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I. INTRODUCTION

Studies have shown that the shortage of human resources for health (HRH) is a factor that is crippling health systems and health care, particularly in countries with limited resources. Despite this, the development of human resources has been given little attention at global and national levels until recently. As a result, developing countries have particularly suffered from high attrition rates, low health manpower production, geographical imbalance and an uneven skill mix of health workers at various levels. It is now evident that in many low- and middle-income countries, meeting key Millennium Development Goals (MDGs) –especially those relating to health – require a significant increase in the number of health workers. Until recently in Ethiopia, Addis Ababa University medical faculty has been the only training institution for postgraduate medical training and produces only 20-30 internists per year for 80 million populations in the country. This definitely shows that there is a great shortage of internist in the country.

Human resources are the most important assets of any health system. For health institutions to function effectively and efficiently a well-trained, motivated and well-functioning health workforce must be produced, deployed, maintained and appropriately utilized towards the goal of improving the health of the population. In recognition of this, Ethiopia’s Federal Ministry of Health has developed an HRH strategy as a first step to addressing health workforce challenges and developing the health workforce strategy of the country.

To strengthen the health care delivery and increase the health professional to population ratio in Ethiopia, there is currently a rapid expansion in building of new hospitals and new medical schools. Ten years back there were only three universities with medical schools and producing a total of 80 -120 medical doctors each year. But currently there are more than 8
universities with medical schools and are producing more than 1000 medical doctors each year. These medical doctors after graduation work for two or more years in different urban and rural areas in Ethiopia and need to pursue their postgraduate medical education then after. But until recently Addis Ababa University medical faculty has been the only training institution for postgraduate medical training, and it usually cannot accept more than maximum of 30 medical doctors per year for postgraduate training in internal medicine.

Postgraduate medical schools are not only important to strengthen the health care system by filling health professional demand in the hospitals and producing medical educators for the new medical schools but also increasing retention rate of medical doctors in the country by providing opportunity for career development of newly graduated doctors who need to pursue their education in postgraduate medical discipline.

Jimma University, college of public health and medical science has enough experience in producing proficient medical doctors for last two decades and has also been capable of running postgraduate training in internal medicine for the last 7 years. Based on the first seven years’ experience of postgraduate training in Internal medicine in Jimma University and the gaps noticed, this is a revised curriculum to improve the programme by filling the gaps noticed in the first seven years.
II. GOAL and SPECIFIC OBJECTIVES

Goal
To produce competent, responsible and proficient internists who can improve the quality of the health care delivery system in Ethiopia

Specific Objectives
At the end of the study students should be able to:

- Demonstrate the ability of organizing, facilitating, conducting and evaluating high level of care to patients with internal medical problem
- Perform bedside laboratory procedures and tests in internal medicine
- Design and lead clinical, biomedical and community based researchers
- Apply medical and pedagogical knowledge and skill to teach undergraduate and post graduate medical students effectively
- Assist in the professionalization of the field in the health care delivery
- Use software (Word, Excel, Microsoft power point, SPSS) for presentation, teaching, communication and research effectively

III. ADMISSION or ENROLLMENT
A general practitioner with an M.D degree may be admitted for specialty program in internal medicine provides that following requirements are fulfilled.

**A/ Academic requirements**

1. The applicant must have successfully completed his M.D training
2. The candidate must have successfully completed an accredited rotating internship with at least satisfactory performance in internal medicine.
3. The applicant must pass theoretical as well as practical entrance examinations, which will be prepared by the department of internal medicine.

☐ The number of entries will be indicated by the number of applicants to the program versus the number of available places for intake.

**B/ Non Academic requirements**

1. The candidate must have a minimum of two years’ experience in the practice of medicine after the completion of internship period.
2. Documents to be submitted to the registrar office of the University by candidates
   - Certified copy of M.D degree from accredited University of Medical School
   - Student copy of undergraduate studies
   - Three confidential letter of recommendation
   - Letter of sponsorship from the employers, governmental or non-governmental organizations.
   - For self-sponsor candidates a release letter from previous employers in required
   - Health status certificate (Stating the physical and mental well-being of the candidate)
• The candidate must also fulfill other rules and regulations set by the registrar of Jimma University.

IV. EDUCATIONAL STRATEGIES

A. Duration
The graduate program shall take three academic years for completion. No candidates may anticipate finishing the program in less than this period. Also the program can by no means be extended beyond four year after initial registration for academic reasons.

B. Academic program for residency in internal medicine

I/ First year residency

<table>
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<tr>
<th>Attachments</th>
<th>Duration</th>
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<tbody>
<tr>
<td>1 General Medical Ward</td>
<td>7 month</td>
</tr>
<tr>
<td>2 Emergency OPD</td>
<td>2 month</td>
</tr>
<tr>
<td>3 Cold and Referral OPD</td>
<td>1 month</td>
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<td>4 Intensive Care Unit</td>
<td>1 month</td>
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<tr>
<td>5 Vacation</td>
<td>1 month</td>
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During general medical wards attachments, residents are also expected to attend chronic referral clinics.

II/ Second year residency
### Attachments and Courses

<table>
<thead>
<tr>
<th>Attachments and Courses</th>
<th>Duration</th>
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<tr>
<td><strong>A Clinical Attachment in Internal Medicine Department</strong></td>
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<tr>
<td>1 General Medical Ward</td>
<td>3 months</td>
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<tr>
<td>2 Cold and Referral OPD</td>
<td>2 months</td>
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<tr>
<td>3 Intensive Care Unit</td>
<td>1 months</td>
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<tr>
<td><strong>B Clinical Attachment to Other Department</strong></td>
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<tr>
<td>4 Dermatologic Department</td>
<td>1 months</td>
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<tr>
<td>5 Psychiatry Department</td>
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</tr>
<tr>
<td>6 Nephrology Department</td>
<td>1 months</td>
</tr>
<tr>
<td>7 Cardiology Department</td>
<td>1 months</td>
</tr>
<tr>
<td><strong>C Courses</strong></td>
<td></td>
</tr>
<tr>
<td>8 Basic Epidemiology, Biostatistics and Research methodology</td>
<td>3 credit hours (1 month)</td>
</tr>
<tr>
<td>9 Introduction to computers and information technology relevant to clinical medicine</td>
<td>2 credit hours</td>
</tr>
<tr>
<td>10 Medical pedagogy</td>
<td>2 Credit hours</td>
</tr>
<tr>
<td>11 Medical Ethics</td>
<td>1 credit hour</td>
</tr>
<tr>
<td><strong>D Vacation</strong></td>
<td>1 month</td>
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*a all courses will be provided in one month detachments.

### III/ Third year residency

<table>
<thead>
<tr>
<th>Attachments</th>
<th>Duration</th>
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<tbody>
<tr>
<td>1 General Medical Ward</td>
<td>3 month</td>
</tr>
<tr>
<td>2 Subspecialty Unit</td>
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<td>3 Research Leave</td>
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<td>5 Study Leave</td>
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□ Three subspecialty units for two month each will be attached based on the choice of resident when subspecialty units are available in Jimma University. Till then cardiology, Neurology and hematology will be the attachments in AAU.

### C. Teaching learning methods

1. Clinical attachment
A. When candidates are attached to wards, medical intensive care unit (ICU), Out Patient Department (OPD) or referral clinics, they are expected to learn both the theory and skills through supervised practice.

B. Duty

- First year and second year residents are assigned to work on night duties in the emergency MOPD, Medical ICU and general wards. During their duty hours they are expected to evaluate, investigate emergency medical conditions. They are also expected to consult third year medical residents or the duty senior consultant when they are faced with difficult problems and have difficulty in deciding on the management of such cases.

- Third year residents are assigned to be on call duties, they should make themselves available where they can be reached within the hospital vicinity. They are consulted by 1\textsuperscript{st} year and 2\textsuperscript{nd} year residents to evaluate and decide on management of difficult cases and to do some procedures with should be done by only 3\textsuperscript{rd} year residents.

2. Morning session (Discussions)

Morning session (Discussions)

Morning secessions are conducted 3 days every week (Monday, Wednesday, and Friday)

During this morning session activities to be held are

A. Morning duty report: In the morning session the team of residents and interns who were assigned during duty hours in the previous days shall report brief summary of the cases they have seen, discharges, admission and deaths in their respective places, and defend and justify on the diagnosis and management of the cases.

B. Death rounds (reports)
• Death rounds (Discussions) presented by 1st year and 2nd year residents based on a schedule and program arranged by the chief resident of the department.

• Death rounds are based on selecting one of the unexplained, difficult, interesting or unexpected deaths that occurred in the previous weeks.

• The purpose of death round presentation is to identify the good side in the management of the case and also the management pitfalls of the medical team who has been in charge of managing the deceased, explain the possible cause of death and learn from mistakes. This would help to improve and upgrade the quality of medical care given in the department. Death rounds shall be conducted every two weeks, just after duty reports in one of the days of morning session.

• It is believed that death rounds will be more educative if supported by postmortem histopathology examinations. The resident who is presenting the death round should do his best to have an autopsy done on a case he is going to present, in collaboration with the department of pathology.

C. Journal clubs

• Are presented by first year and second year residents based on a program arranged by the chief resident every two weeks just after duty reports in one of the days of morning session.

  o A resident who is going to present a journal club shall select an original article published in one of medical or health related journals few weeks ahead of the presenting date.

  o The selected journal should be critically appraised by the resident, and the resident should discuss the journal with senior
in the department and/or consultants in the department or public health or epidemiology experts in other departments.

- The important aspects of the journal together with critical appraisal of the journal, depicting the strong and weak points of the study should be presented.

4. **Grand rounds (medical circus)**

- Interesting, rare, unique or difficult case, are selected by the medical team working in each ward and medical ICU based on a program scheduled by the chief resident.

- The history, physical findings, the laboratory investigations, course and management of the patient will be presented by the intern in charge of the patients.

- Differential diagnosis and general aspects of the patients’ problems will be discussed by junior resident in charge of the patient, and the most likely diagnosis of the patient and the state of the art management of the problem will be discusses by a senior resident in charge of the patient.

- Grand rounds can be scheduled in the morning or afternoon, at a time which will be convenient to most residents and senior consultants in the department.

5. **Postgraduates seminars**

- Important topics for postgraduates seminars will be selected by each unit in the department, and program will be scheduled by the chief resident.
• Presenters should discuss with the senior consultant assigned to moderate the seminar, few weeks ahead of the presentation and search for the state to the art medical knowledge regarding the seminar topic.

• Seminar topic may be presented once every week in the morning or afternoon at a time which is convenient to most residents and teaching staff.

6. Teaching/ training activities

• Involving residents in teaching is also another method of teaching them. Teaching medical students will enable them to bring out their learned theoretical and practical skills into practice and also helps for their future career. In addition it will also enable them to practice the medical pedagogy course they will be offered.

• All residents are expected to participate actively in the teaching and training process of undergraduate medical students and health officer students.

7. Research activities

Involvement of medical residents in research activities has not been the tradition in the postgraduate training programs in internal medicine in most medical school including the medical faculty of Addis Ababa University.

This makes internal medicine specialists only clinicians who are managing sick individual patients, and not researchers who can identify major health problem of public health importance and try to seek feasible solution.

Medical residents who are going to be trained in Jimma University, will be equipped with the necessary knowledge and skill to conduct clinical hospital
based as well as community based researches. The basic epidemiology and research methodology course they are going to take during second year residency and the research thesis which they will be conducting and defending will enhance their research capability and interest.

The research theses of residents will be presented in a symposium, and will be evaluated by panel of assessors, each author should defend his/ her research thesis. This is mandatory as a partial requirement for graduation.

**D. Supervision, Evaluation and Feedback**

- The candidate is always closely supervised by all staff member involved in post graduate training.
- At the end of each attachment, including elective attachments, the resident shall be evaluated by the immediate supervisor (s) according to an evaluation from prepared by the department and feedback will be given at the spot.
- Quarterly progressive evaluation will be done by the department counsel every three month and feedback will be provided for the residents by the department head and/or post graduate coordinator of the department. This will be compiled and shall be used to, as part of requirement to be promoted to subsequent years of training.

**E. Examination and promotion**

**A.First year residency**

1. The progressive assessment of the candidates during his/her first year residency must be a minimum of 70% to be eligible to sit for the first year exam.
II. At the end of the 1st year of residency program, the candidate must pass a written and practical examination before he is enrolled for the second year program.

III. If a candidate fails examination, he/she should repeat the year. No candidate is allowed to repeat the 1st year more than once.

B/ Second year residency

I. The progressive assessment of the candidates during his/her second year residency must be a minimum of 70% to be eligible to take the second year exam.

II. At the end of the second year of residency, the candidate must pass a practical examination and OSCE before he/she is enrolled for the third year program (will be conducted by internal examiners).

III. A research proposal has to be submitted to the department of Internal medicine before the end of second year of residency.

IV. If a candidate fails the examination, he/she should repeat the year. No candidate is allowed to repeat the second year more than once.

C. Third year residency

I. The candidate must have satisfactory progressive assessment from his supervisors during each of the elective subspecialty and general ward attachments with a minimum of the total average 70%, to be eligible to sit for final qualifying exam.
II. The candidate must submit his/ her research thesis and defend, and the research should be calculated by panel of assessors found to be at least good (70%). This is mandatory for the candidate to be legible to sit for the final qualifying exam.

III. There should be a written exam which comprises multiple choice questions prepared by the department and approved by Postgraduate examining board of the department before one month of the day of final examinations.

IV. There should be a practical examination consisting short, long ad viva cases. The cases for examination should be confidentially selected by the examination committee of the department.

V. There should be a practical exam consisting laboratory slides, microscopic findings, pictures, X-ray films etc prepared by the examination committee.

VI. The candidate should successfully pass the 3rd year qualifying written and practical examination with minimum overall score of 70% and above to qualify for specialty certificate in Internal Medicine.

VII. If a candidate fails the practical examination or both the written and practical examination, the case should be discussed at the department level. The overall performance of the candidate throughout his/ her stay during the training should be taken in to consideration to decide the candidate’s fate.
VIII. The candidate may repeat from a minimum of 6 months up to 1 year if it strongly believed by member of the department that the candidate needs further training and close supervision.

**F. Examiners in internal medicine**

1. There shall be an examination preparing committee within the department.

2. For first year residents the practical examination can be conducted by members of the department whose academic rank is not less than Associate professor. Senior clinicians in the country may also be invited as examiners.

3. For Second year residents, the examination is conducted by internal examiners.

4. For third year residents qualifying practical examination, external examiners, who are from internationally recognized institutions, shall be invited. The examining board of FGC must approve the credentials of the external examiners. External examiners may be invited from within the country or from abroad.

5. The examiners upon completion of the examination shall submit the results of each candidate along with a written evaluation of the general performance of all candidates to the FGC through the examining board with a copy to the head of the department of internal medicine.

**V. GRADUATION AND AWARD**

**GRADUATION**
A candidate is legible for graduation if he/she

1. Successfully pass the 3rd years qualifying written and practical examination with minimum overall score of 70% and above.
2. Satisfactory cumulative progressive assessment throughout his/her stays during the three years of residency.
3. Minimum score of 70% and above in taught courses given during their second year residency.
4. Submitting and defending his/her research thesis that is evaluated to be at least satisfactory by a panel of assessors and should score with minimum of 70% and above.
5. The candidate should never have any record of serious medical ethical misconduct or major disciplinary breach throughout his/her stays.
6. The candidate needs to have a clearance paper from the department, faculty as well as the university.

AWARD

- A candidate who fulfills all the above mentioned requirements and complies with rules and regulations of the department, whose progressive assessment and final examination results are judged to be of sufficient merit, shall be recommended by the council of graduate studies to the University Senate for approval.

- Up on graduation the candidate will be awarded a certificate of specialty in internal medicine that will be accredited by the federal ministry of education and federal ministry of health of Ethiopia.

VI. FACULTY DEVELOPMENT

A. Jimma University Specialized Hospital
The Hospital which was built several years back by the Italian colonizers was not meant to be a hospital. The buildings are very old and besides the outpatient departments and inpatient wards are not arranged in such way that patients can safely and efficiently be transported from one part of the hospital to the other. Both the inpatient and outpatient department rooms are very far from the standard.

A new hospital with a better standard is on construction in Jimma University. This will create a good opportunity to improve the services and also for development of subspecialty units in Internal medicine which directly and indirectly improves the clinical and academic services.

**B. Equipments and facilities in the in and out patient**

All these instruments listed below are basic for specialized hospital where there is postgraduate study in internal medicine is available and need to be there.

1. **Emergency OPD**: - The emergency medical OPD is a very small room which is not equipped even with simple and but basic medical instruments like.

   - Blood pressure apparatus
   - Thermometers
   - Ambu bag
   - Oxygen cylinder
   - Cardiac defibrillator
   - ECG machine etc
2. **Regular MOPDS**
Are not equipped with minimum possible facilities like
- Blood pressure apparatus
- Thermometers
- Measuring taps
- Stethoscopes
- Percussion hammer
- Weighing scale
- Otoscops and ophthalmoscopes
- Proper examination coach
- And other necessary equipments

3. **In patient wards**
- Instruments necessary for basic procedures that are done at a ward level are not enough, some are very old and most are unavailable.

These includes
- Bone marrow sets
- Pleural biopsy sets
- Peritoneal biopsy sets
- Pericadiocentsis sets
- Central venous catheters etc.
- Lumbar puncture sets
- Pus draining sets
- Dressing sets
- Cut down sets

C. **The supply of Essential drugs**
1. **Outpatient department (regular OPD)**
As our country Ethiopia is a developing country, most of the patients coming to Jimma University Hospital are very poor and cannot afford to buy even the cheapest drugs. The budget allocated to buy drugs for free patients, by no means in enough. So most patients seen in outpatient department do not get the appropriate drugs which are prescribed for them.

2. **Emergency OPD**
This room is supposed to be a place where critically sick patients are evaluated without any delay and get the most appropriate care to save their lives. Each and every minute lost in the EMOPD counts against the patient’s life.

However our emergency OPD not only lacks the appropriate set up and facilities, but also has almost none of the emergency drugs the availability of which would have saved the lives of many. Patients who are seen at the EMOPD are given prescriptions to buy drugs outside the Hospital, and with every minute and hour lost the patient’s life put in great jeopardy.

3. **In patient wards**
The supply of drugs and other medical supplies such as catheters, Vigo, nasogatric tubes, are in great shortage. Even the cheapest but essential antibiotics, anti-malarial drugs, intravenous fluids are often unavailable. As physicians working under this circumstance and witnessing the suffering of very poor, critically sick and needy patients is not only emotionally painful but disappointing.

D. **Human Power**
1. The department of internal medicine currently has a total of 15 internists working as a staff of the department. None of the internists working in the department have subspecialty training, and there is no one in the department who has reached an academic status of associate professorship. Though the number of staffs increased, a lot work should be done to improve the profile of staffs by providing an opportunity for more training in the different subspecialty unit.

2. The paramedical staff working in the outpatient and inpatient wards including Nurses, health assistants and janitors should be trained well to the specific units.

We member of the department strongly believe that the following conditions should be fulfilled in order to sustain post graduate training in internal medicine that is being practiced in Jimma University.

- The department needs to establish the following Units
  - Infectious disease unit
  - Cardiology unit
  - Neurology unit
  - Endocrine and diabetes unit
  - Nephrology unit
  - Chest (Respiratory) unit
  - Medical intensive care unit
  - Hematology and oncology unit
  - Gastroenterology unit
  - Rheumatology and immunology unit
For the department to establish these units it is mandatory to have at least one sub specialist in each unit to begin with, and as a long term plan members of each unit should be subspecialties.

Personnel and facilities essential for each unit

1. Infectious disease unit
   a) Man power requirement
      - Internists with subspecialty training in infectious disease - 2 in number
      - Nurses
      
      BSc Nurse with interests in infectious disease - 1
      Nurses with short course training in infectious diseases - 2
      Nurse counselors trained in counseling of PLWHA - 4
      Record personnel - 3
   b) Facilities and equipments
      - 1 separate room with 6 classes which will serve as a follow up clinic and counseling unit and record keeping room
      - 1 computer with printer
      - 1 photocopy Machine

2. Cardiology unit
   A. Man power requirement
      - Internists with subspecialty training in cardiology - 2 in number
      - Cardiology nurse:- General nurses trained in cardiology - 2
      - ECG technician - 1
      - Record personnel - 1
   a. Facilities and equipments
      - 1 room with 3 classes which will serve as office, ECG and echocardiography room
- ECG machines – 2 in number
  1 manual
  1 automatic computerized
  - Echocardiogram – 2 in member
  - 1 movable echocardiogram which can be transported to OPD and the ward for emergency echo evaluation
  - 1 stationary echocardiogram with Doppler and color flow and high quality resolution, to be put in the office of cardiology unit.

3. Neurology Unit
   a) Manpower requirement
   - Internist with subspecialty training in neurology - 2 in number
   - Neurology trained Nurses - 3
   - Record personnel - 1
   b) Facilities and equipments
   - Neurology unit with 3 classes which will sever as an office and procedure room
   - Nerve conduction test and myography machine -1
   - CT scan – 1
   - MRI - 1
   - Computerized EEG - 1
   - Complete neurology examination set - 4

4. Endocrine unit
   a. Man power requirement
   - Internists with subspecialty training in endocrinology - 2
   - Endocrinology trained nurses - 2
   - Record personnel - 1
b. Facilities and equipments
- 1 room with 3 classes which will serve as an office and procedure room
- Weighing scales - 3
- Ophthalmoscope - 3

5. Nephrology Unit
a. Manpower
- Internists trained in nephrology - 2
- Nephrology nurses - 2
- Record personnel - 1
b. Facilities and equipments
- Procedure room and store
- 1 room with three classes which will serve as an office, computerized hemodyalisis machine with all its accessories - 2
- Sets and electrolyte solutions for peritoneal dialysis - according to the requirement
- Renal biopsy sets – 5

6. Chest / Respiratory medicine unit
a. Manpower requirement
- Internists with subspecialty training in respiratory medicine- 2
- Chest unit nurses - 2
- Record officer - 1
b. Facilities and equipments
- 1 room with 3 classes which will serve as an office and procedure room
- Respiratory function measuring apparatus - 2
Peak flow meters - 6

7. Hematology and oncology unit
   a. Manpower requirements
      ▪ One internists with subspecialty training in Hematology, and
        another internist with subspecialty training in oncology.
      ▪ Hematology unit nurses - 2
      ▪ Record personnel -1
   
   b. Facilities and equipments
      ▪ 1 room with 3 class which will serve as an office and procedure
        room
      ▪ Microscopes which are specially designed so that at least 5 people
        can see the same slide at the same time - 1
      ▪ Binocular microscopes - 2
      ▪ Bone marrow sets - 5 complete sets.

8. Gastroenterology Unit
   a. Manpower
      ▪ Internists with gastroenterology training -2
      ▪ GI nurses - 2
      ▪ Record personnel - 1
   b. Facilities and equipments
      ▪ 1 room with three classes which will serve as an office, procedure
        room and store
      ▪ Fibro optic endoscopy of different sizes - 3
      ▪ Colonoscopy/ sigmiodoscopy - 2
      ▪ Liver biopsy sets - 5
      ▪ Peritoneal biopsy sets – 5
9. Medical intensive care unit

a. Manpower requirements
   - Internists with subspecialty training in intensive care - 2
   - Medical ICU nurses with special training - at least 6
   - Record personnel – 1

b. Facilities and equipments
MICU needs one separate, relatively isolated and quite complex with 8 classes
   - 1 room with 2 section separated by glass walls and a controlling station which will be the admission room for patients.
   - 6 beds specially designed for MICU
   - 7 cardiac monitors, one for each bed and one reserve
   - Two central monitors which are connected to the other monitors.
   - ECG machines - 2
   - Cardiac defibrillators – 2
   - Continuous oxygen supply
     - Through network of tubes from a central reservoir or
     - Oxygen cylinders - 4 in number
     - Mechanical Ventilation Machine - 6
   - CPR sets including
     - Ambu bags - 4
     - End tracheal tubes - of variable size 10 in number
     - CPR board
   - Emergency drug cupboard with sufficient supply of all the necessary emergency drugs.
   - Office for Nurses 1 room
   - Duty room for MICU nurses – 1 room
   - Duty room for MICU on duty residents 1 room
   - Store for MICU - 1
Follow up clinics

- Each unit is expected to have follow up clinic in which patients are evaluated and followed.
- Each of the units may not need separate follow up rooms, but 3-4 follow up rooms can be used by all units based on schedules programmed by the departments.

E. Laboratory and diagnostic facilities

Jimma University specialized hospital is a teaching specialized as well as a referral Hospital and currently there is a plan to make is a postgraduate training hospital and center of excellence for medical sciences. This hospital deserves a well equipped and facilitated laboratory and diagnostic service.

1. Laboratory service

The laboratory should be restructured and equipped with modern laboratory equipments and is should be able to do the following test.

a. Hematological tests
   - CBC, WBC differential count - peripheral morphology
   - Platelet count - Bone marrow studies
   - RBC indices
   - ESR - C – reactive protein
   - Blood group and RH
   - Coagulation profiles
      o Clotting time, bleeding time
      o PT, PTT
      o Serum clotting factors level

b. Stool examination
   o Direct stool exam
   o Concentration method

c. Urinalysis
   o Urinalysis and microscopy
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- Urine protein (albumin) and 24hrs urine protein
- Specific gravity, ph of urine

d. Organ function tests
    - Liver function tests and liver enzyme
    - Renal function tests
        - BUN
        - Creatinine and Creatinine clearance

e. Serology
    - ELISA and Western blot for HIV
    - ASO liter
    - Widal test
    - Weil – Felix
    - Rheumatoid factor
    - ANA
    - HBs antigen
    - Antibodies to HCV
    - Serology test for H. pylori
    - Others

f. Endocrine related rests
    - FBS, RBS
    - Thyroid function tests
    - Cortisol and related rests

g. Bacteriologic (Microbiologic tests)
    - Gram stain
    - AFB stain
    - Indian INK
    - Culture → blood culture, urine culture, stool culture, CSF culture etc

h. Electrolyte studies
Serum
\[
\begin{align*}
&Na^+ \\
&K^+ \\
&C1^{-}
\end{align*}
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**Not:**

- The list of laboratory studies mentioned above by no means is complete. It should be discussed with other departments and the laboratory school to include some more important investigation.
  - The laboratory should be able to design strategy to accept samples at any time of the day and to be able to do urgent and mandatory investigation during duty hours.

### 2. Imaging diagnostic facilities

There are a lot more diagnostic procedures that should be done in JUSH.

- Improve and facilitate the existing X-ray service
- Arrange the use of the mobile x-ray machine for patients who are difficult of mobilize and critically sick.
- Improves contrast imaging studies such as
  - Barium enema
  - Barium meal
  - Fluoroscopy
  - Myelography
  - Venography and angiography
- Improve the Ultrasonographic facilities.
- Introducing new but essential imaging facilities such as
  - CT- Scanner
  - MRI
  - Radio nuclear imaging
VII. IMPLEMENTATION

The revised curriculum will be presented and discussed with the dean of college of public health and medical science, the members of the college academic commission and other stakeholders.

The curriculum will be introduced for all staffs when they are appointed to Jimma University department of internal medicine. The department head of internal medicine should follow the implementation of the curriculum and also provide a refreshment presentation on the post graduate curriculum on regular bases at department meetings.

Orientation on the curriculum will be given for all new medical residents joining internal medicine during their entrance. The chief resident will be actively involved on implementation of the curriculum by preparing annual schedule for each year with the department and also communicating early whenever problems are noticed during the implementation of curriculum.
VIII. EVALUATION AND FEEDBACK OF THE PROGRAMME

For effective implementation and continuous improvement of the Post Graduate study in Internal Medicine, there should be a mechanism for evaluating the program and modify the contents of the curriculum accordingly. These mechanisms includes

- Feedback from medical residents, graduates and medical educators about the programme every year
- Medical educators evaluation by medical residents, department head and by the peer and feedback will be given at the end of each year
- Analyzing residents score on progressive assessment and examination
- Evaluating the quality of research proposal and thesis
- Supervision by quality assurance office of the college of public health and medical science and feedback on supervision
Annex

Duties and responsibilities of residents

I. Activities of the resident during attachment to wards

A. Best possible patient care

I. See and evaluate the patient promptly
II. Record all pertinent information at a time a patient is seen
III. Retrieve previous records pertaining to the patient as applicable and bring all relevant information up-to date
IV. Institute appropriate investigation and treatment
V. Consult supervisor whenever in doubt or facing difficult cases
VI. Inform the patient and relatives about the nature of the illness.

B. procedures

1. Procedures to be done by first year residents

- Side room laboratory procedures (e.g. CSF analysis, CBC, grams stain, India ink stain, AFB stain, rapid diagnosis with kits, routine blood, urine and stool examination).
- Basic bacteriological techniques (e.g. proper collection of blood for culture, proper storage of specimens, etc)
- Lumbar puncture
- ECG
- Paracentesis and peritoneal biopsy
- Thoracentesis and pleural biopsy
- Easily accessible tissue biopsies (i.e. skin snip, lymph node biopsy, etc)
- Bone marrow aspiration
- Arterial puncture for blood gas analysis
- Cardiac monitoring and defibrillation
- Sangstakns Blakemore tube insertion
- Assist second and third year residents during other procedures.
2. Procedures to be done by second year residents
   - All procedures mentioned above
   - Liver biopsy
   - Sigmoidoscopy
   - Rectal snip
   - Splenic puncture
   - Muscle biopsy
   - Arterial and C>V.P lines
   - Peritoneal dialysis
   - Assist third year residents during other procedures.

3. Procedures to be done by third year residents
   - Supervision and training of first and second year residents for procedures listed above
   - Renal biopsy
   - Pericardiocentesis
   - Other procedures as provided during subspecialty attachment (e.g lung biopsy, small bowel biopsy, etc)
   - Assist attending physician during other procedures.

C. Additional specific learning activities
   a. Chart rounds
   b. Death rounds
   c. Regular ward rounds
   d. X-ray sessions with a radiologist once a week
   e. Histology reading of biopsy specimens taken from ward or OPD in collaboration with pathologists.
   f. Grand round: third year residents to take major responsibility in selecting the case for grand rounds.
   g. Journal club
h. Consultation service in other departments
i. Case discussion session in each ward under the supervision of teaching staff.
j. Clinio- pathological conference (C.P.C)
k. Subspecialty rounds and sessions
l. Referral clinics with specialists.

D. Teaching activities
a. First year residents are expected to
1. Assist in physical diagnosis course for medical students and health officer students, especially during demonstration sessions.
2. Be involved in giving bedside teaching, round, seminar and tutorials to clinical – I students and health officer students and other medical students (eg. anesthesia, dentistry) under supervision.

b. Second year residents are expected to
1. Be actively involved in demonstration of physical examination skills
2. Conduct teaching rounds and bedside teachings
3. Attend and moderate student seminars

C. Third year residents are expected to
1. Give lectures for undergraduate medical students (health officers, anesthesia, dentistry...)
2. Conduct teaching round and bed side teachings to all students including clinical – II medical students.
3. Teaching and supervising some procedures and skills to junior residents.

E. The duties and responsibilities of the residents on the ward
a) The resident shall start work punctually at 8:00 am. The resident must see and evaluate problem cases and prepare all the necessary data for the medical ward round.
b) The resident must see all new patients on the day of admission, write a summary note, complete work-up and discuss the differential diagnosis, investigation and management with the intern in charge. In difficult and complicated cases, s/he should consult with the senior supervisor. S/He should record concise progress notes.
c) The resident must do daily rounds on his work.
d) The resident must perform diagnostic procedures under the supervision of the attending physician and/or senior resident.
e) The resident must report death on his ward and attend the weekly death rounds.
f) Discharge summaries and referral letters are the responsibilities of the resident. Discharge summaries must be completed within 48 hours of discharging the patient. The final diagnosis (es) and future recommendation(s) should be clearly written. The recommendation should be explained to the patient repeatedly until he/she is certain that there is no misunderstanding. Emphasize the importance of follow-up clinic visits and make sure that appointments are fixed before the patient leaves the hospital. Patient education is an essential aspect of practice and prevention is always the aim.
g) Discharge summaries are written in three copies. The original is kept in the chart of the patient, a copy is sent of the secretary of the department of internal medicine, and a third copy is sent to the health institution caring for the patient in the future. Every discharge summary must be counter signed by senior attending Physician.
h) Death certificates are to be filled out in detail, especially the diagnosis, treatment and immediate cause of death. Make sure that the
certificate is counter-signed by the senior attending physician. One copy (original) is kept in the chart, a second copy is sent to the secretary of the department of internal medicine, and a third one to the office for the medical director for filling.

i) The resident must hand over his critically ill patients to his fellow resident on duty for the night.

j) For the continuity of patient care and part of learning experience, the resident shall have night duties. The number of night duties per resident will be determined by the number of residents and other factors; however, more hours should be allocated for ICU followed by ward duties and the least for OPD duties.

k) The admitting resident should inform the doctor involved in the care of the patient prior to admission.

l) The resident must see medical consultations from other wards and services with his attending physician and should follow the up.

m) The resident must be well acquainted with the available emergency equipment and drugs and therefore must be able to utilize them at a short notice.

n) The resident must organize those sets of instruments essential for procedures with the head nurse of the ward.

o) The resident will have follow up clinics at least once a week.

p) The resident must participate in teaching undergraduate students and other health personnel according to a program lay down by the department and under the supervision of the attending physicians.

q) The resident should participate in grand rounds (medical circus) journal club and other academic activities.

r) The medical resident supervises the intern, the nursing staff and the organization and activities of the ward.

s) The resident will participate in the administrative aspects of the ward.
t) The resident will hold a weekly meeting with the ward staff concerning the organization and activities of the unit.

u) In all appropriate medical documents (e.g. history, discharge summary, death certificate sick leave, etc) the resident must identify himself by clearly writing his name, rank and signature.

v) The resident is responsible for ascertaining that the ward registration book is properly and completely filled.

w) The resident should do his utmost to persuade relatives to permit an autopsy when a patient dies. If autopsy is impossible he should take needle autopsies of all accessible organs relevant to the diagnosis of the case.

x) The resident must observe the rules and regulations laid down by the hospital management.

F. Functions and duties of the medical resident in the outpatient department.

a. The resident, during his term of attachment to the OPD shall see all types of medical patients.

b. The resident must start his OPD duty at 8:00 am and finish at 12:00 he shall start work at 1:00 PM and finish at 5:00 PM in the afternoon. On grand round days, however, he must finish his OPD duty in time to attend the grand round.

c. The resident, in addition to his routine OPD duty, must participate in the supervision of medical students working in the OPD.

d. The resident must supervise and make certain the complete registrations of clinical data are kept in the OPD.

e. The resident must have his share of night duty in OPD.

f. The resident may perform simple diagnostic procedures and laboratory studies in the OPD.
g. The resident must see all medical emergency cases during the whole day in rotation with his resident colleagues. While it is his turn to see emergency cases, he will also be the admitting officer for that day.

h. The resident shall have a supervisor for consultation

i. The resident must participate in all teaching activities going on the department of internal medicine outside his OPD working hours.

G. The duties and responsibilities of the resident in the medical ICU

a. The resident must be always available during his duty hours.

b. The medical resident should follow the general guidelines set for the resident in the ward for his level of training.

c. The medical resident shall Performa the procedures outline under activities of the resident during attachment to unit.

d. The resident must evaluate the patient considered for admission to the ICU, then consult the senior supervisor before effecting the admission according to the given admission criteria.

e. The resident must monitor the patients frequently and record the findings.

f. The resident must be proficient with resuscitation of the patient in cardio respiratory arrest e.g. tracheal intubation application of a cardiac monitor, cardiac massage, intracardiac administration of drugs, application of electric shock, etc

g. The resident must present a well prepared summary of all deaths. He must persuade the relative to permit autopsy in all cases and without fail as well as strong conviction. Short af autopsy, the resident must try to have needle biopsy of accessible organs, and musty aspirate fluid for cytology or culture.

H. Duties and responsibilities of the chief and assistant chef resident
The chief resident assists in the co-ordination to the resident program laid down by the department of internal medicine.

The chief resident is responsible for arranging rotation of the medical residents and interns, night duty Rota, service Rota and vacations in consolation in consultation with the chairman of the department.

The chief resident represents residents in the department.

The chief resident will be responsible for the following teaching and related activities, such as organization of:

- Grand rounds
- Teaching seminars
- Journal club
- Organization of death rounds

The chief resident receives and distributes all consultations from other services to the appropriate person(s) in the department.

The chief resident shall have less night duty and must have an assistant chief resident so that his training is not compromised.

There shall be a chief resident’s office.

The assistant chief resident assists the chief resident in all the above activities and automatically assumes the duties of the latter in his absence.