



Medical Internship Curriculum: Framework for Medical Intern's Competencies

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جامعة الملك سعود بن عبدالعزيز
King Saud bin Abdulaziz University for Health Sciences

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Medical Internship Curriculum: Framework for Medical Intern's Competencies

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Contents

Acknowledgment	5
Introduction	7
Section 1: Medical Internship	9
Section 2: Framework for Medical Intern's Competencies	15
Section 3: Medical Internship Governance	19
Section 4: Microskills	29
Section 5: Objectives	33
Section 6: Basic Procedural Competencies at KSAU-HS	43
Section 7: Medical Internship Competencies	47
Section 8: Assessment	53
References	63



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**INTRAVENOUS ACETAMINOPHEN VS. ORAL
WITH MORPHINE PCA AFTER**

OBJECTIVE:
Compare the effects of iv acetaminophen
those of oral ibuprofen with respect to
operative pain control and morphine
requirements in patients receiving morphine
patient-controlled intravenous analgesia (PCIA) after
cesarean delivery.

METHODS:
Twenty-five term patients were
randomized to receive either
100 mg oral ibuprofen plus oral placebo
every six hours or 100 mg oral
acetaminophen plus 100 mg oral
ibuprofen every six hours. All patients
received morphine bolus
1 mg/kg and no basal morphine.
Pain was assessed using a visual
analogue scale (VAS; 0 to 10) at rest and
at 15, 30, 45, 60, 75, 90, 105, 120, 135, 150, 165, 180, 195, and 210 minutes
postoperatively. A total of 48 hr postoperatively
was recorded on a temperature
chart.



Introduction

Graduating from the medical school is not the end of journey, it is the start of a career. The graduates of King Saud bin Abdulaziz University for Health Sciences (KSAU-HS) should be assured that they have received a high quality medical education and they should look forward to receive some of the best training available in Saudi Arabia at King Abdulaziz Medical Cities during their Medical Internship (MI).

The Framework for Medical Intern's Competency (FMIC) is a guide for the learning and working environment during MI. This is a stepping stone for future residency training. The structured training of the FMIC is supervised and assessed against pre-set competencies. Therefore, it will enhance intern's skills, attitudes, and professional behavior learned through the innovative undergraduate medical program. The FMIC will include key professional skills needed to ensure best and safest patient care through outstanding communications skills, clinical skills, and multi-disciplinary teamwork. The FMIC also introduces a portfolio of achievements that demonstrates the progress in each of these areas. The College of Medicine has overall responsibility for education and training during MI. The Medical Internship Unit (MIU) is responsible for the MI program administratively, whilst the Internship Committee will oversee the various other activities during the year.



Section - 1

Medical Internship

Medical Internship (MI) is a supervised period spent in different specialties, following the completion of graduation requirements from the medical school. During MI, the intern should be an active learner, achieving learning outcomes independently by demonstrating a variety of learning styles. The learner should also fulfill the essential educational components of practice-based experiences, feedback and reflection in practice.^[1] As a future competent physician working in a complex health system, an intern needs exposure to a wide range of medical career options and to develop a variety of professional skills considered essential for working in the health care system.^[2] These innovations have guided the shift of undergraduate medical education from following a set of standards to curricula based on competencies or practice outcomes. Such curricula transform the core abilities of effective practice into educationally useful elements and outcomes.^[3] Moreover, undergraduate medical curricula are recommended to be student-centered, problem-based, integrated, community-based, elective and systematic (SPICES model).^[4]

The increasing awareness of the legal aspects in the field of medicine has added more complexity to clinical practice by emphasizing clinical governance and patient safety in the education system, whether it is in the form of teaching or training.^[5] Subsequently, it has materialized in the globalization of the essential physician's requirements to accomplish competencies in the domains of medical knowledge, clinical skills,

professional attitudes, behavior and ethics (Figure 1).^[6] Another concept that has been introduced in MI is the gradual escalation of responsibilities toward patient care by progressing from the status of supervision to independence.^[7] This can be achieved by spiral approach through revisiting any topic at different levels of difficulties. By progressive learning, the intern competence would be enhanced by revisiting the topic.^[8]

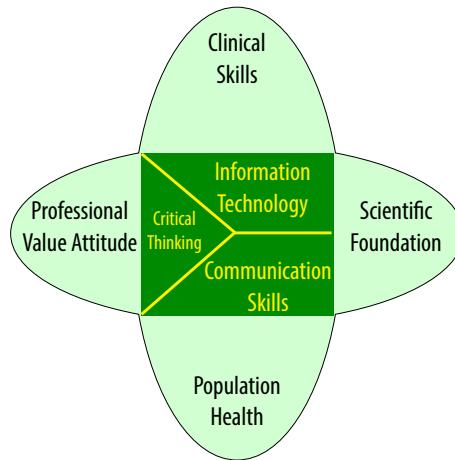


Figure1: Global essential requirements for medical school graduates

In recent years, there has been an evolution towards innovation in MI by introducing new methods and approaches. In North America, MI was embedded in the first year of postgraduate training programs and customized for each specialty training program.^[9,10] During this year, the trainee is to be assessed against competencies that include patient care, medical knowledge, practice-based learning and improvement, interpersonal skills and communication, and professionalism.^[11] In Canada, the Royal Colleges of Physicians has integrated the Canadian Medical Education Directions for Specialists (CanMEDS) in the postgraduate training programs (Box 1).^[12,13]

Box 1: CanMEDS Seven Physician Roles

Medical Experts: Applying medical knowledge, clinical skills, and professional attitudes in the provision of patient-centered care

Communicators: Facilitating effective doctor-patient relationship

Collaborators: Achieves optimal patient care by effective work within a healthcare team

Managers: Participating in healthcare organizations and contributing to the effectiveness of the healthcare system

Health Advocates: Influencing advancement of health and well-being of individual patients, communities, and populations

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

Professionals: Applying ethical practice, profession-led regulation, and high personal standards of behavior.

In 2005, a two-year Foundation Program (Box 2) was introduced in the United Kingdom to overcome concerns about the quality of training during MI.^[14] This program ensures that new graduates are equipped with skills, attitudes, and aptitudes early in their future career.^[15] The program contains assessment tools including an educational portfolio reflecting their competencies and practice. In Australia, a framework has been created for junior doctors (Box 3) in a program that can span up to 3 years.^[16] Both programs focus on clinical management, communication, professionalism and medical practice.

Box 2: The Competencies in the Foundation Program of the UK

- 1. Good clinical care:**
 - History taking and physical examination
 - Safe prescription and keeping relevant medical record
 - Time management and organized decision-making
 - Good quality care and promotion of patient safety
 - Reduce risk of cross infection
 - Clinical Governance and quality improvement
 - Basic nutritional care
 - Patient education
 - Ethical and legal aspects in general practice
- 2. Good medical practice**
 - Self-directed life-long learning
 - Use evidence and guidelines that will benefit patient care
 - Use audit to improve patient care
- 3. Teaching and Training**
- 4. Good communication**
- 5. Teamwork within the clinical team and medical context**
- 6. Professional behavior and probity**
- 7. Core skills in acute care**

Box 3: Australian Curriculum Framework for Junior Doctors

- 1. Clinical Management**
 - Safe patient care
 - Patients assessment
 - Emergencies
 - Patient management
 - List of common conditions
 - Skills and procedures
- 2. Communication**
 - Patient interaction
 - Managing information
 - Skills and procedures
- 3. Professionalism**
 - Doctor and Society
 - Professional and behavior
 - Teaching and learning

These innovations have created challenges in countries that adopted a traditional one year MI. With the establishment of new medical schools in the Kingdom of Saudi Arabia, a variety of innovative curricula have been adopted by these schools.^[17,18] Nevertheless, medical interns are expected to provide service in the expanse of competencies and outcomes based educational programs. Therefore, the FMIC has been designed to be dynamic and responsive to changes in the needs of the Medical Intern and health care practice and services. It articulates with undergraduate teaching and postgraduate training and is flexible so that it can be used in different placements. The FMIC has been developed to be used as a learning tool for the fair assessment of capabilities achieved and readiness for further training. This document describes the MI curriculum at the College of Medicine at King Saud bin Abdulaziz University for Health Sciences (KSAU-HS).





Section - 2

Framework for Medical Intern's Competencies

The FMIC aims to ensure high quality and effective learning and training of medical interns during MI period through an innovative competency and performance based curriculum. Upon completion of MI, a medical intern will be able to recognize and deal successfully with common clinical and related non-clinical scenarios. The FMIC also includes aspects of supervision, organization, assessment and feedback. It outlines the knowledge, skills and attitude that are required by interns to deliver safe patient care and provides an educational template identifying the core competencies and outcome expected at the end of MI. This framework is based on the aforementioned Australian curriculum framework for Junior Doctor, The Rough Guide for the Foundation Program of the UK, CanMEDS, and the global essential requirements in medical education.^[12,14,16]

The Framework for Medical Intern's Competencies will assist educators and clinical supervisors in providing a structured and well planned program of education for medical interns. It assesses intern's development in learning and training and plans their professional development (Box 4). The FMIC is considered a continuum of the undergraduate SPICES model, built around the domains of:

- *Clinical management*: by applying medical knowledge, clinical skills and professional attitudes in the provision of patient-centered care.
- *Medical practice*: by effectively participating in healthcare, demonstrating a commitment towards well-being of individual patients, communities and

populations and demonstrating a lifelong interest in reflective learning with appropriate application of medical knowledge.

- *Professionalism*: by applying ethical practice, profession led regulations and high personal standards of behavior.
- *Communication skills*: by facilitating effective doctor-patient relationship and achieving optimal patient care by effective work within a healthcare team.

Box 4: The Domains of the FMIC

- Clinical management
- Medical practice
- Professionalism
- Communication skills

Core Values

The Framework for Medical Intern's Competencies has the following core values:

- *Comprehensive approach for health care, disease prevention, early diagnosis, treatment and rehabilitation. This includes the psychosocial and economic status of the patient.*
- *Effective methods of professionalism and communication and clinical governance.*
- *Innovative tools of adult learning where the learner has an active role in the learning process.*
- *Enhancement of the intern's ability to apply effective feedback.*

Learning Outcomes

At the end of Medical Internship, a medical intern is able to:

- *Diagnose and manage diseases by applying the basic medical and clinical sciences effectively in practice.*
- *Provide comprehensive management that includes health care and disease prevention.*
- *Demonstrate effective role as a team member and apply the principles of multi-disciplinary approach.*
- *Know when to ask for opinion from clinical supervisors and senior colleagues.*
- *Deal professionally with the patient and family.*
- *Apply effective tools in communication, presentation and leadership.*
- *Apply the principles of clinical governance.*
- *Demonstrate life-long commitment toward continuing medical education.*





Dr. Ali Al Dhaher
President of the Board of Directors
of the Ministry of Health

Dr. Mohammed Al Sultan
Minister of Health

B

Section - 3

Medical Internship Governance

Medical internship (MI) is governed by the **Medical Internship Unit** (MIU) under the umbrella of Clinical Affairs, College of Medicine, KSAU-HS. The Director of MIU is the chairperson of **Medical Internship Program Committee**. The MIU governs MI based on the following charges:

- *Runs administrative affairs related to medical internship program.*
- *Deals with issues related to interns.*
- *Prepares an ideal training and learning environment.*
- *Conducts educational activities to enhance intern's skills.*
- *Promotes research related to medical internship.*
- *Ensures the implementation of the FMIC.*
- *Orients medical intern for future carrer choices and opportunities.*

Role of Placement Coordinator

In each specialty, a placement coordinator will report to the Director of the MIU. The supervisor of each specialty is expected to:

- *Be approachable and easily accessible to medical interns assigned in the placement and to establish a healthy rapport.*
- *Be a good communicator and advocate intern's training.*
- *Provide counseling and advice for the medical intern in relation to career planning and dealing with work pressures.*
- *Be interested in education and enthusiastic about teaching.*

- *Be able to deal effectively with other staff and specialists that the intern will need to deal with.*
- *Be a good role model and demonstrate commitment to the development of the profession.*

The placement coordinator is encouraged to receive feedback from rotating medical interns on the following aspects:

- *The range and effectiveness of teaching methods.*
- *The usefulness and effectiveness of teaching and clinical support provided.*
- *The degree of collaboration with the supervisor in planning learning outcomes and program of supervision.*
- *The degree of support in the provision of information on further training opportunities.*
- *The degree of support on addressing performance issues and conflict resolution.*

Role of Clinical Supervisor

Clinical supervisor is defined as a clinician in the teaching hospitals who has been given the responsibility to organize and supervise the training of medical interns. He serves a liaison role between junior doctors, administration and senior colleagues. The position of the clinical supervisor is seen as a key component in the training structure of medical interns and requires a senior clinician with special skills as a teacher, innovator, adviser and diplomat.

The role of a clinical supervisor in clinical teaching includes a range of responsibilities such as direct observation, discussions on clinical problems and interesting cases, joint

consultations, formal teaching on specific topics, demonstrations and participation in clinical procedures. Small group discussions with other members of the practice might be sometimes employed. The clinical supervisor should discuss overall education with the intern, as well as perceptions of clinical strengths and weaknesses. Discussions with the medical intern must be based on the principles of constructive feedback. This will include frank discussion on progress-to-date and possible variation of the program to meet new needs as they arise.

The supervisor is required to offer support to the intern in the following aspects:

1. Provide orientation to the practice ensuring that the intern is:
 - *Introduced to all members of staff and the stage of training and responsibilities of the intern is known by all.*
 - *Be aware of the location of educational resources.*
2. Provide supervision to the medical intern at a level appropriate to their level of training as indicated below:
 - *Medical intern should not take the principal responsibility of individual patient.*
 - *The clinical supervisor or the designee must be physically present in the workplace at all times whilst the intern is providing clinical care.*
 - *If the supervisor is absent from the medical practice, his/her duties should be delegated to a colleague after coordinating with the coordinator.*
3. The Clinical Supervisor will provide professional education and clinical training of interns including ethical issues, career guidance, self education, etc.

Intern's Responsibilities and Rights

Medical Intern is responsible for their learning, assessment and attendance at structured learning sessions in their placements. They will maintain an up-to-date portfolio. Each activity is an opportunity to learn something new such as a competency or a clinical skill. Some competencies can be learned from nurses or other health care workers. The precise arrangements and responsibilities will vary by specialties. There will be emphasis on gradual increasing responsibilities for patient care that facilitates the progress from being supervised to independence.

During MI, each intern is expected to:

- *Be a professional and effective team member.*
- *Provide safe patient care.*
- *Conduct a history and perform a physical examination.*
- *Prepare a list of differential diagnoses, working diagnoses, appropriate investigations, and a management plan.*
- *Seek approval from the clinical supervisor prior to executing the management plan.*
- *Follow and document the management plan, results of investigations, and any changes in the patient's condition.*
- *Adhere to the rules and regulations of the assigned department.*
- *Apply modern methods of teaching e.g. Microskills.^[19]*

Medical Intern rights include:

- *Training under the supervision of a faculty staff.*
- *Availability of a rich training and academic environment.*
- *Receiving proper and professional treatment.*
- *Enjoying leaves as per College of Medicine policy and procedures.*
- *Awareness of assessment and evaluation in different placements.*
- *Any dispute should be brought to the attention of the placement supervisor or Director of MIU.*

Applying to Medical Internship

During the clinical clerkship (clinical years of the curriculum), each medical intern will be requested to apply in order to start MI. Completion of all graduation requirements is a pre-requisite for MI. Placement will start at the beginning of a Gregorian month. Two-month placements will commence on the odd months of MI (1, 3, 5, 7, 9 and 11). Once the rotations are officially released, no changes will be allowed unless the clinical supervisors of the two-month placements agree. Once MI is successfully completed, a graduation certificate will be released.

To ensure high quality training and proper supervision, medical interns are encouraged to spend the training at teaching facility of the university. The assignments of placements will depend on the latest available cumulative GPA to ensure fair distribution. The placements during MI includes:

- *Medicine* *2 months*
- *Surgery* *2 months*

- *Obstetrics and Gynecology* 2 months
- *Pediatrics* 2 months
- *Emergency Medicine* 1 month
- *Family Medicine* 1 month
- *Psychiatry* 1 month
- *Elective* 1 month

(Request for elective placement should be submitted at least two months in advance)

Starting Medical Internship

Before the commencement of the first placement, there will be an orientation course for the MI program. This will include information about the hospital, timetable and further information. Any delay or interruption of MI will be subject to the College of Medicine policy and procedures.

A typical orientation day would include:

- *Introduction to Internship that includes educational needs and requirements, appraisal methods, counseling, duties and responsibilities, support services, medical ethics and medico-legal issues.*
- *Overview of the FMIC, including Assessment in MI and Educational Portfolio*
- *Safe Patient Practice*
- *Medication Safety*
- *Electronic medical records, Quadramed Computerized Patient Record (QCPR)*
- *Radiology system, Picture Archiving Communication System (PACS)*
- *Infection Prevention & Control*

Completing Medical Internship program

At the end of MI, the intern will be issued **Medical Internship Completion Certificate**. Based on this certificate, the Medical Intern will be eligible to receive the M.B.B.S certificate. The following should be available prior to issuing MI completion certificate:

- *All end of placement "Intern Competency Assessment" forms*
- *Complete portfolio*
- *Complete separation clearance*

Leaves during Medical Internship

Medical Intern is entitled for the following leaves, per the College of Medicine policy and procedures:

1. Annual leave (AL)

Medical intern is entitled to 20 days annual leave divided as follows:

- *Routine annual leave – 15 days*

Annual leave must be submitted at least 30 days ahead of requested dates; the Medical intern is not allowed to apply for more than 5 days in one placement. Only one annual leave request is permitted per placement. Annual leave days must be taken continuously (i.e. requesting one or two days is prohibited). A Travel & Request Authorization (TRA) should be signed and approved by the Undergraduate Education Director (UCE) Co-Director and the MI Director. No TRAs will be approved if submitted to Internship Unit after the 25th of the preceding month of the requested dates.

- ***Urgent leave – 5 days***

This type of leave is limited for urgent and justifiable reasons. These days can be used at any time. UL requires approval of UCE Co-Director (should not interfere with on-call duties) and Internship Unit Director. The medical intern is not allowed to take more than 2 days per placement. Unused urgent leave can be used as Annual Leave in the last 2 months of internship year.

2. Eid Holiday - 5 days

The Medical Intern is entitled to 5 working days during either Ramadan or Hajj holiday as per the hospital calendar. If the medical intern was not able to use the Ramadan or Hajj holiday and he/she was obliged to report for work, he/she will be compensated as long as there is a letter of justification coming from the placement concerned. If the Medical intern is working in a department, he/she is obliged to take Ramadan or Hajj holiday. The medical intern must complete a TRA for record purposes.

3. National Day - 1 day

23 September is the Saudi Arabia National Day. The holiday is declared by the government and according to hospital policy.

4. Educational Leave - 7 days

The Medical intern is entitled to 2 educational leaves per rotation. A TRA should be submitted at least 30 days in advance of the requested dates, along with proof of registration, including payment receipt, a commercial brochure, program, poster

or advertisement. A copy of a Certificate of Attendance must be submitted to the MIU within one week of returning from the EL. Failure to submit the Certificate will result in a deduction of the leave days from annual leave.

5. Maternity and sick leaves will be compensated after the end of the Internship.

6. A TRA must be completed and submitted for the approval of UCE Co-Director and MI Director for any type of leave.

7. Any leave that exceeds 50% of the working days of any placement will necessitate the placement to be repeated or compensated based on the combined decisions of UCE Co-Director and Internship Unit Director.

8. The medical intern is not allowed to take more than 2 types of leave in the same placement to a maximum of 7 working days.

9. Sick leave

- **If sickness/illness occurred during working hours**, *he/she should go to the Employee Health Clinic. A TRA must be completed and submitted with the attached sick leave report for the approval of UCE Co-Director and submitted to the Internship Unit thereafter.*
- **If sickness/illness occurred after working hours**, *he/she should go to the Emergency Department. A TRA must be completed and submitted with the attached sick leave report, for the approval of UCE Co-Director and submitted to the Internship Unit thereafter.*

- *A sick leave report coming from a private hospital will be subject to the rules and regulations of the college.*

10. Any non-approved absences from the program will be subjected to disciplinary actions. Any non-approved on-call absences will be subjected to the repetition of placement/rotation.



Section - 4

Microskills

In a busy clinical setting, microskills enable clinical teachers to effectively assess, instruct and give feedback more efficiently. Microskills are used when the clinical teacher knows something about the case and the learner needs or wants to know (Box 5). The clinical teacher plays several roles that include being an expert in the field, being a problem solver and being a one-minute Preceptor.^[20]

Box 5: Steps for Microskills

1. Get commitment
2. Probe for supporting evidence
3. Teach general rules
4. Tell them what they did right
5. Correct mistakes

Microskills 1. Get Commitment

Rationale: The initial step to diagnose learning needs is by asking the learner how to interpret the data. This will direct the learning process toward problem solving and create a collaborative model toward patient care between the clinical teacher and the learner.

Process: After a learner presents certain aspects of a clinical case to a clinical teacher,

the learner will be asked first about his/her opinion concerning those clinical aspects and to formulate a hypotheses and triggers for further discussion.

Microskills 2. Probe For Supporting Evidence

Rationale: After interpreting the learning data (e.g. clinical scenario or data interpretation), the learner proceed with problem solving, based on his/her prior knowledge and experience. This step will allow the clinical teacher to identify areas of strengths and gaps in knowledge, skills and behavior.

Process: The learner will expect clinical teacher opinion after he/she has presented the hypothesis of the presented problem. The clinical teacher will ask the learner for evidence that supports the presented hypothesis and to think about alternatives.

Microskills 3. Teach General Rules

Rationale: Offering information and concepts as general rules or approaches is more acceptable to the learner. A direct insult to the hypotheses and presentations of the learner will affect his/her interest in learning.

Process: The clinical teacher will identify learning aspects based on the learner's presentation and hypothesis. The learner will receive general knowledge and concepts from the clinical teacher. The learner will be open to this approach rather than passive learning.

Microskills 4. Tell Them What They Did Right

Rationale: By reinforcing the satisfactory response of the learner, the clinical teacher

will enhance his/her skills and competencies.

Process: A satisfactory response from the learner, in an effective manner, will lead to a positive impact on patient care. The clinical teacher needs to reflect this in the feedback to the learner.

Microskills 5. Correct Mistakes

Rationale: The learner should have an opportunity to discuss what the mistake was and what could be done differently to avoid it in the future. This will allow the clinical teacher to better assess both the learner's knowledge and standards of practice. The learner will avoid making the same mistake when he/she is made aware of it.

Process: When a clinical teacher identifies that the learner has made a mistake, the learner should recognize its impact on patient care and the health system. The clinical teacher should find a suitable time to allow the learner to critique the action taken. The clinical teacher should then explain to the learner what went wrong and how to avoid it in the future.





Section - 5

Objectives

Internal Medicine

At the completion of this placement, the medical intern will be able to:

- Undertake a competent clinical assessment of a patient with an undifferentiated presentation of common medical conditions.
- Have a systematic approach to the evaluation of a patient with multi-system illnesses, including the ability to prioritize the different problems present.
- Be familiar with the diagnostic patterns used in the evaluation of patients with common medical conditions.
- Be familiar with common medical emergencies and trauma.
- Complete Basic Life Support (BLS) and preferably Advanced Cardiac Life Support (ACLS).
- Order and interpret the results of the main tests relevant to the investigation of the presentation of common medical problems.
- Make recommendations for the initial phases of management of common medical conditions.
- Maintain comprehensive records of care provided to patients, including regular updates.
- Demonstrate the ability to maintain a professional relationship with patients during the course of their illness, including the provision of full explanation and support to both patients and their families or care providers.
- Demonstrate the ability to obtain informed consent for invasive procedures.

Surgery

At the completion of this placement, the medical intern will be able to:

- Undertake a competent clinical assessment of a patient with an undifferentiated presentation of common surgical conditions, including conditions related to the breast, neck, abdomen, testis, joints and bone, brain and spine etc.
- Be familiar with common surgical emergencies and trauma.
- Complete Basic Life Support (BLS) and preferably Advanced Trauma Life Support (ATLS).
- Have a systematic approach to the evaluation of a patient with multi-system illnesses, including the ability to prioritize the different problems present.
- Understand the management and possible complications, including hernia, testicular problems, common endocrine conditions, breast, and common surgical emergencies.
- Evaluate common co-morbid conditions in patients with a surgical condition, including diabetes mellitus, hypertension, asthma.
- Be familiar with the diagnostic patterns used in the evaluation of patients with common surgical conditions.
- Order and interpret the results of the main tests relevant to the investigation of the presentation of common surgical problems.
- Make recommendations for the initial phases of management of common surgical conditions.
- Maintain comprehensive records of care provided to patients, including regular updates.

- Demonstrate the ability to maintain a professional relationship with patients during the course of their illness, including the provision of full explanation and support to both patients and their families or care providers.
- Demonstrate the ability to obtain informed consent for invasive procedures.

Obstetrics and Gynecology

At the completion of this placement, the medical intern should be able to:

- Undertake a competent clinical assessment of a patient with an undifferentiated presentation of common obstetrical and gynecological conditions, including pregnant women, menstrual history etc.
- Demonstrate sensitive communication with female patients.
- Be familiar with common surgical emergencies and trauma.
- Complete Basic Life Support (BLS) and preferably Advanced Trauma Life Support (ATLS).
- Have a systematic approach to the evaluation of a patient with multi-system illnesses, including the ability to prioritize the different problems present.
- Acquire knowledge and skills of a woman in labor and delivery.
- Acquire skills to assess fetal well-being.
- Demonstrate ability to use Pinard stethoscope and take CTG.
- Understand the management and possible complications, including abnormal labor and delivery, abnormal postnatal care, vaginal bleeding, incontinence and prolapse, treatment of infections.
- Evaluate common co-morbid conditions in patient with a pregnancy condition, including diabetes mellitus, hypertension, asthma.
- Be familiar with the diagnostic patterns used in the evaluation of patients

with common obstetrical and gynecological conditions, including urinary pregnancy test, quantitative HCG assessment, routine antenatal screening investigations, use of ultrasound techniques, abnormal CTG traces, Pap Smear.

- Make recommendations for the initial phases of management of common obstetrical and gynecological conditions.
- Maintain comprehensive records of care provided to patients, including regular updates.
- Demonstrate the ability to maintain a professional relationship with patients during the course of their illness, including the provision of full explanation and support to both patients and their families or care providers.
- Demonstrate the ability to obtain informed consent for invasive procedures.

Pediatrics

At the completion of this placement, the Medical Intern will be able to:

- Obtain a full history and perform physical examination for a pre-school and school-aged child.
- Obtain a full history and perform physical examination for an adolescent.
- Seek further relevant information related to differential diagnosis.
- Demonstrate awareness of issues in examination of child and adolescent at risk.
- Take a child's temperature and record on chart demonstrating correct use of different methods/sites.
- Perform ear examination using the otoscope.

- Measure blood pressure (including use of non-electronic sphygmomanometer) and plot on chart for infant and older child.
- Perform urinalysis.
- Measure and plot on chart head circumference, weight and height for an infant, older child and adolescent
- Measure blood glucose using a glucometer demonstrating correct use of stylet.
- Observe and assess on performing lumbar puncture.
- Measure peak expiratory flow and understand principles of spirometry.
- Collect specimens for microbiological examination such as urine, throat swabs, nasopharyngeal aspirates and skin swabs.
- Interpret results of full blood count and blood film.
- Interpret results of blood biochemistry report.
- Interpret results of arterial blood gas report recognizing normal and abnormal findings.
- Interpret microbiological analyses of specimens of urine, blood, stool, sputum, nasopharyngeal aspirate and cerebrospinal fluid.
- Interpret and discuss plain x-rays of the chest, abdomen, skull and musculoskeletal system in a child.
- Acquire the basic knowledge in the management and therapies of common general pediatric problems and of the different subspecialties.
- Calculate and chart a pediatric drug dosage correctly using weight or surface area. Recognize and use sources of recommended dosages and chart correctly.

- Instruct a child and/or parent in the use of a variety of age appropriate devices for asthma medication delivery, demonstrating knowledge of medication appropriate devices, conveyed in appropriate language to parent/caregiver and child.
- Convey information about investigations required and investigation results in appropriate language and with accuracy based on evidence and verify patient/parents/caregiver understanding.
- Convey information to parents about immunization schedule, indications and contraindications.
- Perform routine immunization confirming appropriate site, equipment and technique.
- Perform Pediatrics Advanced Life Resuscitation (PALS) in children of all ages.
- Provide information to parents and caregivers of chronically ill and disabled children.
- Provide explanations of common conditions to parents and children such as asthma, croup, gastro intestinal illness, febrile seizures, otitis media and upper respiratory tract infections.
- Demonstrate ability to communicate effectively and accurately regarding ongoing care, management plans and responsibilities.
- Understand responsibilities regarding notification of children at risk.
- Demonstrate awareness of the issues in ongoing care for children of families living in rural and regional areas and the medical management difficulties for these families.

Emergency Medicine

At the completion of this placement, the medical intern will be able to:

- Recognize critically ill patients (impending or actual circulatory, respiratory and renal failure and situations that are likely to lead to them).
- Initiate immediate management as needed.
- Assess the trauma patient.
- Understand the disturbed physiology reflected in critical care situations.
- Demonstrate the ability to recognize and assess acutely ill patients, arrange appropriate urgent investigations and initiate immediate management.
- Understand the principles of triage.
- Understand indications for change to a palliative approach to management.
- Be able to participate in more advanced life support.
- Be able to practice safe airway management and to have skills for basic CPR, such as secure a patent airway, apply oxygen therapy, conduct external cardiac massage, bag valve mask ventilation, conduct defibrillation and identify conditions requiring urgent referral.
- Assess patients with potential threat to airway, ventilation or circulation.
- Gain an understanding of the common medical surgical emergencies and the approach to these patients.
- Interpret basic clinical investigations in their clinical context such as cervical spine x-ray, ECG, chest x-ray, arterial blood gases.
- Understand the importance of working in a multi-disciplinary team in the Emergency Department.
- Recognize which illnesses require/do not require hospital admission for either

therapy or investigation.

- Know the immediate management of life threatening illnesses.
- Communicate bad news to patients and relatives.
- Demonstrate strategies for dealing with uncooperative patients and relatives.
- Be familiar with information systems used in the Emergency Department.
- Understand the importance of time management.
- Prioritize issues when dealing with patients in the Emergency Department.
- Be familiar with common Procedural Skills: airway management, chest tube insertion, BLS, ACLS, and PALS management, venepuncture and venous cannulation, blood gas collection, urinary catheterization, suturing, application of Plaster of Paris.

Psychiatry

At the completion of this placement, the medical intern will be able to:

- Discuss the etiology, epidemiology and prognosis of key disorders in each of the diagnostic categories.
- Outline the clinical manifestations and natural history of key disorders in each of the diagnostic categories and utilize this knowledge to make diagnoses on the basis of history and examination.
- Discuss underlying mechanisms of action of biological and psychosocial treatments for key disorders.

Choose and interpret standard investigations used when investigating or monitoring psychiatric disorders and their treatment. Formulate a management plan for key disorders in each of the diagnostic categories encompassing

relevant biological treatments (medication and electroconvulsive therapy), psychological treatments (e.g. behavioral therapy, cognitive behavioral therapy, supportive therapy, family therapy) and social interventions.

- Describe and manage likely side effects and interactions of these treatments.
- Discuss the role of the multidisciplinary team in the care of people with a mental illness and integrate this into the care of a patient.





Section – 6

Basic Procedural Competencies at KSAU-HS

Medical intern will be able to provide safe treatment to patients through competently performing certain procedural and/or assessment skills. Some may only be possible under supervision. The intern is recommended to be competent in the following procedures in each specialty:

1. Basic Procedural Competencies in Medicine Specialty:

Interpret common abnormalities of ECG.

- *Interpret common chest x-rays abnormalities.*
- *Use ophthalmoscope.*
- *Perform arterial and venous blood withdrawal.*
- *Set up and administer oxygen to a patient.*
- *Perform urinary catheterization.*
- *Insert Nasogastric tube.*
- *Perform Peak flow-meter.*
- *Perform Pulse Oximetry measurement.*
- *Perform blood sugar measurement.*

2. Basic Procedural Competencies in Surgery Specialty:

- *Perform the techniques of surgical scrubbing.*
- *Perform arterial and venous blood withdrawal.*
- *Interpret common abdomen x-rays abnormalities.*

- *Interpret common cervical spine x-rays abnormalities.*
- *Set up and administer oxygen to a patient.*
- *Perform urinary catheterization.*
- *Insert Nasogastric tube.*
- *Perform suturing of minor wounds and removal of sutures.*
- *Assist in applying a plaster of pare cast.*
- *Examine the ear using an Otoscope.*

3. Basic Procedural Competencies in Pediatrics Specialty:

- *Perform ear examination using the Otoscope.*
- *Assist in performing lumbar puncture.*
- *Perform arterial and venous blood withdrawal.*
- *Assist in performing PALS in children of all ages.*
- *Perform suturing of minor wounds and removal of sutures.*
- *Assist in inserting Foley catheter.*
- *Assist in inserting Nasogastric catheter.*

4. Basic Procedural Competencies in Obstetrics and Gynecology Specialty:

- *Perform Fundal height assessment.*
- *Perform Fetal heart sound detection.*
- *Apply and interpret CTG tracing.*
- *Assist in low risk normal vaginal delivery.*
- *Assist in episiotomy performance and suturing.*
- *Perform speculum examination.*
- *Assign neonatal APGAR score.*

5. Basic Procedural Competencies in Emergency Medicine Specialty:

- *Perform local anesthetics.*
- *Set up and administer oxygen to a patient.*
- *Perform nebuliser/inhaler therapy.*
- *Assess level of consciousness using Glasgow Coma Score.*
- *Perform neck stiffness testing.*
- *Identify focal neurological sign identification.*
- *Assist in conduction of ACLS, PALS, ATLS.*
- *Assist in performing intubation.*
- *Assist in performing chest tube insertion.*
- *Assist in transporting sick children.*
- *Identify indications for urgent CT-Scan in trauma, headache and impaired consciousness.*

6. Basic Procedural Competencies in Psychiatry Specialty:

- *Perform mini-mental state examination.*
- *Perform psychiatric Mental State Examination.*
- *Perform suicide risk assessment.*
- *Perform alcohol withdrawal scale use.*
- *Application of Psychiatric Schedule.*
- *Identify overdose syndromes.*
- *Identify drug intoxication and use.*

Section - 7

Medical Internship Competencies

Assessment during MI will cover knowledge, attitudes, behaviors, skills in different domains. Medical interns are encouraged to learn as much as they can. However, they are not expected to be exposed to all the skills and procedures listed in the FMIC.

I- Clinical Management

Medical interns are expected to appropriately assess patients presenting with common, important conditions, including the accurate identification of symptoms, signs and/or problems and their differential diagnosis and then use that information to further manage the patient, consistent with their level of responsibility. Interns are expected to deal with the undifferentiated problems and specific conditions, and seek help where they recognize they have insufficient knowledge or skills to deal with the problem or condition (Box 11). The clinical management domain will cover the following competencies:

1. Acquire relevant clinical knowledge.
2. To be able to:
 - Take history and perform physical examination.
 - Construct differential diagnosis.
 - Plan investigations and management
 - Prescribe medications safely.
 - Keep an accurate and relevant medical record.
 - Apply SOAP approach (Subjective, Objective, Assessment and Plan) in

follow-up of patients.

- Maintain Medical records

3. Acquire core skills in acute care.

Box 11: Common problems and conditions recommended for Medical Interns

- Acute asthma
- Acute cough
- Abdominal pain
- Anaphylaxis
- Bleeding in the 1st trimester
- Breathlessness
- Cardiac Arrhythmias
- Chest pain
- Child Abuse
- Chronic cough
- Chronic Obstructive Pulmonary Disease
- Coma
- Constipation
- Delirium
- Dementia
- Depression and anxiety
- Diabetes: new cases and complications

- Diarrhea
- Domestic Violence
- Envenomation
- Falls, especially in the elderly
- Gastrointestinal bleeding
- Headache
- Heart failure
- Hypertension
- Ischaemic heart disease
- Injury
- Liver disease
- Loss of consciousness
- Minor trauma
- Non-specific febrile illness
- Pain - acute and chronic
- Palliative Care
- Patient transfer
- Respiratory infections
- Poisoning

- Post Operative Care
- Monitoring vital signs
- Fluid balance
- Pain relief
- Psychosis
- Urinary Tract Infections
- Reduced Urinary Output
- Rehabilitation
- Renal failure
- Septicaemia
- Sexually Transmitted Infections
- Stroke/TIA
- Subarachnoid haemorrhage
- Tiredness/Anaemia
- Upper airway obstruction
- Urinary Incontinence
- Urinary symptoms
- Weight gain
- Weight loss

II- Medical Practice:

Medical interns are expected to understand and be involved in continuous quality improvement as it relates to the enhancement of patient care, safety and management. They will demonstrate the knowledge, skills, attitudes and competencies needed:

1. To start self-directed life-long learning.
2. To use evidence and guidelines that will benefit patient care.
3. To undertake a role in teaching and presentation
4. To educate patients effectively about:
 - Health care and disease prevention, investigations and therapy.
 - Lifestyle modification related to environmental and biological factors.
 - Smoking and alcohol.
5. To be available and accessible.
6. To maintain evidence of punctuality.

III- Professionalism

Medical interns are expected to reflect and maintain a level of behavior that is appropriate with the community standard of the medical profession. Medical interns are expected to involve themselves in activities that promote the continuation of education and learning throughout their working life and contribute to patient education. Medical Interns are expected to understand the doctors' role within the context of the health care system and the community. This domain will cover the following competencies:

1. Demonstrate appropriate time management and decision-making.

2. Understanding the principles of clinical governance.
3. Ensure and promote patient safety:
 - Practice patient-centered care.
 - Make patient safety a priority in clinical practice.
 - Understand the importance of good team work for patient safety.
 - Understand the principles of quality and safety improvement.
 - Understand the needs of patients who have been subjected to medical harm or errors.
4. Apply principles of infection control.
5. Understand the principles related to ethical and legal issues:
 - Medical ethical principles.
 - Confidentiality.
 - Informed consent.
 - Legal framework of medical practice.
6. Maintain educational portfolio to reflect personal professional development.

IV- Communications skills

Medical Interns are expected to communicate with patients and involve them in the provision of health care in an effective manner to ensure they are treated with respect and dignity. Interns are expected to understand and be capable of managing the duties expected of him/her as a team member, understand the roles and duties of others and to anticipate, recognize and manage conflict. This domain will cover the following competencies:

1. Maintain professional practice and Patient-Doctor relations in different circumstances e.g., consultation, breaking bad news, complaints.

2. Be an effective teamwork player within the clinical team by communicating professionally with colleagues with respect to chain of command and teamwork and interface with different specialties, and with other professionals.

V- Acute Care

Medical Interns are expected to recognize critically ill patients and initiate immediate management as needed. They will be required to take part in life support, be competent to participate with a resuscitation team under supervision and be able to contribute to discussion and decisions regarding resuscitation of patients. The domain of acute care will cover the following competencies:

1. Acquire core skills in relation to acute illness
2. Assessment and management of acutely ill patient.
 - Management of fluid safely in acute patients.
 - Reassessment of ill patients after initiation of treatment.
 - Request senior or more experienced help when appropriate.
 - Uses common analgesic drugs safely and effectively.
 - Management of a patient following self-harm.
 - Ensures safe continuing care of patients on handover between shifts, on-call staff or with “hospital at night” team by meticulous attention to detail and reflection on performance.
 - Recognize advanced life support with confidence to initiate resuscitation till a more senior colleague arrives.
3. Provide comprehensive care from the point of admission and taking into account the effects of any chronic disease.



Section - 8

Assessment

The medical intern will be assessed with multiple tools against standards of competencies at a level of a first year resident in any specialty. The assessment underpinning FMIC are clinically oriented, directly observed, and work based.^[21] There will be a set of generic competencies applied for all placements. Twenty competencies in four domains are identified. The score will range from 1–10 with a total score of 100. The four domains are clinical management, medical practice, professionalism, communication skills (Box 6). Each medical intern should review his/her assessment form and sign it. Signing this form indicates that the intern is informed but does not necessarily mean that they agree with the assessment. A score of less than 60% indicates that the performance is below average. The director of the MIU may advise to repeat the rotation or part of it after conducting appropriate consultations. Any disciplinary action or grievance should be submitted to the Director of MIU where it will be discussed in the MI Committee. This will follow the College of Medicine policy and procedures for MI program.

Box 6: General Pre-set Competencies in the FMIC

1- Clinical Management

- Acquires clinical knowledge
- Takes History and perform Physical Examination
- Constructs differential diagnosis
- Plans appropriate investigation and management
- Applies SOAP in follow-up of patients
- Maintains quality medical records
- Recognizes and assesses acutely ill patients

2- Medical Practice

- Demonstrates evidence of self-learning
- Gives comprehensive case presentation
- Provides appropriate patient instructions
- Maintains regular attendance
- Demonstrates required technical skills

3- Professionalism

- Manages time appropriately
- Practices the principles of patient safety
- Applies principles of medical ethics
- Demonstrates self-confidence
- Acknowledges own limitations and seeks assistance

4- Communication Skills

- Maintains professional practice
- Communicates well with patient and/or family
- Communicates effectively with the team and others

The collection of evidence during the MI will be in the form of an **Educational Portfolio**. The portfolio and its components represent a higher level of assessment of clinical competencies as represented in Miller's triangle (Figure 8-1).^[22] Maintaining up-to-date portfolio will allow optimum assessment in each student.

The final score during MIP will be weighted based on the duration of each placement:

- Medicine 16%
- Surgery 16%
- Obstetrics and Gynecology 16%
- Pediatrics 16%
- Emergency Medicine 8%
- Family Medicine 8%
- Psychiatry 8%
- Elective 4%
- Review of portfolio 8%

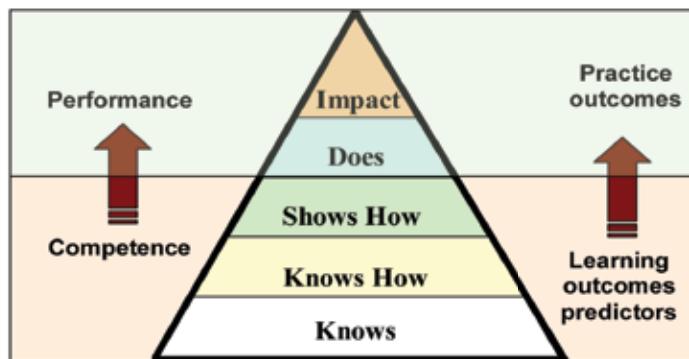


Figure 8-1 : Modified Miller's triangle for clinical competence
 Conceptual relation assessment of competence and performance
With special Thanks to Prof. Hosam Handy

Educational Portfolio

The educational portfolio reflects performance, assesses clinical competencies, and professional development.^[23] It contains a collection of reflective statements with self-appraisal, mandatory formative assessment (MFA), evidence of summative assessment and achievements that reflect the clinical experiences and new competencies acquired by the intern during MI (Box 7). Educational portfolio will be gradually built throughout MI to reflect the acquired clinical experiences and new competencies. At the end of each placement, intern will show evidence of **mandatory formative assessment**.

In addition to the MFA, the portfolio will also include any record of achievements throughout MI. It may also include evidence of these achievements e.g. summary of presentations, summary of procedures, presented research, etc. It is the intern's responsibility to keep it up to date. The medical intern is responsible for organizing his/her assessments. This includes finding a suitable case or procedure and organizing the session with a clinical supervisor or an experienced colleague. This should take no more than one hour a month. **All completed mandatory assessment forms should be kept in the educational portfolio**, regardless of the outcome. The Intern's clinical supervisor will need to review the portfolio at regular intervals during each placement.

Different assessment tools allow opportunities to regularly receive direct and instant feedback from experienced colleagues. The strengths and areas of development that are identified in the assessments will help the intern to develop his/her personal professional development planning.

Box 7: Minimal Requirements for Educational Portfolio

- Reflective statement and self-appraisal of each placement.
- Personal professional development plan including career planning.
- End of placement assessment.
- Mandatory formative assessment: Mini-CEX and CBD.
- Evidence of achievements in each placement with descriptive statement.

Mandatory Formative Assessment

The Mandatory Formative Assessment (MFA) reflects the progress of medical intern. It is designed to assess the clinical competence at a level of first year resident in any postgraduate program. It is also designed to allow the intern an opportunity to regularly receive direct and immediate feedback from an experienced senior colleague.^[24] Passing this evaluation is not the aim, performing it with immediate feedback and lessons learnt are the ultimate goals. Therefore, this assessment will not be approached as if it is an examination.

To maximize the educational impact of this type of assessment, aspects of performance that are particularly good, as well as those identified as being in need of improvement, should be discussed between the intern and the assessor or supervisor. Feedback should be given sensitively, in a suitable environment. MFA includes the following tools: Mini Clinical Evaluation Exercise (Mini-CEX), Case-Based Discussion (CBD), Directly Observed Procedural Skills (DOPS). The assessor should determine the level of complexity of the case or procedure as follows:

- Low complexity: Uneventful and straight-forward, with few demands on the intern.
- Moderate complexity: Routine with manageable complications.
- High complexity: Difficult or unusual due to demanding encounters or unusual findings for intern's level.

Mini Clinical Evaluation Exercise

Mini Clinical Evaluation Exercise (Mini-CEX) provides the intern with an opportunity to receive immediate feedback on skills essential to provide good clinical care by observing an actual clinical encounter. It reflects the performance of clinical skills, routinely considered part of patient encounters (Box 8). It is integrated into different aspects within the clinical environment including in-patient and out-patient setting. These skills includes history-taking, physical examination, clinical diagnostic, clinical judgment, patient management, communication, humanistic qualities, professionalism and overall clinical competence.^[25]

Box 8: Competencies Assessed in Mini-CEX

- Professional approach to patient
- History taking skills
- Physical examination skills
- Clinical diagnostic skills
- Clinical judgment & synthesis
- Patient management skills
- Communication skills
- Overall clinical competence

Process: Medical Intern will be responsible for the conduction of at least one Mini-CEX session each month. The process will end with a structured discussion with the supervisor or assessor:

- A selected case from the in-patient or out-patient setting to be interviewed under direct supervision.
- The case should be presented with a conclusion. It should take no longer than 15 minutes.
- This should be followed immediately by feedback lasting 5-10 minutes that include things done right and those need improvement.
- A mini-CEX form should be completed with the presence of the intern.
- The assessment form should be part of the educational portfolio.

Case-Based Discussion

Case-Based Discussion (CBD) is part of the MFA. CBD assesses clinical judgment, decision-making and the application of knowledge in relation to patient care. It allows the application of clinical reasoning in practice. This may include discussing ethical and legal framework of practice and facilitate feedback in order to guide learning. It is not focused on the ability to make a diagnosis. Since a real patient record is used, it allows evaluation of the quality of record keeping and presentation of the case. These skills includes (Box 9) professional approach to patient, data gathering and interpretation, making diagnoses/decisions, clinical management, managing medical complexity, working with colleagues and as part of a team, community orientation, maintaining an ethical approach, fitness to practice.^[26]

Box 9: Competencies Assessed in Case-Based Discussion

- Professional approach to patient
- Data gathering and interpretation
- Making diagnosis and decisions
- Clinical management
- Managing medical complexity
- Working with colleagues and in teams
- Maintaining an ethical approach
- Fitness to practice

Process: Medical Intern will be responsible for the conduction of at least one CBD session each month. The process will end with a structured discussion with the supervisor:

- Medical intern must ensure that the supervisor is aware of patient details in order to offer learning opportunities for discussion.
- The supervisor discusses the case in depth with the intern for 15 - 20 minutes.
- An assessment form is completed by the supervisor who then provides immediate feedback for approximately 5 minutes.
- The assessment form should be part of the educational portfolio.

Directly Observed Procedural Skills

Directly Observed Procedural Skills (DOPS) will be used for assessing competences in basic procedural skills related to each placement. These skills include (Box 10) understanding the scientific principles of the procedure, compliance with health and safety requirements, understanding and apply the appropriate instructions, strictly

perform infection control measures, awareness of the limitations of the test, overall technical ability and correct use of equipment, communication of results (written and verbal reports), including report validation.^[27]

Box 10: Competencies Assessed in Directly Observed Procedural Skills

- Professional approach to patient
- Obtains informed consent
- Selects cases appropriate to the procedure
- Demonstrates respect for patient's views and dignity during the procedure
- Communicates clearly with patient, including outcome of procedure.
- Gives appropriate dose of Anesthesia (if needed)
- Demonstrates good communication with the nursing staff
- Follow the acceptable standards in performing the procedure

Procedure: Medical Intern will be responsible for the conduction of at least one DOPS session each month. The process will end with a structured discussion with the supervisor:

- A selected procedure form the basic procedural skills related to the placement to be performed by the intern under direct supervision.
- The intern should present the procedure with a conclusion. It should take no longer than 15 minutes.
- This should be followed immediately by feedback lasting 5-10 minutes. It should also include things done right and those need improvement.
- A DOPS form should be completed with the presence of the intern.
- The procedure should not be repeated unless the performance was unsatisfactory.
- The assessment form should be part of the educational portfolio.

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