2. Structured Assessments

- OSCE
- Written Examination
- Structured Oral Examination (SOE)
- Critical Appraisal Exercises

3. Portfolio-Based Assessment

- Reflective Practice
- Logbooks
- Program Evaluation Reports
- Quality Improvement Projects
- Policy Briefs

4. Scholarly Assessment

- Research Projects
- Manuscripts
- Presentations
- Knowledge Translation Activities

5. Global Assessment

- In-Training Evaluation Reports (ITERS)
- 360° Feedback

- Supervisor Evaluations

No single assessment method is used in isolation. Competency decisions are based on a triangulation of evidence collected across multiple contexts and time points.

Alignment with Program Outcomes

Program Outcome	Competencies
Professionalism and Ethical Practice	All competencies
Population Health Leadership	7, 8-10
Clinical Preventive Expertise	1-4
Digital Health and Data-Driven Decision-Making	5-6, 10, 12
Research and Evidence-Based Practice	7, 11, 12
Health Systems and Policy Competence	7, 8, 10
Communication, Collaboration, and Advocacy	1-4, 9, 10

Graduation Requirements

To successfully complete the residency program, residents must do the following:

- Demonstrate achievement of all core competencies at the required level for graduation.
- Successfully complete all mandatory clinical, field, and academic rotations.
- Successfully complete the required elective rotations in accordance with program requirements.
- Successfully complete all required scholarly activities, including the research project and other research requirements.
- Maintain a satisfactory training portfolio, including documentation of workplace-based assessments, reflective practices, and required program activities.
- Successfully complete all mandatory online courses and universal topics required by the SCFHS.
- Maintain ethical and professional conduct standards throughout the training program.
- Successfully fulfill all the SCFHS program requirements, including the required in-training and final certification examinations.

Graduates are expected to function as independent preventive medicine specialists capable of delivering high-quality preventive care; leading population health initiatives; contributing to health policies; conducting research; and strengthening health systems at the local, regional, and national levels.

Graduate Attributes/Program Outcomes:

Upon completion of the program, the graduate is expected to demonstrate the following attributes:

1. Professionalism & Ethical Practice

- Demonstrates integrity, accountability, and professionalism in all clinical, public health, and research activities.
- Applies ethical principles, including confidentiality, informed consent, equity, and transparency.
- Maintains professional standards in multidisciplinary and multicultural environments.

2. Population Health Leadership

- Applies a population health approach to disease prevention and health promotion.
- Addresses social determinants of health and advocates for health equity.
- Designs, implements, and evaluates population-based programs aligned with national priorities.

3. Clinical Preventive Expertise

- Provides comprehensive, evidence-based preventive care across the life course.
- Integrates risk assessment, screening, and intervention into clinical practice.
- Links individual patient care to broader population health outcomes.

4. Digital Health & Data-Driven Decision-Making

- Utilizes digital health systems, electronic health records, registries, and surveillance platforms in clinical and public health practice.
- Analyzes and interprets data using analytical tools to identify trends, risks, and priority populations.

- Translates data into actionable insights for program planning, evaluation, and system-level decision-making.
- Applies digital tools and dashboards in surveillance, outbreak response, and population health management.
- Ensures ethical, secure, and responsible use of data, including privacy, confidentiality, and artificial intelligence (AI) governance.

5. Research & Evidence-Based Practice

- Critically appraises and applies scientific evidence in clinical and public health decision-making.
- Conducts research and contributes to knowledge generation in preventive medicine.
- Translates research findings into practice, programs, and policy.

6. Health Systems & Policy Competency

- Develops and implements health policy.
- Applies systems thinking and value-based care principles.
- Leads and participates in program planning, quality improvement, and health system strengthening.

7. Communication, Collaboration & Advocacy

- Communicates effectively with patients, communities, and stakeholders.
- Collaborates across sectors and disciplines to improve health outcomes.
- Advocates for preventive medicine, public health priorities, and community engagement.

Bottom of Form

Alignment: Program Outcomes with competencies

Program Outcome (Graduate Attribute)	Aligned Competencies	Alignment Rationale
1. Professionalism & Ethical Practice	All competencies (Cross-cutting)	Professionalism and ethics underpin all clinical, public health, and system-level activities
	10	Ethical decision-making in policy and public health interventions
	12	Research integrity and ethical conduct
2. Population Health Leadership	7	Population health analysis and program evaluation
	8	Policy and system-level interventions
	9	Identify gaps, design improvement initiatives, and Monitor the outcomes
	10	Leadership in public health systems and emergency response
3. Clinical Preventive Expertise	1	Individual risk assessment
	2	Screening and early detection
	3	Preventive interventions and management
	4	Clinical preventive care delivery
4. Digital Health & Data-Driven Decision-Making	5	Surveillance systems and data analysis
	6	Outbreak detection and response using real-time data

Program Outcome (Graduate Attribute)	Aligned Competencies	Alignment Rationale
	7	Population data analysis and program evaluation
	10	Data-driven decision-making in public health systems
	12	Use of datasets in research and evidence generation
5. Research & Evidence-Based Practice	11	Research design and implementation
	12	Evidence generation and translation
	7	Program evaluation using evidence
6. Health Systems & Policy Competency	8	Policy development and system-level interventions
	10	Health system leadership and emergency preparedness
	7	Program planning and evaluation
7. Communication, Collaboration & Advocacy	9	Community engagement and health promotion
	10	Multisectoral coordination and communication
	1–4	Patient communication in clinical preventive care

Integration Across Training Components

A key strength of this curriculum is the longitudinal integration of **competencies** across all training dimensions, ensuring that competency development is not fragmented but is reinforced across different learning environments.

1. Field Rotations

Field training focuses on competencies related to the following:

- Surveillance systems and data interpretation
- Outbreak investigation and response
- Program implementation and evaluation
- Multisectoral coordination

This ensures that residents develop competencies in population-level decision-making and public health practices.

The performance in each field rotation is to be recorded using the field rotation assessment form provided in Appendix B.

2. Academic Courses

Academic component support through the following:

- Epidemiology and biostatistics (data analysis and interpretation)
- Evidence-based medicine (critical appraisal and decision-making)
- Research methods (study design and knowledge generation)
- Health policy and health promotion

3. Clinical Rotations

Clinical rotations provide structured opportunities to develop competencies related to the following:

- Preventive risk assessment
- Delivery of preventive interventions
- Life-course care
- Mental health integration
- Quality improvement

These rotations emphasize individual-level care while linking clinical encounters to population health implications.

Cross-Cutting competencies: Evidence-Based Medicine and Research

Two **competencies**, designed as cross-cutting competencies across all rotations, are as follows:

- Evidence-Based Medicine:
 - Residents formulate questions, critically appraise the literature, and apply evidence to both clinical and population health data-driven decision-making.
- Research and Knowledge Translation:
 - Residents conduct research, implementation, analysis, and dissemination, with an emphasis on translating evidence into practice, programs, and policy.

These **competencies** ensure that all clinical and public health activities are based on scientific evidence and continuous knowledge generation.

Alignment with Preventive Medicine Practice

The **competencies** framework reflects the full continuum of preventive medicine practice, including the following:

- Primary Prevention: Risk reduction and health promotion
- Secondary Prevention: Screening and early detection
- Tertiary Prevention: Disease control and complication prevention
- Population Health: Surveillance, program design, and evaluation
- Health Systems: Policy development, quality improvement, and leadership

This integrated approach ensures that graduates are prepared to function effectively across the following:

- Clinical settings
- Public health systems
- National health programs

A. Field rotations

Health Programs Rotation

During this rotation, residents will gain experience in assessing the health needs of a population; investigating health issues; assessing sociopolitical realities; advocating for the appropriate action to improve health; planning, implementing, and evaluating chronic disease prevention and promotion programs and/or strategies; contributing to the formulation of public policy; collaborating and building relationships; and contributing to the body of knowledge of Preventive medicine as it relates to chronic disease and its prevention and promotion.

CanMEDS Domain	Specific Rotation Objectives	Tasks
Medical Expert	- Demonstrate skill in using various methods to assess the health of populations. - Demonstrate knowledge of the development and implementation of surveillance and control methods applicable to diseases, risk factors, and health-related behaviors. - Demonstrate the ability to gather information, analyze and describe health issues, and decide on appropriate courses of action. - Demonstrate the ability to interpret and apply knowledge in specific situations.	- Assess and interpret • existing data sources and indicators; • the distribution and determinants of health with regard to specific populations as well as their impact on specific diseases in the population; • health behavior data, particularly with respect to nutrition, physical activity, the use of tobacco and other substances, risk taking, and participation in recommended screening programs • related social, economic, and environmental factors; • epidemiological data; • the potential for change in a given context or population; • exhibit knowledge of practice guidelines for the prevention of related diseases. - Identify conditions or population characteristics that lend themselves to surveillance, and select and understand appropriate methodologies and factors that influence the potential for change in a given context or population. - Gather information, and analyze and describe the health of the population (e.g., disease rates, biological risk

CanMEDS Domain	Specific Rotation Objectives	Tasks
		markers, health behaviors, and quantitative and qualitative methods for explaining differences in health and health-related behaviors). - Apply principles and strategies of • harm reduction, • disease prevention, and • health promotion.
Communicator	- Demonstrate skill in communicating assessments and recommendations (including rationale) to community partners, service providers, policymakers, and the public, both orally and in writing.	- Develop health promotion strategies. - Develop communication plans, including media components. - Respond to inquiries from the media and other stakeholders. - Demonstrate effective listening skills, and elicit and provide feedback. - Demonstrate group-facilitation skills.
Collaborator	- Develop effective relationships for gathering and sharing information with physicians and other service providers, community partners, clients, and patients.	- Effectively participate in interdisciplinary teams for the purpose of information exchange, conflict resolution, and problem-solving. - Identify and contact appropriate partners who can contribute to the assessment and resolution of certain issues. - Use various means to engage with stakeholders.

CanMEDS Domain	Specific Rotation Objectives	Tasks
	- Demonstrate a collaborative approach to the delivery of services.	- Clearly articulate the goals and objectives of a given collaborative process. - Identify and describe the roles and expected contributions of members of interdisciplinary teams assembled to address health issues.
Leader	Demonstrate the ability to plan and administer disease prevention programs; to assess issues and advocate for the appropriate action; and to plan, implement, and evaluate a disease program and/or specific strategies within it.	- Prioritize program alternatives. - Design an implementation plan for a disease/health promotion program or initiative. - Conduct a program evaluation. - Understand and use leadership, negotiation, and conflict-resolution skills. - Set agendas, chair meetings, and act as a secretary.
Health Advocate	- Apply knowledge of the distribution and determinants of health-status information to develop a position on a disease issue. - Demonstrate knowledge in, and apply the theories and principles of, health promotion and behavioral sciences.	- Identify opportunities for policy changes and/or advocacy. - Define advocacy positions and defend them persuasively. - Understand and utilize strategies to support policy change. - Demonstrate the ability to assist in the development of community capacity.

CanMEDS Domain	Specific Rotation Objectives	Tasks
Scholar	- Develop, implement, and monitor personal learning plans. - Demonstrate the ability to critically appraise research and literature. - Contribute to the development of new knowledge. - Facilitate the education of patients and clients, residents, other health professionals, and the community.	- Develop personal learning plans. - Pose research questions and actively participate in research processes (e.g., epidemiological research, needs assessment, cost-effectiveness studies, qualitative research, and evaluative research). - Contribute to new knowledge through the dissemination of findings. - Demonstrate the ability to use and interpret statistics. - Participate in/lead the teaching of agency staff, medical students, other residents, other health professionals, and members of the community.
Professional	- Deliver the highest quality of care with integrity, honesty, and compassion. - Exhibit appropriate personal and interpersonal professional behaviors. - Practice medicine in a manner that is ethically consistent with the obligations of a physician.	- Evaluate own skills and abilities, show awareness of the limits of own professional competence, and realize when to consult with others. - Identify ethical issues (e.g., informed consent, privacy rights, conflict of interest) in the course of practice and apply appropriate strategies to address them. - Recognize and respond effectively to the unprofessional behavior of others.

CanMEDS Domain	Specific Rotation Objectives	Tasks
		- Demonstrate awareness of, and exhibit, appropriate interpersonal behavior in professional relationships. - Find opportunities to evaluate and improve skills in this area. - Demonstrate professional behavior, including timely attendance at work and meetings and responses during on-call periods.

Environmental Health Rotation

This rotation is designed to allow residents to gain experience in assessing the environmental health needs of a population; investigating environmental health issues; assessing sociopolitical realities; advocating appropriate actions to improve health; planning, implementing, and evaluating environmental health programs and/or strategies; contributing to the formulation of public policy; collaborating and building partnerships; and contributing to the body of knowledge of Preventive medicine and how it relates to the domain of environmental health.

CanMEDS Domain	Specific Rotation Objectives	Tasks
Medical Expert	- Demonstrate skill in using various methods in a number of settings to assess the health of a population with regard to environmental issues. - Demonstrate the ability to gather information on, and analyze and describe, the health of a population and its relation to the environmental health issue at hand. - Demonstrate the ability to interpret epidemiological studies and apply knowledge in a specific situation. - Demonstrate skills in investigating and managing environmental health hazards. - Demonstrate knowledge in the development and implementation of surveillance and control methods. - Demonstrate knowledge of the principles of toxicology. - Demonstrate knowledge of the characteristics and methods for monitoring water, soil, food, and air.	- Access and interpret existing environmental health data sources and indicators, demographics, social and economic factors, epidemiological data, risk assessments, and hazard analyses. - Conduct risk assessments of environmental hazards. - Apply principles and strategies of harm reduction and health promotion to various environmental and occupational health risks. - Contribute to the development of a community emergency-response plan, including measures to prevent and manage biological, chemical, and radiological agents. - Use appropriate legislation in response to environmental issues. - Undertake cluster investigations.

CanMEDS Domain	Specific Rotation Objectives	Tasks
Communicator	- Demonstrate skill in communicating assessments and recommendations related to environmental health issues (including rationale) to community partners, service providers, policymakers, and the public, both orally and in writing. - Demonstrate knowledge of the principles of risk communication. - Demonstrate effective listening skills, and elicit and provide feedback.	- Develop communication plans, including media components, for environmental health issues. - Respond to media inquiries concerning environmental issues.
Collaborator	- Demonstrate a collaborative approach to the delivery of services. - Demonstrate team-building activities and facilitation skills.	- Develop effective relationships for gathering and sharing information with physicians and other service providers, community partners, clients, and patients. - Effectively participate in interdisciplinary teams for the purpose of information exchange, conflict resolution, and problem-solving. - Identify and contact appropriate partners who can contribute to the assessment and resolution of environmental health issues.

CanMEDS Domain	Specific Rotation Objectives	Tasks
		- Use various means of engaging with stakeholders. - Clearly articulate the goals and objectives of a given collaborative process. - Identify and describe the role and expected contribution of the members of an interdisciplinary team assembled to address an environmental health issue.
Leader	Demonstrate the ability to plan and administer environmental program; the ability to assess issues and advocate for the appropriate action; the ability to plan, implement, and evaluate environmental health programs and/or strategies; the ability to contribute to the formulation of environmental health policy; and the ability to collaborate and build relationships.	- Conduct needs assessments. - Prioritize program alternatives. - Design, implement, and evaluate environmental health programs. - Use leadership, negotiation, and conflict-resolution skills. - Develop organizational policies and procedures. - Establish agendas, chair meetings, and act as a secretary.
Health Advocate	- Demonstrate policy development and implementation. - Demonstrate the ability to assist in the development of community capacity.	- Apply knowledge of the distribution and determinants of health-status information to develop a position on an environmental issue.

CanMEDS Domain	Specific Rotation Objectives	Tasks
		- Identify opportunities for policy change and/or advocacy. - Define an advocacy position and defend it persuasively. - Utilize strategies to support policy change.
Scholar	- Demonstrate the ability to critically appraise research literature. - Demonstrate the ability to use and interpret statistics.	- Pose research questions and actively participate in research processes (e.g., epidemiological research, needs assessments, cost-effectiveness studies, qualitative research, and evaluative research.) - Contribute to the development of new knowledge through the dissemination of findings. - Develop personal learning plans. - Conduct field investigations or surveys. - Participate in/lead the teaching of agency staff, medical students, other residents, other health professionals, and members of the community.

CanMEDS Domain	Specific Rotation Objectives	Tasks
Professional	Demonstrate awareness of, and exhibit appropriate interpersonal behaviors in, professional relationships.	- Evaluate own skills and abilities, be aware of own limits of professional competence, and realize when to consult with others. - Identify ethical issues (e.g., informed consent, privacy rights, and conflicts of interest) that may arise in the course of practice and apply appropriate strategies for addressing them. - Recognize and respond effectively to unprofessional behaviors in others.

International Health Regulations & Port Entry Rotation

During this rotation, residents will gain experience in implementing IHR and managing public health measures at the points of entry. They will assess, plan, implement, and evaluate health security measures at borders; contribute to policy formulation related to international travel and trade; collaborate with stakeholders; and contribute to global health security knowledge.

CanMEDS Domain	Specific Rotation Objectives	Tasks
Medical Expert	- Demonstrate comprehensive understanding of the IHR and their application at points of entry. - Show proficiency in identifying and managing public health risks related to international travel and trade. - Exhibit knowledge of global surveillance systems for infectious diseases and other public health emergencies of international concern. - Demonstrate understanding of vector control measures at points of entry.	- Conduct public health risk assessments at points of entry. - Implement health screening protocols for travelers. - Design and evaluate vector control programs at ports and borders. - Analyze global health surveillance data to inform decision-making at points of entry. - Contribute to the development of emergency response plans for public health events at borders. - Apply IHR decision-making algorithms to real or simulated public health events.
Communicator	- Demonstrate skills in communicating complex IHR and policies to diverse stakeholders. - Exhibit competence in crafting clear, culturally sensitive health messages for international travelers.	- Develop communication strategies for implementing new health measures at points of entry. - Create health advisory materials for travelers in multiple languages. - Conduct briefings for border staff on current global health

CanMEDS Domain	Specific Rotation Objectives	Tasks
		threats and necessary precautions. - Respond to media inquiries about health measures at borders during public health emergencies.
Collaborator	- Demonstrate the ability to work effectively with multidisciplinary teams at points of entry. - Show competence in building and maintaining partnerships with related health organizations. - Exhibit skills in facilitating cooperation between health, border control, and transportation sector stakeholders.	- Participate in joint training exercises with customs, immigration, and security personnel. - Facilitate meetings between health authorities and transportation industry representatives to address travel-related health issues.
Leader	- Demonstrate the ability to plan and manage public health programs at points of entry. - Show competence in resource allocation for health measures at borders during routine and emergency situations. - Exhibit skills in overseeing the implementation of IHR core capacities at designated points of entry.	- Conduct needs assessments for IHR core capacity implementation at points of entry. - Develop strategic plans for enhancing health security measures at borders. - Evaluate the effectiveness and efficiency of health screening measures at borders.

CanMEDS Domain	Specific Rotation Objectives	Tasks
		- Oversee the maintenance of public health emergency contingency plans at points of entry.
Health Advocate	- Demonstrate the ability to advocate for health security measures that balance public health protection with minimal interference to international travel and trade. - Show competence in promoting the rights of travelers while implementing necessary public health measures.	- Develop policy briefs on the public health and economic impacts of border health measures. - Advocate for adequate resources to implement IHR core capacities at points of entry. - Promote global cooperation and capacity building for implementing IHR.
Scholar	- Demonstrate the ability to critically appraise and apply research related to border health and IHR implementation. - Show competence in designing and conducting operational research to improve health measures at points of entry. - Exhibit skills in knowledge translation for IHR-related best practices.	- Conduct literature reviews on the effectiveness of health screening measures at borders. - Design and implement studies to evaluate new technologies for health screening at points of entry. - Develop best practice guidelines for implementing IHR at points of entry.

CanMEDS Domain	Specific Rotation Objectives	Tasks
		- Contribute to the training of port health officers and other relevant staff.
Professional	- Demonstrate awareness of ethical issues in implementing public health measures in the context of international travel and trade. - Exhibit cultural competence in dealing with diverse international travelers and stakeholders. - Demonstrate commitment to continuous professional development in the evolving field of global health security.	- Identify and address ethical dilemmas in implementing travel restrictions or mandatory health measures. - Demonstrate respect for diverse cultural practices while ensuring compliance with health regulations. - Reflect on and address personal biases that may affect decision-making in border health scenarios. - Engage in continuous learning about emerging global health threats and evolving IHR implementation strategies. - Promote a culture of professionalism and ethical practice among port health staff.

Infection Control Rotation

This rotation is designed to allow residents to gain comprehensive experience in infection prevention and control practices in various healthcare settings and communities. Residents will engage in assessing infection risks, planning and implementing infection control measures, evaluating the effectiveness of these measures, contributing to the formulation of infection control policies, collaborating with multidisciplinary teams, and contributing to the body of knowledge on infection prevention and control.

CanMEDS Domain	Specific Rotation Objectives	Tasks
Medical Expert	- Demonstrate comprehensive understanding of the epidemiology, transmission, and prevention of healthcare-associated infections (HAIs) and community-acquired infections. - Show proficiency in identifying and managing infection risks in various healthcare settings. - Exhibit knowledge of antimicrobial stewardship principles and practices. - Demonstrate understanding of environmental infection control measures and the role of the healthcare environment in infection transmission.	- Conduct infection risk assessments in various healthcare settings (e.g., hospitals, long-term care facilities, outpatient clinics). - Analyze surveillance data to identify trends in HAIs and emerging infectious threats. - Contribute to the development and implementation of antimicrobial stewardship programs. - Evaluate the effectiveness of environmental cleaning and disinfection practices. - Apply evidence-based guidelines for preventing specific types of HAIs (e.g., central line-associated bloodstream infections, surgical site infections).
Communicator	- Demonstrate skills in communicating infection control principles and practices to healthcare workers, patients, and the public. - Show proficiency in developing and delivering infection control education and training programs.	- Develop communication strategies to promote hand hygiene compliance among healthcare workers and visitors. - Create educational materials on infection prevention for patients and families.

CanMEDS Domain	Specific Rotation Objectives	Tasks
	- Exhibit competence in crisis communication during outbreaks or other infection control emergencies.	- Prepare and deliver presentations on current infection control issues to hospital committees. - Develop and implement communication plans for managing outbreaks in healthcare facilities.
Collaborator	- Demonstrate the ability to work effectively within multidisciplinary infection control teams. - Show competence in collaborating with various hospital departments to implement infection control measures. - Exhibit skills in facilitating cooperation between infection control clinical teams and hospital administration.	- Participate in infection control committee meetings and contribute to policy development. - Collaborate with nursing teams, environmental services, and facility management to improve infection control practices. - Work with clinical teams to implement care bundles for preventing device-associated infections. - Engage with laboratory services to optimize the use of diagnostic tests for infection control purposes. - Facilitate partnerships with public health agencies for surveillance and management of notifiable diseases.

CanMEDS Domain	Specific Rotation Objectives	Tasks
Leader	- Demonstrate the ability to plan, implement, and evaluate infection control programs. - Show competence in managing resources for infection prevention and control activities. - Exhibit skills in using quality improvement methodologies to enhance infection control practices.	- Develop a comprehensive infection control plan for a healthcare facility. - Manage the implementation of new infection control technologies or practices. - Conduct cost-effectiveness analyses of infection prevention interventions. - Lead quality improvement projects to reduce HAI rates. - Oversee the collection and reporting of infection control metrics for regulatory compliance.
Health Advocate	- Demonstrate the ability to advocate for resources and support infection prevention and control programs. - Show competence in promoting patient safety through infection control practices. - Exhibit skills in advocating for policies that support antimicrobial stewardship and prevent antimicrobial resistance.	- Develop business cases for investment in infection control infrastructure and personnel. - Advocate for the inclusion of infection control considerations in hospital renovation or construction projects. - Promote patient empowerment in infection prevention through educational initiatives. - Advocate for policies that support appropriate antimicrobial use in healthcare and community settings.

CanMEDS Domain	Specific Rotation Objectives	Tasks
Scholar	- Demonstrate the ability to critically appraise and apply infection control research. - Show competence in designing and conducting studies to evaluate infection control interventions. - Exhibit skills in translating infection control evidence into practice.	- Conduct literature reviews on emerging infection control issues or interventions. - Design and implement a research project addressing a local infection control challenge. - Develop evidence-based guidelines or protocols for specific infection control practices. - Contribute to the peer-reviewed literature on infection prevention and control.
Professional	- Demonstrate awareness of ethical issues in infection control practices. - Exhibit cultural competence in implementing infection control measures in diverse populations. - Show commitment to continuous professional development in the field of infection prevention and control.	- Identify and address ethical dilemmas in infection control (e.g., balancing individual rights with public health protection). - Ensure that infection control practices respect patient dignity and cultural practices. - Reflect on and address personal biases that may affect decision-making in infection control scenarios. - Engage in continuous learning about emerging pathogens and new infection control technologies.

CanMEDS Domain	Specific Rotation Objectives	Tasks
		- Promote a culture of safety and shared responsibility for infection prevention among all healthcare workers.

Vaccination Operation Rotation

During this rotation, residents will gain experience in planning, implementing, and evaluating vaccination programs. They will engage in all aspects of vaccination operations, including program design, cold chain management, vaccine administration, adverse event monitoring, data management, and community engagement.

CanMEDS Domain	Specific Rotation Objectives	Tasks
Medical Expert	- Demonstrate comprehensive understanding of vaccine-preventable diseases and immunology principles. - Show proficiency in planning and implementing vaccination programs for various populations and settings. - Exhibit knowledge of vaccine storage, handling, and cold chain management. - Demonstrate understanding of vaccine safety monitoring and adverse event reporting systems.	- Develop vaccination strategies for different target populations (e.g., infants, adolescents, adults, high-risk groups). - Implement and oversee proper vaccine storage and handling procedures. - Conduct vaccine effectiveness and impact evaluations. - Manage adverse events following immunization. - Apply current immunization schedules and catch-up vaccination protocols. - Analyze vaccination coverage data to identify gaps and propose interventions.
Communicator	- Demonstrate the ability to communicate vaccine-related information to diverse audiences, including healthcare providers, patients, and the public. - Show proficiency in addressing vaccine hesitancy and promoting vaccine acceptance.	- Develop communication plans, including media components for vaccination programs. - Respond to inquiries from the media and other stakeholders regarding vaccination issues. - Develop educational materials on vaccines and vaccination programs for various audiences.

CanMEDS Domain	Specific Rotation Objectives	Tasks
	- Exhibit competence in risk communication related to vaccine safety and efficacy.	- Create and implement communication strategies to address vaccine misinformation.
Collaborator	- Demonstrate the ability to work effectively with multidisciplinary teams in vaccination operations. - Show competence in collaborating with various stakeholders, including healthcare providers, community leaders, and policymakers. - Exhibit skills in facilitating partnerships to enhance vaccination coverage and equity.	- Collaborate with primary care providers to improve vaccination rates in their practices. - Engage with community organizations to plan and implement vaccination outreach activities. - Work with school health programs to enhance school-based vaccination efforts. - Facilitate partnerships with private sector entities for workplace vaccination programs.
Leader	- Demonstrate the ability to manage vaccination operations, including resource allocation and supply chain management. - Show competence in project management skills applied to vaccination campaigns. - Exhibit skills in using immunization information systems and data management tools.	- Develop operational plans for vaccination campaigns, including budget and resource allocation. - Manage vaccine inventory and distribution to ensure optimal supply levels. - Implement or upgrade immunization information systems.

CanMEDS Domain	Specific Rotation Objectives	Tasks
		- Conduct vaccination session microplanning for efficient resource utilization. - Oversee the training and supervision of vaccination staff.
Health Advocate	- Demonstrate the ability to advocate for equitable access to vaccines and vaccination services. - Show competence in promoting the importance of vaccination to various stakeholders. - Exhibit skills in using vaccination data to address health disparities.	- Develop policy briefs to support the introduction of new vaccines or expansion of vaccination programs. - Advocate for resources to strengthen vaccination infrastructure and cold chain systems. - Engage with community leaders to promote vaccination and address cultural barriers. - Advocate for vaccination policies that protect public health.
Scholar	- Demonstrate the ability to critically appraise and apply vaccine-related research. - Show competence in designing and conducting studies to improve vaccination strategies. - Exhibit skills in translating vaccination research into practice and policy.	- Conduct literature reviews on emerging vaccines or innovative vaccination strategies. - Design and implement a research project to evaluate vaccination intervention. - Contribute to the development of vaccination training curricula for healthcare workers.

CanMEDS Domain	Specific Rotation Objectives	Tasks
		- Conduct training sessions for healthcare providers on new vaccines or vaccination protocols.
Professional	- Demonstrate awareness of ethical issues in vaccination practices, including informed consent and mandatory vaccination policies. - Exhibit cultural competence in implementing vaccination programs in diverse populations. - Show commitment to continuous professional development.	- Identify and address ethical considerations in vaccination decision-making and policy development. - Reflect on and address personal biases that may affect vaccination recommendations or practices. - Engage in continuous learning about new vaccines, vaccination technologies, and immunization strategies.

School Health Rotation

This rotation is designed to provide residents with comprehensive experience in planning, implementing, and evaluating school health programs. Residents will engage in various aspects of school health, including health education, preventive services, mental health support, nutrition programs, physical activity promotion, and management of chronic conditions in the school setting. They will learn to apply evidence-based practices, collaborate with diverse stakeholders, and contribute to the advancement of school-based health strategies.

CanMEDS Domain	Specific Rotation Objectives	Tasks
Medical Expert	- Demonstrate comprehensive understanding of child and adolescent health issues relevant to the school setting. - Show proficiency in planning and implementing school health programs addressing various health domains. - Exhibit knowledge of school-based health screenings and preventive services. - Demonstrate understanding of the management of common chronic conditions in the school environment. - Demonstrate understanding of adolescent reproductive health, including puberty, menstrual health, prevention of sexually transmitted infections (STIs), and age-appropriate family life education within the school health framework.	- Develop comprehensive school health programs addressing physical, mental, and social health needs. - Implement and oversee school-based health screenings (e.g., vision, hearing, body mass index). - Create management plans for students with chronic conditions (e.g., asthma, diabetes, allergies). - Conduct health needs assessments in school populations. - Apply evidence-based interventions for health promotion in schools. - Analyze school health data to identify trends and areas for intervention. - Provide age-appropriate reproductive health education sessions addressing puberty, menstrual hygiene, prevention of STIs, and responsible health behaviors. - Identify students who require referral for specialized reproductive health assessment, counseling, or clinical services.

CanMEDS Domain	Specific Rotation Objectives	Tasks
		- Participate in school-based awareness programs on prevention of early pregnancy and reproductive health risks.
Communicator	- Demonstrate skill in communicating health information to students, parents, teachers, and school administrators. - Show proficiency in developing age-appropriate health education materials. - Exhibit competence in facilitating health discussions with adolescents.	- Develop health education curricula on various topics (e.g., nutrition, physical activity, substance abuse prevention). - Conduct training sessions for teachers and school staff on health-related topics. - Create communication strategies for engaging parents in school health initiatives. - Prepare and deliver presentations on school health program outcomes to school administration or community stakeholders. - Develop effective communication channels between school health services and primary care providers.

CanMEDS Domain	Specific Rotation Objectives	Tasks
Collaborator	- Demonstrate the ability to work effectively within multidisciplinary school health teams. - Show competence in collaborating with education professionals, mental health providers, and community organizations. - Exhibit skills in facilitating partnerships to enhance school health programs.	- Participate in school health committees or wellness councils. - Collaborate with teachers to integrate health education into various subjects. - Engage with community health organizations to provide additional resources and services to schools. - Work with school nutrition services to improve healthy food options. - Facilitate partnerships with local healthcare providers for referrals and continuity of care.
Leader	- Demonstrate the ability to manage school health programs, including resource allocation and staff coordination. - Show competence in project management skills applied to school health initiatives. - Exhibit skills in using health information systems in the school setting.	- Develop operational plans for school health services. - Manage the implementation of new school health initiatives or interventions. - Implement or upgrade school health information systems. - Coordinate the roles and responsibilities of school health team members. - Oversee the training and supervision of school health staff.

CanMEDS Domain	Specific Rotation Objectives	Tasks
Health Advocate	- Demonstrate the ability to advocate for comprehensive school health programs and policies. - Exhibit skills in using school health data to improve school health programs.	- Develop policy briefs to support the implementation or expansion of school health services. - Advocate for resources to strengthen school health infrastructure. - Engage with school administrators to promote health-supporting school policies (e.g., healthy food policies, anti-bullying measures). - Advocate for inclusive health education that addresses the needs of diverse student populations.
Scholar	- Demonstrate the ability to critically appraise and apply research relevant to school health. - Show competence in designing and conducting studies to improve school health strategies. - Exhibit skills in translating research into school health practices and policies. - Demonstrate the ability to apply evidence-based strategies for adolescent reproductive health promotion within school settings.	- Conduct literature reviews on effective school health interventions. - Design and implement a research project to evaluate a school health program or intervention. - Develop evidence-based guidelines for school health practices. - Contribute to the development of school health curricula or training materials. - Review and appraise the literature on effective school-based reproductive health interventions.

CanMEDS Domain	Specific Rotation Objectives	Tasks
		- Analyze adolescent health indicators (e.g., early pregnancy rates, STI trends where applicable) to inform program development.
Professional	- Demonstrate awareness of ethical issues in school health practices, including confidentiality and consent in the pediatric population. - Exhibit cultural competence in implementing health programs in diverse school communities. - Show commitment to continuous professional development in the field of school health.	- Identify and address ethical considerations in school health service delivery and research. - Ensure that school health practices respect student privacy and adhere to relevant regulations. - Reflect on and address personal biases that may affect interactions with students or health recommendations. - Engage in continuous learning about emerging issues in child and adolescent health relevant to the school setting.

Surveillance Operation Rotation

This rotation is designed to allow residents to gain comprehensive experience in public health surveillance operations. Residents will engage in designing, implementing, managing, and evaluating surveillance systems for various health conditions and events. They will learn to collect, analyze, interpret, and disseminate surveillance data; contribute to the formulation of evidence-based public health policies; collaborate with multidisciplinary teams and stakeholders; and contribute to the advancement of surveillance methodologies.

CanMEDS Domain	Specific Rotation Objectives	Tasks
Medical Expert	- Demonstrate comprehensive understanding of the principles and practices of public health surveillance. - Show proficiency in designing, implementing, and evaluating surveillance systems. - Exhibit knowledge of different types of surveillance and their applications. - Demonstrate understanding of data quality assurance in surveillance operations.	- Design a surveillance system for a specific health condition. - Evaluate existing surveillance systems using standardized frameworks. - Analyze surveillance data to identify trends, clusters, or outbreaks. - Develop case definitions for surveillance purposes. - Implement quality control measures for data collection and management.
Communicator	- Demonstrate skills in communicating surveillance findings to various audiences, including policymakers, healthcare providers, and the public. - Show proficiency in developing surveillance reports and other communication materials. - Exhibit competence in risk communication based on surveillance data.	- Prepare and present regular surveillance reports to public health officials. - Develop fact sheets or bulletins to communicate surveillance findings to the public. - Create and deliver presentations on surveillance results to healthcare providers. - Write scientific papers or reports based on surveillance data. - Develop communication strategies for disseminating urgent surveillance findings during outbreaks.

CanMEDS Domain	Specific Rotation Objectives	Tasks
Collaborator	- Demonstrate the ability to work effectively with multidisciplinary teams in surveillance operations. - Show competence in collaborating with various stakeholders, including healthcare providers, laboratories, and community organizations. - Exhibit skills in facilitating data sharing and integration across different surveillance systems.	- Participate in surveillance working groups or task forces. - Engage with healthcare providers to improve disease reporting practices. - Work with information technology professionals to enhance electronic surveillance systems. - Facilitate partnerships with academic institutions for surveillance-related research.
Leader	- Demonstrate the ability to manage surveillance operations, including resource allocation and personnel management. - Show competence in project management skills applied to surveillance activities. - Exhibit skills in using health informatics and data management systems for surveillance.	- Develop operational plans for surveillance activities, including budget and resource allocation. - Manage a team of surveillance officers or data analysts. - Develop standard operating procedures for surveillance activities. - Conduct performance evaluations of surveillance staff.

CanMEDS Domain	Specific Rotation Objectives	Tasks
Health Advocate	- Demonstrate the ability to use surveillance data to advocate for public health interventions and policies. - Show competence in promoting the importance of surveillance to various stakeholders.	- Develop policy briefs based on surveillance data to inform decision-making. - Advocate for resources to strengthen surveillance systems. - Engage with community leaders to promote participation in surveillance activities. - Advocate for the use of surveillance findings in health program planning and evaluation.
Scholar	- Demonstrate the ability to critically appraise and apply surveillance-related research. - Show competence in designing and conducting studies to improve surveillance methodologies. - Exhibit skills in translating surveillance data into actionable public health knowledge.	- Conduct literature reviews on innovative surveillance methods or technologies. - Design and implement a research project to evaluate or improve a surveillance system. - Develop algorithms for automated outbreak detection from surveillance data. - Participate in scientific conferences or webinars on public health surveillance. - Contribute to the development of training materials for surveillance personnel.

CanMEDS Domain	Specific Rotation Objectives	Tasks
Professional	- Demonstrate awareness of ethical issues in public health surveillance, including privacy and data security. - Exhibit cultural competence in implementing surveillance activities in diverse populations. - Demonstrate commitment to continuous professional development in the evolving field of public health surveillance.	- Identify and address ethical considerations in surveillance data collection and use. - Ensure that surveillance practices respect individual privacy and adhere to data protection regulations. - Reflect on and address potential biases in surveillance systems and data interpretation. - Engage in continuous learning about emerging surveillance technologies and methodologies. - Promote a culture of data quality and integrity in surveillance operations.

Population Health Rotation

During this rotation, residents will gain experience in assessing the health needs of populations, investigating population health issues, evaluating social determinants of health, and advocating for appropriate actions to improve overall population health. Residents will engage in planning, implementing, and evaluating population health programs and strategies; contribute to public health policy formulation; collaborate across sectors; and enhance the body of knowledge of population health and preventive medicine.

CanMEDS Domain	Specific Rotation Objectives	Tasks
Medical Expert	- Demonstrate skill in using methods to assess the health of populations, including social determinants of health. - Gather and analyze data on population health trends and their relation to socioeconomic factors. - Demonstrate knowledge of health system planning and evaluation methodologies. - Demonstrate proficiency in health informatics and data science techniques for population health analysis and management.	- Access and interpret population health data sources, indicators, demographics, and social determinants of health. - Conduct health impact assessments of policies and programs. - Analyze the impact of social determinants on health outcomes. - Apply health informatics and data science techniques to analyze large-scale health data. - Apply machine learning algorithms to predict population health trends. - Develop and implement data visualization tools for complex population health datasets.
Communicator	- Demonstrate skills in communicating population health assessments and recommendations to stakeholders. - Demonstrate knowledge of health literacy principles in population health communications.	- Develop communication strategies for complex population health issues. - Create health education materials for diverse populations.

CanMEDS Domain	Specific Rotation Objectives	Tasks
	- Exhibit understanding of the role of digital health and telemedicine in population health management.	- Present population health data to policymakers and community leaders. - Evaluate the impact of telemedicine initiatives on population health outcomes.
Collaborator	- Demonstrate a collaborative approach to population health challenges. - Demonstrate skills in building and maintaining partnerships across different sectors to address social determinants of health. - Develop skills in collaborating with professionals from diverse fields to address complex population health challenges.	- Participate in interdisciplinary teams addressing complex health issues. - Engage partners from various sectors. - Facilitate cross-sector collaborations to improve health outcomes. - Work with professionals from fields such as education and environmental science on population health projects. - Facilitate interdisciplinary workshops to address complex population health issues.

CanMEDS Domain	Specific Rotation Objectives	Tasks
Leader	- Demonstrate the ability to plan, implement, and evaluate population health programs. - Show competence in health system resource allocation and priority setting. - Exhibit skills in managing and analyzing large datasets for decision-making. - Demonstrate understanding of health economics principles in population health decision-making.	- Conduct community health needs assessments. - Design and implement population health interventions. - Evaluate the effectiveness and cost-effectiveness of health programs. - Use data analytics tools to inform management strategies. - Conduct cost-benefit and cost-effectiveness analyses of population health interventions.
Health Advocate	- Advocate for policies improving health outcomes. - Show competence in community engagement and empowerment strategies.	- Identify policy change opportunities to improve health. - Develop and present evidence-based policy recommendations. - Engage with community members to understand health priorities. - Advocate for Health in All Policies approach.

CanMEDS Domain	Specific Rotation Objectives	Tasks
Scholar	- Critically appraise and apply population health research. - Show competence in designing and conducting population health research. - Exhibit skills in knowledge translation and exchange in population health contexts. - Demonstrate awareness of global health issues and their impact on local population health.	- Critically appraise the population health literature. - Design and conduct research studies. - Develop knowledge translation strategies. - Participate in teaching activities related to population health for various audiences. - Compare and contrast population health approaches in different global contexts.
Professional	- Demonstrate awareness of ethical issues in population health practice and research. - Show cultural competence and sensitivity in population health work. - Show commitment to continuous professional development in population health.	- Identify and address ethical issues in practice and research. - Demonstrate cultural humility in diverse communities. - Reflect on and address personal biases. - Engage in continuous learning about emerging health issues and approaches.

Rapid Response in Preventive Medicine and Public Health

This rotation will equip healthcare professionals with critical skills and knowledge to function effectively in rapid response teams, ensuring the timely and efficient management of public health emergencies.

CanMEDS Domain	Specific Rotation Objectives	Tasks
Medical Expert	- Understand epidemiology, disease surveillance, outbreak investigation, and control measures. - Master protocols for rapid response to infectious disease outbreaks, environmental health threats, and bioterrorism.	- Perform rapid health assessments and implement control measures. - Utilize diagnostic tools and epidemiological methods to identify and manage public health threats.
Communicator	- Grasp effective communication strategies during emergencies.	- Clearly communicate health risks and public health information to diverse audiences, including the public, healthcare providers, and policymakers. - Prepare and deliver concise briefings and reports on public health threats and response activities.
Collaborator	- Understand the roles and responsibilities of various agencies and stakeholders in public health emergencies.	- Work effectively within interdisciplinary and interagency teams, including government, nongovernmental organizations, and community groups.

CanMEDS Domain	Specific Rotation Objectives	Tasks
		- Facilitate coordination and cooperation among stakeholders to ensure a cohesive response.
Leader	- Recognize the critical role of leadership in managing public health emergencies.	- Lead rapid response teams, making quick informed decisions under pressure. - Allocate resources efficiently and manage crisis situations to mitigate public health threats.
Health Advocate	- Understand the principles of health advocacy in the context of emergency response.	- Advocate for the needs of vulnerable populations and equitable access to resources during public health crises. - Promote public health policies that enhance community resilience and preparedness.
Scholar	- Stay informed about the latest research and best practices in rapid response and public health emergencies.	- Engage in continuous learning and professional development to improve public health emergency response. - Conduct and contribute to research on the effectiveness of public health interventions and response strategies.

CanMEDS Domain	Specific Rotation Objectives	Tasks
Professional	- Understand the ethical and professional responsibilities involved in public health emergencies.	- Maintain professionalism, integrity, and accountability in all aspects of public health response. - Demonstrate resilience, adaptability, and ethical decision-making in high-stress environments.

Mass Gathering Medicine and Disaster Management

This rotation will aid in developing expertise in managing health risks associated with mass gatherings and disasters by integrating preventive medicine principles and CanMEDS competencies.

CanMEDS Domain	Specific Rotation Objectives	Tasks
Medical Expert	- Understand the principles of mass-gathering medicine, including crowd dynamics, risk assessment, and health surveillance. - Learn disaster management principles, including disaster risk reduction, preparedness, response, and recovery.	- Conduct health risk assessments and implement preventive measures for mass gatherings. - Develop and execute disaster response plans, including triage, medical care, and public health interventions during emergencies.
Communicator	- Grasp effective communication strategies for mass gatherings and disaster scenarios.	- Communicate health risks and safety information to the public, event organizers, and emergency responders. - Provide clear and timely updates during disasters to ensure coordinated response efforts.
Collaborator	- Understand the roles and responsibilities of multidisciplinary teams in mass gatherings and disaster management.	- Work collaboratively with healthcare providers, emergency services, public health officials, and community organizations. - Facilitate coordination among local, national, and international agencies during mass gatherings and disasters.

CanMEDS Domain	Specific Rotation Objectives	Tasks
Leader	- Recognize the importance of leadership in mass-gathering medicine and disaster management.	- Lead and coordinate healthcare teams, ensuring efficient resource allocation and decision-making during events and emergencies. - Develop and implement training programs for emergency preparedness and response.
Health Advocate	- Understand the principles of health advocacy in the context of mass gatherings and disasters.	- Advocate for policies and interventions that enhance safety and health during mass gatherings. - Address health disparities and promote equitable access to resources during disaster response and recovery.
Scholar	- Stay informed about the latest research and best practices in mass gathering medicine and disaster management.	- Engage in continuous learning and professional development to improve knowledge and skills. - Conduct and contribute to research on health outcomes and interventions related to mass gatherings and disasters.
Professional	- Understand ethical principles and professional responsibilities in mass gatherings and disaster management.	- Demonstrate professionalism, integrity, and accountability in all aspects of practice.

CanMEDS Domain	Specific Rotation Objectives	Tasks
		- Maintain resilience, adaptability, and ethical decision-making in high-stress environments.

B. Academic rotations

Epidemiology Principles & Application

Course Title: Epidemiology Principles & Application

Credit Duration: 4 weeks

Course Level: R1

Course Description: This course provides a foundational epidemiological framework for residency in preventive medicine. It introduces residents to the logic of population-based inquiry; the measurement of disease frequency and association; and the role of epidemiology in prevention, surveillance, screening, and public health decision-making. Emphasis is placed on applying epidemiological thinking to common public health problems, including communicable diseases, NCDs, injuries, and health inequities relevant to Saudi Arabia. Residents examine how epidemiological methods inform risk assessment, community diagnosis, policy development, and evaluation of preventive interventions. This course develops an applied understanding of the study design; bias; confounding factors; causal reasoning; and screening test performance, including sensitivity, specificity, and predictive values.

Course Learning Outcomes:

- Analyze measures of disease frequency, association, and impact in population datasets.
- Differentiate between major epidemiological study designs and evaluate their appropriate use.

- Interpret patterns of distribution and determinants of communicable diseases, NCDs, and injuries in populations.
- Apply epidemiological reasoning to screening, prevention, surveillance, and reporting questions.
- Critique threats to validity, including bias, confounding factors, and misclassification.
- Interpret screening test characteristics, including sensitivity, specificity, and predictive value, in the context of preventive medicine
- Main Content/Topics Covered:
 - History, scope, and use of epidemiology
 - Measures of incidence, prevalence, mortality, risk, and impact
 - Descriptive, cross-sectional, case-control, and cohort designs
 - Screening concepts and test performance characteristics
 - Bias, confounding factors, effect modification, and causal inference
 - Outbreak investigation, surveillance, and reporting principles

Teaching and Learning Methods: Interactive seminars, case-based discussions, guided reading, applied exercises, and supervised presentations.

Assessment Methods: Written assessments, assignments, presentations, and participation in discussion/problem-solving activities.

Biostatistics Principles and Methods

Course Title: Biostatistics Principles and Methods

Credit Duration: 4 weeks

Course Level: R1

Course Description: This course introduces the statistical concepts and analytical methods required for preventive medicine practice, research, and evidence-based decision-making. It focuses on the interpretation and appropriate use of descriptive and inferential statistics in the clinical and population health contexts. Residents develop competence in summarizing

data; selecting statistical tests; interpreting p-values and confidence intervals; and understanding estimations, hypothesis testing, and model outputs. The course links statistical reasoning to epidemiological questions and emphasizes the practical interpretation of formula rather than memorization. Examples include surveillance, screening, risk factor analyses, health service evaluations, and public health program assessments.

Course Learning Outcomes:

- Summarize quantitative data using appropriate descriptive statistical methods.
- Select and justify suitable inferential tests for common public health questions.
- Interpret confidence intervals, p-values, and measures of uncertainty appropriately.
- Apply the concepts of sampling variability and statistical assumptions to data analysis.
- Critique the statistical validity of published biomedical and public health studies.
- Interpret regression outputs in relation to epidemiological and preventive medicine questions.

Main Content/Topics Covered:

- Types of data and summary measures
- Probability, distribution, and sampling
- Estimation and hypothesis testing
- Comparison of means and proportions
- Correlation and regression fundamentals
- Statistical interpretation in research and program evaluation

Teaching and Learning Methods: Interactive seminars, case-based discussions, guided reading, applied exercises, and supervised presentations.

Assessment Methods: Written assessments, assignments, presentations, and participation in discussion/problem-solving activities.

Demography

Course Title: Demography

Credit Duration: 1 week

Course Level: R1

Course Description: This course examines the population structure and dynamics as essential foundations for preventive medicine and public health planning. Residents study fertility, mortality, migration, age-sex composition, dependency, and population change, with a focus on how demographic transitions shape the disease burden, service needs, and prevention priorities. This course emphasizes the interpretation of demographic indicators in health needs assessment, burden estimation, life course planning, and workforce and service forecasting. Particular attention is paid to the practical use of demographic evidence in the Saudi context, including population growth, regional variation, urbanization, and changing disease patterns.

Course Learning Outcomes:

- Interpret key demographic measures relevant to preventive medicine practice.
- Analyze how fertility, mortality, and migration influence health system needs.
- Apply demographic data to population health assessment and priority setting.
- Construct and interpret population pyramids and life table concepts.
- Evaluate demographic transitions in relation to epidemiological changes.
- Synthesize demographic evidence into planning recommendations for health programs.

Main Content/Topics Covered:

- Population size, structure, and composition
- Fertility, mortality, and migration indicators
- Population pyramids and life tables
- Demographic and epidemiological transitions
- Population projections and service planning
- Demographic applications in Saudi public health

Teaching and Learning Methods: Interactive seminars, case-based discussions, guided reading, applied exercises, and supervised presentations.

Assessment Methods: Written assessments, assignments, presentations, and participation in discussion/problem-solving activities.

Advanced Epidemiology

Course Title: Advanced Epidemiology

Credit Duration: 4 weeks

Course Level: R2

Course Description: This advanced course deepens the residents' ability to use epidemiology as a tool for causal inference, program evaluation, and policy-relevant research. Building on introductory epidemiology, it focuses on complex study designs, analytical strategies, sources of systematic error, interpretation of interactions, and advanced issues of validity and generalizability. Residents critically examine observational and experimental evidence and learn to distinguish associations from causation in real preventive medicine problems. The course also strengthens the residents' ability to work with advanced measures of effect, data quality considerations, and interpretation of results from routinely collected and surveillance data. The course supports the higher-level competencies expected of senior trainees, including critical analysis of the literature and interpretation of evidence for population-based interventions and policy.

Course Learning Outcomes:

- Evaluate complex epidemiological studies for validity, bias, and causal interpretation.
- Analyze confounding, interaction, mediation, and selection issues in observational research.
- Design epidemiologically sound approaches to prevention and public health research questions.
- Interpret advanced measures of the effect, population impact, and data quality limitations.
- Critique evidence used to support policies, surveillance, and injury prevention decisions.
- Synthesize epidemiological evidence from studies and routine data into defensible preventive medicine recommendations.

Main Content/Topics Covered:

- Advanced observational study designs and analyses (including complex surveys)
- Advanced interventional study design (including a quasi-experimental design)
- Causal inference and analytical framework
- Confounding, interaction, mediation, and selection bias
- Measurement errors, misclassifications, and data quality
- Applications in policy, surveillance, and injury prevention

Teaching and Learning Methods: Interactive seminars, case-based discussions, guided reading, applied exercises, and supervised presentations.

Assessment Methods: Written assessments, assignments, presentations, and participation in discussion/problem-solving activities.

Introduction to Clinical Preventive Services

Course Title: Introduction to Clinical Preventive Services

Credit Duration: 1 week

Course Level: R1

Course Description: This course introduces evidence-based principles and practices of clinical preventive services in preventive medicine. It focuses on the integration of population health principles into patient-level preventive care, including risk assessment, screening, immunization, counseling, and selected chemopreventive strategies, where appropriate. Residents examine how recommendations are generated, how benefits and harms are weighed, and how preventive services are adapted to different age groups and risk profiles. Particular attention is paid to screening test performance, overdiagnosis, shared decision-making, and culturally safe communication with patients and families. The course also emphasizes implementation barriers, equity, and the role of primary care and referral systems in effective prevention. The relevance of Saudi practice is considered through service delivery pathways, preventive priorities, and the need for contextually appropriate counseling.

Course Learning Outcomes:

- Apply evidence-based principles to common clinical preventive services.
- Evaluate screening interventions in terms of test performance, benefits, harm, and feasibility.
- Design risk-based preventive recommendations for defined patient groups.
- Interpret preventive care guidelines in light of epidemiological, cultural, and contextual factors.
- Integrate counseling, immunization, and injury prevention strategies into preventive care planning.
- Critique barriers to the uptake, equity, and culturally safe delivery of preventive services.

Main Content/Topics Covered:

- Scope of the clinical preventive services
- Risk assessment and preventive counseling
- Screening principles, test performance, and over-diagnosis

- Immunization and selected prophylactic interventions
- Culturally safe communication and shared decision-making
- Implementation in primary care and preventive medicine

Teaching and Learning Methods: Interactive seminars, case-based discussions, guided reading, applied exercises, and supervised presentations.

Assessment Methods: Written assessments, assignments, presentations, and participation in discussion/problem-solving activities.

Noncommunicable Disease Prevention

Course Title: Noncommunicable Disease Prevention

Credit Duration: 1 week

Course Level: R1

Course Description: This course examines the epidemiology, determinants, and prevention of major NCDs in preventive medicine. Residents study the population burden and modifiable risk factors for cardiovascular disease (CVD), diabetes, cancer, chronic respiratory disease, addiction-related disorders, and major injuries, with a focus on the Saudi pattern of lifestyle-related disease burden. The course emphasizes multilevel prevention strategies, ranging from primary prevention and risk reduction to screening, early detection, and long-term program planning. Residents consider the behavioral, environmental, occupational, social, and policy determinants of risk and evaluate the relative contribution of clinical and population-based approaches. The course also highlights health promotion, regulation, surveillance, and evaluation of NCD programs. By the end of the course, residents should be able to frame NCD prevention as a system-level responsibility requiring epidemiological evidence, communication strategies, intersectoral action, and policy development.

Course Learning Outcomes:

- Analyze the determinants and burden of priority NCDs, addiction-related conditions, and injuries.

- Design multilevel prevention strategies targeting behavioral and structural risk factors.
- Evaluate screening and early detection approaches for selected chronic conditions.
- Interpret surveillance and risk factor data to guide planning and prioritization.
- Critique policy and regulatory options for reducing the population's NCD burden.
- Synthesize evidence for feasible preventive medicine recommendations for chronic diseases and injury prevention.

Main Content/Topics Covered:

- Epidemiology of major NCDs and the injury burden
- Lifestyle, metabolic, and addiction-related risk factors
- Screening and early detection
- Health promotion and community-based prevention
- Policies, regulations, and intersectoral actions
- NCD surveillance and program evaluation

Teaching and Learning Methods: Interactive seminars, case-based discussions, guided reading, applied exercises, and supervised presentations.

Assessment Methods: Written assessments, assignments, presentations, and participation in discussion/problem-solving activities.

Communicable Disease Prevention

Course Title: Communicable Disease Prevention

Credit Duration: 3 weeks

Course Level: R1

Course Description: This course develops residents' abilities to prevent and control communicable diseases through surveillance, risk assessment, outbreak response, immunization strategies, and public health interventions. It

addresses the transmission dynamics, chain of infection, case definitions, notification systems, and control measures across communities and healthcare settings. Residents examine endemic and emerging infectious threats, including vaccine-preventable diseases, respiratory infections, food- and water-borne illnesses, and travel-related risks. Practical relevance is highlighted in the Saudi context, including mass gatherings, imported infections, and the continuing coexistence of communicable disease and NCD burdens.

Course Learning Outcomes:

- Analyze the transmission patterns and determinants of communicable diseases.
- Apply surveillance and case-definition principles for communicable disease control.
- Design prevention and control strategies for priority infectious threats.
- Evaluate immunization, screening, and outbreak response interventions.
- Interpret surveillance data to guide investigations and actions.
- Communicate evidence-based recommendations to health professionals and public audiences.

Main Content/Topics Covered:

- Transmission dynamics and the chain of infection
- Surveillance, notification, and case definitions
- Outbreak investigation basics
- Prevention and control strategies
- Vaccination and preventive strategies
- Contact tracing, isolation, and public health control measures
- Communicable disease priorities in Saudi Arabia

Teaching and Learning Methods: Interactive seminars, case-based discussions, guided reading, applied exercises, and supervised presentations.

Assessment Methods: Written assessments, assignments, presentations, and participation in discussion/problem-solving activities.

Infection Control

Course Title: Infection Control

Credit Duration: 1 week

Course Level: R1

Course Description: This course introduces residents to infection prevention and control as the core components of preventive medicine in hospitals, ambulatory care, and community settings. It addresses the epidemiology of healthcare-associated infections, standard- and transmission-based precautions, environmental hygiene, occupational exposure prevention, antimicrobial stewardship, and legal and reporting responsibilities associated with communicable threats in healthcare institutions. Residents examine infection control from both clinical and systems perspectives, emphasizing surveillance, quality improvement, outbreak detection, and multidisciplinary collaboration. The course also highlights the role of preventive medicine physicians in policy development, staff education, patient safety, and evaluation of infection control programs. Saudi healthcare context is considered through hospital safety priorities, preparedness for emerging pathogens, and integration with notifiable disease systems and public health reporting.

Course Learning Outcomes:

- Analyze common sources and patterns of healthcare-associated infections.
- Apply core infection prevention and control principles in clinical and institutional settings.
- Evaluate infection prevention strategies using surveillance, quality, and reporting indicators.
- Interpret the role of antimicrobial stewardship in preventing antibiotic resistance and patient harm.

- Design basic infection control recommendations for healthcare teams and facilities.
- Critique organizational, legal, and reporting factors that influence infection prevention performance.

Main Content/Topics Covered:

- Healthcare-associated infections and transmission routes
- Standard and transmission-based precautions
- Hand hygiene, personal protective equipment, environmental control, and occupational exposure prevention
- Antimicrobial stewardship
- Infection surveillance, outbreak detection, and reporting
- Policy, governance, and quality improvement in infection control

Teaching and Learning Methods: Interactive seminars, case-based discussions, guided reading, applied exercises, and supervised presentations.

Assessment Methods: Written assessments, assignments, presentations, and participation in discussion/problem-solving activities.

Principles of Environmental Health

Course Title: Principles of Environmental Health

Credit Duration: 1 week

Course Level: R1

Course Description: This course introduces the environmental determinants of health and preventive medicine approaches used to identify, assess, and mitigate environmental risks. Residents examine how air, water, food, housing, waste, climate, and chemical exposures influence population health and health inequities. The course emphasizes environmental hazard identification, exposure pathways, risk assessment, surveillance, and control measures as well as the legal and regulatory dimensions of environmental health practices. Residents also consider planetary health and the One Health perspective,

including the interaction of humans, animals, and environmental systems, in emerging health threats. The Saudi context is incorporated through examples relevant to climate, urbanization, food safety, water systems, and environmental exposure.

Course Learning Outcomes:

- Analyze the major environmental determinants of health and their population impacts.
- Apply environmental risk assessment principles to public health problems.
- Interpret environmental monitoring and surveillance data for decision-making.
- Evaluate preventive interventions, legal frameworks, and regulatory approaches for environmental hazards.
- Design communication messages for environmental and climate-related health risks.
- Synthesize planetary health and the One Health concept into preventive medicine recommendations.

Main Content/Topics Covered:

- Environmental determinants of health
- Exposure pathways and risk assessment
- Air, water, food safety, and sanitation
- Climate-related, chemical, and ecological hazards
- Planetary health and the One Health perspectives
- Environmental regulations, surveillance, and public communication

Teaching and Learning Methods: Interactive seminars, case-based discussions, guided reading, applied exercises, and supervised presentations.

Assessment Methods: Written assessments, assignments, presentations, and participation in discussion/problem-solving activities.

Principles of Occupational Health

Course Title: Principles of Occupational Health

Credit Duration: 1 week

Course Level: R1

Course Description: This course introduces residents to occupational health as a preventive medicine discipline concerned with the protection and promotion of workers' health. It addresses physical, chemical, biological, ergonomic, and psychosocial hazards in the workplace and examines strategies for exposure prevention, health surveillance, fitness assessment, and return-to-work planning. Residents study occupational risk assessment; the hierarchy of controls; workplace health promotion; and the interface between occupational medicine, public health, employers, and regulations. Relevant Saudi workplace contexts include healthcare settings, industry, construction, service sectors, and heat exposure.

Course Learning Outcomes:

- Analyze major occupational hazards and their health consequences.
- Apply risk assessment and hazard control principles in workplace settings.
- Evaluate occupational surveillance and prevention strategies.
- Interpret fitness for work and work-related issues in preventive medicine.
- Design recommendations for workplace health promotion and protection.
- Critique the legal, ethical, and organizational dimensions of occupational health practices.

Main Content/Topics Covered:

- Occupational hazard and exposure assessments
- Hierarchy of control and prevention strategies
- Occupational disease surveillance
- Work-related injuries and illness prevention
- Workplace health promotion

- Regulation, ethics, and communication in occupational health

Teaching and Learning Methods: Interactive seminars, case-based discussions, guided reading, applied exercises, and supervised presentations.

Assessment Methods: Written assessments, assignments, presentations, and participation in discussion/problem-solving activities.

Maternal & Child Health

Course Title: Maternal & Child Health

Credit Duration: 1 week

Course Level: R1

Course Description: This course examines maternal, neonatal, infant, and child health from preventive medicine and population health perspectives. Residents study the continuum of care across preconception, pregnancy, childbirth, postpartum care, infancy, and early childhood, with an emphasis on risk reduction, screening, immunization, growth and development, and health-system coordination. The course addresses key indicators used to assess maternal and child health as well as the social and environmental determinants that influence outcomes. Saudi relevance is reflected in its service planning, preventive priorities, and population health monitoring.

Course Learning Outcomes:

- Analyze the major determinants and indicators of maternal and child health.
- Apply preventive strategies across the maternal and child health continuum.
- Evaluate screening and early intervention approaches for mothers and children.
- Interpret maternal and child health data for planning and quality improvement.
- Design population-oriented recommendations for improving maternal and child outcomes.

- Critique the health systems and social barriers affecting service access and equity.

Main Content/Topics Covered:

- Maternal and perinatal health indicators
- Antenatal, postnatal, and early childhood prevention
- Immunization, growth, and developmental surveillance
- Nutrition and breastfeeding promotion
- Social determinants and vulnerable populations
- Maternal and child health program planning and evaluation

Teaching and Learning Methods: Interactive seminars, case-based discussions, guided reading, applied exercises, and supervised presentations.

Assessment Methods: Written assessments, assignments, presentations, and participation in discussion/problem-solving activities.

Social & Behavioral Health

Course Title: Social & Behavioral Health

Credit Duration: 1 week

Course Level: R1

Course Description: This course introduces social and behavioral sciences as essential foundations for preventive medicine and public health interventions. Residents examine how social determinants, culture, norms, beliefs, incentives, environments, and institutions shape health behaviors and outcomes. Major behavioral changes and social theories are reviewed and applied to problems such as tobacco use, physical inactivity, substance use, vaccine uptake, screening participation, treatment adherence, and injury prevention. This course emphasizes moving beyond individual risk factors to a broader understanding of structural influences, social inequities, and contextual barriers. Residents are expected to integrate social and behavioral insights into program design, communication, community engagement, and evaluation. This

course supports advanced competencies in designing interventions that are theoretically informed, culturally responsive, and feasible in real-world preventive medicine settings.

Course Learning Outcomes:

- Analyze the social and behavioral determinants of priority health problems, including substance use and injury-related behaviors.
- Apply major behavioral change theories to preventive medicine interventions.
- Evaluate culturally responsive and contextually appropriate health behavior strategies.
- Interpret qualitative and community-derived insights and epidemiological evidence.
- Design interventions that address both individual and structural determinants.
- Critique the limitations of purely individual-focused prevention models.

Main Content/Topics Covered:

- Social determinants of health
- Behavioral theories and models
- Health behavior, substance use, and injury-related risks
- Community engagement and cultural context
- Qualitative perspectives on program design
- Behavioral intervention planning and evaluation

Teaching and Learning Methods: Interactive seminars, case-based discussions, guided reading, applied exercises, and supervised presentations.

Assessment Methods: Written assessments, assignments, presentations, and participation in discussion/problem-solving activities.

Health Education & Communication

Course Title: Health Education & Communication

Credit Duration: 1 week

Course Level: R2

Course Description: This course develops advanced skills in health education, risk communication, and strategic public communication for preventive medicine practice. Residents examine how evidence-based messages are designed, tailored, delivered, and evaluated across clinical, community, digital, and media settings. This course emphasizes health literacy, audience segmentation, risk perception, social marketing, behavior change communication, crisis communication, and culturally safe messaging. Residents learn to distinguish information delivery from true educational design and to align communication approaches with epidemiological evidence, program goals, and ethical responsibilities. Practical applications include communication about vaccination, screening, chronic disease prevention, outbreak responses, and community engagement. The course is especially relevant to preventive medicine physicians who must translate complex technical evidence into clear, persuasive, and socially acceptable public health actions.

Course Learning Outcomes:

- Design health education interventions for defined populations and settings.
- Evaluate communication strategies using health literacy, risk perception, and behavior change principles.
- Apply social marketing and multichannel communication methods to prevent health issues
- Develop culturally safe messages for diverse audiences.
- Critique media, digital, and community communication approaches to public health practices.

- Synthesize epidemiological evidence into actionable educational content and campaign plans.

Main Content/Topics Covered:

- Principles of health education
- Health literacy, audience analysis, and risk perception
- Behavior-change communication and social marketing
- Risk and crisis communication
- Media, digital, and community engagement strategies
- Evaluation of communication interventions and campaigns

Teaching and Learning Methods: Interactive seminars, case-based discussions, guided reading, applied exercises, and supervised presentations.

Assessment Methods: Written assessments, assignments, presentations, and participation in discussion/problem-solving activities.

Mental Health

Course Title: Mental Health

Credit Duration: 1 week

Course Level: R2

Course Description: This course prioritizes mental health in population health and preventive medicine. Residents study the epidemiology and determinants of common mental disorders, substance use disorders, self-harm risks, and the relationship between mental and physical health. The course emphasizes public mental health approaches, including prevention, early identification, stigma reduction, community-based interventions, school and workplace strategies, and integration with primary care and chronic disease programs. Residents examine mental health inequities, vulnerable populations, and the social context of their mental well-being. The course is designed to move beyond a purely clinical psychiatric framework toward a systems and population perspective appropriate for preventive medicine practice. Applications in Saudi public health

are considered through burden patterns, service organizations, and the need for culturally appropriate preventive strategies.

Course Learning Outcomes:

- Analyze population determinants and the burden of common mental and substance use disorders.
- Apply preventive and promotive approaches to mental health in community settings.
- Evaluate integration strategies linking mental health to primary care and public health services.
- Interpret mental health indicators and population data for program planning.
- Design stigma reduction, early intervention, and suicide/self-harm prevention strategies for priority groups.
- Critique structural and social barriers affecting mental health access and outcomes.

Main Content/Topics Covered:

- Public mental health concepts and burdens
- Social determinants, vulnerable populations, and stigma
- Prevention, promotion, and early identification
- Substance use, self-harm, and comorbidities
- Service integration and primary care linkages
- School, workplace, community mental health, and evaluation

Teaching and Learning Methods: Interactive seminars, case-based discussions, guided reading, applied exercises, and supervised presentations.

Assessment Methods: Written assessments, assignments, presentations, and participation in discussion/problem-solving activities.

Nutritional Health

Course Title: Nutritional Health

Credit Duration: 1 week

Course Level: R2

Course Description: This course introduces nutrition as a core determinant of health throughout the life course and as a major domain of preventive medicine. Residents study the epidemiology of nutrition-related conditions, including obesity, diabetes, cardiovascular risk, micronutrient deficiencies, and nutrition in terms of maternal and child health. The course emphasizes dietary assessment, nutritional surveillance, food environments, policy interventions, and evidence-based approaches to promote healthy dietary behaviors. Saudi relevance includes the prevention of diet-related chronic disease and the public health importance of healthy food systems and nutrition literacy.

Course Learning Outcomes:

- Analyze nutritional determinants of major public health conditions.
- Apply nutritional concepts throughout the life course of preventive medicine practices.
- Evaluate dietary and policy interventions aimed at improving population nutrition.
- Interpret nutritional surveillance and risk factor data for planning purposes.
- Design feasible nutrition promotion strategies for clinical and community settings.
- Critique the influence of food and social contexts on dietary behavior.

Main Content/Topics Covered:

- Nutrition throughout the life course
- Obesity, metabolic risk, and diet-related diseases
- Maternal, child, and community nutrition
- Nutritional assessment and surveillance

- Food environment and policy approaches
- Nutrition education and program design

Teaching and Learning Methods: Interactive seminars, case-based discussions, guided reading, applied exercises, and supervised presentations.

Assessment Methods: Written assessments, assignments, presentations, and participation in discussion/problem-solving activities.

International Health

Course Title: International Health

Credit Duration: 1 week

Course Level: R2

Course Description: This course examines global and international health issues relevant to preventive medicine, including transnational disease threats, global health governance, migration, travel, border health, and international collaboration. Residents study the interactions between local public health systems and global health frameworks, with a focus on IHR, health security, humanitarian concerns, and global inequities. This course emphasizes how international mobility, trade, conflicts, environmental change, and zoonotic threats influence national prevention priorities. Residents are expected to understand international health not as a separate domain from local practice but as a lens through which national preparedness, surveillance, legal obligations, and cross-border policies are strengthened. The Saudi context is particularly relevant because of travel, migration, and mass-gathering considerations.

Course Learning Outcomes:

- Analyze the major global and international determinants of public health risks.
- Apply international health frameworks and legal obligations to border- and travel-related health issues.

- Evaluate the public health implications of migration, mobility, conflict, and global inequality.
- Interpret the role of international collaboration in disease prevention, preparedness, and reporting.
- Design preventive strategies informed by global health security and the One Health principle.
- Critique policy options at the interface of national and international public health.

Main Content/Topics Covered:

- Concepts of global and international health
- IHR, reporting, and health security
- Migration, travel, and border health
- Humanitarian, conflict-related, and cross-border public health issues
- Global inequities, environmental changes, and zoonotic threats
- International cooperation, diplomacy, and preparedness

Teaching and Learning Methods: Interactive seminars, case-based discussions, guided reading, applied exercises, and supervised presentations.

Assessment Methods: Written assessments, assignments, presentations, and participation in discussion/problem-solving activities.

Healthcare Management & Leadership

Course Title: Healthcare Management & Leadership

Credit Duration: 1 week

Course Level: R1

Course Description: This course introduces residents to leadership and management capabilities required for preventive medicine practice. It addresses governance, team leadership, organizational behavior, communication, negotiation, change management, project management, budgeting, performance management, and resource stewardship in healthcare

and public health settings. Residents examine how leaders translate evidence into strategy, align programs with system priorities, and foster collaboration across disciplines and sectors. The course emphasizes practical leadership in preventive medicine environments such as public health departments, hospitals, population health programs, and interagency initiatives. Residents are expected to understand management not only as administration but also as a disciplined process of planning, implementation, accountability, and improvement. The course supports leadership competencies and prepares trainees to supervise projects, manage teams, and contribute to institutional and public health decision-making.

Course Learning Outcomes:

- Apply leadership and management concepts to preventive medicine settings.
- Evaluate organizational structures, human resource issues, and team dynamics that affect program delivery.
- Design practical approaches for planning, delegation, budgeting, and performance monitoring.
- Interpret the roles of change management and project management in health system improvement.
- Demonstrate strategies for negotiation, conflict resolution, and stakeholder alignment.
- Critique leadership decisions based on ethics, accountability, and resource stewardship.

Main Content/Topics Covered:

- Leadership theory and style
- Governance, organizational behavior, and team management
- Project management, budgeting, and resource stewardship
- Performance management and accountability
- Communication, negotiation, and conflict resolution

- Strategic planning and change management

Teaching and Learning Methods: Interactive seminars, case-based discussions, guided reading, applied exercises, and supervised presentations.

Assessment Methods: Written assessments, assignments, presentations, and participation in discussion/problem-solving activities.

Health Systems & Services

Course Title: Health Systems & Services

Credit Duration: 1 week

Course Level: R1

Course Description: This course examines how health systems are organized, financed, governed, and evaluated, with an emphasis on their implications for preventive medicine and population health. Residents study key system functions, including service delivery, workforce, financing, access, quality, accountability, and the legislative and regulatory structures that shape public health actions. This course explores how prevention is embedded within primary care, hospital systems, public health structures, and intersectoral arrangements. Residents analyze how health systems can support or impede health equity, continuity of care, disease prevention, and population-based interventions. The Saudi healthcare context is relevant when considering service organizations, public-private interfaces, and ongoing system transformation. The course equips residents with an applied understanding of how system design influences preventive outcomes and how physicians can contribute to system improvement through leadership, advocacy, and evidence-informed planning.

Course Learning Outcomes:

- Analyze the core functions and components of health systems and services.
- Evaluate how system organization, financing, and regulation affect prevention, access, and quality.

- Interpret service delivery models in relation to population health needs.
- Apply health systems related to preventive medicine planning, reporting, and policy.
- Critique system barriers contributing to inequity and fragmentation of care.
- Synthesize system-level evidence for practical recommendations for service improvement.

Main Content/Topics Covered:

- Health system building blocks and functions
- Service delivery models and levels of care
- Financing, access, and accountability
- Public health laws, regulations, and reporting structures
- Public health and primary care integration
- Saudi healthcare system context and reform relevance

Teaching and Learning Methods: Interactive seminars, case-based discussions, guided reading, applied exercises, and supervised presentations.

Assessment Methods: Written assessments, assignments, presentations, and participation in discussion/problem-solving activities.

Planning & Evaluation of Health Programs

Course Title: Planning & Evaluation of Health Programs

Credit Duration: 1 week

Course Level: R1

Course Description: This course develops practical competencies required to design, implement, monitor, and evaluate public health and preventive medicine programs. Residents learn structured approaches to needs assessment, priority setting, stakeholder analysis, objective formulation, indicator selection, logic model development, and evaluation planning. This course emphasizes the relationship between epidemiological evidence, the theory of change, implementation feasibility, and measurable outcomes. It prepares residents for

leadership roles in communicable disease control, chronic disease programs, health promotion, and service improvement initiatives.

Course Learning Outcomes:

- Design a health program based on needs assessment and priority setting.
- Develop measurable objectives, indicators, and logical models for evaluation.
- Apply implementation and evaluation frameworks to preventive medicine programs.
- Interpret program data to assess effectiveness, efficiency, and equity.
- Critique strengths and limitations of different evaluation designs.
- Synthesize evaluation findings into actionable recommendations for improvement.

Main Content/Topics Covered:

- Needs assessment and priority setting
- Program logic and theory of change
- Objective formulation and indicator selection
- Monitoring and evaluation framework
- Process, outcome, and impact evaluation
- Reporting and use of evaluation findings

Teaching and Learning Methods: Interactive seminars, case-based discussions, guided reading, applied exercises, and supervised presentations.

Assessment Methods: Written assessments, assignments, presentations, and participation in discussion/problem-solving activities.

Introduction to Health Economics

Course Title: Introduction to Health Economics

Credit Duration: 1 week

Course Level: R1

Course Description: This course introduces economic concepts that are most relevant to preventive medicine and public health decision-making. Residents examine scarcity, opportunity costs, efficiency, equity, incentives, and priority settings in healthcare. This course focuses on how economic reasoning informs prevention policies, resource allocation, screening decisions, vaccination strategies, and evaluation of public health interventions. Residents are introduced to the principles of cost analysis, cost-effectiveness, cost-utility, and budget impact, with an emphasis on interpretation rather than on technical modeling.

Course Learning Outcomes:

- Apply core economic concepts to preventive medicine and public health decisions.
- Interpret common forms of economic evaluations used in healthcare.
- Evaluate prevention strategies in terms of cost, value, and equity.
- Analyze the trade-offs involved in priority setting and resource allocation.
- Critique the assumptions underlying economic arguments in policy discussions.
- Synthesize economic and epidemiological evidence for program recommendations.

Main Content/Topics Covered:

- Scarcity, efficiency, and opportunity costs
- Demand, supply, and incentives in healthcare
- Cost analysis and economic evaluation
- Cost-effectiveness and cost-utility concepts
- Priority setting and equity
- Applications to prevention and public health policies

Teaching and Learning Methods: Interactive seminars, case-based discussions, guided reading, applied exercises, and supervised presentations.

Assessment Methods: Written assessments, assignments, presentations, and participation in discussion/problem-solving activities.

Disaster Management

Course Title: Disaster Management

Credit Duration: 1 week

Course Level: R2

Course Description: This course introduces disaster management from the perspective of preventive medicine and public health preparedness. Residents study the phases of disaster risk reduction, preparedness, response, recovery, and resilience, with an emphasis on health system coordination, rapid assessment, surveillance, risk communication, and protection of vulnerable populations. The course examines natural, infectious, technological, chemical, radiological, and environmental emergencies and highlights the role of preventive medicine physicians in planning, interagency coordination, and population protection. Residents explore incident command principles, continuity planning, triage interfaces, public health logistics, injury prevention, and post-event evaluations. Saudi relevance includes emergency preparedness in healthcare and public health systems and the broader importance of mass gathering and event-related readiness.

Course Learning Outcomes:

- Analyze disaster risks and their population health implications.
- Apply preparedness and response frameworks to public health emergencies.
- Evaluate rapid assessment, surveillance, communication, and injury prevention needs during disasters.
- Design basic preparedness recommendations for health systems and communities.
- Interpret ethical, legal, and equity considerations in disaster decision-making.

- Critique disaster response plans for coordination, feasibility, and resilience.

Main Content/Topics Covered:

- Disaster risk reduction and resilience
- Preparedness, response, recovery, and continuity planning
- Incident coordination, rapid assessment, and surveillance
- Chemical, radiological, infectious, and environmental emergencies
- Risk communication, vulnerable populations, and injury prevention
- Post-event evaluation and lessons learned

Teaching and Learning Methods: Interactive seminars, case-based discussions, guided reading, applied exercises, and supervised presentations.

Assessment Methods: Written assessments, assignments, presentations, and participation in discussion/problem-solving activities.

Healthcare Quality and Patient Safety

Course Title: Healthcare Quality and Patient Safety

Credit Duration: 1 week

Course Level: R2

Course Description: This course examines quality of care and patient safety as essential responsibilities for preventive medicine, especially at the interface of clinical systems and population health. Residents study quality domains; safety science; systems thinking; human factors; adverse event analysis; and improvement methods such as audits, indicators, and Plan-Do-Study-Act cycles. The course prepares residents to contribute to safe healthcare systems and to apply quality and safety methods in preventive medicine clinics, hospital programs, and public health services.

Course Learning Outcomes:

- Analyze the key dimensions of healthcare quality and patient safety.
- Apply system-based approaches to prevent avoidable harm.

- Evaluate quality indicators and safety metrics in clinical and preventive services.
- Design a basic quality improvement initiative using structured improvement methods.
- Interpret the root causes and factors contributing to safety incidents.
- Critique organizational cultures and processes affecting quality performance.

Main Content/Topics Covered:

- Quality domain and performance measurement
- Patient safety science and human factors
- Adverse event review and root-cause analyses
- Quality improvement methodologies
- Safety in preventive and clinical settings
- Measurement, reporting, and organizational learning

Teaching and Learning Methods: Interactive seminars, case-based discussions, guided reading, applied exercises, and supervised presentations.

Assessment Methods: Written assessments, assignments, presentations, and participation in discussion/problem-solving activities.

Principles of Health Informatics & Artificial Intelligence

Course Title: Principles of Health Informatics & Artificial Intelligence

Credit Duration: 1 week

Course Level: R2

Course Description: This course introduces health informatics and AI as tools for strengthening preventive medicine, surveillance, service planning, and quality improvement. Residents study health information systems, electronic records, data quality, coding, interoperability, dashboards, and decision-support applications. The course also introduces core concepts in AI, including predictive modeling, classification, and algorithmic support for risk stratification and operational decision-making. Emphasis is placed on

interpretation, data governance, aggregation and disaggregation, privacy, ethics, transparency, and algorithmic bias rather than technical programming. Residents are expected to understand how informatics systems support prevention, continuity, and population health management, and how AI-related tools should be critically appraised before implementation. The course is designed to prepare future preventive medicine leaders to thoughtfully engage in digital health transformation in the Saudi context.

Course Learning Outcomes:

- Analyze the role of health information systems in preventive medicine practices.
- Evaluate data quality, interoperability, aggregation, disaggregation, and governance challenges in health informatics.
- Interpret basic AI applications relevant to surveillance, prediction, and decision support.
- Critique ethical, legal, privacy, and equity issues related to digital health and AI.
- Design informatics-informed approaches for monitoring, reporting, and program improvement.
- Synthesize digital and epidemiological evidence for practical health system use.

Main Content/Topics Covered:

- Health information systems and data architecture
- Electronic health records, coding, and interoperability
- Data quality, aggregation, disaggregation, dashboards, and analytics
- AI concepts and applications in preventive medicine
- Ethics, privacy, transparency, bias, and governance
- Digital transformation of public health and healthcare

Teaching and Learning Methods: Interactive seminars, case-based discussions, guided reading, applied exercises, and supervised presentations.

Assessment Methods: Written assessments, assignments, presentations, and participation in discussion/problem-solving activities.

Medical Research Designs & Methods

Course Title: Medical Research Designs & Methods

Credit Duration: 2 weeks

Course Level: R1

Course Description: This course provides a structured introduction to the research methodology for preventive medicine residents and serves as a foundation for the program's longitudinal research requirements. Residents examine how research questions are framed; how study designs are selected; and how methodological choices affect validity, feasibility, and applicability. The course addresses quantitative, qualitative, and mixed-methods approaches, along with sampling, measurement, protocol development, data collection, data governance, and introductory analytical planning. Emphasis is placed on research as a tool for advancing preventive medicine practices, evaluating programs, and informing policies. Residents are expected to progress from reading research to designing feasible publishable quality studies. The course is closely linked to later work in critical appraisal, ethics, scientific writing, and resident-led scholarly output.

Course Learning Outcomes:

- Formulate research questions relevant to preventive medicine practices.
- Select appropriate study designs for descriptive, analytical, and evaluative objectives.
- Evaluate sampling, measurement, data governance, and validity considerations in protocol development.
- Design a feasible research proposal with clear methods, outcomes, and an analytical strategy.
- Interpret the strengths and limitations of qualitative, quantitative, and mixed methods.

- Synthesize methodological decisions into a coherent and ethically sound research plan.

Main Content/Topics Covered:

- Research questions and hypothesis development
- Quantitative, qualitative, and mixed-method designs
- Sampling, measurement, and validity
- Protocol development and data collection planning
- Data governance, management, and introductory analysis
- Dissemination and translation of research findings

Teaching and Learning Methods: Interactive seminars, case-based discussions, guided reading, applied exercises, and supervised presentations.

Assessment Methods: Written assessments, assignments, presentations, and participation in discussion/problem-solving activities.

Critical Appraisal

Course Title: Critical Appraisal

Credit Duration: 1 week

Course Level: R1

Course Description: This course develops residents' ability to critically appraise biomedical, public health, and health services literature for validity, relevance, and applicability. It emphasizes the structured evaluation of studies addressing therapy, diagnosis, prognosis, harm, systematic reviews, and public health intervention questions. Residents learn to examine the study design, risk of bias, statistical interpretation, causal reasoning, consistency, and external validity. The aim is to strengthen scholarly judgment and support lifelong evidence-based practices.

Course Learning Outcomes:

- Critique the internal validity of common biomedical and public health study designs.

- Interpret study results in relation to clinical and population relevance.
- Evaluate systematic reviews and evidence summaries using structured criteria.
- Distinguish statistical significance from practical and public health significance.
- Apply appraised evidence to preventive medicine decision-making.
- Synthesize strengths and limitations of evidence in concise scholarly presentations.

Main Content/Topics Covered:

- Principles of evidence-based appraisal
- Appraisal of therapy, diagnosis, prognosis, and harm studies
- Bias, confounding, and applicability
- Interpretation of effect and precision measures
- Appraisal of systematic reviews and guidelines
- Translation of evidence into practice and policy

Teaching and Learning Methods: Interactive seminars, case-based discussions, guided reading, applied exercises, and supervised presentations.

Assessment Methods: Written assessments, assignments, presentations, and participation in discussion/problem-solving activities.

Research Ethics

Course Title: Research Ethics

Credit Duration: 1 week

Course Level: R1

Course Description: This course introduces ethical principles and governance structures that guide responsible research in preventive medicine and public health. Residents study respect for people, beneficence, justice, confidentiality, informed consent, community considerations, conflicts of interest, authorship, and research integrity. This course examines the ethical challenges in clinical,

epidemiological, qualitative, and population-based research, including the use of routinely collected data, public health surveillance data, vulnerable populations, and public health emergencies. Residents also review the roles of ethics committees, protocol reviews, data stewardship, and researcher accountability. Emphasis is placed on ethical reasoning rather than on procedural compliance alone. The course prepares residents to conduct and supervise research that meets professional, institutional, and societal expectations while protecting participants and maintaining scientific credibility.

Course Learning Outcomes:

- Apply core ethical principles to preventive medicine research scenarios.
- Evaluate research protocols for ethical risks, safeguards, and data stewardship requirements.
- Interpret consent, confidentiality, privacy, and data protection requirements appropriately.
- Critique conflicts of interest, authorship issues, and threats to research integrity.
- Design ethically defensible approaches for studies involving vulnerable populations and routine data.
- Synthesize ethical considerations in research planning and oversight documents.

Main Content/Topics Covered:

- Principles of research ethics
- Informed consent and participant protection
- Privacy, confidentiality, data governance, and stewardship
- Research misconduct, authorship, and integrity
- Ethics review and institutional oversight
- Ethical issues in public health, surveillance, and population-based research

Teaching and Learning Methods: Interactive seminars, case-based discussions, guided reading, applied exercises, and supervised presentations.

Assessment Methods: Written assessments, assignments, presentations, and participation in discussion/problem-solving activities.

Scientific Writing Skills

Course Title: Scientific Writing Skills

Credit Duration: 1 week

Course Level: R2

Course Description: This course develops advanced scholarly writing skills required for residency in preventive medicine, including the preparation of research manuscripts, structured abstracts, critical appraisal outputs, technical reports, and policy-oriented documents. Residents learn how to organize arguments, present methods and results clearly, write concise scientific prose, and tailor their writing to different academic and professional audiences. The course is directly relevant to the program's longitudinal research expectations and future consultant roles requiring publication, policy communication, and knowledge translation.

Course Learning Outcomes:

- Write structured scientific texts that are clear, concise, and methodologically accurate.
- Organize manuscripts and reports according to accepted scholarly conventions.
- Interpret and present quantitative and qualitative findings effectively in tables and narrative form.
- Critique scientific writing for clarity, logic, completeness, and transparency.
- Apply ethical standards to authorship, citations, and reporting.
- Synthesize evidence into formats suitable for journals, reports, and policy audiences.

Main Content/Topics Covered:

- Scientific style and manuscript structure

- Abstract, introduction, methods, results, and discussion
- Tables, figures, and visual presentation of data
- Referencing and responsible reporting
- Writing for journals, reports, and policy briefs
- Revision, peer review, and response to feedback

Teaching and Learning Methods: Interactive seminars, case-based discussions, guided reading, applied exercises, and supervised presentations.

Assessment Methods: Written assessments, assignments, presentations, and participation in discussion/problem-solving activities.

C. Clinical rotations

1. Clinical Preventive Medicine R1-R4
2. Emergency Medicine R1
3. Internal Medicine R2
4. Pediatrics R2
5. Obstetrics & Gynecology R3
6. Psychiatry R3
7. Occupational Medicine R3
8. Primary Healthcare Clinics R4

All clinical rotations are designed to integrate individual-level care with population health, surveillance systems, and preventive medicine strategies, ensuring competency in both the clinical and public health domains.

1. Clinical Preventive Medicine Rotation

Duration	• R1: 8 Weeks • R2: 8 Weeks • R3: 8 Weeks • R4: 8 Weeks
Level	R1-R4
Setting	Primary healthcare center/hospital
Level of Care	Primary (with referral linkage to Secondary/Tertiary)

Rotation Purpose

This rotation ensures competency in delivering comprehensive, evidence-based clinical preventive care across the life course through the structured implementation of national and international guidelines within primary healthcare (PHC) settings.

At the consultant level, preventive medicine specialists are expected to design, implement, and evaluate integrated preventive care systems that combine risk assessment, screening, counseling, preventive interventions, and surveillance, linking individual clinical services to population health strategies and health system performance.

This rotation integrates clinical care with public health by operationalizing screening, multidisciplinary interventions, and data-driven decision-making to improve health outcomes at both the individual and population levels.

This rotation prepares residents to deliver and lead evidence-based preventive interventions that integrate clinical care, behavioral strategies, occupational health, and surveillance systems to achieve measurable improvements in population health outcomes.

Learning Objectives

By the end of this rotation, the resident should be able to

1. Conduct a structured preventive risk assessment incorporating behavioral, social, occupational, and environmental determinants of health.
2. Apply evidence-based screening recommendations across age groups using national and international guidelines.
3. Implement immunization strategies and identify missed opportunities.
4. Provide structured counseling on lifestyle, smoking cessation, mental well-being, reproductive health, and occupational risks.
5. Deliver evidence-based preventive interventions, including behavioral, clinical, and pharmacological approaches, where appropriate.
6. Perform comprehensive risk stratification using validated tools and develop individualized preventive care plans.
7. Identify high-risk individuals and establish appropriate follow-up and referral pathways.
8. Manage mild-to-moderate conditions within PHC using preventive and early treatment approaches.
9. Integrate preventive care into multidisciplinary and systems-based practice.
10. Analyze preventable causes of disease and complications using a population health framework.
11. Interpret PHC and surveillance data to inform preventive strategies, quality improvements, and program design.
12. Demonstrate appropriate infection prevention, reporting, and safeguarding practices against violence and abuse

Scope of Practice

Residents are expected to

- Participate in preventive care and chronic disease clinics.

- Perform structured clinical preventive services.
- Conduct comprehensive risk assessment and stratification.
- Deliver lifestyle and behavioral interventions (nutrition, physical activity, smoking cessation, and weight management).
- Provide reproductive health and family planning counseling.
- Perform mental health screening and provide basic supportive management.
- Conduct occupational history and workplace risk assessment.
- Initiate preventive clinical management.
- Coordinate care with multidisciplinary teams (dietitians, health educators, and mental health services).
- Participate in the referral and follow-up pathways.
- Contribute to quality improvement initiatives.
- Document and report notifiable conditions according to public health regulations.

Preventive Medicine Integration Framework

a) Primary Prevention (Risk Reduction & Health Promotion)

Residents will

- Conduct structured lifestyle and risk assessments.
- Deliver behavioral interventions for the following:
 - Smoking cessation
 - Healthy diet and physical activity
 - Weight management.
- Promote immunization across the life course.
- Provide reproductive health and preconception counseling.
- Address occupational and environmental risk factors.
- Promote mental well-being and stress management.
- Deliver injury prevention counseling.

Population Link:

Translate individual risk patterns into community-level health promotion and prevention strategies.

b) Secondary Prevention (Early Detection & Screening)

Residents will

- Apply evidence-based screening recommendations for priority conditions in PHC.
- Perform structured risk stratification using validated tools.
- Identify high-risk individuals who require intervention.
- Screen for mental health conditions and psychosocial risks.
- Screen for violence and abuse.
- Identify missed opportunities during screening and immunization.

Population Link:

Evaluate screening coverage and identify service gaps within PHC systems.

c) Tertiary Prevention (Complication Prevention, Disability Limitation, and Rehabilitation)

Residents will

- Develop long-term preventive care plans to reduce complications and disease progression.
- Implement interventions to improve adherence and continuity of care.
- Provide preventive clinical management for at-risk individuals.
- Coordinate multidisciplinary care, including rehabilitation and social support.
- Prevent avoidable hospital admissions and readmissions.
- Address functional, psychosocial, and occupational impacts of illness.

d) Quaternary Prevention (Avoidance of Overmedicalization and Harm)

Residents will

- Identify individuals at risk of overdiagnosis, overtreatment, and unnecessary medical interventions.
- Apply evidence-based medicine principles to avoid low-value or non-beneficial screening and interventions.
- Practice rational prescribing and minimize polypharmacy, particularly in vulnerable populations.
- Critically appraise screening indications to prevent false positives, unnecessary investigations, and patient harm.
- Engage in shared decision-making by incorporating patient values, preferences, and risk–benefit discussions.
- Recognize and address the medicalization of normal life processes (e.g., aging and mild psychological distress).
- Apply “Choosing Wisely” principles in clinical practice.
- Ensure appropriate use of referrals, investigations, and follow-up strategies.

Population Link:

Analyze preventable complications and system gaps to inform quality improvement, service redesign, preventive interventions, and clinical management.

Residents are expected to implement evidence-based preventive interventions at progressive levels.

Surveillance Linkage

Residents will

- Ensure compliance with national mandatory reporting regulations for notifiable conditions, including communicable diseases, injuries, violence, abuse, and occupational conditions, in accordance with the Ministry of Health (MOH) and Public Health Authority (PHA) policies.

- Utilize PHC data as a key source for population health surveillance.
- Identify trends, high-risk populations, and emerging public health concerns.
- Contribute to evaluation of screening and preventive programs.
- Maintain data quality, completeness, confidentiality, and ethical standards.

Consultant-Level Integration

At the consultant level, preventive medicine specialists are expected to

- Design, implement, and evaluate integrated preventive care pathways across PHC and community settings.
- Develop structured intervention programs addressing behavioral, clinical, occupational, and psychosocial risk factors.
- Lead multidisciplinary care models integrating clinical services with public health programs.
- Establish surveillance-informed decision-making systems linking clinical data to population health strategies.
- Monitor performance indicators and lead quality improvement initiatives.
- Develop workplace health and prevention programs and integrate occupational health into clinical care.
- Integrate mental health into routine preventive services and establish referral pathways.
- Contribute to national policies, guidelines, and preventive health strategies aligned with Vision 2030.

Strategic Outcome

This rotation ensures that residents graduate with the following:

- Strong competency in comprehensive clinical preventive care
- Ability to implement evidence-based preventive interventions
- Integration of clinical care with population health systems
- Advanced skills in multidisciplinary coordination and systems-based practice

- Competency in surveillance integration and data-driven decision-making
- Readiness for consultant-level roles in preventive program design, implementation, and evaluation

2. Emergency Medicine

Duration	4 weeks
Level	R1
Setting	Emergency Department
Level of Care	Secondary/Tertiary

Rotation Purpose

This rotation is designed to provide residents with practical experience in the initial assessment and management of acute medical conditions and emergencies. It emphasizes the integration of preventive medicine principles within acute care settings, including the early identification of risk factors, screening opportunities, and public health reporting.

Learning Objectives

- Demonstrate competency in rapid clinical assessment and triage of patients presenting with acute conditions.
- Apply clinical reasoning in the management of common emergency presentations.
- Identify opportunities for preventive interventions during emergency encounters.
- Recognize and appropriately manage communicable diseases requiring notification.

- Demonstrate understanding of emergency preparedness and public health implications of acute presentations.

Clinical Activities

- Perform initial patient assessment, including history taking, physical examination, and triage prioritization.
- Participate in managing common emergency conditions (e.g., chest pain, respiratory distress, trauma, and infections).
- Identify high-risk patients and provide appropriate preventive counseling (e.g., smoking cessation and cardiovascular risk).
- Recognize and report notifiable diseases according to national public health guidelines.
- Participate in emergency response scenarios and simulations.
- Collaborate with multidisciplinary teams in acute care settings.
- Ensure accurate documentation and appropriate referral for continuity of care.

Preventive Medicine Integration

- Utilize emergency visits as opportunities for screening and early detection of chronic diseases.
- Provide brief preventive counseling (e.g., smoking, obesity, vaccination status).
- Identify public health threats and initiate appropriate reporting pathways.
- Apply principles of injury prevention and health education.

Emergency Department as a Surveillance Hub

The Emergency Department (ED) serves as a critical frontline platform for early detection of public health threats and real-time surveillance.

Residents are expected to

- Utilize ED encounters to identify early signs of emerging health events, including infectious diseases, injuries, environmental exposure, and unusual clinical patterns.
- Recognize clusters of presentations that may indicate outbreaks or public health incidents.
- Apply the principles of syndromic surveillance using the presenting symptoms and patterns to support early warning systems.
- Ensure timely identification and reporting of notifiable conditions in accordance with national regulations.
- Contribute to event-based surveillance by identifying unusual or unexpected cases requiring escalation.
- Collaborate with epidemiology and public health teams for the following:
 - Case investigation
 - Contact tracing
 - Outbreak response.
- Support integration of ED data into national surveillance systems and dashboards.
- Maintain high standards of data quality, completeness, and timeliness in documentation and reporting.
- Participate in escalation processes based on predefined operational thresholds and triggers.

Core Competencies (CanMEDS)

- Medical Expert: Acute assessment and management
- Communicator: Effective patient interaction in urgent settings
- Collaborator: Team-based emergency care
- Health Advocate: Preventive counseling during acute care
- Professional: Ethical and timely care delivery

3. Internal Medicine

Duration	8 weeks
Level	R2
Setting	Hospital (Medical Ward + Clinics)
Level of Care	Secondary/Tertiary

Rotation Purpose

This rotation strengthens competencies in chronic disease prevention, cardiometabolic risk assessment, cancer screening, and hospital-based prevention.

This rotation develops competency in adult health risk assessment, early detection, and prevention of chronic conditions, with an emphasis on integrating clinical care with population health, surveillance systems, and health system performance.

The rotation focuses on the following:

- Comprehensive risk assessment across major health domains
- Early identification of individuals at high risk
- Integration of preventive care into hospital-based practice
- Use of clinical data to inform population health strategies

At the consultant level, preventive medicine specialists are expected to design and evaluate integrated chronic disease prevention programs linking individual clinical encounters to population-level outcomes, system performance, and policy development.

Learning Objectives

By the end of this rotation, the resident should be able to

1. Conduct comprehensive assessment across key health risk domains, including the following:
 - Cardiometabolic risk
 - Behavioral and lifestyle factors
 - Environmental and occupational exposures
 - Psychosocial determinants
2. Apply evidence-based approaches to screening and early detection across adult populations.
3. Perform structured risk stratification using validated tools and prioritize interventions based on the overall risk profile.
4. Identify individuals with complex and interacting risks (multimorbidity) and develop integrated preventive care plans.
5. Implement preventive strategies, including behavioral, clinical, and pharmacological interventions, where appropriate.
6. Promote long-term risk reduction through patient-centered counseling and follow-up planning.
7. Analyze patterns of hospital utilization, including admissions and readmissions, to identify preventable causes.
8. Integrate clinical findings into population health planning and quality improvement initiatives.
9. Demonstrate effective coordination of care across clinical services and community settings.
10. Utilize clinical and registry data to support surveillance and system-level decision-making.

Scope of Practice

Residents are expected to

- Perform structured risk assessment across multiple health domains
- Conduct screening and early detection activities
- Develop individualized and population-informed preventive care plans
- Deliver lifestyle and behavioral interventions
- Initiate preventive clinical management where appropriate
- Coordinate care with multidisciplinary teams
- Contribute to discharge planning with a focus on prevention and continuity of care
- Participate in quality improvement initiatives targeting preventable complications
- Interpret clinical data and contribute to program evaluation

Preventive Medicine Integration Framework

a) Primary Prevention (Risk Reduction & Health Promotion)

Design and implement integrated prevention strategies for major chronic diseases (e.g., CVDs, chronic kidney disease [CKD], mental health, cancer, musculoskeletal conditions) and priority infectious diseases, incorporating vaccination programs, early risk detection, and transmission control measures, with translation into population-level prevention planning.

Population Link:

Translate individual risk factor patterns into community-level health promotion planning.

b) Secondary Prevention (Early Detection & Screening)

Aligned with screening and early detection objectives.

Residents will

- Apply national screening guidelines for the following:

- Hypertension
- Diabetes mellitus
- Dyslipidemia
- CKD (estimated glomerular filtration rate, albuminuria)
- Obesity (body mass index, waist circumference)
- Breast, colorectal, cervical, and lung cancer (risk-based referral)
- Perform structured cardiovascular risk stratification.
- Identify high-risk patients with multimorbidity who require intensified monitoring.
- Use early chronic obstructive pulmonary disease/asthma detection tools (spirometry referral, when indicated).

c) Tertiary Prevention (Complication Prevention, Disability Limitation & Rehabilitation)

Evaluate screening coverage gaps and identify missed-opportunity cases within hospital data.

Residents will design and implement comprehensive patient-centered care strategies for individuals with established diseases, focusing on preventing complications, slowing disease progression, optimizing functional status, and reducing avoidable healthcare utilization.

Key competencies include the following:

- Develop and implement long-term management plans for patients with established chronic conditions (e.g., post-myocardial infarction, stroke, diabetes, and CKD).
- Apply evidence-based complication prevention strategies (e.g., nephropathy screening, retinopathy referral, neuropathy assessment, and heart failure decompensation prevention).
- Conduct medication reconciliation, adherence assessment, and risk–benefit optimization to minimize polypharmacy and adverse outcomes.

- Design and implement structured discharge and continuity-of-care plans, including follow-up coordination and patient self-management support.
- Promote functional recovery and rehabilitation, incorporating multidisciplinary care and patient education.

Population Link:

Analyze preventable hospital readmissions as indicators of system-level prevention gaps.

1. Multimorbidity & Complex Chronic Disease Integration

Newly added based on expanded objectives:

Residents will

- Apply multimorbidity management principles.
- Prioritize risk reduction based on competing morbidity risks.
- Integrate polypharmacy risk assessment into preventive planning.
- Coordinate care with PHC and specialty clinics.

Consultant-Level Integration:

Design chronic disease integrated care pathways at the system level.

2. Surveillance & Data Integration

Expanded to reflect NCD epidemiology objectives.

Residents will

- Interpret hospital-based NCD data (admissions, complications, mortality).
- Analyze readmission rates and preventable complications.
- Utilize registry data (diabetes, CVD, CKD).
- Contribute to NCD surveillance reporting systems where applicable.

Population Link:

Translate hospital-level data into regional NCD program recommendations.

3. Quality Improvement & Systems-Based Prevention

Aligned with discharge and adherence objectives.

Residents will

- Identify system-level barriers to chronic disease control.
- Propose quality improvement interventions (e.g., adherence programs, risk stratification protocols).
- Evaluate effectiveness of screening pathways.
- Recommend policy-level changes for prevention of chronic diseases.
- Ensure compliance with national mandatory reporting regulations for notifiable conditions, including communicable diseases, injuries, violence, and abuse (e.g., domestic violence, abuse of older adults), in accordance with the MOH and PHA policies.

d) Quaternary Prevention

Avoid unnecessary investigations and interventions.

Apply evidence-based decision-making.

Promote appropriate, value-based care.

4. Pediatrics

Duration	8 weeks
Level	R2
Setting	Hospital (Pediatric Ward + Outpatient Clinics)
Level of Care	Secondary/Tertiary

Rotation Purpose

This rotation ensures competency in prevention of child health disorders, immunization systems, growth monitoring, developmental surveillance, and infectious disease control.

At the consultant level, preventive medicine specialists must design child health programs, evaluate immunization coverage, analyze pediatric morbidity trends, and respond to outbreaks affecting children.

This rotation integrates bedside pediatric care with vaccination programs, school health policies, surveillance systems, and population-based child health indicators.

Learning Objectives

By the end of this rotation, the resident should be able to

1. Conduct structured child preventive assessment, including growth, developmental, and school readiness screening.
2. Apply national immunization schedules and identify vaccine-preventable disease risks.
3. Interpret pediatric surveillance indicators (infant mortality rate, under-5 mortality).
4. Identify malnutrition and implement prevention strategies.
5. Counsel parents on injury prevention and infectious disease control.
6. Participate in outbreak investigation involving pediatric populations.

Scope of Practice

Residents are expected to

- Participate in well-baby and pediatric clinics.
- Review immunization coverage and missed-opportunity cases.
- Contribute to infection control and outbreak response.
- Conduct growth chart assessment and risk stratification.
- Engage in school health preventive activities (if available).

Preventive Medicine Integration Framework

a) Primary Prevention (Risk Reduction & Health Promotion)

- Immunization advocacy
- Injury prevention counseling
- Nutrition education
- Breastfeeding promotion

b) Secondary Prevention (Early Detection & Screening)

- Growth monitoring
- Developmental screening
- Early anemia detection
- Newborn metabolic screening

c) Tertiary Prevention (Complication Prevention, Disability Limitation, and Rehabilitation)

- Complication prevention in asthma and chronic illness
- Rehabilitation referral pathways
- Prevention of disability progression

d) Quaternary Prevention (Avoiding Unnecessary Harm)

- Avoid unnecessary investigations, imaging, screening, medications, and hospitalization.
- Promote rational antibiotic use and antimicrobial stewardship.
- Prevent overdiagnosis and overtreatment of self-limiting pediatric conditions.
- Use evidence-based guidelines and shared decision-making to minimize low-value care and treatment-related harm.

Surveillance Linkage

- Ensure compliance with national mandatory reporting regulations for notifiable conditions, including communicable diseases, injuries, and child abuse, in accordance with MOH and PHA policies
- Vaccine-preventable disease reporting
- Acute flaccid paralysis surveillance
- Pediatric infectious disease reporting

5. Obstetrics & Gynecology

Duration	8 weeks
Level	R3
Setting	Hospital (Inpatient & Outpatient Clinics)
Level of Care	Secondary/Tertiary

Rotation Purpose:

The Obstetrics & Gynecology rotation is included in preventive medicine training to ensure that residents acquire competency in women's health across the life course, particularly in reproductive, maternal, and perinatal health, from a preventive and population health perspective.

At the consultant level, preventive medicine specialists must be able to design, evaluate, and lead maternal and reproductive health programs; integrate screening and vaccination strategies; interpret maternal morbidity indicators; and contribute to surveillance and policy development.

This rotation integrates clinical care with population health by linking antenatal risk stratification, cancer screening, infection prevention, and maternal

morbidity indicators to public health planning, quality improvement, and the strengthening of the health system.

Learning Objectives

By the end of this rotation, the resident should be able to

1. Conduct a structured antenatal risk assessment incorporating medical, social, and epidemiological risk factors.
2. Apply evidence-based screening approaches to women's health, including reproductive and general health risk domains.
3. Interpret maternal and perinatal morbidity and mortality indicators and utilize them to inform clinical and population-level decision-making.
4. Identify high-risk individuals and situations requiring preventive referral pathways and coordinated care.
5. Implement preventive strategies, including immunization and risk-reduction interventions, in accordance with national guidelines.
6. Provide structured counseling on reproductive health, family planning, and preconception care.
7. Analyze preventable adverse outcomes using a public health and systems-based framework.
8. Demonstrate appropriate infection prevention and patient safety practices in obstetric and gynecologic settings.
9. Apply a continuum-of-care approach that integrates preconception, antenatal, intrapartum, postpartum, and interconception care with preventive services and long-term women's health outcomes.
10. Recognize reproductive health events as indicators of future cardiometabolic risk and integrate them into long-term preventive care planning.
11. Apply preventive strategies across the life course, including adolescence, reproductive years, and menopause/aging.

12. Incorporate women-specific NCD prevention into clinical and programmatic practice.
13. Evaluate reproductive and maternal health services using **program-level indicators** such as coverage, access, and unmet needs.

Scope of Practice

- Participate in antenatal, intrapartum, postnatal, and gynecology clinics to ensure a continuum of care across different stages of women's health.
- Perform structured preventive assessments incorporating biological, behavioral, social, and environmental determinants of health.
- Identify individuals at high risk and coordinate preventive care pathways and appropriate referral systems.
- Recognize reproductive and clinical histories as indicators of future cardiometabolic risk and integrate them into long-term care planning.
- Engage in the implementation of screening and early detection programs and identify missed opportunities within clinical pathways.
- Provide counseling on reproductive health, family planning, preconception care, and life-course risk reduction.
- Participate in maternal morbidity and mortality review processes and analyze preventable factors using a systems-based approach.
- Contribute to quality improvement initiatives targeting maternal outcomes, patient safety, and service delivery.
- Assess access, utilization, and equity gaps in reproductive and women's health services, including family planning.
- Interpret clinical and service data and contribute to evaluation of maternal and reproductive health programs.
- Document and report notifiable conditions in accordance with national regulations and contribute to surveillance, outbreak investigation, and public health response activities related to maternal and reproductive health.

Preventive Medicine Integration Framework

a) Primary Prevention (Risk Reduction & Health Promotion)

Residents will

- Provide preconception and interconception care to optimize health before pregnancy.
- Promote healthy lifestyle behaviors across the life course, including nutrition, physical activity, and risk reduction.
- Deliver counseling on reproductive planning and birth spacing.
- Address modifiable behavioral, environmental, and social risk factors.
- Advocate for preventive interventions, including immunization and infection prevention strategies.
- Promote health strategies tailored to adolescence, reproductive years, and post-reproductive stages.

Population Link:

Translate individual risk profiles into population-level women's health and reproductive health promotion strategies.

b) Secondary Prevention (Early Detection & Screening)

Residents will

- Apply structured, evidence-based approaches to screening and early detection.
- Identify individuals at high risk who require close monitoring and follow-up.
- Integrate screening into routine clinical workflows across the continuum of care.
- Detect early indicators of health risk, including clinical, behavioral, and psychosocial factors.
- Identify missed opportunities in screening and preventive service delivery.

Population Link:

Evaluate screening coverage, access, and gaps in service delivery and equity.

c) Tertiary Prevention (Complication Prevention & Continuity of Care)

Residents will

- Support strategies that reduce progression of health risks and adverse outcomes.
- Contribute to coordinated care pathways across antenatal, intrapartum, and postnatal care settings.
- Ensure continuity of care by linking reproductive services to long-term health management.
- Identify preventable complications and system-level gaps.

Population Link:

Use outcome patterns to inform quality improvement and health system performance.

d) Quaternary Prevention

Residents will

- Apply evidence-based decision-making to avoid unnecessary interventions.
- Promote appropriate use of screening and procedures.
- Support shared decision-making and patient-centered care.

Surveillance & Reporting Integration (Revised)

Residents will

- Ensure compliance with national mandatory reporting regulations for notifiable conditions, including communicable diseases, injuries, violence, and abuse, in accordance with the MOH and PHA policies.
- Participate in maternal and reproductive health surveillance systems, including the following:
 - Maternal morbidity and mortality review processes
 - Perinatal and birth outcome registries
 - Congenital anomaly and reproductive health surveillance.

- Contribute to identification and reporting of priority public health events and trends.
- Interpret clinical and service data to support the following:
 - Monitoring of health outcomes
 - Identification of high-risk populations
 - Program evaluation and improvement
- Support the integration of clinical data into population-level surveillance systems and decision-making frameworks.
- Maintain data quality, completeness, timeliness, and confidentiality in all reporting activities.

Top of Form

Bottom of Form

6. Psychiatry

Duration	4-6 weeks
Level	R3
Setting	Psychiatric Hospital / Clinics
Level of Care	Secondary/Tertiary

Rotation Purpose

This rotation develops competency in prevention of mental health disorders, early identification of mental health disorders, and integration of mental health within clinical and population health systems.

The rotation emphasizes the following:

- Identification and management of behavioral and psychosocial risk factors.
- Integration of mental health into PHC and chronic disease management.

- Application of population mental health strategies.
- Use of mental health indicators in surveillance, planning, and policy development.

At the consultant level, preventive medicine specialists are expected to design and implement integrated mental health programs, linking clinical care to public health systems, workplace settings, and community-based interventions.

Learning Objectives

Residents should be able to

1. Conduct structured mental health risk assessment, including suicide risk, substance use, and psychosocial determinants.
2. Apply evidence-based approaches to the screening and early detection of mental health conditions across different populations and settings.
3. Implement brief intervention strategies, including Screening, Brief Intervention, and Referral to Treatment (SBIRT).
4. Integrate mental health assessment and management into PHC and chronic disease clinics.
5. Interpret mental health epidemiological data and utilize it in population health planning and program development.
6. Design and support strategies for stigma reduction and mental health promotion.
7. Contribute to system-level suicide prevention strategies, including early identification, referral pathways, and risk mitigation.
8. Identify mental health risks in workplace and community settings and contribute to preventive interventions.

Preventive Framework:

a) Primary Prevention (Risk Reduction & Health Promotion)

- Mental health promotion

- School-based prevention
- Contribute to workplace mental health and stress reduction initiatives
- Address behavioral and psychosocial risk factors
- Implement stigma reduction strategies at individual and community levels

b) Secondary Prevention (Early Detection & Screening)

- Systematic screening for common mental disorders (depression, anxiety, substance use, post-traumatic stress disorder) in high-risk and PHC populations
- Early identification of suicide risk and self-harm behaviors using validated tools
- Screening for substance misuse and behavioral addictions
- Perinatal mental health screening
- Adolescent behavioral and emotional risk screening (school health settings)
- Cognitive impairment screening in older adults
- Early detection of stress-related disorders in high-risk occupations
- Integration of mental health screening into NCD clinics (e.g., diabetes, CVD)
- Brief intervention and referral pathways (SBIRT model)
- Crisis identification and activation of referral and safety planning mechanisms

c) Tertiary Prevention (Complication Prevention, Disability Limitation, and Rehabilitation)

- Relapse prevention
- Rehabilitation linkage

Surveillance

Residents will

- Ensure compliance with national reporting requirements for mental health-related events, including self-harm and substance-related conditions.
- Contribute to mental health surveillance systems, including the following:

- Suicide and self-harm trends
- Substance use patterns
- Behavioral risk surveillance.
- Integrate mental health indicators into the following:
 - **PHC data systems**
 - **NCD programs**
 - **Public health surveillance frameworks.**
- Utilize data to support the following:
 - Program planning
 - Risk stratification
 - Policy development.

7. Occupational Medicine

Duration	4 weeks
Level	R3
Setting	Occupational Health Clinics/Workplace Settings/Industrial Facilities
Level of Care	Primary/Secondary

Rotation Purpose

This rotation ensures competency in occupational health risk assessment, prevention of work-related diseases and injuries, workplace health promotion, and the integration of occupational health within population health and regulatory frameworks.

At the consultant level, preventive medicine specialists must be able to design and evaluate occupational health programs, assess workplace risks, analyze occupational morbidity trends, and contribute to policy development and regulatory compliance.

The rotation integrates clinical occupational health practices with workplace surveillance systems, injury prevention strategies, environmental risk control, and population-level occupational health indicators.

Learning Objectives

By the end of this rotation, the resident should be able to

1. Conduct a structured occupational risk assessment, including exposure history (chemical, physical, biological, and ergonomic).
2. Perform fitness-for-work and return-to-work evaluations.
3. Identify and manage common occupational diseases and injuries.
4. Apply occupational health regulations and reporting requirements.
5. Implement workplace-based preventive and health promotion strategies.
6. Analyze occupational health indicators (injury rates, exposure trends).
7. Identify high-risk workers and implement preventive interventions.
8. Integrate occupational health into population and public health systems.

Scope of Practice

Residents are expected to

- Participate in occupational health clinics and workplace visits.
- Conduct occupational history taking and exposure assessment.
- Perform fitness-for-work and return-to-work evaluations.
- Review occupational injury and illness cases.
- Participate in workplace inspections and hazard identification.
- Contribute to workplace health promotion programs.

- Document and report occupational conditions according to regulations.

Preventive Medicine Integration Framework

a) Primary Prevention (Risk Reduction & Health Promotion)

- Workplace hazard control (e.g., engineering, administrative, personal protective equipment)
- Health promotion programs (e.g., smoking cessation, physical activity)
- Ergonomic interventions
- Occupational safety training

b) Secondary Prevention (Early Detection & Screening)

- Occupational health screening programs
- Early detection of work-related diseases
- Periodic medical examinations
- Surveillance of exposure-related conditions

c) Tertiary Prevention (Complication Prevention & Rehabilitation)

- Return-to-work planning
- Disability prevention and limitation
- Rehabilitation coordination
- Prevention of recurrent workplace injury

d) Quaternary Prevention (Avoiding Overmedicalization)

Avoid unnecessary medical testing or overscreening not supported by occupational risk assessment.

Surveillance Linkage

- Ensure compliance with the national mandatory reporting regulations for occupational diseases and injuries in accordance with the MOH and PHA policies
- Occupational injury and illness reporting systems
- Workplace exposure monitoring systems

- Integration with environmental and public health surveillance
- Contribution to occupational health registries and reporting

8. Primary Healthcare Clinics

Duration	8 weeks
Level	R4
Setting	Primary Healthcare Centers/Family Medicine Clinics
Level of Care	PHC

Rotation Purpose

This rotation is designed to provide residents with a comprehensive experience in delivering continuous, patient-centered preventive and PHC services. It emphasizes the integration of preventive medicine principles into routine clinical practice, including the screening, early detection, risk factor modification, and long-term management of patients across the life course.

Specific Learning Objectives

- Demonstrate competency in comprehensive patient assessment, including preventive risk evaluation.
- Apply evidence-based screening and preventive service guidelines.
- Manage common chronic diseases using preventive and risk-reduction strategies.
- Provide lifestyle counseling, including smoking cessation, nutrition, and physical activity.
- Deliver age-appropriate preventive care, including immunization and screening.

- Integrate reproductive health, mental health, and family-centered care into clinical practice.
- Demonstrate continuity of care and appropriate referral practices.

Clinical Activities

- Conduct comprehensive patient consultations, including history, examination, management, and preventive risk assessment.
- Perform and interpret screening tests (e.g., hypertension, diabetes, obesity, cancer screening).
- Provide preventive counseling on lifestyle modification (smoking, diet, physical activity).
- Administer and review immunization status according to national guidelines.
- Manage patients with chronic conditions using preventive care plans.
- Provide reproductive health and family planning counseling within the scope of practice.
- Identify mental health concerns and provide initial management or referral.
- Coordinate care with other healthcare providers and services.
- Ensure accurate documentation and follow-up planning.

Preventive Medicine Integration

- Apply primary, secondary, and tertiary prevention in all patient encounters.
- Use consultations as opportunities for early detection and screening.
- Deliver brief interventions for behavioral risk factors.
- Integrate population health principles into individual care decisions.
- Support continuity of care and long-term risk-reduction strategies.

Core Competencies (CanMEDS)

- **Medical Expert:** Comprehensive preventive and PHC
- **Communicator:** Patient-centered counseling
- **Collaborator:** Multidisciplinary coordination

- **Health Advocate:** Risk factor modification and prevention
- **Professional:** Ethical, continuous, and culturally competent care

Bottom of Form

D. Research

Through coursework and field placement, all residents are expected to gain a reasonable understanding of the principles of the research. Residents who wish to gain additional hands-on research experience will find numerous opportunities to do so throughout their training.

Each resident is required to perform TWO research projects during their residency training. This should be conducted as follows:

- During R1 and R2, each resident is required to create ONE review article (systematic or narrative review). This review article must be
 - Completed and submitted to the supervisor before the year 2 promotion exam AND
 - Published (or accepted for publication) in a Web of Science-indexed journal before the end of year 4.
- During R3 and R4, each resident is required to conduct ONE original research according to the SBPM guidelines and submit it as an article of publishable quality. This manuscript should be submitted to the program by the 1st of September during year 4 for it to be eligible for part two of the final exam. This manuscript should be accompanied by a

Option A:

- Proof that it was published or accepted for publication in a Web of Science-indexed journal.
- In such a case, there will be NO oral defense.

OR

Option B:

- Proof that it was submitted for publication in an ISI journal.
- In this case, the program will form a committee (including an external examiner) to hear the oral defense of the research project.

Evidence-Based Medicine

Through both academic coursework and clinical/field training, all residents are expected to develop a strong foundation for evidence-based medicine (EBM), including the ability to search, critically appraise, interpret, and apply scientific evidence to clinical and public health decision-making.

Each resident is required to demonstrate competency in EBM throughout their residency training. This should be conducted as follows:

During R1 & R2: Foundational EBM Competency

Each resident is required to complete structured EBM training and application activities. These must include the following:

- Participation in Journal Club sessions with documented critical appraisal using standardized tools.
- Completion of at least TWO structured critical appraisal assignments (e.g., randomized controlled trial [RCT], cohort study, or systematic review).

These activities must be

- Completed and documented in the resident portfolio before the year 2 promotion exams AND
- Demonstrated through satisfactory performance in OSCE and/or SOE stations related to EBM application

During R3 & R4: Advanced EBM Application and Integration

Each resident is required to demonstrate advanced applications of EBM in clinical and population health practices.

This requirement should be fulfilled through the following:

1. Submission of a stand-alone EBM assignment demonstrating the advanced application of evidence. This may include the following:
2. Critically Appraised Topic (CAT)
3. Clinical guideline appraisal
4. Evidence-to-decision or policy-relevant report
5. The assignment must demonstrate the following:
6. Formulation of a structured clinical or public health question
7. Systematic literature search
8. Critical appraisal of evidence
9. Translation of evidence into clinical, preventive, or policy decisions

The assignment must be submitted to the program by the 1st of September during year 4 to be eligible for the final assessment

1. The submission must be accompanied by
2. Documentation of supervisor approval
3. Evidence of originality and academic integrity
4. The program assigns faculty evaluations and/or SOE to assess competency

Assessment of EBM Competency

EBM competency is assessed longitudinally using Journal Club evaluation, CBD, Portfolio review, application of evidence in decision-making (OSCE/SOE), and evaluation of the standalone EBM assignment.

VIII. CONTINUUM OF LEARNING

1. Introduction

The concept of the 'Continuum of Learning' is integral to preventive medicine residency program. It underscores the progression and development of residents' competencies from the beginning of their training to their transition into independent practice. This section outlines the stages of learning, and support mechanisms that facilitate continuous professional growth and development.

2. Stages of Learning

I. Junior Stage

- Description:

knowledge and skills in population and clinical settings. Residents engage in hands-on experience and take responsibility for clinical and public health projects.

- Objectives:

- Apply preventive medicine principles in clinical and community settings.
- Develop and implement public health interventions.
- Enhance communication and collaboration skills.
- Demonstrate increasing proficiency in CanMEDS roles.

- Support Mechanisms:
 - Clinical rotations in diverse settings.
 - Participation in public health initiatives and research projects.
 - Regular feedback and performance evaluations.
 - Continued mentorship and professional development opportunities.

II. Senior Stage

- Description:

In the senior stage, residents are expected to demonstrate high levels of competence and autonomy. They play leadership roles, contribute to policy development, and engage in scholarly activities.

- Objectives:
 - Lead and manage public health programs and initiatives.
 - Advocate for policy changes and health equity.
 - Conduct and disseminate research in preventive medicine.
 - Exhibit mastery of CanMEDS roles in practice.
- Support Mechanisms:
 - Leadership training and advanced coursework.
 - Opportunities for independent research and publication.
 - Involvement in policymaking and advocacy.
 - Ongoing mentorship and career guidance.

3. Transition to Practice

- Description:

The transition to the practice phase prepares residents for independent practice in preventive medicine. This includes finalizing their skills, preparing for board certification, and transitioning to roles as practicing preventive medicine specialists.

- Objectives:
 - Ensure readiness for independent practice.
 - Achieve board certification in preventive medicine.
 - Develop a plan for continuous professional development.
- Support Mechanisms:
 - Capstone projects and final evaluations.
 - Board review courses and exam preparation.
 - Career planning and job placement support.

4. Continuous Professional Development

- Description:

Learning does not end with completion of the residency program. Continuous professional development is essential for maintaining competence and staying updated with advancements in preventive medicine.

- Objectives:
 - Engage in lifelong learning and professional development.
 - Participate in continuing medical education (CME) activities.
 - Stay updated with the latest research and best practices in preventive medicine.
- Support Mechanisms:
 - Access to CME programs and conferences.
 - Opportunities for advanced degrees and certifications.
 - Membership in professional organizations and networks.

IX. TEACHING METHODS

The teaching process in postgraduate residency/fellowship/diploma training programs is mainly based on the principles of adult learning theory. The trainees are expected to be aware of the importance of learning and play active roles in the content and process of their own learning. The training programs implement the adult learning concept in each feature of the activities, in which residents are responsible for their own learning requirements. Formal training time includes the following four teaching activities:

- Program Specific Learning Activities
- Universal Topics
- General Learning Opportunities
- Simulation

1. Program-Specific Learning Activities:

Program-specific learning activities are educational activities that are specifically designed and intended for trainees' teaching during their training time. Trainees are required to attend these activities, and noncompliance can subject them to disciplinary action. It is advisable to link attendance and participation in these activities to formative assessment tools (see the formative assessment section below). Program administration should support these activities by providing protected time for trainees to attend these activities and allow them to participate in such activities.

I. Program Academic Half-Day:

1. Attendance:

To learn preventive medicine concepts and integrate them into the preventive medicine residency program, all residents are expected to attend AHDs throughout their residency training. If special circumstances cause a resident to be absent from an AHD, the resident must notify the chief resident as far in advance as possible (absence is subject to approval by the program director). Failure to do so may result in disciplinary actions.

In preparation for parts 1 and 2 of the SCFHS examinations, residents are permitted to skip all AHDs during the final month preceding the exam date. Following their examinations, attendance at AHDs is mandatory until the residents complete the residency program.

2. Structure:

Item	Time (1): 9:00–10:20	Time (2): 10:40–12:00
Week 1	Outbreak presentation Public health lab	Critical appraisal (therapy)
Week 2	Health program Health organization	Critical appraisal (diagnosis)
Week 3	Well-known surveys Well-known RCTs	Critical appraisal (prognosis)
Week 4	Hot topics Public health issues	Critical appraisal (SR)

Explanations of the terms mentioned in the structure above, examples of topics, and a template for the timetable are provided in Appendix A.

Online required courses

Each resident must complete the following online courses, which are distributed over the 4 years of residency training in accordance with the “promotion requirements” (see the “assessment” section).

- National Committee of Bioethics (course and researcher registration):
 - <http://bioethics.kacst.edu.sa/>
- WHO vaccine-safety online course:
 - <http://vaccine-safety-training.org>
- Emergency Responder Health Monitoring and Surveillance online course:
 - <http://emergency.cdc.gov/training/erhmscourse/index.asp>
- CERC online training:
 - <http://emergency.cdc.gov/cerc/training/basic/index.asp>
- Health-literacy online course:
 - <https://www.train.org/cdctrain/course/1105934/details>
- Communicating Science Clearly
 - <https://www.train.org/cdctrain/course/1112747/details>

2. Universal Topics

Universal topics are educational activities developed by the SCFHS and intended for all specialties. Universal topics have been developed by the SCFHS and are available through e-learning via personalized access for each trainee (to access online modules). Each universal topic includes a self-assessment at the end of the module. As indicated in the “executive policies of formative assessment and annual promotion,” universal topics are a mandatory component of the criteria for the annual promotion of trainees from their current level of training to the subsequent level, particularly at the residency level. Universal topics will be distributed throughout the training period.

The universal topics and their distributions across the four training years are presented in Appendix D.

3. General Learning Opportunities

Formal training time should be supplemented by other practice-based learning such as

- Involvement in quality improvement committees and meetings
- Continuous professional development activities relevant to the specialty (conferences and workshops)
- Morbidity and Mortality (M&M)

M&M conferences offer trainees the opportunity to discuss patient cases in which adverse effects occur through errors or complications. The goal of this resource is to refocus on the content of M&M and transform it into a platform for teaching patient safety principles and emphasizing error-reduction strategies.

4. Simulation

As a national supervising body, the SCFHS initiated a move toward integrating simulations into residency training programs.

Medical simulations involve creating artificial clinical scenarios from which trainees can learn. This process has educational advantages, such as learning and practicing how to deal with rare and/or high-risk clinical scenarios and rare procedures while practicing in a controlled standardized environment with immediate effective feedback that has a substantial impact on knowledge, skills, and attitude. (21,22)

The scenarios for the simulation need to be as close to real clinical situations as possible, including team members, equipment, and environment, followed by timely and effective feedback. According to McGaghie et al., effective feedback has three key components: planning, pre-briefing, and feedback provision. (23)

The use of simulations in postgraduate training programs is currently necessary, especially in competency-based curricula. Current programs aim to graduate skilled, competent, and independent physicians while maintaining a focus on quality and patient safety. Practically, there can be a high level of variability in using simulations to implement competency-based curricula, and the nature of the specialty is likely to play another role in increasing this variability. Establishing standardized needs assessment methods for simulation may pose a challenge to any national organizational body dealing with various ongoing postgraduate training programs.

For more details on choosing, writing, and applying simulation to this curriculum, please read (Standard Template for Simulation Curriculum Development of Postgraduate Training Programs 2020⁽¹⁸⁾).

X. ASSESSMENT AND EVALUATION

1. Purpose of Assessment

Assessments play a vital role in the success of postgraduate training. On the one hand, assessment guides trainees and trainers to achieve defined standards, learning outcomes, and competencies. On the other hand, assessments provide feedback to learners and faculty regarding curriculum development and implementation, teaching methods, and the quality of the learning environment. A reliable and valid assessment is essential to ensure curriculum alignment with respect to objectives, learning methods, and assessment tools. Finally, the assessment assures patients and the public that health professionals are safe and competent.

Assessment can serve the following purposes:

- a. Assessment for learning:** Trainers use information from trainees' performances to inform their learning for improvement. This enables educators to use information about trainees' knowledge, understanding, and skills to provide feedback about learning and ways to improve.
- b. Assessment as learning** involves trainees in the learning process while enabling them to monitor their own progress. Trainees use self-assessment and educator feedback to reflect on their progress. It develops and supports the trainees' metacognitive skills. Assessment as learning is crucial for helping residents/fellows become lifelong learners.
- c. Assessment of learning** is used to demonstrate the achievement of trainees' learning. This is a graded assessment that usually counts toward trainees' end-of-training degrees.

d. Feedback and evaluation as assessment outcomes represent quality metrics that can improve the learning experience.

Miller's Pyramid of Assessment provides a framework for assessing the trainees' clinical competencies that act as a guide for the trainers to select the assessment methods to target different clinical competencies, including "knows," "knows how," "shows how," and "does." ^(19,20)

For the sake of organization, assessment is further classified into two main categories: *Formative* and *Summative*.

2 Formative Assessment

2.1 General Purpose

The main aim of formative assessment is to provide constructive and timely feedback that supports continuous learning and professional development. It is closely linked to program competencies and milestones, ensuring that trainee performance aligns with competency-based progression. Formative assessment supports promotion decisions but is not a substitute for summative evaluation.

2.2 Linking with Competencies and Milestones

Each formative assessment tool must be mapped explicitly to a relevant competency or milestone. This ensures clarity of purpose and standardization across training sites. Mapping should be in line with the official SCFHS Formative Assessment Tool Mapping guidelines.

2.3 Frequency and Distribution

Each milestone should be assessed at least twice, preferably by different assessors, to provide adequate feedback and opportunities for improvement. The distribution of assessment tools must be balanced across rotations to avoid clustering of assessments due to limited training experience.

2.4 Utility Framework

When selecting and applying formative assessment tools, the following quality criteria must be considered:

- Validity: The tool should measure what it is intended to measure.
- Reliability: Results should be consistent across occasions and among assessors.
- Applicability: The tool must be feasible and acceptable in the training environment.
- Cost: Implementation should be cost-effective and practical.
- Educational Impact: Assessments should drive positive learning behaviors and skill development.

2.5 Longitudinal Integration

A formative assessment should be viewed as a longitudinal process across the entire training duration. Certain competencies require progressive demonstration across multiple rotations. When appropriate, the same patient case or procedure may be used to evaluate more than one milestone, thereby enhancing efficiency and reinforcing learning.

2.6 Formative Assessment Tools

Gen./Sub.	Level	Knowledge			Skills							Attitude
		Academic Activities	EYPT-Local	CBD	OSCE /SOE	Research	DOPS	Logbook	Volunteering	COT	mini-CEX	Evaluation - ITES
Preventive Medicine	R1	✓	✓	✓		✓		✓	✓	✓	✓	✓
	R2	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
	R3	✓	✓	✓		✓		✓	✓	✓	✓	✓
	R4	✓		✓	✓	✓		✓	✓	✓	✓	✓

SOE: Structured Oral Examination; **CBD:** Case-Based Discussion; **DOPS:** Direct Observation of Procedural Skills;

Mini-CEX: Mini-Clinical Evaluation Exercise; **EYPT-Local:** Promotion exam or progress test; **COT:** Consultation Observation Tool; **OSCE:** Objective Structured Clinical Examination; **OSPE:** Objective Structured Practical Examination

All formative and work-based assessments should be performed following the SCFHS definitions and methodologies.

Not complying with these requirements will subject trainees to disciplinary actions according to SCFHS bylaws.

Learning Domain	Formative Assessment Tools	Important Details (e.g., frequency, specifications related to the tool)
Knowledge	EYPT-Local: Annual Written Progress Test	Multiple Choice Question exam of at least 100 items according to the blueprint. Trainees are required to take the progress test according to SCFHS criteria.
	End of rotation exams	For each module
Skills	OSCE: Objective Structured Clinical Examination	R2 & R4. The trainee is required to participate and complete the OSCE. Results provided will be for formative feedback purposes and improvement.
	SOE: Structured Oral Examination	R2 & R4. The trainee is required to participate in and complete the SOE. Results provided will be for formative feedback purposes and improvement.
	Logbook	Every year
	Mini-CEX: Mini-Clinical Evaluation Exercise	R1-R4: Trainees are required to do a minimum of four Mini-CEX/academic year. Results on forms are for formative feedback purposes and improvement.
	COT: Consultation Observation Tool	R1-R4: 2/year
	CBD: Case-Based Discussion	Focuses on evaluating the trainee's clinical decision-making and reasoning skills. R1-R2: 2/year R3-R4: 3/year
	Research Activities	R1: Research proposal, National committee of bioethics certificate

Learning Domain	Formative Assessment Tools	Important Details (e.g., frequency, specifications related to the tool)
		R2: Literature review R3: Peer review of manuscript R4: Research thesis
	CAP: Critically Appraised Paper	R1-R4: Trainees are required to present at least two CAPs.
	CAT: Critically Appraised Topic	R2-R4: Trainees are required to present two CATs per year.
	Seminars	R1-R4: Trainees are required to present at least two per year.
	White Paper	R2: Trainees are required to design and write at least one white paper. Results on evaluation forms will be used for formative feedback purposes only.
	Health Planning & Evaluation	R3: Trainees are required to design at least one program plan with an evaluation report. Results on evaluation forms will be used for formative feedback purposes only.
	Portfolio	R1-R4: Collection of evidence of residents' activities that outlines residents' own learning experience. The portfolio contains a component of self-reflection on the contents.
Attitude	ITER: In-Training Evaluation Report	All ITERs must be completed. ITERs are used as end-of-rotation evaluation following SCFHS policies and criteria for ITERs.
Volunteering	Volunteer Work	As a mandatory practice, 40 h of volunteering throughout the program. Provide documents of evidence (letters/certificates).

The evaluation of each component will be based on the following equation:

Does Not Meet Expectation	Borderline	Meets Expectation	Exceeds Expectation
(<50%)	(50–69.99%)	(70–89.99%)	(≥90%)

To achieve unconditional promotion, the candidate must score a minimum of “borderline pass” in all formative assessment tools. The program director can still recommend the promotion of candidates if the above criteria are not met in certain situations:

- In case the candidate scored “borderline failure” in one or two components at maximum, and these scores do not belong to the same area of assessment (for example: both borderline failures should not belong both to skills).
- The candidate must have passed all other components and scored a minimum of clear pass in at least two components.

2.7 Mapping of Formative Assessment Tools

The complete mapping the 12 core competencies to the CanMEDS roles and formative assessment tools is provided in Appendix C.

Assessment Tool	Learning Domain	Frequency (per curriculum)
SOE: Structured Oral Examination	Knowledge/Reasoning	R2: once/year with OSCE
Annual Written Progress Test	Knowledge	Once per year
End of Rotation Exams	Knowledge	Each module
OSCE: Objective Structured Clinical Examination	Skills	R2 & R4
Logbook	Skills/Documentation	Every year
Mini-CEX: Mini-Clinical Evaluation Exercise	Skills	4/year (R1-R4)
COT: Consultation Observation Tool	Communication/Skills	2/year (R1-R4)
CBD: Case-Based Discussion	Reasoning/Decision-Making	R1-R2: 2/year, R3-R4: 3/year
Research Activities	Scholarship	R1: Proposal; R2: Review; R3: Peer review; R4: Thesis
CAPs: Critically Appraised Papers	Scholarship	2/year (R1-R4)
CAT: Critically Appraised Topic	Scholarship	2/year (R2-R4)
Seminars	Scholarship/Communication	2/year (R1-R4)

Assessment Tool	Learning Domain	Frequency (per curriculum)
White Paper	Scholarship/Leadership	1 in R2
Health Planning & Evaluation	Leadership/Scholarship	1 in R3
Portfolio	All domains (Reflective)	Continuous, R1-R4
ITER: In-Training Evaluation Report	Attitudes/Professionalism	Each rotation
Volunteering	Attitude/Professionalism	across program

3. Summative Assessment

3.1 General Principles

Summative assessment is a component of assessment that primarily aims to make informed decisions about trainees' competencies. Unlike formative assessment, *summative assessment* does not aim to provide constructive feedback. For further details, please refer to the General Bylaws of Training in Postgraduate Programs⁽¹⁵⁾ and General Assessment Bylaws⁽¹⁷⁾ (available online: www.scfhs.org). To be eligible to sit for the final exams, trainees will be granted "Certification of Training Completion" upon successful completion of all training rotations.

3.2 First Part Examination

This is only applicable to residency programs. It is a written exam that permits the trainee to be promoted from the "junior" to "senior" level of training. For further details on the first part of the examination, please refer to the General Bylaws of Training in Postgraduate Programs and General Assessment Bylaws (available online: www.scfhs.org).

Blueprint Outlines: The content of the following table is for demonstration only (please refer to the most updated version published on the SCFHS website):

A blueprint of the first part of the exam is shown in the following table:

Example of Written Exam Blueprint

No.	Sections	Percentage
1	Communicable and noncommunicable diseases *	30%
2	Epidemiology/Demography/Research Methodology/Biostatistics	25%
3	Clinical Preventive Medicine	20%
4	Healthcare Management	10%
5	Social and Behavioral Health/Mental Health/Health Education and Promotion	5%
6	Occupational and Environmental Health	5%
7	Maternal & Child Health	3%
8	Nutritional Health	2%
Total		100%

3.3 Final In-training Evaluation Report

In addition to the approval of the completion of clinical requirements (resident logbook) by the supervising committee, the Final In-Training Evaluation Report (FITER) is also prepared by program directors for each resident at the end of their final year of training. This report will be the basis for obtaining the Certificate of Training Program Completion as well as the qualification to sit for the final specialty examinations.

3.4 Certification of Training Completion

To be eligible to sit for final specialty examinations, each trainee is required to obtain "*Certification of Training Completion*." Based on the General Bylaws of Training in Postgraduate Programs and executive policy (please refer to www.scfhs.org), trainees will be granted "Certification of Training-Completion" once the following criteria are fulfilled:

- a. Successful completion of all training rotations.
- b. Completion of training requirements (e.g., logbook, research, and others) as outlined in the FITER, which is approved by the scientific council/committee of specialties.
- c. Clearance from SCFHS training affairs that ensures compliance with tuition payments and the completion of universal topics.
- d. Passing the first part of the examination (whenever applicable).

"Certification of Training Completion" will be issued and approved by the supervisory committee or its equivalent according to SCFHS policies.

3.5 Final Specialty Examinations

The final specialty examination is a summative assessment component that grants trainees specialty certifications. It has two elements.

- a. Final written exam: To be eligible for this exam, trainees are required to have obtained "Certification of Training Completion."
- b. Final clinical/practical exam: The OSCE is designed to assess clinical reasoning, applied knowledge, professional judgment, and practical competencies.

- c. Trainees must successfully pass the Final Written Examination to be eligible for the final OSCE. The SOE is designed to assess advanced clinical reasoning, analytical thinking, integration of epidemiological principles, population health management, health system analysis, policy interpretation, and professional judgment in preventive medicine scenarios. It measures the trainee's ability to synthesize evidence, interpret population-level data, justify public health decisions, and respond effectively to complex clinical and community health challenges using a structured oral format.

Blueprint Outlines: The content of the following table is for demonstration only (please refer to the most updated version published on the SCFHS website):

The blueprints of the final written, clinical, and practical examinations are shown in the following table:

Example of Written Exam Blueprint

No.	Sections	Percentage
1	Communicable and Noncommunicable Diseases*	30%
2	Epidemiology/Demography/Research Methodology/Biostatistics	25%
3	Clinical Preventive Medicine	20%
4	Healthcare Management, Quality, Informatics & Artificial Intelligence	10%
5	Social and Behavioral Health/Mental Health/Health Education and Promotion	5%
6	Maternal & Child Health	5%
7	Occupational & Environmental Health	5%
Total		100%

*including internal medicine, pediatrics, emergency medicine, psychiatry, and primary care

For further details on the final exams, please refer to the General Bylaws of Training in Postgraduate Programs and General Assessment Bylaws (available online: www.scfhs.org).

Learning Domain	Summative Assessment Tools	Passing Score
Knowledge	Final Written Examination	At least borderline pass in each tool, in accordance with the standard setting method used by the executive administration of assessment.
Skills	OSCE: Objective Structured Clinical Examination SOE: Structured Oral Examination	At least borderline pass in each tool, in accordance with the standard setting method used by the executive administration of assessment.
Attitude	FITER: Final In-Training Evaluation Report	Successfully pass FITER.

XI. PROGRAM AND COURSE EVALUATION

The SCFHS will apply various measures to evaluate the implementation of this curriculum. The training outcomes of this program will undergo the quality assurance framework endorsed by the Central Training Committee of the SCFHS. Trainee assessment (both formative and summative) results will be analyzed and mapped to the curriculum content. Other indicators that will be incorporated are as follows:

- Report of the annual trainees' satisfaction survey.
- Reports from trainees' evaluation of faculty members.
- Reports from trainees' evaluation of rotations.
- Reports from the annual survey of program directors.
- Data available from program accreditations.
- Reports from direct field communications with trainees and trainers.

Goal-Based Evaluation: The achievement of intended milestones will be evaluated at the end of each stage to assess the progress of curriculum delivery, and any deficiencies will be addressed in the following stage, utilizing the time devoted to trainee-selected topics and professional sessions.

In addition to subject-matter opinions and best practices from benchmarked international programs, the SCFHS will apply a robust method to ensure that this curriculum will utilize all data available during its revision in the future.

XII. POLICIES AND PROCEDURES

This curriculum represents the means and materials and outlines the learning objectives with which trainees and trainers will interact to achieve the identified educational outcomes. The SCFHS has a full set of “General Bylaws of Training in Postgraduate Programs” and “Executive Policies” (published on the official SCFHS website) that regulate all training-related processes. The general bylaws of training, assessment, and accreditation as well as executive policies on admission, registration, formative assessment and promotion, examination, trainees’ representation and support, duty hours, and leaves are examples of regulations that need to be implemented. Under this curriculum, trainees, trainers, and supervisors must comply with the most updated bylaws and policies, which can be accessed online (via the official SCFHS website).

XIII. Appendices

Appendix A: Academic half-day

Structure

Item	Time (1): 9:00–10:20	Time (2): 10:40–12:00
Week 1	Outbreak case study Public health lab	Critical appraisal (therapy)
Week 2	Health program Health organization	Critical appraisal (diagnosis)
Week 3	Well-known surveys Well-known RCTs	Critical appraisal (prognosis)
Week 4	Hot topics Public health issues	Critical appraisal (SR/MA)

- Outbreak case study: In this session, a resident will select a recent outbreak and prepare a presentation on the topic. The outbreak can be from a local setting or one that has recently been reported in the literature or media. A good source of such reports is the PROMED mailing list that monitors disease outbreaks worldwide. Residents are advised to subscribe to PROMED. The case study presentation should include the following items:
 - Descriptive epidemiology
 - The clinical picture
 - Diagnosis and management
 - Risk of the importation of the disease to Saudi Arabia (if not a local outbreak)

- Prevention and control
- Communication: write a press release or health-education message.
- Elevator statement (a short summary of the outbreak).
- Public health lab:
 - Public health preparedness capabilities
 - Lab tests that are of significance to public health
 - Related topics
- Health program (e.g., NCD control program):
 - Background
 - Target goals
 - Theoretical framework
 - Interventions
 - Evaluation strategies
 - Applicability in SA
- Health organization
 - A national or international organization working in or related to health
 - Discuss the organization's structure, governance, funding sources, goals, activities, important publications, and programs.
 - Examples: WHO, UNICEF, EPA
- Well-known surveys/RCTs:
 - Overview
 - Variables
 - Sampling: frame, strategy, special features.
 - Sample size: justification, strata, weighting.
 - Measurements: instruments, validation, psychometric properties with interpretation
 - Quality measures
 - Results of the last survey: prevalence, effect size, interpretation

- Examples: SHIS, STEPS, GATS, GYTS, World Health Survey, MICS, BRFSS, NHANES, NHIS, DHS, Whitehall, Women's Health Study, and Framingham.
- Hot topics:
 - A topic that has recently been highlighted by the media (nationally or internationally)
 - Prepare an "elevator statement" for the topic
- Preventive medicine/Public health issues:
 - Issues that are of importance in preventive medicine
 - Environmental example: Maximum contaminant levels (what they are, how they are set, the agencies involved, levels reported in Saudi Arabia)
- Critical appraisal:
 - Each training center will prepare a timetable so that by the end of the year, each candidate will critically appraise one article in each category (therapy, diagnosis, prognosis, and systematic review).

Example of topics (These are just examples and are not exclusive list)

Category	Titles of topics
Hot topics	- Social media and mental health - Emerging tobacco products - Prediabetes in children - Processed meat and carcinogenesis - Plastic food containers and cancer - Mobile phones and health risks - Fad diets (e.g., Keto, Low carb, Atkins, carnivore diet)
Well-known surveys/RCTs	- Global Adult Tobacco Survey, Global Youth Tobacco Survey - Saudi Health Interview Survey (SHIS) - Behavioral Risk Factor Surveillance System (BRFSS) - National Health and Nutrition Examination Survey (NHANES) - National Health Interview Survey (NHIS) - Demographic and Health Surveys (DHS) - STEPS surveys - MICS surveys - Framingham Heart Study - Women's Health Initiative - European Prospective Investigation into Cancer and Nutrition (EPIC) - Whitehall Study (I and II)
Health program	- Roll Back Malaria - Stop TB - The Multi-Country HIV/AIDS Program for Africa (MAP) - The Global Fund to Fight AIDS, Tuberculosis and Malaria - Global Polio Eradication Initiative

Category	Titles of topics
	- Tips From Former Smokers (Tips) Campaign - The Framework Convention on Tobacco Control (FCTC)
Health organization	- WHO - UNICEF - US Environmental Protection Agency (EPA) - World Organisation for Animal Health (OIE) - Centers for Disease Control and Prevention - National Cancer Institute (NCI) - Global Alliance for Vaccines and Immunization (GAVI)
Preventive medicine/Public health issues	- Global Public Goods for Health (GPGH) - Maximum Contaminant Levels (what they are, how they are set, the agencies involved, levels reported in Saudi Arabia) - Air quality in Saudi Arabia - Water quality in Saudi Arabia
Public health lab	- Standard safety practices in the microbiology laboratory - Collection and transport of sterile-site specimens - Transportation of lab specimens (including regulations of transportation of dangerous goods) - Testing drinking water - Serology tests - Polymerase chain reaction - Monitoring air quality

Scientific activity timetable

Session 1 (Seminar)

[illegible]

Session 2 (Journal Club)

Date	Article title	Article type*	Candidate

* Article type: Intervention, Diagnosis (Assessment or Screening), Prognosis, Harm (including etiology), Quality Improvement, Economic Evaluation, Clinical Prediction Guide

Appendix B: Field rotation assessment form

RESIDENT ASSESSMENT OF FIELD PLACEMENT

If possible, please complete electronically. If needed, the space provided can be increased to allow you to fully answer the questions.

****Please e-mail or give a hard copy to the Program Director and/or the Program Assistant****

1 Name of Resident: _____

2 Field Placement Site:

3 Dates of Placement:

4 Principal Supervisor:

a. Other individual acting in a supervisory role: _____

5 Rotation

a) Were specific goals set for this rotation? (Please attach a copy.)

b) Was there a mid-rotation evaluation? Yes/No

If no, why not?

RESIDENT ASSESSMENT OF FIELD PLACEMENT

c) Were goals achieved?

d) Did any factors limit the achievement of goals?

e) Were additional goals achieved? Please list them.

Please provide an assessment of the:

a. Quality of teaching/educational experience of the rotation

b. The availability/accessibility of the supervisor and other relevant personnel

c. On call periods and projects requested (support and provide information)

RESIDENT ASSESSMENT OF FIELD PLACEMENT

d. The realism of the workload and expectations

e. The sufficiency of variety/exposure to a wide range of issues

f. Feasibility of completing tasks during rotation (state if you were expected to carry over tasks to the next rotation)

g. Instruction regarding publishing/presenting work

6 Please list three strengths of this rotation

1)

2)

3)

7 Please give three suggestions concerning how the rotation could be improved

1)

2)

3)

8 Additional comments:

RESIDENT ASSESSMENT OF FIELD PLACEMENT

Appendix C: Mapping of core competencies to CanMEDS roles and formative assessment tools– competency mapping table (CanMEDS framework)

#	Core competency	CanMEDS role(s)	SOE	Annual Written Progress Test	End of rotation exams	OSCE	Mini-CEX	CBD	Research	Portfolio	Logbook	Academic Activities	Volunteering	COT	CAPs	CAT	Seminars	White paper	ITER
1	Conduct Comprehensive Preventive Risk Assessment	Medical Expert, Health Advocate	✓	✓	✓	✓	✓	✓	✓	✓	✓							✓	
2	Deliver Evidence-Based Preventive Interventions	Medical Expert, Communicator	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓			✓		
3	Apply a Life-Course Preventive Care Approach	Communicator, Health Advocate, Professional	✓	✓		✓	✓			✓		✓		✓			✓	✓	✓
4	Integrate Mental Health into Preventive Care	Communicator, Professional				✓	✓	✓		✓				✓					✓

#	Core competency	CanMEDS role(s)	SOE	Annual Written Progress Test	End of rotation exams	OSCE	Mini-CEX	CBD	Research	Portfolio	Logbook	Academic Activities	Volunteering	COT	CAPs	CAT	Seminars	White paper	ITER
5	Conduct Surveillance and Population Health Analysis	Medical Expert	✓	✓	✓				✓	✓	✓								
6	Conduct Outbreak Investigation and Public Health Response	Medical Expert	✓	✓	✓	✓	✓	✓	✓	✓	✓								
7	Design, Implement, and Evaluate Preventive Health Programs	Medical Expert, Communicator, Collaborator, Health Advocate				✓	✓	✓	✓	✓	✓	✓		✓			✓		
8	Lead Multidisciplinary Teams and Preventive Programs	Collaborator, Leader	✓			✓	✓	✓		✓		✓		✓					

#	Core competency	CanMEDS role(s)	SOE	Annual Written Progress Test	End of rotation exams	OSCE	Mini-CEX	CBD	Research	Portfolio	Logbook	Academic Activities	Volunteering	COT	CAPs	CAT	Seminars	White paper	ITER
9	Apply Quality Improvement and Patient Safety Principles	Leader, Professional	✓	✓				✓		✓		✓						✓	✓
10	Contribute to Health Policy and Health System Strengthening	Leader, Health Advocate, Professional	✓	✓		✓	✓	✓		✓		✓					✓	✓	✓
11	Apply Evidence-Based Medicine and Public Health Practice	Medical Expert, Scholar	✓	✓	✓				✓	✓	✓	✓					✓	✓	✓
12	Conduct Research and Translate Knowledge into Practice	Medical Expert, Scholar	✓	✓					✓	✓		✓					✓	✓	✓

The competency numbers shown in this table represent a cross-reference between the seven CanMEDS roles and the twelve core competencies of the Competency-Based Framework, allowing this appendix to be interpreted consistently with the “Mapping Competencies to Rotations” table. The assessment methods shown include both formative and summative approaches. A tick indicates that the assessment method may be used, where appropriate, to contribute evidence toward assessment of the corresponding competency; it does not imply that all listed methods must be applied to every trainee or competency. Selection of assessment methods should be based on the nature of the competency, the training context, and the trainee’s stage of progression.

Appendix D: Universal topics distributed over the training years

Training Year	Modules		Topics	
	Number	Name	Number	Name
R1	Module-1	Introduction	Topic-1	Safe drug prescribing
			Topic 2	Hospital-acquired infections
			Topic 4	Antibiotic stewardship
	Module-4	Medical and Surgical Emergencies	Topic-15	Management of acute chest pain
			Topic-16	Management of acute breathlessness
			Topic-17	Management of altered sensorium
			Topic-18	Management of hypotension and hypertension
R2	Module-2	Cancer	Topic-9	Cancer prevention
			Topic-10	Surveillance and follow-up of patients with cancer
	Module-3	Diabetes and Metabolic Disorders	Topic-11	Recognition and management of diabetic emergencies

Training Year	Modules		Topics	
	Number	Name	Number	Name
			Topic-12	Management of diabetic complications
			Topic-13	Comorbidities of obesity
			Topic-14	Abnormal electrocardiogram
R3	Module-6	Frail Older Patients	Topic-27	Assessment of frail older patients
			Topic-28	Mini-mental state examination
			Topic-29	Prescribing drugs for older adults
			Topic-30	Care of older adults
	Module-7	Ethics and Healthcare	Topic-31	Occupational hazards of healthcare workers
			Topic-32	Evidence-based approach to smoking cessation
			Topic-33	Patient advocacy
			Topic-34	Ethical issues: transplantation/organ harvesting, withdrawal of care

Training Year	Modules		Topics	
	Number	Name	Number	Name
			Topic-35	Ethical issues: treatment refusal, patient autonomy
			Topic-36	Role of doctors in death and dying

References:

1. Frank JR, Snell L, Sherbino J, editors. CanMEDS 2015 Physician Competency Framework. Ottawa: Royal College of Physicians and Surgeons of Canada; 2015.
2. Peik SM, Mohan KM, Baba T, Donadel M, Labruto A, Loh LC. Comparison of public health and preventive medicine physician specialty training in six countries: identifying challenges and opportunities. *Med Teach*. 2016;38(11):1146–51.
3. Accreditation Council for Graduate Medical Education. Preventive Medicine – Public Health and General Preventive Medicine Milestones. 2nd revision. Chicago, IL: ACGME; 2022. Available from: <https://www.acgme.org/globalassets/pdfs/milestones/publichealthandgeneralpreventivemedicinemilestones.pdf>
4. Faculty of Public Health. Public Health Specialty Training Curriculum 2022. London: Faculty of Public Health; 2022. Available from: <https://www.fph.org.uk>
5. World Health Organization. Global competency and outcomes framework for the essential public health functions. Geneva: World Health Organization; 2024. Available from: <https://www.who.int/publications/i/item/9789240091214>
6. World Health Organization. Essential public health functions: a guide to map and measure national workforce capacity. Geneva: World Health Organization; 2024. Available from: <https://www.who.int/publications/i/item/9789240090743>
7. Ricketts TC, Porterfield DS, Miller RL, Fraher EP. The supply and distribution of the preventive medicine physician workforce. *J Public Health Manag Pract*. 2021;27(Suppl 3):S116–22.

8. Studer KR, Kesler DO, Mills SL, Badmus OA, Edgar L. Public Health and General Preventive Medicine Residency Milestones 2.0. *Am J Prev Med.* 2023;64(5):765–71.
9. General Authority for Statistics, Kingdom of Saudi Arabia. Saudi Census 2022. Riyadh: GASTAT; 2023. Available from: <https://www.stats.gov.sa>
10. General Authority for Statistics, Kingdom of Saudi Arabia. Population Estimates Publication 2024. Riyadh: GASTAT; 2025. Available from: <https://www.stats.gov.sa>
11. General Authority for Statistics, Kingdom of Saudi Arabia. Healthcare Establishments and Workforce Statistics 2024. Riyadh: GASTAT; 2025. Available from: <https://www.stats.gov.sa>
12. Institute for Health Metrics and Evaluation. Global Burden of Disease Study 2023 (GBD 2023): results tool. Seattle, WA: IHME, University of Washington; 2025. Available from: <https://vizhub.healthdata.org/gbd-results/>
13. Kingdom of Saudi Arabia. Saudi Vision 2030. Riyadh; 2016. Available from: <https://www.vision2030.gov.sa>
14. Ministry of Health, Kingdom of Saudi Arabia. Introductory Guide to the Health Sector Transformation Program. Riyadh: Ministry of Health; 2024. Available from: <https://www.moh.gov.sa/en/Ministry/vro/Pages/manual.aspx>
15. Saudi Commission for Health Specialties. General Regulations for Training in Postgraduate Programs. Riyadh: SCFHS. Available from: <https://www.scfhs.org.sa>
16. Saudi Commission for Health Specialties. Executive Rules for Postgraduate Training (admission and registration; formative assessment and annual promotion; examinations; duty hours and leave; trainees' representation and support). Riyadh: SCFHS. Available from: <https://www.scfhs.org.sa>
17. Saudi Commission for Health Specialties. General Assessment Regulations and Executive Rules for Assessment. Riyadh: SCFHS. Available from: <https://www.scfhs.org.sa>

18. Saudi Commission for Health Specialties. Standard Template for Simulation Curriculum Development of Postgraduate Training Programs. Riyadh: SCFHS; 2020.
19. Miller GE. The assessment of clinical skills/competence/performance. *Acad Med.* 1990;65(9 Suppl):S63–7.
20. Cruess RL, Cruess SR, Steinert Y. Amending Miller’s pyramid to include professional identity formation. *Acad Med.* 2016;91(2):180–5.
21. Cook DA, Hatala R, Brydges R, Zendejas B, Szostek JH, Wang AT, et al. Technology-enhanced simulation for health professions education: a systematic review and meta-analysis. *JAMA.* 2011;306(9):978–88.
22. Elendu C, Amaechi DC, Okatta AU, Amaechi EC, Elendu TC, Ezech CP, et al. The impact of simulation-based training in medical education: a review. *Medicine (Baltimore).* 2024;103(27):e38813.
23. McGaghie WC, Issenberg SB, Petrusa ER, Scalese RJ. A critical review of simulation-based medical education research: 2003–2009. *Med Educ.* 2010;44(1):50–63.

