

Curriculum for Masters in General Practice – Bhutan

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Foreword

General practice, called family medicine in many countries, provides the opportunity to strengthen health systems, improve the quality and safety of primary health care, and support countries to move towards universal health coverage, ensuring that every person, every family, and every community, in every nation, has access to health care services delivered by well-trained primary health care providers.

Many countries are rising to the challenge of developing strong systems of community-based medical care, and Bhutan is no exception. Bhutan, like many countries, faces the dual serious health challenges of both communicable and non-communicable diseases, along with the challenge of an increasing population of elderly people, often with multiple comorbidities and many needing home-based care. Bhutan also has the challenge of providing high quality accessible health services to those people based in rural areas.

This curriculum will provide medical graduates with the knowledge, skills, and attitudes that they will need to be effective general practitioners. The curriculum includes not just the essential clinical and communication skills required to be a safe and competent general practitioner, but also sound understandings of community health, professional ethics, legal considerations, and the evolving use of new technologies in health care delivery.

This curriculum is a major contribution to ensuring the future health and well-being of the people of Bhutan. I commend Dr Chhabi Lal Adhikari, on this achievement. This curriculum will assist future generations of medical graduates to train to become highly skilled general practitioners who are equipped to ensure excellent care provision to the individual patients and communities they will serve.

Professor Michael Kidd AM FAHMS

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Faculty of Medicine, Nursing and Health Sciences, Flinders University, Australia, and
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I would like to conclude my acknowledgement by thanking my wife, two sons and other family members for their support throughout my fellowship.

**Curriculum for Masters in General
Practice – Bhutan**

Background

Bhutan is a small country in the Himalayas sandwiched between two giant nations, China in the north and India in the south, east and west. The country has a difficult and rugged terrain consisting mostly of steep and high mountains crisscrossed by a network of swift rivers, which form deep valleys before draining into the Indian plains.^[1] The current population of Bhutan is 775,445 with general literacy rate of 63 percent (2012).^[2] The provision of basic health services are state's affair as enshrined in the constitution, "The state shall provide free access to basic public health services in both modern and traditional medicines".^[3] The National Health Policy states that Royal Government of Bhutan shall continue to follow the Primary Health Care Approach with Primary Health Care Workers at the primary level, General Practitioners at the district level and specialized services at the regional and central level and it aspires to be congruent with the philosophy of Gross National Happiness and reflects various inputs ranging from social, cultural, spiritual and environmental aspects.^[4]

Rationale

The country is heavily dependent on the regional countries for training of medical students due to unavailability of an undergraduate medical school in the country. The health service at medical officer's level in the district is mostly reliant on the junior MBBS doctors who are expected to deliver "too much too soon". They become more competent as general practitioners in the districts as they receive short term in-service trainings and learn working with senior doctors. However, now due to a shift in policy and a change in working environment, medical officers can go for postgraduate trainings within two years. The service is continued by fresh junior doctors whose competencies are at a lower level. This has resulted in imbalance at the level and quality of service provided in different districts. The Royal Government, the Ministry of Health and the Medical University, have for long, known that the General Practice Training Programme at masters level would bring a difference in the way we deliver our health care services at the districts, and for that reason, the specialty has been recognized at the highest level, at par with any other masters in medical profession. The country already has a medical university with three academic programmes, the faculty of Nursing and Public Health, faculty of Traditional Medicine and faculty of Postgraduate Medicine. The medical university has been established with a vision to become a premier centre of excellence in medical education, research and quality health care. Its mission is to develop health human resources for the provision of sustained quality and patient centred care through innovative learner-centred, integrated and humanistic curricula and research activities.^[5] Therefore, a well-designed curriculum based on the need of the country is crucial to start a Residency Programme in General Practice.

Learners and learning environment

The symbiotic relationship that exists in the context of Bhutan for training of General Practitioners is depicted in the following diagram (adopted from the work by^[6] Worley *et al.* 2006).

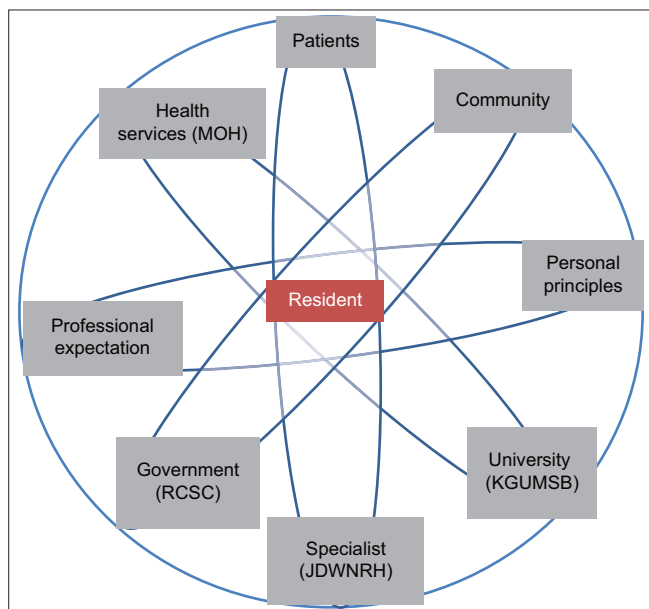


Figure 1: The Symbiotic relationship in Postgraduate Medical Education

After completion of an internship, the undergraduate doctors are employed by the Government (Royal Civil Service Commission - RCSC) under the Ministry of health (MOH). When they qualify for the vocational training, this will be an “in-service training” funded by the government. The Medical University (KGUMSB) will run the training programme in association with the teaching hospital (Jigme Dorji Wangchuk National Referral Hospital – JDWNRH). The Ministry of Health, collaborating with RCSC, is responsible for deployment of doctors and other allied health professionals in the health centres throughout the country. The central referral hospital (JDWNRH) is a multispecialty hospital with General practice and emergency departments, where the training of GPs will take place.

The postgraduate training in General Practice will be a time limited phase of training under supervision leading to recognized and competent General Practitioners.^[7] The eligibility to sit the entrance examination requires candidates to have a recognized MBBS, to have completed the internship and to have at least one year of experience in working in a health centre.

Once selected, they will undergo a supervised vocational training mainly in the Central Referral Hospital and other Referral and District hospitals. After 4 years of training, the successful resident will be awarded Masters in General Practice (MDGP) after completion of the University Examination.^[8]

The major residency training will take place at Jigme Dorji Wangchuk National Referral Hospital. This hospital has all the relevant departments including a department of General Practice. The residents will rotate through different departments during their four years training, but General Practice will be their home base for learning environment. This is important because of encoding specificity, which claims that practice in a certain context is better when the learning has taken place – at least partly – in a similar context. The well-known Godden and Baddeley^[9] experiment in 1975 illustrated that the ability to activate knowledge from the long term memory and to make it available is influenced by contextual cues more strongly than originally assumed. So, availability of the same context at a future point in time facilitates retrieval of the information. The escalating costs of modern treatments in hospital, have led to a development in many countries where much of the care formerly provided in outpatient departments of hospital is now provided by primary care health professionals in the community.^[10] So a rural-based curriculum provides opportunities to learn in these environments. An excellent example of such rural training programme exists at Flinders University in Adelaide, South Australia which has a Parallel Rural Community Curriculum (PRCC) Programme. In this programme, third year MD students are trained in rural accredited health centres, so that they perform better in rural settings once they graduate. It is world recognized and highly regarded program that has produced medical professionals of the highest standard.^[11]

The hospital-based training of general practitioners in Bhutan's context, gives ample opportunity to learn cases and problems common in rural areas in the districts, provided it is embedded in an integrative curriculum. To explain this, the following analogy may be helpful. Education in general practice can be seen like a flowing river (General Practice) with its tributaries (different rotational postings) as explained by the analogy drawn with the river (illustrated in Figure 2). The analogy is drawn with a river that begins as a rivulet (pre-specialized training), becomes bigger and bigger with each tributary from which it receives a contribution (knowledge, skills and professionalism). The zigzag course represents the adoptable nature and diversity of student's education, according to the needs of the community.

The river base embodies the adherence to the five domains of General practice. Finally, it flows on and joins the ocean, meaning the student's competencies contribute to the vast ocean of expertise needed to give better health care to the community, nation and the world, as a whole. Figure 3 illustrates the types of curriculum at different points of time during training and how rotational postings add to the competency of the students. The curriculum is planned, keeping in mind the support necessary to implement it and its learning outcomes. The intended curriculum is one which is planned, the supported curriculum is how various

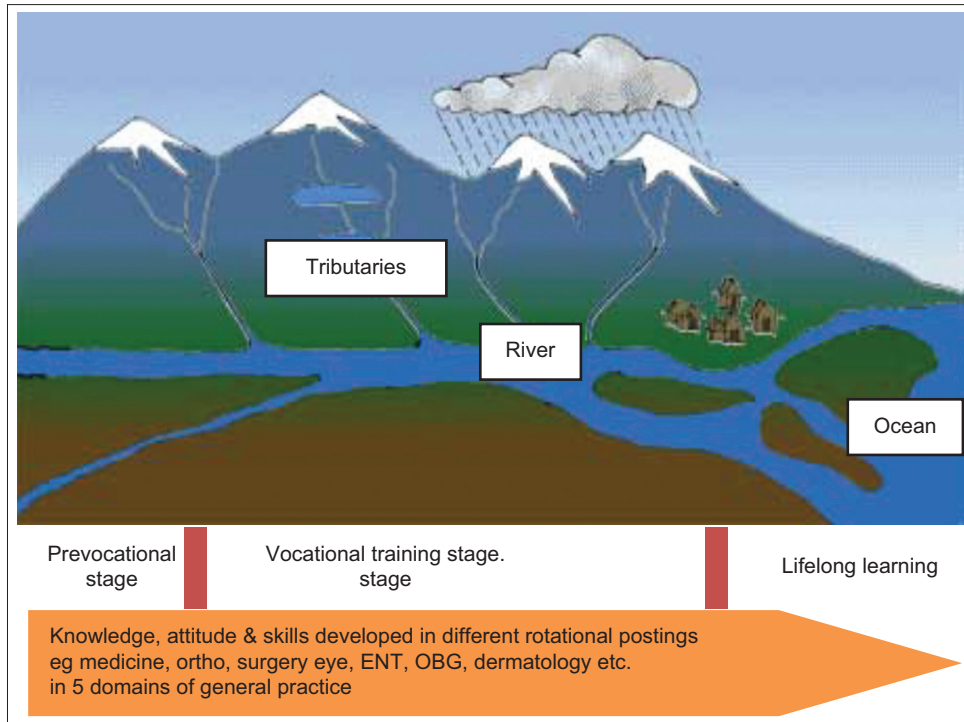


Figure 2: The River Analogy of vocational training of GPs

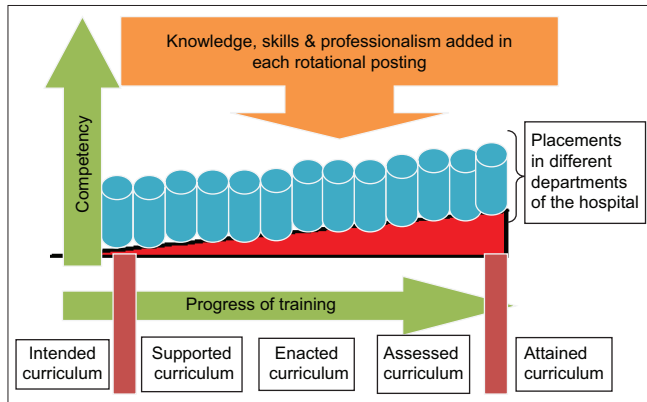


Figure 3: To show the categorisation of curriculum and added competencies in each posting

resources support learning and teaching, the taught or enacted curriculum is what is actually taught, the assessed curriculum denotes how enacted curriculum is assessed and the attained curriculum is the learning experiences as perceived by learners. The intention of this curriculum is the cohesiveness among this categorisation.^[12,13]

Rotational Schedule

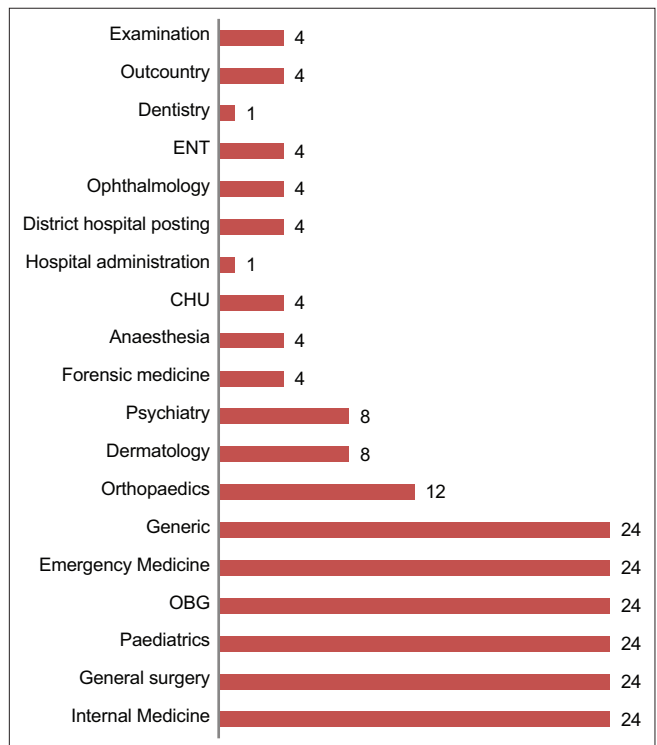


Figure 4: Bar graph to show comparative duration of posting in each department

Four Year Rotational Plan in weeks

The following table summarizes the duration of postings in weeks in each department. Three summative examinations are scheduled at the end of term 1 (Institute examination I – IE I), 4th term (Institute examination II – IE II) and 8th term (University examination – UE).

Rotation block	Year one		Year two		Year Three		Year Four	
	Term I	Term II	Term III	Term IV	Term V	Term VI	Term VII	Term VIII
Generic	24							
Internal medicine	1	23						
Psychiatry		2	6					
Dermatology			8					
Paediatrics			12	12				
Emergency				13	11			
Anaesthesia					4			
Surgery					10	14		
Orthopaedics						11	1	
OBG							24	
CHU								4
Dental								1
Eye								4
ENT								4
Forensic								4
District Hospital								4
Out country								4
Exam Schedule	IE - 1		IE-2		Thesis defence		UE	

Weekly there will be two General Practice ward rounds and one General Out Patient Department (OPD) placement irrespective of place of posting. The residents will have to maintain a portfolio of all the learning activities including log-books and assessments done in each postings aligning with the learning outcomes of the programme. The specialist supervisor will conduct formative assessments as per the mapping with the learning outcomes. The portfolio shall be assessed by the residents, specialist supervisor and the GP supervisor regularly. It will be further assessed by the internal and external examiner in summative examinations (refer appendix for portfolio assessment forms). The portfolio assessment ratings shall be computerised and maintained in an excel sheet and updated regularly by the GP Coordinator.

The competency domains in medical profession are grouped differently by different institutes. The Canadian Medical Education Directives for Specialists CanMeds (2015) describes physician's role as Medical expert, Communicator, Collaborator, Leader, Health Advocate, Scholar and Professional.^[14] The Accreditation Council for Graduate Medical Education (ACGME)^[15] defines six domains as: Patient Care, Medical Knowledge, Practice-based learning and improvement, System based Practice, Professionalism and Interpersonal skills and Communication. The Japanese Family Doctors use six core competencies: Person-centred practice and care, Comprehensive and integrated approach, Management emphasizing collaborative care, Community-oriented approach, Professionalism for the public interest and diversity of care. The Royal Australian College of General Practice (RACGP) defines learning outcomes under five domains: Communication Skills and Patient-Doctor relationship, Applied Professional Knowledge and Skills, Population Health and context of General Practice, Professional and Ethical role and Organizational and Legal dimensions.^[16] For General Practice in Bhutan, the learning outcomes are adapted with permission, from five domains of RACGP with some modifications.

In this section, the general learning outcomes are described under the five domains and in the later section under the educational strategies, the specific learning outcomes are detailed in tabular form to align with the teaching, learning activity and assessment methods.

Domain 1: Communication skills and Patient-Doctor relationship

In this domain: Communication skills, patient centeredness, communicating health promotion, whole person care, are described.

Domain 2: Applied Professional Knowledge and Skill

In this domain: Physical examination and procedural skills, medical conditions and decision making are described.

Domain 3: Community Health and Context of General Practice

In this domain: Epidemiology, public health, prevention, family influence on health and resources are explained.

Domain 4: Professional and Ethical Role

In this domain: Duty of care, standards, self appraisal, teacher role, research, network and self care are described.

Domain 5: Organizational and Legal dimensions and information technology/e-health

In this domain: Information technology/e-health, records, reports, confidentiality and practice management are described.

Educational Strategies

1. Teaching and learning methods

The Curriculum is based on the following principles of learning^[17,18]:

Competency –based Education

Competency-based education is defined by identifying the outcomes, defining performance levels, framework for assessing competencies and continuous evaluation process. The training of General Practitioners needs to be focused on skill development, integrating with knowledge.

The Practice- based, learner centred and experiential learning Education

The training of GP residents will take place in a supervised clinical setting. During the rotational postings, the residents will work in General Out Patient Department (OPD) once in a week and attend general rounds in the ward, twice a week with GP supervisor. Regular assessments and feedback by the specialist supervisor and the GP supervisor will be performed. The residents learn from the following methods but not limited to these:

- Case presentations and discussion
- Case managements and discussion
- Performing procedural skills under supervision, feedback and reflections
- Learning and practising communication skills through role plays and de-briefing
- Working professionally and ethically as a role model.

GPs as teachers, learners and leaders

General practitioners need to develop educational and leadership skills as an integral part of their professional career. This curriculum aims to incorporate teaching, mentoring and leadership at all levels of professional life. The residents will be learning assessment and evaluation skills, adult learning principles, instructional and supervision skills, and providing feedback and develop skills on how to learn and educate. The following methods allow residents to acquire the above skills.

- Paper presentations and question answer session
- Journal clubs and discussion
- Case presentation and discussion
- Bedside teaching followed by demonstration and practice^[19]
- Grand rounds and question answer session
- Seminars, Workshops, Conferences, PBL, Research writing (thesis)
- Teaching interns and allied health staffs

Independent Self-Directed Learning:

- Reading journals and articles, including web-based material
- Maintenance of portfolio
- Audit and research projects

2. Assessment methods

Assessment is a strong driving force behind learning and therefore is a main focus in the curriculum design.^[20,21] Since it addresses complex competencies, it requires both quantitative and qualitative information from different sources as well as professional judgment. No single assessment method is inferior or superior and all methods have their strengths and weaknesses. A complete assessment programme tries to balance these out. A further important issue to consider is the problem of domain specificity. Any assessment or test is factually a sample of questions (or assignments or observation) out of huge domain of possible questions, and how a candidate performs on one question is a poor predictor of their performance on any other question. This – slightly counter intuitive – notion of domain specificity^[22,23] requires examinations to be sufficiently long and sufficiently diverse. Assessment programmes can be described using the categorization of Miller's Pyramid [Figure 5]. This illustrates a helpful framework for assessment. The base of the pyramid represents knowledge (Knows), followed by competence (Knows how), performance (Shows how) and action in the work place (Does).^[24] No single method is able to assess all the layers and therefore multiple methods need to be employed.^[17] The following methods will be utilised for both formative and summative assessments.

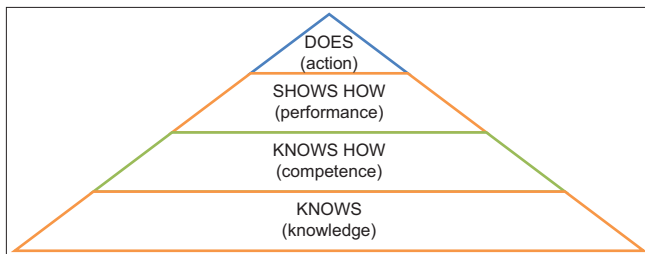


Figure 5: Miller's Pyramid, framework for clinical assessment

a) 360 degree feedback

360-Degree Evaluation/Multisource Assessment consists of measurement tools completed by multiple individuals in a person's sphere of influence. Assessment by peers, other members of the clinical team, and patients can provide insight into trainees' work habits, capacity for team work, and interpersonal sensitivity.^[25]

b) Mini-CEX

The Mini-CEX is a 10 to 20 minute direct observation assessment or "snapshot" of a trainee-patient interaction. The competencies that can be assessed by this method are: patient's history taking, physical examination, counselling skills, Clinical Judgment/reasoning, and overall clinical competence.^[26]

c) Objective Structured Clinical examination (OSCE)

This consists of multiple stations in each of which the candidate is asked to perform a different defined task such as taking a focused history or performing a focused clinical examination of a particular system. A standardised marking scheme specific for each case is used.^[25]

d) The Short Answer Question (SAQ)

This is an open ended, semi-structured question format.^[17] They take more time to answer than for example multiple choice questions and therefore their reliability per hour of testing time is lower. Generally it is recommended that they should be used mainly when testing aspects which cannot be tested by closed questions format.^[27] A structured predetermined marking scheme improves reliability.

e) Direct Observation of Procedural Skills (DOPS)^[17,25]

This is a structured rating scale for assessing and providing feedback on practical procedures. The competencies that are commonly assessed include general knowledge about the procedure, informed consent, pre-procedure preparation, analgesia, technical ability, aseptic technique, post-procedure management, and counselling and communication.

f) Multiple Choice Questions (MCQ)

MCQ tests can be useful for formative and summative assessments and good quality MCQ can be set through peer review process and efficient feedback system.^[28] Although time consuming to set, these tests typically have a high reliability per hour of testing time (than open ended questions), because they can easily mitigate the impact of context specificity, that is a large number of items can be tested and marked within a relatively short time frame.^[29]

h) Key Feature Questions (KFQ)

This is a clinical scenario-based question. A description of the cases is followed by a limited number of questions that focus on critical, challenging actions or decisions.^[17]

i) Simulation with standardized patients.^[26]

A standardized patient is a person trained to accurately and consistently portray a patient with a particular medical condition. Based on an encounter between the standardized patient and a student, both the standardized patient and medical professionals can make judgments about the quality of the performance along a number of dimensions (e.g, history-taking, physical examination, interpersonal and communication skills).

j) Logbook

In the Logbook students keep a record of the patients seen or procedures performed either in a book or in a computer. It documents the range of patient care and learning experience of students. Logbook is very useful in focusing students on important objectives that must be fulfilled within a specified period of time.^[30]

k) Case-based Discussion (CbD)

This is a valuable workplace formative assessment tool and is used to assess the resident's professional judgments in clinical areas. In this method, a comprehensive review of a clinical case is conducted between a resident and an assessor. After the discussion, the assessor provides feedback to help the resident

improve and structure their future learning. The clinical areas that can be assessed by this methods are record keeping, history taking, clinical findings and interpretation, management plan, follow up and future planning.^[31]

I) Portfolio assessment^[32,33]

This method is the most important process that will be utilized to assess GP residents. They are required to collect every bit of learning experience and data like a logbook, reflections and all records of learning activity and assessments reflecting five domains of General Practice, throughout the training period. It will be seen as both the process and the outcome of the GP residency programme. As a process, it will enable the residents to monitor their own learning systematically, reflecting on their learning using the five domains of General Practice leading

to learning goals. As a product, it holds the work records and documents the resident has produced representing their achievements. The portfolio will be assessed (Figure 6 and appendix 1 - 6) regularly by the residents, specialist supervisor and the GP supervisor. It will be further assessed by internal and external examiner at two low stakes examinations (institute examination I and II – IE 1, IE 2) and finally at high stake examination (University examination - UE), after completion of the residency programme. A good documentation process will be followed to ensure credibility. The following figure [Figure 6] illustrates the assessment process of the portfolio. The concept for the flow chart is adapted from the Journal article - Assessing tomorrow’s learners: In competency-based education only a radically different holistic method of assessment will work by Lambert Schuwirth and Julie Ash.^[34]

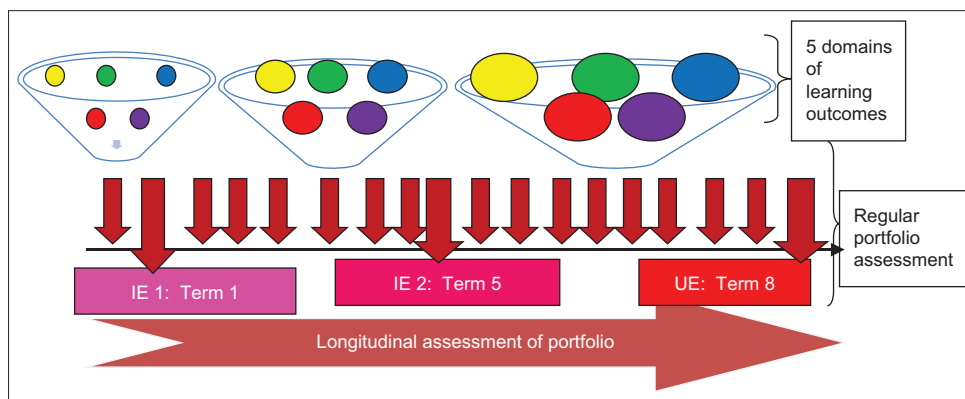


Figure 6: Utility of portfolio as an assessment method

Mapping of specific learning outcomes with teaching/ learning activities and assessment methods

1. Communication and patient-doctor relationship domain

At the end of the training, the GP residents are able to communicate effectively and appropriately with patients, relatives and caregivers and develop skills to maintain good patient-doctor relationship.

Specific Learning Outcome	Teaching/learning activity	Assessment methods
1. Communication is clear, respectful, empathetic and appropriate to the person and socio-cultural context	<ul style="list-style-type: none"> ● Role play and de-contextualizations relating the experiences to first principles. 	<ul style="list-style-type: none"> ● Standardized Patients- OSCE
2. Effective communication is used in challenging situations like: <ul style="list-style-type: none"> ● Breaking bad news ● Agitated family or patients ● Discuss poor prognosis of diseases ● Managing patients experiencing current or consequences of trauma 	<ul style="list-style-type: none"> ● Interviewing Patients and debriefing ● Self-reflection on experience 	<ul style="list-style-type: none"> ● Mini-CEX ● 360 degree feedback ● Real patient observation ● Portfolio assessment
3. Communication with family, caregivers and others involved in the care of the patient is appropriate and clear <ul style="list-style-type: none"> ● Involvement of family member and caregiver in patient management ● Impacts of patient care burden on caregivers 	<ul style="list-style-type: none"> ● Role play and de-contextualizations relating the experiences to first principles. ● Interviewing Patients and debriefing ● Self-reflection on experience 	<ul style="list-style-type: none"> ● Standardized Patients- OSCE ● Mini-CEX ● 360 degree feedback ● Real patient observation ● Portfolio assessment
4. Complaints and concerns are managed effectively <ul style="list-style-type: none"> ● Approaches to address patient complaints ● Plans to reduce risk of arising complaints in future 		
5. Ways in which health can be optimized and maintained are communicated to patients, family members and caregivers. <ul style="list-style-type: none"> ● Self-care strategies ● Nutrition ● Managing stress ● Sexual and reproductive health ● Substance use disorder ● Managing safety risk for older people 		

Learning resources

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2. Applied Professional knowledge and skills domain

1. At the end of the training, the GP residents are able to demonstrate relevant diagnostic and managerial skills in patients of all age groups and life stages and perform important procedures *relevant to General Practice* through a holistic and patient-centred approach.
2. At the end of the training, the GP residents develop skills to practise evidence based medicine innovatively and they collaborate and coordinate care.

Specific Learning Outcome	Teaching/learning Activity	Assessment methods
1. Demonstrate relevant diagnostic and managerial skills in patients of all age groups and life stages with wide range of health problems as specified in the later sections: <ul style="list-style-type: none"> • Procedural skills in General practice • Content outline in different disciplines 	<ul style="list-style-type: none"> • Demonstration, practice and feedback • Real Life Experience in different postings and reflections • Simulations with Standardized patient • Simulation with artificial models • Case presentations and discussion • Case managements and discussion • Active involvement in procedural skills, feedback and reflections • Paper presentations and question and answer session • Journal clubs and discussion • Bedside teaching followed by demonstration and practice • Ward rounds and discussion • Grand rounds and question answer session • Seminars, Workshops, • Conferences, PBL, Research writing (thesis) • Teaching interns and allied health staffs 	<ul style="list-style-type: none"> • OSCE • Mini CEX • MCQ • SAQ, KFQ • DOPS • 360 degree feed back • Case based Discussion (CbD) • Portfolio assessment
2. Demonstrate holistic and patient-centred care <ul style="list-style-type: none"> - Effective history taking, physical examination, documentation - Need based approach - Continuity of care - Therapeutic relationship - Management plans - Psycho -Socio-cultural factors - Priority based 	<ul style="list-style-type: none"> • Mini-CEX and feedback • Real Life Experience in General Practice Department and district postings • Role plays and de-contextualization to understand relationship between case and first principles. • Interviewing patients and de-briefing • Small group discussion • Readings and discussion 	
3. Able to remain informed and innovative <ul style="list-style-type: none"> - Evidence-based resources and practice - Up-to- date prescribing knowledge - Innovate approach to patient with multiple problems - Different models of care- cure, care, rehabilitations etc. 	<ul style="list-style-type: none"> • Literature review, critique reflection • Journal club and discussion • Thesis writing • Poster presentation 	<ul style="list-style-type: none"> • Portfolio assessment • Thesis assessment
4. Able to collaborate and coordinate care <ul style="list-style-type: none"> - Minimize fragmentation of care - Effective communication with patient, relatives, caregivers and other specialists - Multidisciplinary care - Collaborate with other agencies to optimize patient care 	<ul style="list-style-type: none"> • Real-Life Experience in different postings and reflections • Role plays and de-contextualize 	<ul style="list-style-type: none"> • 360 degree feedback • Portfolio Assessment

Procedural skills in General Practice

The GP residents must be able to demonstrate skills in the following procedures^[35] at the end of the training and maintain a log book as per the sample in appendix 1.

Body System: Ear, Nose, Throat and Dental	
Removal of foreign body from external auditory canal	Syringing external auditory canal
Ear Toilet- Dry mopping	Insertion of wick into external ear canal
Removal of ear wax	Removal of foreign body from nose
Anterior nasal packing	Posterior nasal packing
Epley manoeuvre for benign positional vertigo	Cricothyroidotomy
Emergency Thyroidotomy	Peri-tonsillar abscess drainage
Extraction of loose tooth	Drainage of dental abscess

Body system: Eye	
Application of eye patch	Removal of corneal foreign body
Irrigation of eye	Removal of subtarsal foreign body
Epilation	Visual acuity and field assessment
Use of ophthalmoscope	

Body system: Skin and subcutaneous tissue	
Suturing of wound in most surgical conditions	Wound debridement, drainage and excision of infected and contaminated wound
Excision of superficial skin lesions	Incision and drainage of abscess
Biopsy of skin lesions	Application of wound dressings
Drainage of subungual haematoma	Application of burn dressing
Removal of subcutaneous foreign body	Drainage of acute paronychia
Removal of ring from swollen finger	Electrocautery of skin lesion
Pare skin callus	Excision of lipoma
Avulsion of toenail	Wedge excision of ingrown toe nail
Haematoma drainage/evacuation	Superficial foreign body removal
Superficial lymph node biopsy	Circumcision
Control of arterial bleeding	Fasciotomy in compartment syndrome
Excisional biopsy of superficial breast lump	Chest wound closure
Injection of keloid scar	Nerve repair in simple injuries
Tendon sheath drainage	Ligament repair in simple injuries
Reduction of paraphymosis	

Pathology: Collect and prepare	
Slit skin smear for AFB (Hansens)	Fungal scraping
Nasal swab	Throat swab
Bone marrow aspiration	

Body system: Musculoskeletal	
Correct technique of Injections – IM, SC, ID	Application of forearm back slab
Application of forearm sling	Injection/or aspiration of knee joint
Application of scaphoid cast	Application of knee back slab
Application of forearm cast	Splinting of fingers
Application of cervical collar	Removal of plaster/fibre glass cast
Application of full arm cast	Reduction of dislocated finger
Application of below knee cast	Injection or aspiration of shoulder
Reduction of dislocated shoulder	Reduction of dislocated radial head/elbow
Injection of subacromial space	Soft tissue strapping
Injection of tennis elbow	Application of full leg cast
Injection and aspiration of olecranon bursa	Injection/or aspiration of prepatellar bursa
Application of walking heel to a plaster	Injection of planter fasciitis
Reduction of dislocated patella	Reduction of tempero-mandibular joint
Disarticulation/or amputation of digit	Closed reduction of simple fractures and immobilization

Body system: Nervous/ Anaesthesia	
Infiltration of local anaesthetics	Digital nerve block
Airway management using face mask	Application of oral airway
Application of LMA	Lumbar puncture

Body system: Respiratory	
Nebulisation therapy	Perform peak flow measurement
Perform spirometry	Use of ventilator
Pleural tapping	

Body system: Gastrointestinal	
Gastric lavage	NG tube insertion
Drainage of perianal haematoma	Drainage of perianal abscess
Proctoscopy	Extended FAST (focused abdominal sonography in trauma)
Haemorrhoid banding	Paracentesis

Body system: Urogenital	
Urethral catheterization in male	Urethral catheterization in female
Urethral catheterization – child	Suprapubic aspiration – child
Suprapubic cystostomy	Non-scalpel Vasectomy (NSV)

Paediatrics – additional procedures	
Correct breast feeding technique	Other feeding methods
Resuscitation of new born	Phototherapy
Septic work up	ENT examination and hearing testing
Vision testing	Assessment of growth chart
Development milestone assessment	Intravenous infusion
Blood transfusion	Femoral puncture for blood collection
Thoracocentesis	Paracentesis
Lumbar puncture	

Reproductive health procedures	
Pap smear	Taking high vaginal swab
Removal of intrauterine contraceptive device (IUCD)	Breast abscess drainage
Excisional biopsy of superficial breast lump	Taking urethral swab in men
Breech Delivery	Multiple delivery
Induction of labour	Vacuum/forceps delivery
Repair of vaginal lacerations/episiotomy	Manual removal of placenta
Repair of cervical tear	APH management
PPH management procedures	Cervical/endometrial biopsy
Marsupialisation for bartholin cyst/abscess	MVA/evacuation for incomplete abortion
Dilatation and curettage of Uterus	Evacuation of vulval haematoma
IUCD insertion	

Urgent Care – Cardiac	
CPR – Child	CPR – adult
Set up and record 12 lead ECG	Defibrillation
Urgent care – Respiratory	
Mouth to mask ventilation	Insertion oral air way
Administration of oxygen via facemask, nasal prongs, oxygen hood in babies	Reduction tension pneumothorax – needle followed by chest tube insertion and water seal drainage
Insertion of nasopharyngeal airway	ET intubation
Needle thoracocentesis	
Urgent care – Circulation	
Venepuncture	Venous cut-down
Intraosseous infusion	Arterial puncture for arterial blood gas analysis
Central venous cannulation: Internal jugular, subclavian	

Learning resources

1. John Murtagh's General Practice, 6th Edition
2. The contributions of Family Medicine to Improving Health Systems, edited by Prof. Michael Kidd.
3. Australian Family Physician, <http://www.racgp.org.au/afp>
4. Clinical resources for GPs/FPs, <http://www.globalfamilydoctor.com>,
5. American Academy of Family Physicians, www.aafp.org

3. Community Health and context of General Practice domain

At the end of the training, The GP residents are able to make rational decisions and effectively lead to provide preventive, promotive, curative and rehabilitative health services in the community.

Specific Learning Outcome	Teaching/learning Activity	Assessment methods
1. The pattern and prevalence of disease are incorporated into screening and management purposes <ul style="list-style-type: none"> • Common causes of morbidity & mortality • Lifestyle-related disease risk factors • Environmental risk factors 	<ul style="list-style-type: none"> • Workplace implementation of screening and prevention strategies and self-reflections • Team Based Learning • Small group Discussion • Journal article reading • Lectures and QA session 	<ul style="list-style-type: none"> • MCQ • SAQ, KFQ • Portfolio assessment
2. Demonstrate competency in routine community health activities in the district <ul style="list-style-type: none"> • Immunization, AEFI, IMNCI • ANC, PNC, FP services • School health programme 	<ul style="list-style-type: none"> • Demonstration, practice and feedback • Simulations and discussion • Real life experience and reflections • AV aide learning • Role plays and debriefing 	<ul style="list-style-type: none"> • MCQ • SAQ • OSCE • MiniCEX • DOPS • Portfolio Assessment
3. The impacts of social determinants of health are identified and addressed <ul style="list-style-type: none"> • Societal dysfunction • Familial dysfunction 	<ul style="list-style-type: none"> • Interviewing patients and debriefing • Real experience and reflections 	<ul style="list-style-type: none"> • Mini-CEX • Portfolio Assessment
4. Current and emerging public health risk are effectively managed <ul style="list-style-type: none"> • Emerging and re-emerging communicable diseases • Disease surveillance • Notifiable diseases 	<ul style="list-style-type: none"> • Case management and discussion • Journal club • Team Based Learning • Workshops, Seminar • Real life experience and reflection 	<ul style="list-style-type: none"> • MCQ • SAQ • Portfolio Assessment
5. Barriers to equitable access to quality care are addressed <ul style="list-style-type: none"> • strategies to improve access to general and preventive care for vulnerable groups 	<ul style="list-style-type: none"> • Group discussions • Workshops 	<ul style="list-style-type: none"> • MCQ • SAQ, KFQ • Portfolio Assessment
6. Demonstrate effective leadership in the district health team	<ul style="list-style-type: none"> • Simulation in disasters management drills, motor vehicle accidents etc. • Reflection on experience 	<ul style="list-style-type: none"> • 360 degree feed back • Portfolio assessment

Learning resources

1. PEN protocol for hospital, <http://www.health.gov.bt/wp-content/uploads/moh-files/2014/11/PEN-protocols-for-hospitals.pdf>
2. PEN protocols for BHU, <http://www.health.gov.bt/wp-content/uploads/moh-files/2014/11/PEN-protocol-for-BHU.pdf>
3. National Physical Activity guideline, <http://www.health.gov.bt/wp-content/uploads/moh-files/2014/11/National-Physical-Activity-guidelines-.pdf>
4. National Policy and strategic framework on prevention and control of NCD, <http://www.health.gov.bt/wp-content/uploads/moh-files/2014/11/National-Policy-and-Strategic-Framework-on-Prevention-and-Control-of-NCD-.pdf>
5. Bhutan National immunization policy and strategic guideline, <http://www.health.gov.bt/wp-content/uploads/moh-files/2015/07/Final-Bhutan-National-Immunization-Policy-and-Strategic-Guidelines.pdf>
6. Bhutan Dietary guidelines for school children, <http://www.health.gov.bt/wp-content/uploads/moh-files/2014/11/Final-versionDIETARY-GUIDELINES-FOR-SCHOOL-CHILDREN.docx>
7. Guidelines on in-patient food service system, <http://www.health.gov.bt/wp-content/uploads/moh-files/Inpatient-food-Service-System.pdf>
8. Community Development for Health, <http://www.health.gov.bt/wp-content/uploads/moh-files/CommunityDevelopmentforHealth.pdf>
9. National guideline for management of rabies, <http://www.health.gov.bt/wp-content/uploads/moh-files/2015/07/National-Guideline-for-Management-of-Rabies-2nd-Edition-2014.pdf>
10. Anthrax guideline, <http://www.health.gov.bt/wp-content/uploads/moh-files/2015/07/Anthrax-Guideline-2013.pdf>
11. Occupational Health and safety guideline, <http://www.health.gov.bt/wp-content/uploads/moh-files/occupationalHealthandSafetyGuidelinesHealthProfessionals2012.pdf>
12. Leprosy guideline, <http://www.health.gov.bt/wp-content/uploads/moh-files/LEPROSY-GUIDELINES-1st-Edition-2014.pdf>
13. National guideline on clinical lab standards, <http://www.health.gov.bt/wp-content/uploads/moh-files/Clinicallab-standards.pdf>
14. IMNCI, <http://www.health.gov.bt/downloads/imnci/>
15. National service standards, <http://www.health.gov.bt/downloads/service-standards-2/>
16. Annual Health bulletins, <http://www.health.gov.bt/publications/annual-health-bulletins/>
17. **Acts, policies and regulations**, <http://www.health.gov.bt/downloads/acts-policies-and-regulations/>

4. Professional and ethical role domain

At the end of the training, the GP residents demonstrate self-awareness, professional and ethical role in General Practice.

Specific Learning Outcome	Teaching/learning Activity	Assessment methods
1. Adherence to relevant codes and standards of ethical and professional behaviour <ul style="list-style-type: none"> Ethical dilemmas in practice situations and access to professional support Evaluate and review professional behaviour against appropriate codes of conduct 	<ul style="list-style-type: none"> Real life experience and Reflections PBL Small group discussions Role model 	<ul style="list-style-type: none"> 360 degree feedback Work place assessment Portfolio Assessment KFQ
2. Duty of care is maintained <ul style="list-style-type: none"> Manage obstacle to provision of duty of care Record and report any instances that may have been compromised 	<ul style="list-style-type: none"> PBL Small group discussion <ul style="list-style-type: none"> Real life experience and Reflections 	<ul style="list-style-type: none"> 360 degree feedback Portfolio Assessment KFQ
3. Critical incidents and potential critical incidents are identified and managed.	<ul style="list-style-type: none"> PBL TBL Real life experience and reflections 	<ul style="list-style-type: none"> Portfolio Assessment
4. Professional knowledge and skills are reviewed and developed.	<ul style="list-style-type: none"> Reading articles Workshops, seminars, conferences 	<ul style="list-style-type: none"> Portfolio Assessment
5. Reflection and self-appraisal are undertaken regularly	<ul style="list-style-type: none"> Self-reflections 	<ul style="list-style-type: none"> Portfolio Assessment
6. Personal health and wellbeing is evaluated, maintained and developed	<ul style="list-style-type: none"> Self-reflection Role Model 	<ul style="list-style-type: none"> Portfolio assessment

Learning resources

- Medical and Health Council Act 2002, http://www.bmhc.gov.bt/downloads/medical_and_health_council_act.pdf/
- Bhutan Medical and Health Council Regulation 2005, <http://www.bmhc.gov.bt/wp-content/uploads/2012/06/MHCRegulationsFINAL.pdf/>
- Continuing Medical Education guideline 2009, http://www.bmhc.gov.bt/downloads/cme_guidelines.pdf
- Disciplinary proceedings for Malpractice and Negligence Regulations 2009 http://www.bmhc.gov.bt/downloads/disciplinary_proceedings.pdf
- Guidelines for writing Medical Certificates and Reports 2009 http://www.bmhc.gov.bt/downloads/medical_certificate_guidelines.pdf

5. Organizational and legal dimension domain

At the end of the training, the GP residents demonstrate ability to work within statutory and regulatory requirements guidelines and they use quality practice management processes and systems to optimize safety in General Practice.

Specific Learning Outcome	Teaching/learning Activity	Assessment methods
1. Infection control and relevant clinical practice standards are maintained.	<ul style="list-style-type: none"> • TBL • Self- reflections 	<ul style="list-style-type: none"> • 360 degree feed back • Portfolio Assessment
2. Effective clinical leadership is demonstrated	<ul style="list-style-type: none"> • Real life experiences and reflections 	<ul style="list-style-type: none"> • 360 degree feedback • Portfolio Assessment
3. Relevant data is clearly documented, securely stored and appropriately shared for quality improvement	<ul style="list-style-type: none"> • Role Models • Workplace-based self- practice 	<ul style="list-style-type: none"> • 360 degree feedback • Portfolio Assessment
4. Effective triaging and time management structures are in place to allow timely provision of care	<ul style="list-style-type: none"> • Simulations exercises • Real life experience and reflections 	<ul style="list-style-type: none"> • Portfolio Assessment
5. Patient confidentiality is managed appropriately	<ul style="list-style-type: none"> • Case vignette • Self-reflections 	<ul style="list-style-type: none"> • Portfolio Assessment
6. Shared decision making and informed consent are explained and obtained.	<ul style="list-style-type: none"> • Real life experience and reflections • TBL 	<ul style="list-style-type: none"> • Portfolio Assessment
7. Medico-legal requirements are integrated into accurate documentation	<ul style="list-style-type: none"> • Lectures and QA sessions • Real-life experiences and self-reflections • PBL 	<ul style="list-style-type: none"> • MCQ • KFQ • SAQ • Portfolio Assessment

Learning resources

1. Standard infection control guidelines, MOH, Royal Government of Bhutan
2. Guidelines for screening of blood, <http://www.health.gov.bt/wp-content/uploads/moh-files/2014/11/Guidelines-on-screening-blood.pdf/>
3. The Penal code of Bhutan, <http://www.rbp.gov.bt/Forms/PCB%202004.pdf/>
4. Manual for bench marking of quality improvement of Health Care Services, <http://www.health.gov.bt/wp-content/uploads/moh-files/Manual-on-Benchmarkin-of-QUality-Improvement1.pdf>

Introduction to Contents

The contents outlined in this section are in alignment with the learning outcome of the programme. The contents are

categorized according to the departments in the teaching hospital (JDWNRH). All the sections except for the generic curriculum are based on the author's experience in the domain of general practice working in the districts in Bhutan for the last 20 years. The professional colleagues from Forensic Medicine Department, Emergency Department and Generic Curriculum^[36] department of KGUMSB have also contributed in their respective disciplines. The competencies are more focused on the functioning of General Practitioner in the District Hospitals in the context of Bhutan. Experiences and curriculum of other countries like two colleges of Australia, RACGP^[37] and Australian College of Remote and Rural Medicine (ACRRM)^[38] and General Practice (GP) curriculum of Nepal^[39,40] have been extensively referred while preparing the content outline.

The Generic Curriculum is designed to help resident doctors to develop competency in a number of areas including communication and consultation skills, patient safety and team work as well as the general principles and techniques of basic sciences including diagnostic and imaging and investigative medicine.

The resident doctors are also expected to develop and demonstrate a range of essential interpersonal and clinical skills for managing both acute and long-term conditions, regardless of the specialty. The concepts defined in the Generic Curriculum should continue to be visited, reflected upon, and honed throughout the residency training programme and lifelong professional carrier.

Learning outcomes

At the end of this curriculum, the residents are expected to be able to:

1. Identify the general and specific learning needs and outcome of the whole residency programme.
2. Apply the principles and techniques in basic sciences to clinical setting in the respective Specialty discipline.
3. Synthesize the process of history taking, clinical observations, investigations, diagnosis and treatment plans for proper and effective management of the patients.
4. Illustrate a range of essential interpersonal and clinical skills for managing patients with both acute and long-term conditions, regardless of the specialty.
5. Demonstrate different aspects of medical ethics and etiquettes for strengthening professionalism and patient care.
6. Identify and address the legal and ethical issues as applicable to clinical practice and healthcare.
7. Provide leadership and management oversight in patient management with emphasis on intra-and inter-disciplinary teamwork.
8. Make independent clinical decisions with appropriate support.
9. Understand the principles and techniques in epidemiology, biostatistics and research and apply research in clinical practice to promote and strengthen evidence-based care.

Content outline

The resident doctor, irrespective of discipline enrolled, must be able to describe and apply the values during training and throughout the professional life (KGUMSB, 2016)

1. Fundamentals of Basic Science

- Fundamental principles and applications of anatomy
- Fundamental principles and applications of physiology
- Fundamental principles and applications of biochemistry
- Fundamental principles and applications of pharmacology
- Fundamental principles and applications of pathology

2. Basic Life Support and Advance Cardiac Life Support skills

BLS

- Key changes in basic life support, reflecting the new science from the American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care
- Critical concepts of high-quality CPR
- The American Heart Association Chain of Survival
- 1-Rescuer CPR and AED for adult, child and infant
- 2-Rescuer CPR and AED for adult, child and infant
- Differences between adult, child and infant rescue techniques
- Bag-mask techniques for adult, child and infant
- Rescue breathing for adult, child and infant
- Relief of choking for adult, child and infant
- CPR with an advanced airway

ACLS

- Key changes in advanced cardiovascular life support, reflecting the American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care
- Basic life support skills, including effective chest compressions, use of a bag-mask device and use of an AED
- Recognition and early management of respiratory and cardiac arrest
- Recognition and early management of peri-arrest conditions such as symptomatic bradycardia
- Airway management
- Related pharmacology
- Management of acute coronary syndromes (ACS) and stroke
- Effective communication as a member and leader of a resuscitation team
- Effective Resuscitation Team Dynamics

3. Radio-diagnosis and imaging

Plain Radiographs

- Identify normal anatomy on PA, AP and lateral chest films
- Recognize abnormal chest films including pleural effusion, pneumothorax, pneumonia and lobe location, changes of congestive heart failure, changes of chronic obstructive pulmonary disease, atelectasis, pulmonary nodules and masses and hyaline membrane disease of the newborn
- Identify normal anatomy on four views of the abdomen
- Recognize abnormal abdominal films including ileus, small bowel obstruction, large bowel obstruction, free air, and calcifications
- Identify normal anatomy of the spine and long bones in both adults and children
- Recognize abnormal bone radiographs including fractures, degenerative joint disease, osteoporosis (including vertebral collapse), and primary versus metastatic bone malignancy

- Identify normal anatomy on barium enema, and upper gastrointestinal series

Computed Tomography

- o Recognize and treat contrast allergy, its signs and symptoms, and implications to the patient
- o Discuss principles of CT function and applications
- o Discuss differences between CT, MRI, plain film, and US, including the comparative benefits/drawbacks, strengths/weaknesses of each modality
- o Discuss general indications of when to use CT as the imaging of choice
- o Identify normal anatomy found on CT of the head, spine, chest, abdomen, and pelvis
- o Recognize abnormal head CTs including acute haemorrhage infarcts, edema, mass effect, and hydrocephalus in an infant and adult
- o Recognize abnormal chest CTs including pulmonary nodules and masses
- o Recognize abnormal abdominal/pelvis CTs including diverticular disease, appendicitis, bowel obstruction, abdominal aortic aneurysms, pancreatitis, abdominal abscesses, ascites, and hepatic, pancreatic and renal masses
- o Recognize abnormal CTs of the spine, including metastatic disease, degenerative joint disease, and disc disease.

Magnetic Resonance Imaging

- o Discuss principles of magnetic resonance imaging, including differences in abilities and applications of MRI versus CT
- o Identify normal anatomy on MRI of the head and spine
- o Recognize abnormal head and spine MRIs including central nervous system infection, masses, stroke syndromes, multiple sclerosis, disc disease, metastatic vertebral column disease, and cord compression

Ultrasound

- Discuss general principles of ultrasound including the differences between 2D, Doppler, and M mode
- Discuss indications and limitations of
 - ultrasound for specific OB/Gyn situations (molar pregnancy, anencephalic pregnancy, placenta previa, foetal age using biparietal diameter and femur length, and ectopic pregnancy)
 - vascular Doppler ultrasound (aneurysm, deep vein thrombosis, and carotid artery and peripheral vascular disease)
 - ultrasound for gallbladder, bile ducts and liver
 - echocardiogram (transthoracic versus transesophageal echocardiography, chamber size, valvular disease, and pericardial effusions)
 - renal ultrasound for cysts and tumours
 - prostate ultrasound (for evaluation of nodules and biopsy)
 - FAST ultrasound for trauma.

Mammography

- Discuss basics of normal and abnormal mammograms

- Discuss indications and utility of mammography, including usefulness as a screening method and as a surgical tool for resection and biopsy.

Nuclear Medicine

- Discuss general principles and therapeutic uses of nuclear medicine
- Discuss mechanisms, indications, and limitations of HIDA scans, bone scans, tagged RBC scans, myocardial perfusion and function scans, bone densitometry scans, and ventilation/perfusion scans.

Angiography

- Discuss diagnostic and therapeutic principles of angiography
- Discuss indications for obtaining angiograms
- Discuss applications and utility of MRA angiograms
- Recognize normal anatomy of the great vessels and other vasculature on angiograms
- Discuss indications for angiograms for abnormal processes including subarachnoid haemorrhage and berry aneurysms, vascular stenotic lesions, pulmonary angiogram for PE, aortic dissection, aortic trauma, and gastrointestinal bleeding

Become familiar with the various treatment modalities provided by interventional radiologists

- o Ultrasound-guided vascular access
- o Paracentesis
- o Thoracocentesis, chest tube insertion and management
- o Ultrasound-guided cyst aspirations and soft tissue biopsy
- o Embolization procedures
- o Vertebroplasty
- o Vascular stenting
- o Thyroid ablation therapy
- o Thrombolytic therapy for PE/DVT

4. Laboratory medicine

Foundations of Laboratory Medicine

- Concepts of diagnostic sensitivity and specificity of a laboratory test to a specific clinical situation; negative and positive predictive values, situations in which predictive values provide critical information for developing patient care screening, diagnostic, prognostic, and therapeutic pathways/algorithms;
- How reference intervals are derived and used and the different types of reference intervals, including those derived from population distributions, from expert consensus recommendation, or from evidence-based determination of “threshold” values based on a test’s predictive value in a clinical algorithm; how reference intervals may be compartmentalized by age, sex, race, clinical state (e.g., pregnancy);
- Concept of variability in repeated measurements, as well as variability within and between individuals; describe the contributors to analytical uncertainty (precision, accuracy, bias, coefficient of variation);
- Discuss the long-reaching consequences of ordering unnecessary testing; consider whether routine daily

monitoring tests constitute unnecessary testing; based on an understanding of reference intervals, explain why unnecessary testing may lead to higher health care costs and increased risk for the patient; similarly, discuss the consequences of failing to utilize noninvasive or minimally invasive diagnostic procedures before proceeding to invasive approaches (tier 1).

- Distinction between testing appropriate to the clinical laboratory and those relating to research environment;
- External and internal validation of clinical laboratory tests;

Chemical Pathology and Immunology

- Basic principles of toxicology – the diagnosis and management of common clinical toxicology scenarios (e.g., overdoses of acetaminophen, antidepressants, salicylates, ethylene glycol, ethanol, opiates, methanol);
- Interpretation of the results of “drugs of abuse” panels, including causes for false positive and false negative tests, the role of confirmatory testing, and the impact of specimen adulteration;
- Principles of therapeutic drug monitoring, including the determination of peak and trough levels vs random drug levels;
- Uses of metabolic testing, including electrolytes, acid-base balance, osmolality, and blood gases; interpret results for the above tests;
- Tests relevant to diagnosis of myocardial infarction and acute coronary syndrome, cardiovascular and stroke risk, and congestive heart failure;
- Criteria for the laboratory diagnosis of diabetes mellitus and biochemical changes that are seen in diabetic ketoacidosis and nonketotic hyperosmolar coma;
- Evaluation of renal function, and criteria for chronic kidney disease; review basic microscopic urinalysis, and describe key abnormal findings;
- Laboratory evaluation of hepatic, pancreatic, and gastrointestinal tract pathology;
- Common tests used for plasma protein analysis, including total protein, albumin, serum protein electrophoresis, and immuno-fixation electrophoresis and their disease-specific relevance;
- Laboratory tests available for the evaluation of organ-specific and systemic autoimmune diseases, vasculitides, and immuno-deficiencies, including autoantibody testing, serum complement levels, and basic immuno-phenotyping of lymphocyte subpopulations;
- Role of testing for tumour markers, including the differences in their uses for screening, diagnosis, prognosis, and therapeutic monitoring;
- Tests available for use in reproductive biology, both prenatal and postnatal
- Common approaches used in endocrinology testing, including pituitary-adrenal, parathyroid, and thyroid testing; stimulation and suppression test physiology and interpretation.

Molecular Diagnostics

- General principles of molecular diagnostics testing in the screening, diagnosis, and/or monitoring of infectious,

genetic, and oncologic diseases; describe the place of pharmacogenetic testing in clinical care;

- Legal, ethical, and social implications of genetic testing (see law and ethics module);

Hematology

- Methods for determination of the complete blood count, including measured vs calculated values, indications for manual vs automated leukocyte differential, and important interferences;
- Physiology of normal haematopoiesis and the erythrocyte, leukocyte, and platelet response to pathologic stimuli;
- Significance of erythrocyte, leukocyte, and platelet morphologic variations on the peripheral smear; know the types of leukocytes defined in the differential and their significance;
- Laboratory evaluation and differential diagnosis of anaemia, erythrocytosis, leukopenia, leukocytosis, thrombocytopenia, and thrombocytosis;
- Laboratory evaluation, both cellular and chemical, of body fluids, including urine and cerebrospinal, pleural, peritoneal, pericardial, and joint fluid;
- Physiology of coagulation, including the mechanisms of action of naturally occurring and therapeutic anticoagulants;
- Laboratory tests used to diagnose common bleeding and thrombotic disorders, including the haemophilias, platelet disorders, von Willebrand disease, and acquired bleeding diatheses; describe appropriate testing strategies for monitoring haemostatic and anticoagulant therapies;
- Evaluation of hemoglobinopathies, and be able to diagnose common hemoglobinopathies such as sickle cell disease when presented with patient data;
- General principles of flow cytometric, molecular, and cytogenetic approaches used in the evaluation of leukaemias, lymphomas, and related neoplastic disorders;

Microbiology

- Describe the pre-analytic variables that determine the quality and yield of microbiologic testing:
 - a) presence of normal microflora on skin and mucous surfaces;
 - b) presence of contaminants in samples and the effect on culture results;
 - c) effects of sample collection techniques, specimen transport media, timing, and storage conditions;
 - d) importance of sample volume in identifying pathologic organisms in normally sterile sites that may be present in very low concentrations;
 - e) effects of timing of samples to increase the recovery of various pathogens; and describe how the microbiologic workup depends on the site/samples submitted to the laboratory, and describe the basics of optimizing this workup;
- Most frequent agents (bacterial, viral, fungal, parasitic) causing infections in different body sites or systems; and

how an understanding of bacterial, parasitic, and viral pathogenesis impacts sample choice and test interpretations;

- Factors affecting turnaround time in microbiologic workups, e.g., fastidious organisms requiring special media and longer incubation times, as well as unusual tests performed infrequently;
- Explain the use and limitations of stains as rapid diagnostic tools; understand the use of Gram stain on sites/samples that may contain normal flora, as well as those from normally sterile body sites;
- Use and limitations of serology in infectious diseases, to establish immune status, to diagnose acute infection, and as a retrospective means to support diagnosis; recognize the need for the use of paired serology (acute and convalescent phase samples) and for screening and confirmatory methods (such as those used in syphilis); explain why the time course and nature of serologic response is critical in the diagnosis of common disorders, e.g., viral hepatitis and HIV;
- Mechanisms of action of antimicrobial drugs of different classes; interpret the antimicrobial susceptibility report;
- Mechanisms of bacterial resistance to antimicrobials and the spread of resistant organisms in institutions; describe the role of health care providers and of hospital epidemiology and other monitors of infection control in the hospital and the community.

Transfusion Medicine

- Explain the following:
 - a) the blood components available for clinical use;
 - b) the recommended and evidence-based thresholds and indications for transfusion of the various blood components;
 - c) the appropriate evidence-based dosing of blood components;
 - d) the types of recombinant and other “blood component substitutes” available; and
 - e) the alternatives to allogeneic blood product infusion (e.g., hematopoietic cytokines, autologous donations, and intraoperative blood salvage);
- Lifespan of transfused platelets, red blood cells, and the clotting factors present in plasma and how the efficacy of transfusion is monitored by laboratory testing (e.g., expected haemoglobin and platelet count increments);
- Pathophysiology, presentations, and acute management (and prophylaxis) of the different types of transfusion reactions;
- Common infectious disease risks of blood products that remain despite donor screening and blood product testing, including current data on transfusion-transmitted disease incidence and prevalence;
- Importance of blood specimen labelling, with an emphasis on the impact transfusion errors have on patient morbidity and mortality; and the process of issuing and administering blood products, including required patient safety checks, required infusion times, and appropriate blood product

storage limitations once products are issued from the blood bank (tier 1).

- Meaning of and rationale for type and screen (type and cross-match) for blood products and the time limits of such testing; explain the appropriate settings and processes for emergency release of blood and the use of “universal donor” blood;
- Define “massive transfusion,” and describe the special needs of the patients in terms of metabolic derangements and the administration of blood products;
- Various kinds of blood donors (e.g., autologous, directed, altruistic) and the important elements of screening pre-donation;
- Clinical use of therapeutic phlebotomy; various types of apheresis procedures, and examples of how each is used;
- The HLA system and its role in transfusion and transplantation;

5. Infection control

- a) Concept of infection prevention and control
- b) Common misconceptions of infection prevention and control
 - Incidence of infections at the health care facility
 - Prevalence of infections in the community
 - How infections are transmitted
 - HIV and HBV
 - Use of screening
 - Feasibility of adhering to appropriate infection prevention and control practices
- c) Need for infection prevention and control in the
 - Health care facility
 - Home
 - Community
 - Individual
 - Institution
 - Home
 - Community
- d) Consequences of non-compliance
- e) Levels of responsibility.
- f) Definitions:
 - Acute care settings
 - Ambulatory care settings
 - Long-term care settings
 - Home-based care
 - Community-based care
 - Standard Precautions
 - Transmission-Based Precautions
 - Isolation
- g) Common infections in each care setting and methods of prevention
- h) Factors predisposing staff, patients, families, and visitors to infection
- i) Description and methods of
 - Standard Precautions
 - Transmission-Based Precautions
 - Isolation

- j) Antisepsis
 - Definition
- k) Antiseptics
 - Types and their uses
- l) Principles of
 - Decontamination
 - Cleaning
 - Disinfection
 - Sterilization
- m) Categories of disinfectant, their uses, and limitations
- n) Calculation of strengths of disinfectants
- o) National standards and regulations governing infection prevention and control in health care facilities, homes, and communities
- p) Barriers to implementation
 - Lack of knowledge
 - Misunderstanding of associated risks
 - Inadequate equipment and supplies
 - Poor supervision
 - Other
- q) Quality assurance process
 - Definition
 - Standards
 - Indicators
 - Audit

6. Patient safety

- Definition of terms
- What is patient safety
- What are human factors and why is it important to patient safety?
- Understanding systems and the impact of complexity on patient care
- Being an effective team player
- Understanding and learning from errors
- Understanding and managing clinical risk
- Introduction to quality improvement methods
- Engaging with patients and carers
- Minimizing infection through improved infection control
- Patient safety and invasive procedures
- Improving medication safety

7. Medical laws and ethics

- I. Medical Law and Ethics
 - A. Importance in the ambulatory healthcare settings
 - B. Codes of Ethics
 - C. Confidentiality
- II. Medical Practice Management
 - A. Group practices
 - B. Managed Care
 - C. Liabilities
 - D. Licensures, certifications, and registrations.

- III. Liability and Duties
 - A. Types of law – national and international
 - B. Controlled substances
 - C. Contracts
 - D. Statute of Limitations
 - E. Consent
- IV. Workplace Issues
 - A. Medical records
 - B. Employment practices
 - C. Legal implications
- V. Bioethical Issues
 - A. Ethical Issues in Biomedical research
 - B. Life, Death, and Dying and legal documents

8. Basic epidemiology

A. Principles of epidemiology

- 1. Definition
 - Epidemiology
 - Epidemiology approach
- 2. Uses of epidemiology
- 3. Phases of epidemiology approach
 - Descriptive epidemiology
 - What is the problem
 - Frequency of the problem
 - Who is involved
 - Where is the problem
 - When did it occur
 - Analytic epidemiology
 - Analysis of causes of disease
 - Experimental epidemiology
 - Clinical or community trials
 - Evaluation epidemiology
 - Measuring the effectiveness of different health services
- 4. Key components of epidemiology data
 - What
 - Who
 - Where
 - When
 - How
 - Why
- 5. Sources of epidemiology data
 - Census
 - Vital statistics
 - Morbidity data
 - Mortality data
 - Reports of notifiable diseases
 - Hospital records

- Private physicians' offices
 - Disease registers
 - Community
 - Other
6. Measurements and their calculations
 - Ratios
 - Proportions
 - Incidence rates
 - Prevalence rates
 - Demographic rates
 7. Relationship between predictive value and disease prevalence
 8. Screening
 - Definition
 - Screening tests
 - Validity and reliability of screening tests
 - Screening programmes
 9. Surveillance
 - Definition
 - Methods
 - Approaches
 10. Preparation of tables and graphs
 - Graphs
 - Histograms
 - Population pyramids
 - Bar charts
 - Pie charts
 - Scatter diagrams
 - Maps.
3. Classification of the mechanisms of disease transmission
 - Contact transmission
 - Direct transmission
 - Indirect transmission
 - Droplet transmission
 - Airborne transmission
 - Common vehicle transmission
 - Vectorborne transmission
 4. Description
 - Immunity
 - Host response
 - Herd immunity
 - Carrier
 5. Nosocomial infection
 - Definition
 - Modes of transmission
 - Preventive measures
 6. Risk factors for the occurrence of communicable diseases among population groups
 - Extremes of age
 - Presence of underlying disease/infection
 - Natural/Passive immunity
 - Trauma/Invasive procedures
 - Medications
 - Lifestyle
 - Cultural
 - Socio-economic
 - Environmental
 - Organization of health services

B. Infectious disease process

1. Definition
 - Carrier
 - Endemic
 - Epidemic
 - Pandemic
 - Immunity
 - Immune response
 - Herd immunity
 - Immunoglobulins
 - Host response
 - Hypersensitivity
 - Infection
 - Infectivity
 - Pathogenicity
 - Virulence
 - Immunogenicity
 - Sporadic
 2. Dynamics of disease transmission
 - Chain of infection
1. Definition of common terms and concepts used in research
 - Quantitative research
 - Qualitative research
 - Variable
 - Subject
 - Sampling
 - Population
 - Pilot study
 - Validity
 - Reliability
 - Bias
 2. Types of research
 - Historical
 - Descriptive
 - Experimental
 3. Basic research process
 - Identification of problem
 - Statement of problem

9. Research and Biostatistics

A. Research methods

- Definition of terms
 - Statement of hypothesis
 - Identification of assumptions
 - Literature search
 - Definition of setting: geographical, population, etc.
 - Definition of population to be studied
4. Problem statement
 - Characteristics of a problem statement
 5. Methods of sampling and collection
 - Sampling methods
 - Probability methods
 - Non-probability methods
 - Data collecting methods
 - Questionnaire
 - Interview
 - Observation
 - Focus group discussion
 - Document search
 6. Principles of data collection, analysis, and interpretation
 - Pre-testing of instrument
 - Validity
 - Reliability
 - Control for bias
 - Statistical analysis
 - Interpretation
 - Meaning
 - Limitation
 - Usefulness
 7. Strengths and limitations of sources of health data
 - Organizing data
 - Analysing data
 - Interpreting data
 - Implications of findings
 - Limitations
 - Summarizing
 - Conclusion
 - Recommendations
 9. Ethical and legal issues relevant to research
 - Consent
 - Benefits
 - Confidentiality
 - Acknowledgement
 - Other
 10. Research methods relevant to clinical practice
 - Surveys
 - Case studies
 - Experiments

- Case-control studies
 - Cohort studies
11. Design a research proposal in one's area of practice or related fields
 12. Writing the research report
 13. Presentation of study.

B. Biostatistics

1. Definition of terms
 - Statistics
 - Biostatistics
 - Vital statistics
 - Descriptive statistics
 - Inferential statistics
2. Purposes of statistics
 - Summarization of data
 - Comparison of data sets
 - Research methodologies
3. Types of statistics
 - Descriptive
 - Inferential
4. Uses of statistics in clinical practice /public health
 - Surveillance
 - Presentation of data
 - Epidemiology
 - Identification of public health problems
 - Policy analysis and formulation
 - Planning
5. Calculation of the following measures of central tendency
 - Mean
 - Median
 - Mode
6. Measures of variation and their calculation
 - Range
 - Variance
 - Standard deviation
7. Theoretical distribution of variables
 - Normal distribution
 - Binomial distribution
8. Relationship between sample statistics and population parameters
 - Sample mean and population
 - Sample proportion and population proportion
 - Sample variance and population variation.

Learning outcome

The learning outcomes elaborated here are in alignment with the learning outcomes of the program.

The resident at the end of the training is able to:

1. Take correct and detail medical history and perform a thorough clinical examination.
2. Follow appropriate approach to diagnosis and management of acute and chronic medical conditions.
3. Able to diagnose and treat common acute and chronic health problems.
4. To do a range of emergency medical procedures as described in earlier section and carry out necessary referral when indicated.
5. Able to competently perform appropriate diagnostic test of common ailments.
6. To follow up of patients of uncommon illness in the districts once the treatments are initiated by the specialist.
7. To learn the principles of chemotherapy and its side effects and be able to perform prescribed chemotherapy in the district hospital.
8. To provide palliative care in the districts and care of the old age and differently able people in the community.
9. To work effectively as part of multidisciplinary team in the district including BHUs.
10. To provide counselling and health education.

Content Outline

The contents are organized along the system lines and it provides guidelines for the candidate and the supervisor regarding the topics to be covered.

A. The resident **must** be directly involved in the management of the following conditions.

1. Gastroenterology

- Hematemesis & Melaena
- Hepatic Coma
- Acute Pancreatitis
- Acute gastro-enteritis
- Peptic ulcer disease and gastritis
- TB abdomen
- Intestinal parasitic diseases
- Dysentery
- Amoebic liver infestations
- Echinococcus
- Hepatitis/Jaundice
- Cirrhosis of liver
- Hiatus hernia
- Achalasia
- Malabsorption

- Tropical sprue
- Cancer of GI tract
- Gall bladder disease
- Ascitis

2. Blood and lymphoid tissue

- Acute haemorrhage
- Purpura
- Drug-induced blood Dyscrasia
- Agranulocytosis
- Bleeding/Coagulation Disorders
- Blood Transfusion
- Iron deficiency anaemia
- Hypoplastic Anaemia
- Leukaemia
- Hodgkin's disease
- Lymphoma
- Reticulosis

3. Respiratory

- Pneumonia
- Pneumothorax
- High Altitude Sickness
- Emphysema
- Pulmonary Embolism
- Haemoptysis
- ARDS
- Acute Bronchial Asthma and Status Asthmaticus
- Acute Exacerbation of COAD
- Oxygen Therapy
- Other causes of respiratory Distress
- Pleural Effusion
- Bronchiectasis
- Respiratory failure
- Pulmonary Embolism
- Bronchitis
- Asthma
- Koch's disease
- Empyema
- Lung abscess
- Carcinoma lung

4. Tropical Diseases

- Malaria, including cerebral malaria
- Dengue, including DHF and DSS
- Giardiasis
- Tropical eosinophilia
- Enteric fever
- Rabies
- Brucellosis
- Cholera
- Amoebiasis

- Filariasis
- Kala-azar
- Leprosy
- Hydatid cyst
- Worm infestation

5. Cardiovascular

- Pulmonary oedema
- Shock
- Cardiac arrest
- Myocardial infarction
- Cardiac arrhythmias
- Thrombo - embolism
- Infective endocarditis
- Cardiac tamponade
- Cor pulmonale
- Ischaemic heart diseases
- Phlebitis and deep vein thrombosis
- Pericarditis
- Cardiomyopathy
- Syphilitic heart disease
- Hypertension
- Congestive cardiac failure
- Rheumatic fever
- Valvular Heart Disease
- Cardiac neurosis
- Myocarditis
- Cardio-myopathy
- Aortic Aneurysms
- Peripheral Vascular disease

6. Neurology

- Coma
- Status epilepticus
- Subarachnoid hemorrhage
- Meningitis/Encephalitis
- CVA
- Migraine
- Parkinson's disease
- Peripheral neuritis
- Cranial nerve palsy
- Cerebrovascular accidents
- Epilepsy
- Chorea
- Neuro-syphilis
- Brain abscess
- Brain tumour
- Paraplegia including hemi and quadriplegia
- Motor neuron disease

7. Endocrine/metabolic

- Diabetic coma
- Thyroid storm
- Myxoedema
- Diabetes & complications
- Thyroid diseases

- Addison's disease

8. Poisoning & Toxicology

- Mushroom Poisoning
- Anaphylaxis, Angioedema
- Snake bite/Spider bite/Dog bite
- Scorpion stings/Bee stings/Wasp stings
- Food poisoning
- Poisoning by other substances
- Aconite poisoning
- Drug Overdose
- Poisoning and its management in general including specific substances like organophosphorous pesticides, barbiturates, corrosives, petroleum products, dhatura, aconites, heavy metals, paracetamol, salicylates, mushroom, N10, alcohol intoxication etc.

9. Nephrology

- Acute renal failure/AKI
- Haematuria
- Complicated UTI
- Acute glomerulonephritis
- Renal calculi
- Acid/Base/Electrolyte disorders
- CKD
- Nephrotic syndrome/Nephritis
- Genitourinary tuberculosis
- Carcinoma bladder/kidney

10. Nephrology

- CKD
- Nephrotic syndrome/Nephritis
- Genitourinary tuberculosis
- Carcinoma bladder/kidney

11. Oncology

- Tumour Staging
- Basic principles of chemo and radiotherapy
- Basic principles of chemo and radiotherapy

B. The resident **should** be able to identify and refer the following conditions:

1. Gastroenterology

- Irritable bowel syndrome
- Ulcerative colitis
- Crohn's disease
- Chronic pancreatitis
- Diverticulosis

2. Blood and lymphoid tissue

- Megaloblastic anaemia
- Haemolytic anaemia
- Polycythaemia
- Pancytopenia
- Thrombocytopenia

3. Respiratory

- Occupational lung disease

4. Tropical diseases

- Heat stroke/exhaustion

5. Cardiovascular

- Congenital heart diseases

6. Neurology

- Multiple sclerosis
- Muscular Dystrophy
- Myasthenia gravis
- Neurocysticercosis

7. Endocrine/metabolic

- Growth disorders
- Diabetes insipidus
- Pheochromocytoma
- Parathyroid disease
- Osteomalacia
- Sheehan's Syndrome
- Cushing's syndrome

- Hypogonadism

- Infertility

- Malnutrition

- Rickets

8. Nephrology

- Polycystic kidneys

C. Procedural skills: Resident **must** be able to perform the following procedures independently.

1. Lumbar puncture

2. Thoracocentesis

3. Paracentesis

4. Intubation

5. Ventilation Procedures

6. Arterial puncture

7. CPR

8. Taking and reading ECG of common conditions.

9. Bone marrow aspiration

10. Insertion of CV line

11. Reading X- Rays of common conditions

Learning outcome

The learning outcomes elaborated here are in alignment with the learning outcomes of the program.

The resident will be able to demonstrate the following skills at the end of the training.

1. Psychiatric history taking and mental status examination.
2. Clinical diagnosis of common psychiatric conditions especially Depression in general practices.
3. Management of common Psychiatric conditions.
4. Recognition of social and psychological stresses when they affect any illness situation.
5. Diagnostic skills – distinction between organic and functional illness, psychotic and non-psychotic illness
6. Evaluation of mental retardation and training of paramedical staff including teachers in the management.
7. Diagnosis, medical treatment, and psychosocial management of epilepsy.
8. Fundamentals of supportive and short-term psychotherapy.
9. Work effectively in suicide prevention activities in the community.

Content outline

- A. The resident should be able to describe and evaluate the following conditions.
- Signs and symptoms in psychiatry and psychopathology
 - Etiology in psychiatry
 - Psychiatric emergencies

- Reactions to stressful events
 - Anxiety disorders
 - Obsessive compulsive disorders
 - Affective disorders
 - Schizophrenia and related disorders
 - Suicide and deliberate self-harm
 - Dementia
 - Organic brain syndrome
 - Depression/affecting diseases
 - Mental retardation
 - Drugs and alcoholic problems
 - Childhood psychiatric problems
 - Adolescent psychiatry
 - Psycho-sexual disorders
 - Epilepsy
 - Effects of culture in psychiatric illness
 - Treatment overview (Psychotherapy, E.C.T., various drugs regimen etc.)
- B. The resident must be able to evaluate and manage the following conditions
- Take a detailed psychiatric history and mental status examination.
 - Management common psychiatric problems.
 - Manage primary acute psychiatric emergencies.
 - Recognize situations where consultations and/or referral to psychiatrist are required.
 - Prescribe the various psychotropic drugs appropriately for common psychiatric illness.

Learning outcome

The learning outcomes elaborated here are in alignment with the learning outcomes of the program.

At the end of the training:

1. The resident will be able to diagnose and treat most common skin problems and perform some minor procedures.
2. The resident will be able to consult with specialist and communicate with patient and relatives for cases that need referrals.

Content outline

- A. The resident should be able to describe the following conditions and manage the cases.

Bacterial:

- Superficial bacterial infections
- Skin TB
- Leprosy

Viral:

- Herpes simplex
- Herpes zoster
- Wart
- Molluscum contagiosum

Fungal:

- Dermatophyte
- Candida
- Tinea versicolor
- Deep fungal infection

Parasites:

- Scabies
- Pediculosis
- Leishmaniasis

Non-Infective:

- Eczema/Dermatitis
- Acne
- Psoriasis
- Drug eruptions
- Erythema multiforme
- Urticaria
- Purpura
- Bullous diseases

Auto Immune:

- Alopecia
- Collagen Disorders
- SLE

- Lichen Planus
- Vitiligo

Pre-Malignant/Malignant Conditions of Skin/Others:

- Basal Cell
- Squamous Cell
- Cysts
- Melanoma

Sexually transmitted diseases: should be aware of syndrome management.

- Gonorrhoea
- Syphilis
- Chlamydia
- AIDS
- Chancroid
- Granuloma inguinale
- Genital Herpes simplex infection

- B. Residents will be able to carry out the following procedures

- Skin biopsy
- Slit smear
- Scraping fungus detection
- Minor operative procedures (Excision of papilloma, lipoma etc.)
- Therapeutic procedures like- needling, cauterly, Paring etc.

Paediatrics

Learning outcome

The learning outcomes elaborated here are in alignment with the learning outcomes of the program.

The resident is able to:

1. Take correct and detail medical history and perform a thorough clinical examination.
2. To follow appropriate approach to diagnosis and management of acute & chronic conditions.
3. To diagnose and treat common acute and chronic health problems.
4. To do a range of emergency medical procedures as mentioned below and carry out necessary referral when indicated.
5. To competently perform appropriate diagnostic test of common ailments.
6. To follow up of patients of uncommon illness in the districts once the treatments are initiated by the specialist.
7. To work effectively as part of multidisciplinary team in the district including BHUs.
8. To provide counseling and health education.
9. The resident is able to perform all procedures and achieve competency as outlined in the content.

Content outline

The contents are organized along the system lines and it provides guidelines for the candidate and the supervisor regarding the topics to be covered.

A. The resident should be able to describe and manage the following conditions

1. Upper respiratory tract, mouth, eye and ear

- Recurrent viral infections
- croup
- stridor
- laryngomalacia
- rhinitis, sinusitis
- Epistaxis
- sleep apnoea
- hearing loss
- ASOM
- CSOM
- Otitis externa
- Cholesteatoma
- Stomatitis
- Thrush
- Herpes
- Teething
- Caries prevention
- dental abscess
- tonsillitis
- Pharyngitis
- epiglottitis
- cervical adenopathy
- congenital
- glaucoma
- cataract
- blocked tear duct
- conjunctivitis
- retinoblastoma
- amblyopia
- strabismus
- periorbital cellulitis
- foreign bodies in ears /nose / throat

2. Lower respiratory tract

- Bronchitis
- Bronchiolitis
- Asthma
- Cough
- Pneumonia
- Pertusis
- TB
- Bronchiectasis, chronic lung disease
- Inhaled foreign body
- Cystic fibrosis

3. Congenital cardiac conditions

- VSD
- ASD

- Coarctation of aorta
- TOF
- PDA

4. Acquired cardiac conditions

- Rheumatic fever
- RHD
- Kawasaki disease
- Bacterial endocarditis
- Pericarditis
- Arrhythmia
- Myocarditis
- Cardiomyopathies

5. Gastrointestinal system

- Abdominal pain, acute abdomen
- Diarrhea
- Vomiting, poisoning
- Dehydration
- GERD
- Pyloric stenosis
- Appendicitis
- Hernia
- Abdominal mass
- Intussusception
- Constipation
- Rectal bleeding
- Jaundice
- Hepatitis
- Hirschsprung disease
- Gastroenteritis
- Coeliac disease
- Crohn's Disease
- Ulcerative colitis
- Food intolerance diseases- lactose, milk protein
- Congenital gastrointestinal diseases

6. Genitourinary system

- UTI
- Hernia
- Hydrocoele
- Undescended testis
- VUR
- AGN
- Renal failure
- Nephrotic syndrome
- Enuresis
- Phimosis
- Renal stones
- Paraphimosis
- Torsion of testis
- Hypospadiasis
- Circumcision
- Vulvitis
- Congenital abnormality of genitourinary tract
- Tumours

7. Dermatological conditions

- Birth marks
- Napkin rash
- Fungal infections
- Scabies
- Lice
- Kerion
- Eczema
- Acne
- urticaria
- Molluscum contagiosum
- Seborrhoeic dermatitis
- Heat rash
- Impetigo
- Viral exanthems
- Psoriasis

8. Nervous system

- Meningitis
- Encephalitis
- Febrile convulsion
- Epilepsy, seizure disorders
- Migraine
- Other headaches
- Cerebral palsy
- Bell's palsy
- GBS

9. Haematological, Immunological and Rheumatological conditions

- Normal age haematology
- Anaemia
- Leukaemia
- Purpura
- Haemophilia
- Thalassaemia
- Sickle cell disease
- Blood clotting disorders
- Autoimmune diseases
- Arthralgia
- Rheumatic fever
- Rheumatoid arthritis
- SLE
- Scleroderma

10. Endocrine system

- Diabetes Type I, 2
- Growth hormone deficiency
- Congenital adrenal hyperplasia
- Congenital hypothyroidism
- Thyroid disorders
- Abnormal puberty

11. Orthopaedic conditions

- Congenital abnormalities
- Osteomyelitis

- Septic arthritis
- Perthes disease
- Common childhood fractures and dislocation

12. Mental Health issues

- Sleep problems in child
- Eating disorders
- Attention deficit hyperactivity disorder
- Others

13. Infections

- Measles
- Mumps
- Rubella
- Herpes Zooster
- Varicella
- Herpes simplex
- Haemophilus influenza B
- Meningococcus
- Tetanus
- Kalaazar
- Streptococcus, staphylococcus
- Hepatitis
- Malaria
- Dengue
- Scrub typhus
- Typhoid fever
- Others

14. General Issues

- Failure to thrive
- PEM
- Obesity
- Developmental delay
- Autism
- Different ability children
- Others

15. Neonatal conditions

- Essential new-born care
- RDS
- Birth asphyxia, birth trauma
- Cyanosis
- Hypoglycaemia
- Hypothermia
- Vomiting
- Failure to pass meconium
- Neonatal jaundice
- Neonatal infections
- Feeding problems
- Prematurity, post-maturity

B. The resident *must* be able to perform the following procedures

- Peripheral intravenous infusion
- Blood transfusion

- Intraosseous infusion
- Thoracocentesis
- Paracentesis
- Lumbar puncture
- Suprapubic puncture
- Femoral Puncture for blood collection
- Intubation
- CPR – both Basic and Advanced Life Support
- Septic work up
- Correct breastfeeding technique

- Other feeding methods
- Resuscitation of the new-born
- Phototherapy
- ENT examination
- Interpretation of X-rays, Laboratory investigations and ECGs of common problems
- Developmental assessment
- Interpretation of growth charts
- Vision and hearing testing
- Immunization

Learning outcome

The learning outcomes elaborated here are in alignment with the learning outcomes of the program.

At the end of the training, the resident is able to:

1. Accurately take detail history, perform physical examination, apply appropriate diagnostic techniques and arrive to a surgical diagnosis.
2. Perform initial management; communicate with surgeon, patient and relatives appropriately when referral is needed for surgical treatment.
3. Perform minor surgical procedures as outlined in the content.
4. Manage trauma patient conservatively when referral is not indicated.

Content outline

A. The resident must demonstrate the following at the end of the training.

- Approach to diagnosis and treatment of surgical illness
- Assessment of surgical patient
- Nutrition
- Fluid and electrolyte balance
- Management of shock
- Management of wound and healing
- Pain management
- Recovery and mobilization planning

B. The resident must be able to define, diagnose and manage (treatment or referral after initial management) the following conditions:

1. Skin and subcutaneous tissue

- Simple and complex wounds
- Infected wounds
- Abscess, cellulitis
- Hematomas
- Foreign bodies
- Skin lesions
- Skin cancer (biopsy)
- Leg ulcer
- Burns

2. Head and neck

- Head injury
- Lumps in the neck
- Maxillofacial injury
- Injury to eye and ear
 - Oral lesions and injury

3. Chest

- Chest trauma
- Lung abscess
- Chest pain

4. Abdomen

- Appendicitis
- Cholecystitis
- Perforated viscus
- Bowel obstruction
- Abdominal trauma
- Imperforate anus
- Liver abscess
- Abdominal lumps
- Hernia
- GI bleed
- Altered bowel habit

5. Perianal/rectal

- Rectal bleeding
- Perianal sepsis

6. Groin/scrotum

- Groin/scrotal swelling
- Testicular trauma
- Testicular torsion
- Inguinal Hernia

7. Genitourinary

- Renal pain
- UTI
- Phimosis/paraphimosis
- Prostate disease
- Urine retention/incontinence

8. Vascular disease

- Claudication
- Arterial/venous ulcer
- Ischemic limb
- Superficial thrombophlebitis
- Compartment syndrome
- Arterial trauma

C. The resident *must* demonstrate the competency in performing the following procedure at the end of the training.

- Suturing in most surgical situations
- Wound debridement, drainage, and excision in infected and contaminated wound
- Abscess drainage
- Hematoma drainage
- Foreign body removal (superficial)
- Excision of simple skin lesions
- Skin biopsy
- Burn dressing and simple graft, escharotomy
- Cricothyroidotomy
- Emergency tracheostomy
- Superficial lymph node biopsy

- Breast abscess drainage
- Excision of toenails
- Paracentesis
- Control of arterial bleeding
- Fasciotomy in compartment syndrome
- Excisional biopsy of superficial breast lump
- Chest wound closure
- Chest tube insertion and water seal drainage

- Pleural tapping
- Resuscitation and conservative management of acute abdominal conditions and referral
- Urethral catheterization
- Suprapubic cystostomy
- Vasectomy
- Reduction of paraphimosis
- Haemorrhoid banding

Learning outcome

The learning outcomes elaborated here are in alignment with the learning outcomes of the programme.

At the end of the training, the resident will be able to:

1. Manage major and minor trauma, refer after stabilization when indicated.
2. Triage serious and non-serious problems.
3. Manage common Eye, ENT, Gyne/obs conditions presenting to emergency.
4. Use emergency equipment and supplies available in Bhutan.
5. Manage medico-legal cases.
6. Organize and manage emergency services
7. Describe concepts of disaster management.
8. Consult & refer complicated cases after stabilization.
9. Provide leadership and teamwork during emergency.
10. Perform medical procedures with confidence as outlined in the contents.

Content outline

The content outlines are organized along the system and it provides guidelines for the candidate and the supervisor regarding the topics to be covered.

A. Residents must be able to manage (treat and may consider referral after stabilization) the following conditions presenting in emergency department.

1. Cardiovascular System

- Angina pectoris
- Myocardial infarction
- Hypertension
- Cardiac arrhythmias
- Cardiac failure
- Cardiac arrest
- Infective endocarditis
- Myocarditis/pericarditis/tamponade

2. Pulmonary System

- Pulmonary embolus/infarction
- Pulmonary infections (pneumonia/lung abscess)
- Bronchial asthma
- Pleural effusion/Empyema
- Chronic obstructive lung disease
- Spontaneous pneumothorax
- Haemoptysis

3. Gastrointestinal System

- Acid peptic disease
- Acute appendicitis
- Acute cholecystitis
- Acute pancreatitis
- Perforation of hollow viscus

- Intestinal obstruction
- Paralytic ileus
- Obstructed/strangulated hernia
- Volvulus
- Upper and Lower GI bleeding

4. Central Nervous System

- Brain abscess
- Meningitis/Encephalitis
- Cerebrovascular accident
- Seizures
- Coma

5. Endocrine System

- Diabetic Ketoacidosis
- Hypoglycaemia
- Non-ketotic hyperosmolar diabetic coma

6. Psychiatric Illness

- Depression
- Attempted suicide/self-harm
- Conversion disorder
- Acute psychosis
- Mania
- Schizophrenia

7. Genito-Urinary System

- Urinary tract infection
- Ureteric colic
- Renal failure
- Urethral rupture
- Retention of urine
- Haematuria

8. Gynaecological and Obstetrical Problems

- Bleeding PV
- Abortions
- Hyperemesis gravidarum
- Ectopic pregnancy
- Pelvic inflammatory disease
- Torsion of ovarian cyst
- Eclampsia

9. Trauma

- Head injuries
- Chest injuries
- Abdominal injuries
- Soft tissue injuries
- Spinal injuries
- Fractures/dislocations
- ENT, dental and maxillofacial injuries
- Sprains

10. Infectious Diseases

- Malaria
- Dengue
- Other acute viral fever
- Enteric Fever
- Hepatitis
- Gastroenteritis
- Tetanus
- Gas Gangrene
- Rabies

11. Others

- Poisoning
- Burns/Frost bite
- Heat stroke
- Bites: Snake/Insect/Human/Dog
- Anaphylaxis
- Food poisoning
- Foreign body: Throat/Eye/Ear/Nose
- Fluid and electrolyte imbalance
- Alcohol intoxication
- Mastitis/Breast abscess
- Epistaxis
- Painful red eye

B. Procedural skills: Resident must be able to perform the following procedures independently.^[41]

- a. Head tilt chin lift or jaw thrust in a compromised airway
- b. Bag-mask ventilation using resuscitation bag and mask with oxygen
- c. Perform cardiac massage in a case where the heart has stopped
- d. Defibrillate a heart using a defibrillator
- e. Recognize tension pneumothorax and insert needle to relieve the pneumothorax
- f. Insert chest tube to relieve blood or fluid from chest cavity
- g. Insert intravenous line and provide fluid resuscitation including blood
- h. Use cardiac drugs appropriately
- i. Be able to interpret basic ECG and provide appropriate drugs
- j. Insert an alternative airway like LMA and provide breathing
- k. Perform USG to rule out fluid in chest and abdominal cavity in a traumatic patient
- l. Perform X-ray of cervical spine, chest and other body parts in trauma patients (cervical spine fracture and to rule out

- m. pneumothorax)
- m. To perform manual removal of placenta
- n. Immobilize a fracture using POP
- o. Insert an oro-pharyngeal airway in compromised airway
- p. Put on a cervical collar in a suspected case of cervical spine injury
- q. Transfer a patient to a spine board using log roll method if spine injury is suspected and to immobilize the patient to the spine board
- r. Clean and dress a contaminated wound
- s. Clean and immobilize an open fracture with dressing
- t. Intubate and put a patient on artificial ventilation
- u. Perform a cut down where intravenous line is not available
- v. Insert a central venous catheter and monitor fluid input
- w. Insert chest tube where required
- x. Perform abdominal paracentesis for symptomatic ascites and pleural tap for symptomatic Pleural effusion.
- y. Perform FAST (Focus Assessment with Sonography in Trauma) in a patient with intra abdominal injury.
- z. Resuscitate patients using ACLS and ATLS Guidelines.
- aa. Other procedures
 - Removal of foreign bodies
 - Catheterization
 - Gastric Lavage
 - Fracture setting and POP application
 - Lumbar Puncture
 - Reduction of dislocation
 - Intraosseous access
 - Arterial puncture/cannulation
 - Closed reduction- elbow, shoulder,
 - Laryngeal mask airway (LMA)
 - Cricothyroidotomy (needle or surgical)
 - Pelvic immobilization
 - Regional anaesthesia- digital block, wrist block, ankle block
 - Intercostals block
 - Procedural sedation and analgesia
 - Suprapubic catheterization
 - Thrombolytic therapy
 - Epistaxis control
 - Triage
 - Incision and drainage
 - Disaster drill, hospital activation
 - Removal of foreign bodies
 - Catheterization

Learning outcome

The learning outcomes elaborated here are in alignment with the learning outcomes of the programme.

At the end of the training, the resident will be able to:

1. Accurately take detail history, perform physical examination, apply appropriate diagnostic techniques and arrive to a diagnosis.
2. Treat simple gynaecological/obstetrical conditions.
3. Perform initial management; communicate with specialist, patient and relatives appropriately when referral is needed for treatment.
4. Perform obstetrical and gynaecological procedures as outlined in the content with correct procedure.

Content outline

The content outline is a guide to the resident and the supervisor regarding the topics to be covered.

A. Residents should be able to describe and manage the following conditions:

1. Prenatal period:

- Antenatal checkup
- Vomiting in early pregnancy
- UTI
- Hyperemesis gravidarum
- APD
- Anaemia of pregnancy
- Hepatitis in Pregnancy
- Heart disease in Pregnancy
- Cystitis and vaginitis
- Acute abdomen
- Abortion
- Molar Pregnancy
- Ectopic Pregnancy
- Toxaemia of Pregnancy

2. Labour and delivery:

- Normal labour and delivery
- Dysfunctional labour patterns
- Foetal assessment and monitoring
- Foetal distress
- Abnormal presentations
- Placenta previa/abruptio
- Multiple pregnancy
- Induction of labour

- Indications for assisted delivery
- Retained placenta
- Obstructed labour

3. Postpartum:

- Normal puerperium
- Postpartum haemorrhage
- Birth trauma (maternal/infant)
- Abnormal puerperium
- Breast abscess/mastitis (See also surgery)

4. Gynaecology:

- Menstrual irregularity and abnormal bleeding
- Vaginal discharge
- Infections of the genital tract
- Pelvic inflammatory disease
- Sexually transmitted diseases (STD)
- Infertility
- Benign/Malignant tumours
- Vesico-vaginal fistulae
- Bartholin's cyst/abscess
- Prolapse (rectocele, cystocele)
- Post abortion care

B. Residents must perform the following procedures independently or supervised.

1. Obstetric procedures:

- Pelvic examination
- Internal version
- Induction of labour
- Vacuum extraction
- APH management
- PPH management
- Repair of vaginal laceration
- Repair of cervical tear
- Episiotomy/perineal tear repair
- Manual removal of retained placenta
- Resuscitation of newborn

2. Gynaecological procedures:

- D & C
- IUD insertion
- Cervical biopsy
- Endometrial biopsy
- Pap smear
- Manual vacuum aspiration (MVA)

Learning outcome

The learning outcomes elaborated here are in alignment with the learning outcomes of the programme.

At the end of the training, the resident is able to:

1. Accurately take detail history, perform physical examination, apply appropriate diagnostic techniques and arrive to a diagnosis.
2. Perform initial management; communicate with specialist, patient and relatives appropriately when referral is needed for treatment.
3. Perform minor orthopaedic procedures as outlined in the content with correct procedure.
4. Manage trauma patient conservatively when referral is not indicated.

Content outline

The content outline is a guide to the resident and the supervisor regarding the topics to be covered.

A. The resident needs to have the general knowledge on the following areas:

- Embryology
- Ossification process,
- Bone growth/growth plate
- Soft tissue healing
- Bone healing
- Fractures/dislocations,
- General approach to diagnosis & management
- Principles of fracture management
- Rickets
- Physiotherapy
- Osteomalacia
- Osteomyelitis
- Bone tuberculosis
- Septic arthritis
- Arthritic conditions
- Metabolic diseases affecting bones and joints
- Congenital diseases affecting bones and joints
- Benign and malignant lesions of bones

B. The resident should be actively involved with the specialist in the management the following:

- Spinal fractures
- Fracture of humerus, radius, ulna, metacarpals
- Clavicle fracture
- Rib fractures
- Hip fractures
- Hip joint fracture dislocations
- Fracture of femur, tibia, fibula, metatarsals, fracture/dislocation ankle joint malleolar fractures
- Compound fractures
- Dislocations – shoulder, elbow, hip, fingers
- Acute osteomyelitis
- Chronic osteomyelitis
- TB spine, hip
- Septic arthritis
- Osteoarthritis
- Rheumatoid arthritis
- Ankylosing Spondylitis
- Bursitis
- Epicondylitis
- Tendonitis
- Trigger fingers
- Metatarsalgias
- Spondylosis
- Scoliosis
- Back pain
- Gout

C. Residents must perform the following procedures.

Part involved	Procedure
Hand	Abscess drainage Tendon sheath drainage Tendon and nerve repair in simple injuries Disarticulation or amputation of digits
Joints	Aspiration of joint Intra-articular steroid injection
Ligament injuries	Diagnosis, repair and splinting
Limb fractures/dislocations	Simple fracture management, relocation of dislocations - Application and removal of cast - Skin traction
Nerve entrapment	Diagnosis
Back pain	Common management
Arterial trauma	Haemorrhage control

Learning outcome

The learning outcomes elaborated here are in alignment with the learning outcomes of the programme.

At the end of the training, the resident is able to:

1. Diagnose and treat common Eye problems in the districts and play a role in prevention of blindness in the country by identifying common causes of blindness and taking appropriate action.
2. Diagnose uncommon Eye problems and refer to the specialist
3. Perform certain simple procedures as outlined in the content.

Content Outline

A. The resident should be able describe, understand and take appropriate management decision (treat, consult or refer) of the following conditions:

- Vit A deficiency (xerophthalmia)
- Ophthalmia neonatorum
- Blepharitis, chalazion, stye
- Trachoma
- Eye injury, along with foreign body
- Glaucoma

- Conjunctivitis
- Corneal ulcer
- Relate systemic diseases with ocular manifestations in general practice.
- Other causes of painful red eye
- Cataract
- Loss of Vision
- Ocular motility problems with amblyopia
- Papilloedema/cupping of the disc/papillitis

B. The resident shall perform the following procedures under supervision.

- Visual acuity and field assessment
- Use of ophthalmoscope
- Topical anaesthesia of cornea
- Staining of cornea with florescent dye
- Irrigation of eye
- Removal of corneal foreign body
- Removal of sub-tarsal foreign body
- Measurement of intraocular pressure
- Care of the eye in the unconscious patient (tarsorrhaphy)
- Syringing, Epilation.

Learning outcome

The learning outcomes elaborated here are in alignment with the learning outcomes of the programme.

At the end of the training, the resident will be able to:

1. Diagnose common dental and oral diseases and manage treatment in consultation with the dental unit of the hospital.
2. Identification of pre-malignant and malignant disease of oral cavity and referral to the specialist
3. Able to perform certain simple procedures as outlined in the content.

Content outline

A. The resident should be actively involved in the management of the following conditions.

- Temporal mandibular joint dislocation
- Post dental extraction bleeding
- Gingivitis
- Syncope
- Periodontitis
- Dental caries
- Precancerous conditions
- Oral malignant lesions

B. The resident shall carry out the following procedures under supervision

- Extraction of loose teeth
- Drainage of pus/abscess
- Maxillary/Mandibular nerve block
- Reduction of TM dislocation

Learning outcome

The learning outcomes elaborated here are in alignment with the learning outcomes of the programme.

At the end of the training, the resident will be able to:
To manage day to day issues related to forensic medicine in the districts, as outlined in the contents.

Content outline

A. The resident should be able to describe the following conditions and apply in their day to day practice.

1. Medical ethics and laws relating to clinical practice.
2. Forensic evaluation of Injuries:
 - Gender-based violence including domestic violence
 - Child abuse
 - Rape and other forms of sexual violence
 - Interpersonal violence/gang violence
 - Road traffic injuries
 - Other injuries – self harm, accidental injuries
3. Principles of Toxicology including alcohol abuse and drunken driving assessment
4. Sampling for DNA analysis in Disputed Paternity cases
5. Principles of Age estimation
6. Death Investigation system and Medico-Legal Aspects of Post-mortem changes

7. Forensic investigation of deaths:
 - Hanging, drowning, suffocation, etc
 - Other forms of violent or suspicious death
 8. Medico-legal aspects of Reproductive health - pregnancy, abortion, maternal death
 9. Principles and Techniques in forensic sampling and chain of custody
 10. Documentation and forensic testimony
- B. The resident must be able to:
- Demonstrate understanding of the medical laws and ethical issues commonly encountered in clinical practice
 - Evaluate the survivors of gender-based violence including domestic violence and sexual offences
 - Assess child abuse cases
 - Evaluate the road traffic injuries and deaths
 - Carry out medico-legal death investigations into unnatural and suspicious death
 - Apply forensic principles and techniques in the evaluation of injuries including other forms of offences against a person;
 - Provide professional testimony to the courts of law;
 - Illustrate general understanding of the forensic principles and techniques in relation to toxicology, DNA analysis, age estimation, and drug screening.

Learning outcome

The learning outcomes elaborated here are in alignment with the learning outcomes of the programme.

At the end of the training, the resident will be to:

1. Diagnose and treat common ENT problems in the districts.
2. Diagnose uncommon ENT problems and refer to the specialist
3. Able to perform certain simple procedures as outlined in the content.

Content outline

A. The resident should be able to describe and manage the following conditions.

Ear:

- Wax
- Furunculosis
- Otomycosis
- Other otitis externa
- Foreign bodies
- Acute otitis media
- CSOM
- Barotrauma
- Acute mastoiditis
- Otospongiosis
- Meniere's disease
- Otitis Media with Effusion (OME)
- Acute labyrinthitis
- Impaired hearing
- Vertigo
- Tinnitus

Nose:

- Deviated Septum
- Epistaxis

- Rhinitis, sinusitis
- Polyp
- Allergic rhinitis
- Foreign body
- Malignancy

Throat:

- URTI, tonsillitis
- Acute Pharyngitis
- Acute laryngitis
- Peritonsillar abscess
- Foreign body
- Thyroid disease
- Ludwig's angina
- Enlarged nodes
- Acute epiglottitis
- Laryngeal oedema

B. Resident will be able to perform the following procedures:

Ear:

- Syringing
- Removal of Foreign Body
- Lobule repair
- I & D mastoid abscess

Nose:

- Cautery
- Packing
- I & D septal abscess

Throat:

- I & D peritonsillar abscess
- I & D Ludwig's angina
- Cricothyroidotomy
- Tracheostomy
- Neck gland biopsy

Learning outcome:

The learning outcomes elaborated here are in alignment with the learning outcomes of the programme.

At the end of the training, the resident will be able to:
Understand RCSC rules and regulations, financial rules and regulations and other aspects required for becoming the hospital leader in the district.

Content outline

The resident shall actively learn the following management principles applicable in the management of a district level

hospital.

1. Personnel management, work ethics
2. Human Resource Development.
3. Interpersonal relationship and communication.
4. Health economics.
5. Health service accounting, auditing.
6. Financial management, Budgeting, work evaluation, work simplification, office management, system analysis.
7. Hospital organization- emergency, Inpatient department (IPD), OPD, disaster management preparedness
8. Medical store management, EDL.
9. Inventory.

Learning outcome

The learning outcomes elaborated here are in alignment with the learning outcomes of the programme.

At the end of the training, the resident will be able to:

1. Do pre-anaesthetic assessment to certain level so that the resident can explain to the patient about anaesthesia in general practice clinic.
2. Manage post – operative pain.
3. Manage all types of pain adequately in general practice.
4. Perform local anaesthetic blocks for minor surgical procedures.
5. Understand the principle of General, Regional and Local anaesthesia.
6. Do simple procedures as outlined in the content.
7. Manage air-way

Content outline

- A. The resident should be able to describe the following:
- Cardiopulmonary resuscitation (Basic and advanced cardiac life support)

- Pre-operative assessment
- Pre-anaesthetic prescribing
- Initiation and maintenance of general anaesthesia (including pharmacology of various general anaesthetic agents)
- Ketamine anaesthetic
- Local anaesthesia and regional blocks
- Post-operative recovery and monitoring
- Pain management

B. The resident should observe and assist in the following procedures:

- Airway management using facemask, oral airway and intubation.
- Regional anaesthetic block: spinal, epidural and peripheral
- Total intra venous Anaesthesia (Ketamine anaesthetic)
- General anaesthesia

C. The resident must be able perform the following procedures:

- Airway management using face mask, oral airway and intubation
- Different local anaesthetic blocks

Learning outcome

The learning outcomes elaborated here are in alignment with the learning outcomes of the programme.

At the end of the training, the resident will be able to:

1. Perform IUCD insertion
2. Perform Non-scalpel vasectomy
3. Prescribe other non-surgical contraceptive methods
4. Detect and manage any AEFI
5. Perform ANC, PNC and immunization of children

Content outline

A. The resident should be able to describe and apply in clinical practice.

- Describe male and female reproductive anatomy and physiology.
- Understand the current status of family planning and voluntary surgical contraception in Bhutan, including legal status, cultural barriers, myths and prejudices.
- Describe the rationale for vasectomy and tubal ligation, their benefits and disadvantages

- Recognize eligible candidates for voluntary surgical contraception and provide information and counselling services to ensure informed client consent.
- Demonstrate the use of aseptic technique and appropriate anaesthesia and analgesia.
- Demonstrate the basic surgical skills required for vasectomy.
- Discuss technique for reversal of vasectomy of tubal ligation.
- Utilize the common methods of contraception including:
 - DMPA
 - Norplant
 - Intra-uterine devices (IUCD)
 - Oral contraceptives
- Follow up patients who accept various methods of contraception.

B. The resident *must* be able acquire the competencies of the following procedures

- Prescribe and administer all non-surgical forms of contraception.
- Perform non-scalpel vasectomy.

Learning outcome

The learning outcomes elaborated here are in alignment with the learning outcomes of the programme.

At the end of the training, the resident will be able to:

1. Integrate clinical experiences from previous specialty rotations and be able to work competently in a district hospital.
2. Work with district health administration personnel and be familiar with local public health activities, including those at Basic Health Unit (BHU).
3. Demonstrate familiarity with the functions and activities of non-government organizations working in the district.
4. Demonstrate familiarity with community-based activities and initiatives in health, including the roles of Village Health Workers (VHW).

Content outline

The resident is able to describe and understand working system in district hospital and be able to apply the competencies acquired during earlier postings.

- Demonstrate clinical knowledge and skills commensurate with his level of training by managing cases presenting in general practice in district hospitals.
- Be able to implement the principal strategies for addressing

public health problems in the district, particularly those based on Primary Health Care concepts, including:

- o Health education
 - o Essential drugs
 - o Immunization
 - o Oral rehydration
 - o Sanitation
 - o Vitamin A supplementation
 - o Water supply
 - o Family planning
 - o Nutrition
 - o Maternal and child health, Safe motherhood
 - o Community participation
- Be able to describe the organization of the healthcare delivery system at the district level, including public health, clinical services and traditional medicine.
 - Be able to describe the role and function of non-government agencies operating in the district.
 - Be able to identify and refer those patients which require specialized hospital services.
 - Make contacts with BHU staff and assist them in making appropriate referrals to the district hospital.
 - Participate in the formal or non-formal (i.e., in-service) training of other health care workers and staff in the hospital, BHU and the community.

Evaluation

Curriculum evaluation will be approached as an ongoing process of continuous information collection and analysis to allow for a prioritization of quality improvement (QI) activities. At regular times, information will be collected from the stakeholders (residents, specialist supervisors, GP supervisors and GP programme coordinator, Medical University, Teaching Hospitals, Ministry of Health and District Health officials) with a view to detect where optimization of the quality of

the programme is needed. As it will be impossible to engage in quality improvement processes over the whole range, prioritization of QI activities are needed and the curriculum evaluation will be used for this purpose. In line with the assessment strategy, we envision a curriculum evaluation programme that will use a variety of information sources to address the most pressing questions. We foresee a yearly cycle of Plan-Do-Check-Act.

Appendix 1 – 6 Portfolio Assessment forms

Appendix 1

Name

Reg. No

Portfolio Assessment form I: Global assessment of five domains of General Practice for examiners

Portfolio Assessment Scale (Global ratings)		Five domains of General Practice					Signature with date of assessment
		Communication and Patient- doctor relationship	Applied professional knowledge and skills	Community health and context of general practice	Professional and ethical role	Organizational and legal dimensions	
■	Not learned						
■	Needs further training						
■	Competent						
■	Mastery						
Assessor	Frequency						
Resident	After completion of each rotational postings	X	X	X	X	X	
Specialist supervisor		X	X	X	X	X	
GP supervisor		X	X	X	X	X	
Internal and external examiner	End of term 1 (IU – 1)	X	X	X	X	X	
	End of term 2 (IU –2)	X	X	X	X	X	
	End of term 8 (UE)	X	X	X	X	X	

Appendix 2

Name

Rotation block

Portfolio Assessment form II: Domain 1

Portfolio Assessment Scale		Communication skill and Patient–Doctor Relationship						Signature with date of assessment
Assessor	Frequency	Communication is clear, respectful, empathetic and appropriate to the person and socio-cultural context	Effective communication is used in challenging situations	Communication with family, caregivers and others involved in the care of the patient is appropriate and clear	Complaints and concerns are managed effectively	Ways in which health can be optimized and maintained are communicated to patients, family members and caregivers	Global	
<div style="display: flex; flex-direction: column; gap: 5px;"> <div> Not learned</div> <div> Needs further training</div> <div> Competent</div> <div> Mastery</div> </div>								
Resident	After completion of each rotational	X	X	X	X	X	X	
Specialist supervisor	postings:	X	X	X	X	X	X	
GP supervisor	Name of the posting:	X	X	X	X	X	X	
List out teaching and learning activities		List out evidence						

Appendix 3

Name

Rotation block

Portfolio Assessment form III: Domain 2

Portfolio Assessment Scale		Applied Professional Knowledge and Skills					Signature with date of assessment
■	Not learned	Demonstrate relevant diagnostic and managerial skills in patients of all age groups and life stages with wide range of health problems	Demonstrate holistic and patient-centered care	Able to remain informed and innovative	Able to collaborate and coordinate care	Global	
■	Needs further training						
■	Competent						
■	Mastery						
Assessor	Frequency						
Resident	After completion of each rotational	X	X	X	X	X	
Specialist supervisor	postings: Name of the posting:	X	X	X	X	X	
GP supervisor	.....	X	X	X	X	X	
List out teaching and learning activities		List out evidence					

Appendix 4

Name

Rotation block

Portfolio Assessment form IV: Domain 3





Portfolio Assessment Scale		Community Health and Context of General Practice						
	Not learned	The pattern and prevalence of disease are incorporated into screening and management purposes	Demonstrate competency in routine community health activities in the district	The impacts of social determinants of health are identified and addressed	Current and emerging public health risk are effectively managed	Barriers to equitable access to quality care are addressed	Demonstrate effective leadership in the district health team	Signature with date of assessment
	Needs further training							
	Competent							
	Mastery							
Assessor	Frequency						Global	
Resident	After completion of each rotational	X	X	X	X	X	X	X
Specialist supervisor	postings:	X	X	X	X	X	X	X
GP supervisor	Name of the posting:	X	X	X	X	X	X	X
List out teaching and learning activities		List out evidence						

Appendix 5

Name

Rotation block

Portfolio Assessment form V: Domain 4

Portfolio Assessment Scale		Professional and Ethical Role						
 Not learned		Adherence to relevant codes and standards of ethical and professional behavior	Duty of care is maintained	Critical incidents and potential critical incidents are identified and managed	Professional knowledge and skills are reviewed and developed	Reflection and self appraisal are undertaken regularly	Personal health and wellbeing is evaluated, maintained and developed	Signature with date of assessment
 Needs further training								
 Competent								
 Mastery								
								Global
Assessor	Frequency							
Resident	After completion of each rotational	X	X	X	X	X	X	X
Specialist supervisor	postings: Name of the posting:	X	X	X	X	X	X	X
GP supervisor	.....	X	X	X	X	X	X	X
List out teaching and learning activities		List out evidence						

Appendix 6

Name

Rotation block

Portfolio Assessment form VI: Domain 5

Portfolio Assessment Scale		Organizational and Legal Dimension							
<input type="checkbox"/>	Not learned								
<input type="checkbox"/>	Needs further training								
<input type="checkbox"/>	Competent								
<input type="checkbox"/>	Mastery								
		Infection control and relevant clinical practice standards are maintained	Effective clinical leadership is demonstrated	Relevant data is clearly documented, securely stored and appropriately shared for quality improvement	Effective triaging and time management structures are in place to allow timely provision of care	Patient confidentiality is managed appropriately	Shared decision making and informed consent are explained and obtained	Medico-legal requirements are integrated into accurate documentation	Signature with date of assessment
								Global	
Assessor	Frequency								
Resident	After completion of each rotational	X	X	X	X	X	X	X	X
Specialist supervisor	postings: Name of the posting:	X	X	X	X	X	X	X	X
GP supervisor	.....	X	X	X	X	X	X	X	X
List out teaching and learning activities		List out evidence							

Appendix 7 Mapping of learning activity with five domains of General Practice

Appendix 7

Name

Rotation block

Mapping of learning activity with five domains of General Practice (checklist for residents)

Date	Learning activity	Evidence	Communication and Patient- doctor relationship	Applied professional knowledge and skills	Community health and context of general practice	Professional and ethical role	Organizational and legal dimensions

Appendix 8

Log book

Name

Rotation Block

Sl. No.	Procedures/Learning Activity	Number observed	Number assisted	Number Performed

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