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FACULTY OF POSTGRADUATE MEDICINE

DOCTOR OF MEDICINE (MD)
CURRICULUM
PSYCHIATRY (2018)



Khesar Gyalpo University of Medical Sciences of Bhutan

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BACKGROUND

Psychiatry as a specialty deals people with mental illnesses. It entails the assessment, diagnosis and management of psychiatric disorders. The patients are treated on the basis of bio-psycho-social model. The psychiatrist, in accordance with his medical profession, occupies a central position in a multidisciplinary team whose members contribute their special competences to the common goal.

By the end of the eighteenth century it was recognized that the study of mental alienation was part of medicine. However, mental diseases were of such a nature that it was not possible to treat the 'insane' in the same conditions as patients affected by other diseases. Their most obvious manifestations had social consequences. According to the prevailing philosophical view, the mentally ill were deprived of free will by their illness. In practice, they were unable to participate in the normal life of the society and were often considered as potentially dangerous. Because of this they had generally been confined in 'madhouses' of various kinds. Philippe Pinel, a French psychiatrist brought around a turning point. He is known worldwide as the physician who 'liberated the insane from their chains'. As a result, we are now treating our patients in general hospital psychiatry unit.

In most countries, psychiatry is now practiced in the community rather than in institutions and it has converted patients from passive recipients of care to active participants with individual needs and preferences. Psychiatrists are now involved in the planning, provision, and evaluation of services for whole communities. Care in the community has also drawn attention to the many people with psychiatric disorder who are treated in primary care and has led to new ways of working between psychiatrists and physicians. At the same time, psychiatrists are now working more in general hospitals, helping patients with both medical and psychiatric problems.

It is worth mentioning that in treating mentally ill patients one has to take into account biological, psychological, and social factors that interact, and the prevailing stigma is attached to mental disorders. We must keep in mind that scientific treatment in this field exists and is very much effective. With the advent of new generation medications and researches prognosis of psychiatric disorders became much better these days.

Advances in genetics and neurosciences have already increased knowledge of the basic mechanism of the brain functioning and are beginning to uncover the neurobiological mechanisms involved in psychiatric disorder. For example, striking progress has been achieved in the understanding of Alzheimer's disease, and there are indications that similar progress will follow in uncovering the causes of mood disorder, schizophrenia, and autism. Psychological and social sciences, and epidemiology are also essential methods of investigation in psychiatry. Although the pace of advance in these sciences may not be as great as in the neurosciences, the findings generally have a more direct relation to clinical

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phenomena. Moreover, the mechanisms by which psychological and social factors interact with genetic, biochemical, and structural ones still continue to be important even though not much progress in is seen in this area.

Regarding psychiatric disorders, mostly the major psychiatric diseases come forward in discussion, presentation even in different social and medical concern. But the prevalence and existence of other psychiatric problems (also known as: The minor psychiatric disorders) are much higher in all set up, all around the world, that have not been properly recognized. These minor disorders deserve to get sufficient concentration in the academic curriculum to improve quality mental health service and making quality psychiatrists.

The field of psychiatry itself can be divided into various subspecialties. These include: Adult psychiatry, Child and adolescent psychiatry, Intellectual disability psychiatry, Developmental psychiatry, Geriatric psychiatry, , Addiction psychiatry, Forensic psychiatry, Neuropsychiatry, Consultation-liaison psychiatry , Social psychiatry, Cross-cultural psychiatry, Community psychiatry, psychotherapy ,Biological psychiatry, Psychiatric epidemiology, Psychosomatic medicine, Psychopharmacology etc.

RATIONALE

With the establishment of Medical University in Bhutan and recognizing the need to train more mental health professionals, the Royal Government of Bhutan has approved starting of psychiatry residency in Bhutan from July 2018 at the Faculty of Postgraduate Medicine, Khesar Gyalpo University of Medical Sciences of Bhutan. With four Psychiatrists in the country, it is proposed that at least one resident can be inducted every year.

Learner's and learning environment

In order for Psychiatry residency to occur, there has to be a full time psychiatric ward in a General hospital setup or a mental hospital, with a minimum of 20 beds. For each resident to be inducted, there should be at least two full time teaching faculty members.

All the selected Residents in the program will act and designated as residents. Their job description shall be as per job description of a resident of the University. The Residents must at all times participate in clinical placements that offer appropriate experience, such as, direct contact with and supervised responsibility of patients. Training placement will be made as Blocks that consists of three months. All training placements must include direct clinical care of patients. The Residents will undergo the residency training in a wide spectrum of psychiatry. General adult psychiatry is the core of basic training although all residents are expected to gain experience in the sub-specialties of psychiatry. The Residents will also undergo residency training in Medicine relevant to psychiatry, other disciplines relevant to hospital liaison psychiatry etc. The training scheme must provide an

overall balance of hospital and community experience. The programme must ensure that the rotation plan for an individual trainee enables them to gain the breadth of experience required. Trainees will need to monitor the scheme through their log books and portfolio. The designated supervisor with the aim of ensuring high quality training will carry out the evaluation of performance of a trainee periodically. In addition; residents will receive theoretical knowledge on customized ways during this residency-training period to make the training sensible and meaningful.

Goals

- i. To develop psychiatrists who possess knowledge, skill, and attitudes that will ensure that they are competent to practice psychiatry safely and effectively.
- ii. To prepare psychiatrists who would able to meet and respond to the changing healthcare needs and expectations of the society.
- iii. To ensure that they have appropriate foundation for lifelong learning and further training in their specialty and/or subspecialties.
- iv. To help them to be critical thinkers and problem solvers when managing mental health problems in the community.
- v. To be able to empathize with patients and communicate effectively.
- vi. To be able to teach and train health staff and educate the general public.

Learning Objectives:

The candidates in the program shall strive to achieve diverse competencies, and the following are the objectives:

- i. **Clinical expertise:** to assess cases, establish diagnoses, formulate and implement treatment plan, work in a team and proper documentation.
- ii. **Health advocacy:** to apply appropriate determinants consequences of mental health, mental health promotion and prevention.
- iii. **Academic perspectives:** to create a life-long programme for continuous medical education, read, interpret and apply new findings, integrate and apply new knowledge and technology.
- iv. **Collaborative capacities:** to establish treatment plan, work efficiently with other health care professionals and work collaboratively with relevant agencies.
- v. **Administrative capacity:** to develop cost effective treatment plan, and mental health services, utilize resources effectively and conduct multidisciplinary work.
- vi. **Effective communication:** to establish therapeutic alliance with patients and relatives/caregivers, educate patient, families, teachers, other health and social service professionals, and public and communicate effectively with teachers, prison health care staff, law and law enforcing personnel.
- vii. **Professionalism:** to abide by ethical principles and profession; respect patient rights and broader human rights; support patient autonomy and dignity and respect patient patient's culture, beliefs and values.
- viii. **Educator:** to learn the skills of teaching health staff and educate the general public on Mental health.

AN OVERVIEW OF ROTATIONAL SCHEDULE

Sl. No	Activity	PG 1		PG 2		PG 3		PG 4	
		Term 1	Term 2	Term 3	Term 4	Term 5	Term 6	Term 7	Term 8
	Generic Curriculum								
	IPD/OPD placement								
	Lecture class								
	Child and adolescent Psychiatry					3 Months			
	Neurology			3 Months					
	Field posting							October	
	Assessment Schedule	2 nd week December		3 rd Week of May			1 st week of June		3 rd & 4 th Week, May
	Continuous assessment								

Term: July to December and January to June (6 months), 4 years is divided into 8 terms.

***: refer the section on assessment system for further detail

Core Competencies

Domain 1: Communication skills and Patient-Doctor relationship

Domain 2: Applied Professional Knowledge and Skill

Domain 3: Community Health and Context of Psychiatry

Domain 4: Professional and Ethical Role

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

Educational Strategies

Teaching and learning methods

The Curriculum is based on the following principles of learning:^{1,2}

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 Psychiatry needs to be focused on skill development, integrating with knowledge.

The Practice- based, learner centered and experiential learning Education

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

- i. Case presentations and discussion
- ii. Case managements and discussion
- iii. Performing procedural skills under supervision, feedback and reflections
- iv. Learning & practising communication skills through role plays and de-briefing
- v. Working professionally and ethically as a role model. The following methods allow residents to acquire the above skills.
- vi. Paper presentations and question answer session
- vii. Journal clubs and discussion
- viii. Case presentation and discussion

¹² Kern D. Curriculum development for medical education. Baltimore: Johns Hopkins University Press; 1998.

- ix. Bedside teaching followed by demonstration and practice³
- x. Grand rounds and question answer session
- xi. Seminars, Workshops, Conferences, PBL, Research writing (thesis)
- xii. Teaching interns and allied health staffs

Independent Self-Directed Learning:

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

Assessment methods

Assessment is a strong driving force behind learning and therefore is a main focus in the curriculum design.^{4,5} 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^{6,7} requires examinations to be sufficiently long and sufficiently diverse. Assessment programmes can be described using the categorization of Miller's Pyramid (fig. 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)⁸. No single method is able to assess all the layers and therefore multiple methods need to be employed.⁹ The following methods will be utilized for both formative and summative assessments.

⁴Frederiksen N. The real test bias: Influences of testing on teaching and learning. *American Psychologist* 1984;39:193-202.

⁵Cilliers FJ, Schuwirth LWT, Adendorff HJ, Herman N, Van der Vleuten CPM. The mechanisms of impact of summative assessment on medical students' learning. *advances in health sciences education* 2010;15:695-715.

⁶Eva K. On the generality of specificity. *Medical Education* 2003;37:587-8.

⁷Eva KW, Neville AJ, G.R. N. Exploring the etiology of content specificity: Factors influencing analogic transfer and problem solving. *Academic Medicine* 1998;73:s1-5.

⁸Miller G E. The Assessment of Clinical Skills/Competence/Performance. September supplement 1990, Volume 65, Number 9.

⁹Kern D. Curriculum development for medical education. Baltimore: Johns Hopkins University Press; 1998.

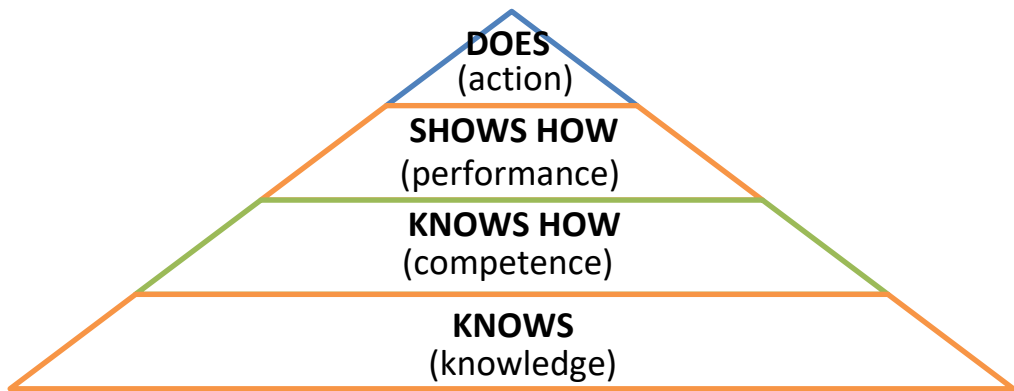


Figure 5: Miller's Pyramid, framework for clinical assessment

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.¹⁰

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, counseling skills, Clinical Judgment/reasoning and overall clinical competence¹¹.

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 standardized marking scheme specific for each case is used¹².

The Short Answer Question (SAQ)

This is an open ended, semi-structured question format²⁵. 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.¹³ A structured predetermined marking scheme improves reliability.

¹⁰Tabish S. Assessment methods in medical education. International Journal of health Science. 2008;Volume 2(2); 2008 (PMC3068728).

¹¹Assessment tools [Internet]. American Board of Internal Medicine. 2016 [cited 28 May 2016].

¹² Tabish, S. A. Assessment methods in medical education. Int J Health Sci (Qassim). 2008 Jul; 2(2): 3–7.

¹³Schuwirth W T Lambert, Vleuten P M Cees. ABC of learning and teaching in medicine.

Direct Observation of Procedural Skills (DOPS)

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 counseling and communication.

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 system¹⁴. 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, i.e. a large number of items can be tested and marked within a relatively short time frame.

Simulation with standardized patients.

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)

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.

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 these methods are record keeping, history taking, clinical findings and interpretation, management plan, follow up and future planning.¹⁵

¹⁴ Bunmi S. Malau-Aduli, Dwight Assenheimer, Derek Choi-Lundberg & Craig

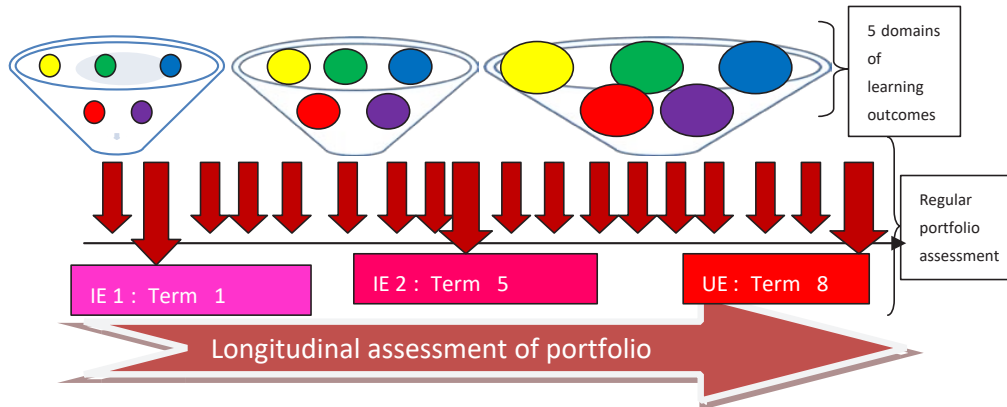
Zimitat (2014) Using computer-based technology to improve feedback to staff and students on MCQ assessments, *Innovations in Education and Teaching International*, 51:5, 510-522,

¹⁵ Case-based Discussion [Internet]. RACP. [cited 29 May 2016]. Available from: <https://www.racp.edu.au/trainees/assessments/work-based-assessments/case-based-discussion>

Portfolio assessment

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 Psychiatry, 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 Psychiatry 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 (fig. 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.¹⁶



¹⁶ Schuwirth L, Ash J. Assessing tomorrow's learners: In competency-based education only a radically different holistic method of assessment will work. Six things we could forget. *Medical Teacher*. 2013;35(7):555-559.

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Psychiatric Evaluation			
Level	Learning outcome	Teaching/learning activity	Assessment Method
1 year	<ul style="list-style-type: none"> - Obtain general medical and psychiatric history and complete. Mental state examination - Obtains relevant collateral information from secondary sources. - Screen for patient safety including suicidal and homicidal ideation 	<ul style="list-style-type: none"> - Didactic Lecture - Audiovisual viewing - Role play - Demonstration, practice and feedback - Real Life Experience in different settings and reflections - Case demonstration with Standardized patient - Case presentations and discussion - feedback and reflections - Journal clubs and discussion - Ward rounds and discussion - Grand rounds and question answer session - Seminars, Workshops, - Conferences 	<ul style="list-style-type: none"> - OSCE - Mini CEX - MCQ - SAQ - DOPS - 360 degree feed back - Case based Discussion (CbD) - Log book - Portfolio assessment
Psychiatric Formulation and Differential Diagnosis			
1 year	<ul style="list-style-type: none"> - Organizes and accurately summarizes reports, and presents to colleagues information obtained patient evaluation - Develops a working diagnosis based on the patient evaluation 	Do	Do
Treatment Planning and Management			
1 year	<ul style="list-style-type: none"> - Identifies potential treatment options. - Recognizes patient in crisis or acute presentation. - Recognizes patient readiness for treatment 	Do	Do
Psychotherapy			
	<ul style="list-style-type: none"> - Accurately identifies patient emotions, particularly sadness, anger, and fear. - Maintains appropriate professional boundaries. - Demonstrates a professional interest and curiosity in a patient's story. 	Do	Do

Somatic therapy			
	<ul style="list-style-type: none"> - Lists commonly used psychopharmacologic agents and their indications to target specific psychiatric symptoms (e.g., depression, psychosis). - Reviews with the patient/family general indications, dosing parameters, and common side effects for commonly prescribed psychopharmacologic agents. - Identifies psycho-dynamic, cognitive-behavioral, and supportive therapies as major psychotherapeutic modalities - Describes general indications and common side effects for commonly prescribed psychopharmacologic agents - Describe indications for ECT 	Do	Do
Development through the Life Cycle			
	<ul style="list-style-type: none"> - Describes the basic stages of normal physical, social, and cognitive development through the life cycle 	Do	Do
Psychopathology			
	<ul style="list-style-type: none"> - Identifies the major psychiatric diagnostic system (DSM) - Lists major risk and protective factors for danger to self and others - Gives examples of interactions between medical and psychiatric symptoms and disorders 	Do	Do
Clinical Neuroscience			
	<ul style="list-style-type: none"> - Knows commonly available neuroimaging and neurophysiologic diagnostic modalities and how to order them - Knows how to order neuropsychological testing 	Do	Do
Practice of Psychiatry			
	<ul style="list-style-type: none"> - Lists common ethical issues in psychiatry - Recognizes and describes institutional policies and procedures¹ - Lists ACGME Competencies 	Do	Do
Patient Safety and the Health Care Team			
	<ul style="list-style-type: none"> - Differentiates among medical errors, near misses, and sentinel events - Recognizes failure in teamwork and communication as leading cause of preventable patient harm - Follows institutional safety policies, including reporting of problematic behaviors and processes, errors, and near misses 	Do	Do

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Resource Management			
	- Recognizes need for efficient and equitable use of resources	Do	Do
Community-based Care			
	- Gives examples of community mental health systems of care - Gives examples of self-help groups (Alcoholics Anonymous [AA], Narcotics Anonymous [NA]), other community resources (church, school) and social networks (e.g., family, friends, acquaintances).	Do	Do
Consultation to Non Psychiatric Providers and Non Medical Systems			
	- Describes the difference between consultant and primary treatment provider	Do	Do
Development and Execution of Life Long Learning through constant self evaluation, including critical evaluation of research and clinical evidence			
	- Uses feedback from teachers, colleagues, and patients to assess own level of knowledge and expertise - Recognizes limits of one's knowledge and skills and seeks supervision - Describes and ranks levels of clinical evidence	Do	Do
Formal Practice-based Quality Improvement based on established and accepted methodologies			
	- Recognizes potential gaps in quality of care and system-level inefficiencies - Discusses with supervisors possible quality gaps and problems with psychiatric care delivery	Do	Do
Teaching			
	Recognizes role of physician as teacher	Do	Do
Compassion, Integrity, Respect for others, Sensitivity to diverse patient population, Adherence to ethical Principles			
	- Demonstrates behaviors that convey caring, honesty, genuine interest, and respect for patients and their families - Recognizes that patient diversity affects patient care - Displays familiarity with some basic ethical principles (e.g., confidentiality, informed consent, professional boundaries)	Do	Do

Accountability to self, Patients, Colleagues and the Profession		
	<ul style="list-style-type: none"> - Understands the need for sleep, and the impact of fatigue on work - Lists ways to manage fatigue, and seeks back-up as needed to ensure good patient care - Exhibits core professional behaviors¹ - Displays openness to feedback - Introduces self as patient’s physician 	<p>Do</p> <p>Do</p>
Relationship Development and Conflict Management with Patients, Families, Colleagues and Members of the Health Care Team		
	<ul style="list-style-type: none"> - Cultivates positive relationships with patients, families, and team members - Recognizes communication conflicts in work relationships - Identifies team-based care as preferred treatment approach, and collaborates as a member of the team 	<p>Do</p> <p>Do</p>
Information Sharing and Record Keeping		
	<ul style="list-style-type: none"> - Ensures transitions of care are accurately documented, and optimizes communication across systems and continuums of care - Ensures that the written record (electronic medical record [EMR], personal health records [PHR]/patient portal, hand-offs, discharge summaries, etc.) are accurate and timely, with attention to preventing confusion and error, consistent with institutional policies - Engages in active listening, “teach back,” and other strategies to ensure patient and family understanding. - Maintain appropriate boundaries in sharing information by electronic communication. 	<p>Do</p> <p>Do</p>

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Psychiatric Evaluation			
Level	Learning outcome	Teaching/learning activity	Assessment Method
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	<ul style="list-style-type: none"> - Accurately identifies patient emotions, particularly sadness, anger, and fear - Maintains appropriate professional boundaries. - Demonstrates a professional interest and curiosity in a patient's story. 	Do	Do

Somatic therapy			
	<ul style="list-style-type: none"> - Lists commonly used psychopharmacologic agents and their indications to target specific psychiatric symptoms (e.g., depression, psychosis). - Reviews with the patient/family general indications, dosing parameters, and common side effects for commonly prescribed psychopharmacologic agents. - Identifies psycho-dynamic, cognitive-behavioral, and supportive therapies as major psychotherapeutic modalities - Describes general indications and common side effects for commonly prescribed psychopharmacologic agents - Describe indications for ECT 	Do	Do
Development through the Life Cycle			
	<ul style="list-style-type: none"> - Describes the basic stages of normal physical, social, and cognitive development through the life cycle 	Do	Do
Psychopathology			
	<ul style="list-style-type: none"> - Identifies the major psychiatric diagnostic system (DSM) - Lists major risk and protective factors for danger to self and others - Gives examples of interactions between medical and psychiatric symptoms and disorders 	Do	Do
Clinical Neuroscience			
	<ul style="list-style-type: none"> - Knows commonly available neuroimaging and neurophysiologic diagnostic modalities and how to order them - Knows how to order neuropsychological testing 	Do	Do
Practice of Psychiatry			
	<ul style="list-style-type: none"> - Lists common ethical issues in psychiatry - Recognizes and describes institutional policies and procedures¹ - Lists ACGME Competencies 	Do	Do

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Patient Safety and the Health Care Team			
	<ul style="list-style-type: none"> - Differentiates among medical errors, near misses, and sentinel events - Recognizes failure in teamwork and communication as leading cause of preventable patient harm - Follows institutional safety policies, including reporting of problematic behaviors and processes, errors, and near misses 	Do	Do
Resource Management			
	<ul style="list-style-type: none"> - Recognizes need for efficient and equitable use of resources 	Do	Do
Community-based Care			
	<ul style="list-style-type: none"> - Gives examples of community mental health systems of care - Gives examples of self-help groups (Alcoholics Anonymous [AA], Narcotics Anonymous [NA]), other community resources (church, school) and social networks (e.g., family, friends, acquaintances). 	Do	Do
Consultation to Non Psychiatric Providers and Non Medical Systems			
	<ul style="list-style-type: none"> - Describes the difference between consultant and primary treatment provider 	Do	Do
Development and Execution of Life Long Learning through constant self evaluation, including critical evaluation of research and clinical evidence			
	<ul style="list-style-type: none"> - Uses feedback from teachers, colleagues, and patients to assess own level of knowledge and expertise - Recognizes limits of one's knowledge and skills and seeks supervision - Describes and ranks levels of clinical evidence 	Do	Do
Formal Practice-based Quality Improvement based on established and accepted methodologies			
	<ul style="list-style-type: none"> - Recognizes potential gaps in quality of care and system-level inefficiencies - Discusses with supervisors possible quality gaps and problems with psychiatric care delivery 	Do	Do
Teaching			
	Recognizes role of physician as teacher	Do	Do

Compassion, Integrity, Respect for others, Sensitivity to diverse patient population, Adherence to ethical Principles		
<ul style="list-style-type: none"> - Demonstrates behaviors that convey caring, honesty, genuine interest, and respect for patients and their families - Recognizes that patient diversity affects patient care - Displays familiarity with some basic ethical principles (e.g., confidentiality, informed consent, professional boundaries) 	Do	Do
Accountability to self, Patients, Colleagues and the Profession		
<ul style="list-style-type: none"> - Understands the need for sleep, and the impact of fatigue on work - Lists ways to manage fatigue, and seeks back-up as needed to ensure good patient care - Exhibits core professional behaviors¹ - Displays openness to feedback - Introduces self as patient’s physician 	Do	Do
Relationship Development and Conflict Management with Patients, Families, Colleagues and Members of the Health Care Team		
<ul style="list-style-type: none"> - Cultivates positive relationships with patients, families, and team members Recognizes communication conflicts in work relationships - Identifies team-based care as preferred treatment approach, and collaborates as a member of the team 	Do	Do
Information Sharing and Record Keeping		
<ul style="list-style-type: none"> - Ensures transitions of care are accurately documented, and optimizes communication across systems and continuums of care - Ensures that the written record (electronic medical record [EMR], personal health records [PHR]/ patient portal, hand-offs, discharge summaries, etc.) are accurate and timely, with attention to preventing confusion and error, consistent with institutional policies - Engages in active listening, “teach back,” and other strategies to ensure patient and family understanding. - Maintain appropriate boundaries in sharing information by electronic communication. 	Do	Do

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Psychiatry Training Milestones

Psychiatric Evaluation			
Level	Learning outcome	Teaching/learning activity	Assessment Method
Year 3	<ul style="list-style-type: none"> - Consistently obtains complete, accurate, and relevant history - Performs efficient interview and examination with flexibility appropriate to the clinical setting and workload demands - Selects laboratory and diagnostic tests appropriate to the clinical presentation Uses hypothesis-driven information gathering techniques 	<ul style="list-style-type: none"> - Didactic Lecture - Audiovisual viewing - Role play - Demonstration, practice and feedback - Real Life Experience in different settings and reflections - Case demonstration with Standardized patient - Case presentations and discussion - feedback and reflections - Journal clubs and discussion - Ward rounds and discussion - Grand rounds and question answer session - Seminars, Workshops, - Conferences 	<ul style="list-style-type: none"> - OSCE - Mini CEX - MCQ - SAQ - DOPS - 360 degree feed back - Case based Discussion (CbD) - Log book - Portfolio assessment
Psychiatric Formulation and Differential Diagnosis			
Year 3	<ul style="list-style-type: none"> - Develops a full differential diagnosis while avoiding premature closure - Organizes formulation around comprehensive models of phenomenology that take etiology into account 	Do	Do
Treatment Planning and Management			
	<ul style="list-style-type: none"> - Incorporates manual-based treatment¹ when appropriate - Applies an understanding of psychiatric, neurologic, and medical co-morbidities to treatment selection² - Links treatment to formulation - Recognizes need for consultation and supervision for complicated or refractory cases - Re-evaluates and revises treatment approach based on new information and or response to treatment 	Do	Do

Psychotherapy		
<ul style="list-style-type: none"> - Identifies and reflects the core feeling, key issue, and what the issue means to the patient - Recognizes and avoids potential boundary violations - Establishes and maintains a therapeutic alliance with, and provides psychotherapies (at least supportive, psychodynamic, and cognitive-behavioral) to, patients with uncomplicated problems - Manages the emotional content of, and feelings aroused during, sessions - Integrates the selected psychotherapy with other treatment modalities and other treatment providers⁷ 	Do	Do
<ul style="list-style-type: none"> - Balances autonomy with needs for consultation and supervision 	Do	Do
<ul style="list-style-type: none"> - Describes differences among the three core individual therapies - Describes the historical and conceptual development of psychotherapeutic paradigms - Describes the basic techniques of the three core individual therapies - Describes the basic principles, indications, contraindications, benefits, and risks of couples, group, and family therapies - Summarizes the evidence base for each of the three core individual therapies 		
Somatic therapy		
<ul style="list-style-type: none"> - Manages pharmacokinetic and pharmacodynamic drug interactions when using multiple medications concurrently - Monitors relevant lab studies throughout treatment, and incorporates emerging physical and laboratory findings into somatic treatment strategy - Uses augmentation strategies, with supervision, when primary pharmacological interventions are only partially successful 	Do	Do

DOCTOR OF MEDICINE (MD) CURRICULUM

	<ul style="list-style-type: none"> - Demonstrates an understanding of pharmacokinetic and pharmacodynamic drug interactions - Demonstrates an understanding of psychotropic selection based on current practice guidelines or treatment algorithms for common psychiatric disorders - Describes specific techniques in ECT - Lists emerging neuro-modulation therapies 		
Development through the Life Cycle			
	<ul style="list-style-type: none"> - Explains developmental tasks and transitions throughout the life cycle, utilizing multiple conceptual models³ - Describes the influence of psychosocial factors (gender, ethnic, cultural, economic), general medical, and neurological illness on personality development - Utilizes appropriate conceptual models of development in case formulation 	Do	Do
Psychopathology			
	<ul style="list-style-type: none"> - Demonstrates sufficient knowledge to identify and treat most psychiatric conditions throughout the life cycle and in a variety of settings² - Displays knowledge of, and the ability to weigh, risk and protective factors for, danger to self and/or others across the life cycle, as well as the ability to determine the need for acute psychiatric hospitalization - Shows sufficient knowledge to identify and treat common psychiatric manifestations of medical illness (e.g., delirium, depression, steroid-induced syndromes) - Demonstrates sufficient knowledge to include relevant medical and neurological conditions in the differential diagnosis of psychiatric patients 	Do	Do
Clinical Neuroscience			
	<ul style="list-style-type: none"> - Recognizes the significance of abnormal findings in routine neurodiagnostic test⁶ reports in psychiatric patients - Knows indications for specific neuropsychological tests and understands meaning of common abnormal findings - Describes neurobiological and genetic hypotheses of common psychiatric disorders and their limitations 	Do	Do

Practice of Psychiatry			
	<ul style="list-style-type: none"> - Discusses conflict of interest and management - Describes applicable regulations for billing and reimbursement 	Do	Do
Patient Safety and the Health Care Team			
	<ul style="list-style-type: none"> - Describes systems and procedures that promote patient safety 	Do	Do
Resource Management			
	<ul style="list-style-type: none"> - Coordinates patient access to community and system resources 	Do	Do
Community-based Care			
	<ul style="list-style-type: none"> - Incorporates disorder-specific support and advocacy groups in clinical care - Describes prevention measures: universal, selective and indicated¹ - Describes rehabilitation programs (vocational, brain injury, etc.) and the recovery model 	Do	Do
Consultation to Non Psychiatric Providers and Non Medical Systems			
	<ul style="list-style-type: none"> - Assists primary treatment care team in identifying unrecognized clinical care issues - Identifies system issues in clinical care and provides recommendations - Discusses methods for integrating mental health and medical care in treatment planning 	Do	Do
Development and Execution of Life Long Learning through constant self evaluation, including critical evaluation of research and clinical evidence			
	<ul style="list-style-type: none"> - Demonstrates a balanced and accurate self-assessment of competence, using clinical outcomes to identify areas for continued improvement - Selects an appropriate, evidence-based information tool¹ to meet self-identified learning goals - Critically appraises different types of research, including randomized controlled trials (RCTs), systematic reviews, meta-analyses, and practice guidelines 	Do	Do
Formal Practice-based Quality Improvement based on established and accepted methodologies			
	<ul style="list-style-type: none"> - Involves appropriate stakeholders in design of a QI project⁴ - Lists common responses of teams and individuals to changes in clinical operations and describes strategies for managing same 	Do	Do

DOCTOR OF MEDICINE (MD) CURRICULUM

Teaching			
	<ul style="list-style-type: none"> - Participates in activities designed to develop and improve teaching skills - Organizes content and methods for individual instruction for early learners 	Do	Do
Compassion, Integrity, Respect for others, Sensitivity to diverse patient population, Adherence to ethical Principles			
	<ul style="list-style-type: none"> - Elicits beliefs, values, and diverse practices of patients and their families, and understands their potential impact on patient care - Routinely displays sensitivity to diversity in psychiatric evaluation and treatment - Recognizes ethical issues in practice and is able to discuss, analyze, and manage these in common clinical situations 	Do	Do
Accountability to self, Patients, Colleagues and the Profession			
	<ul style="list-style-type: none"> - Identifies and manages situations in which maintaining personal emotional, physical, and mental health is challenged, and seeks assistance when needed - Recognizes the tension between the needs of personal/family life and professional responsibilities, and its effect on medical care - Recognizes the importance of participating in one's professional community - Is recognized by self, patient, patient's family, and medical staff members as the patient's primary psychiatric provider 	Do	Do
Relationship Development and Conflict Management with Patients, Families, Colleagues and Members of the Health Care Team			
	<ul style="list-style-type: none"> - Develops therapeutic relationships in complicated situations - Sustains working relationships in the face of conflict - Facilitates team-based activities in clinical and/or non-clinical situations (including on committees) 	Do	Do
Information Sharing and Record Keeping			
	<ul style="list-style-type: none"> - Uses easy-to-understand language in all phases of communication, including working with interpreters - Consistently engages patients and families in shared decision making 	Do	Do
	<ul style="list-style-type: none"> - Gives examples of situations in which communication can be compromised (e.g., perceptual impairment, cultural differences, transference, limitations of electronic media) 		

Psychiatry Training Milestones

Psychiatric Evaluation			
Level	Learning outcome	Teaching/learning activity	Assessment Method
Year 4	<ul style="list-style-type: none"> - Routinely identifies subtle and unusual findings - Follows clues to identify relevant historical findings in complex clinical situations and unfamiliar circumstances - Begins to use the clinician’s emotional responses to the patient as a diagnostic tool - Serves as a role model for gathering subtle and reliable information from the patient - Teaches and supervises other learners in clinical evaluation 	<ul style="list-style-type: none"> - Didactic Lecture - Audiovisual viewing - Role play - Demonstration, practice and feedback - Real Life Experience in different settings and reflections - Case demonstration with Standardized patient - Case presentations and discussion - feedback and reflections - Journal clubs and discussion - Ward rounds and discussion - Grand rounds and question answer session - Seminars, Workshops, - Conferences 	<ul style="list-style-type: none"> - OSCE - Mini CEX - MCQ - SAQ - DOPS - 360 degree feed back - Case based Discussion (CbD) - Log book - Portfolio assessment
Psychiatric Formulation and Differential Diagnosis			
	<ul style="list-style-type: none"> - Incorporates subtle, unusual, or conflicting findings into hypotheses and formulations - Efficiently synthesizes all information into a concise but comprehensive formulation - Serves as a role model of efficient and accurate formulation - Teaches formulation to advanced learners 	Do	Do
Treatment Planning and Management			
	<ul style="list-style-type: none"> - Devises individualized treatment plan for complex presentations - Integrates multiple modalities and providers in comprehensive approach³ - Appropriately modifies treatment techniques and flexibly applies practice guidelines to fit patient need - Supervises treatment planning of other learners and multidisciplinary providers - Integrates emerging neurobiological and genetic knowledge into treatment plan 	Do	Do

DOCTOR OF MEDICINE (MD) CURRICULUM

Psychotherapy		
<ul style="list-style-type: none"> - Links feelings, behavior, recurrent/central themes/schemas, and their meaning to the patient as they shift within and across sessions - Anticipates and appropriately manages potential boundary crossings and avoids boundary violations - Provides different modalities of psychotherapy (including supportive therapy and at least one of psychodynamic or cognitive behavioral therapies) to patients with moderately complicated problems - Selects a psychotherapeutic modality and tailors the selected psychotherapy to the patient on the basis of an appropriate case formulation - Successfully guides the patient through the different phases of psychotherapy including termination - Recognizes, seeks appropriate consultation about and manages treatment impasses 	Do	Do
<ul style="list-style-type: none"> - Describes proposed mechanisms of therapeutic change - Discusses the evidence base for combining different psychotherapies and psychopharmacology - Critically appraises the evidence for efficacy of psychotherapies 	Do	Do
<ul style="list-style-type: none"> - Provides psychotherapies to patients with very complicated and/or refractory disorders/problems Personalizes treatment based on awareness of one's own skill sets, strengths, and limitations 		
<ul style="list-style-type: none"> - Incorporates new theoretical developments into knowledge base - Demonstrates sufficient knowledge of psychotherapy to teach others effectively 		
Somatic therapy		
<ul style="list-style-type: none"> - Titrates dosage and manages side effects of multiple medications - Appropriately selects evidence-based somatic treatment options (including second and third line agents and other somatic treatments) for patients whose symptoms are partially responsive or not responsive to treatment 	Do	Do

	<ul style="list-style-type: none"> - Describes the evidence supporting the use of multiple medications in certain treatment situations (e.g., polypharmacy and augmentation) - Integrates knowledge of the titration and side effect management of multiple medications, monitoring the appropriate lab studies and how emerging physical and laboratory findings impact somatic treatment. 		
	<ul style="list-style-type: none"> - Explains less common somatic treatment choices to patients/families in terms of proposed mechanisms of action - Integrates emerging studies of somatic treatments into clinical practice 		
	<ul style="list-style-type: none"> - Integrates emerging studies of somatic treatments into knowledge base - Effectively teaches at a post-graduate level evidence-based or best somatic 		
Development through the Life Cycle			
	<ul style="list-style-type: none"> - Describes the influence of acquisition and loss of specific capacities in the expression of psychopathology across the life cycle - Gives examples of gene-environment interaction influences on development and psychopathology 	Do	Do
	<ul style="list-style-type: none"> - Incorporates new neuroscientific knowledge into his or her understanding of development 		

DOCTOR OF MEDICINE (MD) CURRICULUM

Psychopathology			
	<ul style="list-style-type: none"> - Demonstrates sufficient knowledge to identify and treat atypical and complex psychiatric conditions throughout the life cycle and in a range of settings (inpatient, outpatient, emergency, consultation liaison) - Displays knowledge sufficient to determine the appropriate level of care for patients expressing, or who may represent, danger to self and/or others, across the life cycle and in a full range of treatment settings - Shows knowledge sufficient to identify and treat a wide range of psychiatric conditions in patients with medical disorders - Demonstrates sufficient knowledge to systematically screen for, evaluate, and diagnose common medical conditions and psychiatric patients and to ensure appropriate further evaluation and treatment of these conditions in collaboration with other medical providers. 	Do	Do
	<ul style="list-style-type: none"> - Displays knowledge sufficient to teach assessment of risks and the appropriate level of care for patients who may represent a danger to self and/or others - Shows sufficient knowledge to identify and treat uncommon psychiatric conditions in patients with medical disorders - Demonstrates sufficient knowledge to detect and ensure appropriate treatment of uncommon medical conditions in patients with psychiatric disorders 		

Clinical Neuroscience		
<ul style="list-style-type: none"> - Explains the significance of routine neuroimaging, neurophysiological, and neuropsychological testing abnormalities to patients - Knows clinical indications and limitations of functional neuroimaging - Describes psychiatric co-morbidities of less common neurologic disorders and less common neurologic co-morbidities of psychiatric disorders - Explains neurobiological hypotheses and genetic risks of common psychiatric disorders to patients - Demonstrate sufficient knowledge to incorporate leading neuroscientific hypothesis of emotions and social behaviours into case formulation 	Do	Do
<ul style="list-style-type: none"> - Integrates recent neurodiagnostic research into understanding of psychopathology - Flexibly applies knowledge of neuropsychological findings to the differential diagnoses of complex patients - Explains neurobiological hypotheses and genetic risks of less common psychiatric disorders to patients - Integrate knowledge of neurobiology into advocacy for psychiatric patient care and stigma reduction 		
Practice of Psychiatry		
<ul style="list-style-type: none"> - Describes the existence of state and regional variations regarding practice, involuntary treatment, health regulations, and psychiatric forensic evaluation - Describes professional advocacy - Describes how to seek out and integrate new information on the practice of psychiatry 	Do	Do
<ul style="list-style-type: none"> - Describes international variations regarding practice, involuntary treatment, and health regulations - Proposes advocacy activities, policy development, or scholarly contributions related to professional standards 		

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Patient Safety and the Health Care Team			
	<ul style="list-style-type: none"> - Participates in formal analysis (e.g., root-cause analysis, failure mode effects analysis) of medical errors and sentinel events - Develops content for and facilitates a patient safety presentation or conference focusing on systems-based errors in patient care (i.e., a morbidity and mortality [M&M] conference) 	Do	Do
	<ul style="list-style-type: none"> - Leads multidisciplinary teams (e.g., human factors engineers¹, social scientists) to address patient safety issues - Provides consultation to organizations to improve personal and patient safety 		
Resource Management			
	<ul style="list-style-type: none"> - Practices cost-effective, high-value clinical care, using evidence-based tools and information technologies to support decision making - Balances the best interests of the patient with the availability of resources 	Do	Do
	<ul style="list-style-type: none"> - Designs measurement tools to monitor and provide feedback to providers/ teams on resource consumption to facilitate improvement - Advocates for improved access to and additional resources within systems of care 		
Community-based Care			
	<ul style="list-style-type: none"> - Routinely uses self-help groups, community resources, and social networks in treatment - Employs prevention and risk reduction strategies in clinical care - Appropriately refers to rehabilitation and recovery programs - Uses principles of evidence-based practice and patient centered care in management of chronically ill patients 	Do	Do
	<ul style="list-style-type: none"> - Participates in the administration of community-based treatment programs - Participates in creating new community-based programs - Practices effectively in a rehabilitation and/or recovery-based program 		

Consultation to Non Psychiatric Providers and Non Medical Systems		
<ul style="list-style-type: none"> - Provides integrated care for psychiatric patients through collaboration with other physicians - Manages complicated and challenging consultation requests 	Do	Do
<ul style="list-style-type: none"> - Provides psychiatric consultations to larger systems - Leads a consultation team 		
Development and Execution of Life Long Learning through constant self evaluation, including critical evaluation of research and clinical evidence		
<ul style="list-style-type: none"> - Demonstrates improvement in clinical practice based on continual self-assessment and evidence-based information - Identifies and meets self-directed learning goals with little external guidance - Demonstrates use of a system or process for keeping up with relevant changes in medicine - Independently searches for and discriminates evidence relevant to clinical practice problems 	Do	Do
<ul style="list-style-type: none"> - Sustains practice of self-assessment and keeping up with relevant changes in medicine, and makes informed, evidence-based clinical decisions - Teaches others techniques to efficiently incorporate evidence gathering into clinical workflow - Independently teaches appraisal of clinical evidence 		
Formal Practice-based Quality Improvement based on established ad accepted methodologies		
<ul style="list-style-type: none"> - Substantially contributes to a supervised project to address specific quality deficit within own clinical service(s), and measures relevant outcomes - Describes basic methods for implementation and evaluation of clinical QI projects 	Do	Do
<ul style="list-style-type: none"> - Independently proposes and leads projects to enhance patient care - Uses advanced quality measurement and “dashboard” tools - Describes core concepts of advanced QI methodologies and business processes 		

DOCTOR OF MEDICINE (MD) CURRICULUM

Teaching			
	<ul style="list-style-type: none"> - Gives formal didactic presentation to groups (e.g., grand rounds, case conference, journal club) - Effectively uses feedback on teaching to improve teaching methods and approaches 	Do	Do
	<ul style="list-style-type: none"> - Educates broader professional community and/or public (e.g., presents at regional or national meeting) - Organizes and develops curriculum materials 		
Compassion, Integrity, Respect for others, Sensitivity to diverse patient population, Adherence to ethical Principles			
	<ul style="list-style-type: none"> - Develops a mutually agreeable care plan in the context of conflicting physician and patient and/or family values and beliefs - Discusses own cultural background and beliefs and the ways in which these affect interactions with patients 	Do	Do
	<ul style="list-style-type: none"> - Serves as a role model and teacher of compassion, integrity, respect for others, and sensitivity to diverse patient populations - Leads resident case discussions regarding ethical issues - Adapts to evolving ethical standards (i.e. can manage conflicting ethical standards and values and can apply these to practice) - Systematically analyzes and manages ethical issues in complicated and challenging clinical situations 		
Accountability to self, Patients, Colleagues and the Profession			
	<ul style="list-style-type: none"> - Knows how to take steps to address impairment in self and in colleagues - Prioritizes and balances conflicting interests of self, family, and others to optimize medical care and practice of profession - Prepares for obtaining and maintaining board certification - Displays increasing autonomy and leadership in taking responsibility for ensuring that patients receive the best possible care 	Do	Do

	<ul style="list-style-type: none"> - Develops physician wellness programs or interventions - Develops organizational policies, programs, or curricula for physician professionalism - Participates in the professional community (e.g., professional societies, patient advocacy groups, community service organizations) - Serves as a role model in demonstrating responsibility for ensuring that patients receive the best possible care 		
Relationship Development and Conflict Management with Patients, Families, Colleagues and Members of the Health Care Team			
	<ul style="list-style-type: none"> - Sustains therapeutic and working relationships during complex and challenging situations, including transitions of care - Leads a multidisciplinary care team 		
	<ul style="list-style-type: none"> - Sustains relationships across systems of care and with patients during long-term follow-up - Develops models/approaches to managing difficult communications - Manages treatment team conflicts as team leader - Leads and facilitates meetings within the organization 		
Information Sharing and Record Keeping			
	<ul style="list-style-type: none"> - Demonstrates effective verbal communication with patients, families, colleagues, and other health care providers that is appropriate, efficient, concise, and pertinent - Demonstrates written communication with patients, families, colleagues, and other health care providers that is appropriate, efficient, concise, and pertinent - Uses discretion and judgment in the inclusion of sensitive patient material in the medical record - Uses discretion and judgment in electronic communication with patients, families and colleagues 	Do	Do
	<ul style="list-style-type: none"> - Models continuous improvement in record keeping - Participates in the development of changes in rules, policies, and procedures related to technology 		

INTRODUCTION TO CONTENT

Generic curriculum

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:

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

TEACHING METHODS MODULE

MEDICAL HUMANITIES MODULE

Note: Above two modules will be delivered from term 2 to term 7 residency with compulsory attendance requirement of 90% to qualify for institute examination III.

QUALITY IMPROVEMENT PROJECT

CLINICAL COURSE CONTENT

Semester	Duration in months	Course
Basic science	3	<p>1. Neuroanatomy: Structure of the nerve, plasma membrane, nerve cell process. The types of cell found within nervous system. Neuronal synapses. The general anatomy of the brain, cranial nerves and spinal cord. Functions of the lobes and some major gyri including prefrontal cortex, cingulate gyrus and limbic system. The anatomy of the basal ganglia. The internal anatomy of the temporal lobes especially hippocampal formation, amygdala and reticular formation, the major white matter pathways, corpus callosum. Papez's circuit and other circuits relevant to integrated behaviour. The major neurochemical pathways.</p> <p>2. Neurophysiology: The basic concepts in the physiology of nervous system, synapses and receptors, including synthesis, release and uptake of transmitters. Basic knowledge of action potentials, resting potentials, ion fluxes and channels etc. The physiology of nervous system involved in integrated behaviour including perception pain, memory, motor function, arousal, drives and the emotions including aggression fear and stress Knowledge of disturbances of their functions with relevance to organic and nonorganic psychiatry. Tin localization of cerebral functions throughout the life span and their relevance to the effects of injury at different ages to the brain and behaviour. An understanding of neurodevelopmental models of psychiatric disorders and of cerebral plasticity. A basic knowledge of the physiology of arousal and sleep with particular reference to noradrenergic activity and the locus coeruleus. Nature of dream and its relationship with sleep. The normal EEC and evoked response techniques. Their application in investigation of cerebral pathology, seizure disorders, sleep and psychiatric disorders. The effects of drug and different disorders on EEG.</p> <p>3. Neuroendocrinology: The physiology of nervous and endocrine systems involved in integrated behaviour including perception, pain, memory, motor function, arousal, drives and the emotions including aggression, fear and stress. Knowledge of disturbances of their functions with relevance to organic and nonorganic psychiatry. An understanding of the neuroendocrine system, specially the control system of the secretion of hypothalamic and pituitary hormones, and posterior pituitary function. A basic-understanding of neuroendocrine rhythms and their disturbances in psychiatric disorders. General understanding of anatomical considerations, formation, secretion, transport, metabolism, effect and regulation of thyroid hormones, adrenal hormones, gonadal hormones and the hormones of the pancreas Endocrine functions of the kidneys, hear and pineal gland; hyper and hypo functions of these hormones. Endocrine disorders: pathology of endocrine glands including hyperthyroidism, hypothyroidism, hyper-pituitarism, hypo-pituitarism, hyper- parathyroidism, hypoparathyroidism, hypoadrenalism, hyperadrenalism in relation to psychiatric disorders, diabetes.</p>

		<p>4. Neurochemistry: Neurotransmitters: synthesis, storage and release Ion channels and calcium flux in relation to ion channels. Receptors: structures and function in relation to the transmitters listed below in pre- synaptic and post-synaptic receptors. Basic biochemistry of noradrenalin, serotonin, dopamine, GABA, acetylcholine, excitatory amino acids. Neuropeptides: Elementary knowledge of neuropeptides, particularly corticotrophin releasing hormone and cholecystokinin, enkephalins and endorphins. Chronobiology.</p> <p>5. Neuropathology: the neuropathology of organic disorders including the dementia, delirium and amnesic disorder. Lobar damage and its dysfunctional presentation. The neuropathology of schizophrenia, obsessive-compulsive disorder (OCD), neuropathology of other psychiatric disorders particularly brain damage related to stress - the 'glucocorticoid cascade hypothesis. Conditions associated with mental retardation including inborn errors of metabolism. Pathology of degenerative disorders including Alzheimer's disease, Pick's disease, Huntington's disease. Parkinson's disease and neurochemical pathology of tardive dyskinesia. Association between the localization of gross cerebral lesions and clinical signs (including tumours, trauma, cerebro-vascular disease, infections including slow virus and unconventional agent affections). Psycho-neuroimmunology.</p> <p>6. Behavioural Genetics: Basic concepts - chromosomes, cell division, gene structure, transcription and translation, normal karyotype, pattern of inheritance. Traditional techniques: Family, twin and adoption studies. Techniques of molecular genetics: restriction enzymes, molecular cloning and gen probes and others. Condition associated with chromosomal abnormalities-cytogenic and Mendelian disorders, disorders with multifactorial inheritance, Fragile X syndrome. Principal inherited conditions encountered in psychiatric-practice and the genetic contribution to specific psychiatric-disorders. Prenatal identification, Chromosomal and DNA analysis. Genetic counselling. Molecular and genetic heterogeneity. Phenotype/genotype correspondence. Nutritional disorders: protein energy malformation, vitamin deficiency disease and its relation to psychiatric disorders. Pathology of obesity. Human Genome Project.</p>
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<p>Psychology</p>	<p>3</p>	<p>1. Basic Psychology: Introduction to psychology and its major perspectives: behavioural (learning), developmental, humanistic, cognitive, and psychoanalytic. Sensation and perception: basic principles of visual and auditory perception. Theories of colour vision. The relevance of perceptual theory of illusions, hallucinations and other psychopathology. The process of perception, organization and perception, interpretation and perception. Motivation: theories of motivation. Classification of needs with emphasis on Maslow's hierarchy of needs. Internal and external sources of motivation. Eating disorders. Human obesity. Important social motives. Emotion: development of emotion, components of emotional response, nature and classification. Theories of emotion. Cognitive appraisal, differentiation and the status of primary emotions. Emotion and performance. Learning: learning theories including classical, operant, observational and cognitive models. The concepts of extinction and reinforcement. Nature and schedules of reinforcement. Learning process and etiological formulation of clinical problems. Escape and avoidance learning. The cognitive approach to learning. Clinical application of reinforcement in behaviour therapy. Types of punishment, Use of punishment in behavior therapy. Memory: memory systems and information processing. Type of memory. Process of encoding, storage and retrieval. The process of forgetting, emotional factors and retrieval. Distribution, inference, schemata and elaboration in retrieval. The relevance of this to memory disorders and their assessment. Improving memory. Memory and brain. Thinking and language: the nature and development of thinking and its relationship with language. Concepts and reasoning. Problem solving strategies. Decision making. Component of spoken language and language development. Theories of language. Intelligence: nature, definition and components of intelligence, concept of IQ and its stability. Intelligence tests, cultural influences, recent advancement in assessing intelligence. Aptitude and achievement tests. Extreme of intelligence. Heredity, environment and intelligence. Personality: different perspectives of personality (psycho-dynamics, trait and type theories), behavioural and social learning, humanistic and interactions approaches- Personality tests and its constructions. Projective and non-projective test of personality. Stress: models of stress, stress reaction-physiological and psychological aspects. Cognitive appraisal of stress. Situational factors-life events, conflict and trauma. Vulnerability and invulnerability, type-A behaviour theory. Coping mechanism. Locus of control. Relationship of stress with disorders, coping with stress, concept of behavioral medicine. States of consciousness: arousal. Sleep structure and dreaming. Biorhythms and effects of sleep deprivation. Hypnosis and suggestibility, meditation and trances.</p>
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	<p>2. Social Psychology Attitudes: Attitude: formation and attitude changes. Components and measurements of attitude. Cognitive consistency and dissonance. Believe-Attitude-Behaviour relationships. Self-psychology, self-concepts, self-esteem and self-image. Self-recognition and personal identity. Interpersonal issues: person perception, affiliation and friendship. Attribution theory. Social behaviour in social interactions. Theory of mind and pervasive developmental disorders. Leadership, social influence, power and obedience: types, characteristics and behaviour of leaders. Types of social power. Influences operating in small and large groups. Conformity, polarization and group thinking. Gang and deindividuation. Communicative control in relationships. Inter-group behaviour: prejudice, stereotypes and inter-group hostility Social identity and group membership. Aggression: theories of aggression. Factors influencing aggression. Family and social background of aggressive individuals. Altruism: social exchange theory and helping relationships. Interpersonal cooperation. Masculinity and femininity: psychology of man and psychology of woman. Psychology of institution/organization. Management consultancy, introduction of system theories.</p> <p>3. Developmental Psychology: Basic framework for conceptualizing the development: nature and stage theories, maturational tasks, maturity. Examination of gene-environment interactions. Relative influence of early reasons and later adversities. Impact of specific adversities such as trauma/abuse on development. Historical models - Freud and Neo-Freudians, Social learning, Piaget. Attachment: theories of attachment and its relevance to development. Classification and outcome of attachment. Maternal deprivation and its consequences. Brief consideration of neonatal/infantile-maternal bonding. Adult attachment behaviour. Family: family relationship and parenting practice: Influence of parental attitudes compared with parenting practice. Some aspects of distorted family function e.g. discord, overprotection, rejection, enmeshment, and disengagement. The impact of family factors on subsequent, development of the child. Family structure and influence on development. Temperament: individual temperamental difference and their impact on parent child relationships. Origins, types and stability of temperament and the evolution of character and personality. Childhood vulnerability and protective factors with respect to mental health. Developmental theories. Cognitive development: Piaget’s model and its advancement. Hypothesis of intrauterine cognitive development. Language development: basic outline theories with special reference to environmental influences and communicative competence. Social development: social competence, peer relationships. Components of peer popularity and unpopularity, bully victim problems. Moral development: criteria reference to Kohlberg’s stag theory. Egocentricism in adolescence. Development and maintenance of fears: in childhood and adolescence with reference to age. Sexual development: factors in the development of sexual identity and preference. Gender role. Adolescence as a developmental phase: Identity formation and role confirmation, and adolescence crisis with special emphasis on works of Bell, Kohut and Erickson. Adulthood: adaptations such as pairing, parenting, illness, bereavement and loss. Job and careers. Conception, pregnancy and childbirth: stresses related with rearing responsibilities, and their implications in the development of infant. Middle age: adoption to physical change, mid-life crisis. Normal aging: changes of normal aging and its impact on physical, social, cognitive and emotional aspects of individual functioning. Social changes accompanying old age. Stage of bereavement. Disability and pain xvii) Death and dying: adjustment with dying and its phases. Methodology of studying development: cross sectional, cohort and individual studies.</p>
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		<i>4. Identification and evaluation of influences on development.</i>
		<p>5. Sociology and Anthropology: Description and terms: Social class, socio-economic status and their relevance to psychiatric disorder and health care delivery. Social role of doctors: Doctor-patient – relationship. Sick role and illness behaviour. Formation of group, clan and family. Family cycle: family factors and psychiatric disorders. Social factors and specific mental health issues: Life events, and their subjective and contextual issues. Sociology of residential institutions. Basic principles of criminology and penology. Culture and its influence on psychiatric disorders. Stigma and prejudice. Ethnicity: types, ethnic minorities. Adoption and mental health. Anthropological studies, methodology, surveys, social anthropological approaches, and ethnography. Interrelationship between professional groups: team formation, patient care. Characteristics of professions. Development of self-sociological and anthropological perspectives</p>
		<p>6. Neuropsychology: Brain structure and organization in relation to memory, language, perception, attention-concentration, Visio-spatial ability and frontal lobe functions.</p>
		<p>7. Psychometrics: Psychological testing: knowledge about different psycho-logical tests and clinical implications, special emphasis on tests for intelligence, personality and developmental assessments. Neuropsychological testing: application of neuropsychological tests particularly to measure cognitive impairments in organic disorders especially dementia. Comprehensive test batteries and specialized approaches.</p>

Neurology	3	1. Clinical knowledge of neurology: physical examination of nervous system, diagnosis, investigation and treatment of common conditions.
		2. Disorders affecting cranial nerves, spinal cord, peripheral nerves and demyelinating diseases.
		3. Infection of the nervous system: bacterial, viral including slow viral diseases.
		4. Psychiatric consequences and associations of brain diseases, damage and dysfunctions.
		5. Brain degeneration process including degenerative disorders and its psychiatric consequences including organic psychiatric conditions.
		6. Psychiatric aspects of head injury and stroke and psychiatric conditions associated with them and the rehabilitation strategies.
		7. Seizure disorders, epilepsy, their management and psychiatric conditions associated with them and the rehabilitative strategies.
		8. Neurological disorders presenting as psychiatric problems.
		9. Specific conditions like headache, migraine, facial pain, neuralgias.
		10. Neuro-imaging techniques: structural and functional imaging including X-ray, CT, MRI, EEC, SPECT, PET, MRS, Fusion imaging.

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Child Psychiatry	3	Child and Adolescent Psychiatry:
		1. Classification and epidemiology of child and adolescent psychiatric disorders
		2. Interviewing: with children and adolescents, with parents and family.
		3. Assessments, physical examination, medical investigations, psychological tests, multiaxial diagnosis.
		4. Aetiology of child psychiatric disorders: genetic influences, chromosomal abnormalities, brain disorders, individual and family factors, social and environmental influences.
		5. Prevalence, aetiology, presentation, treatments and outcome of clinical syndromes and conditions in child and adolescent psychiatry including pervasive developmental disorders, specific developmental disorders, hyperkinetic disorder, oppositional defiant and conduct disorders, emotional disorders specific to childhood, anxiety disorder, depression, somatoform disorder and its variants, stress related disorder, obsessive compulsive disorder, tics disorder, feeding and sleeping disorders, attachment disorders in infancy and childhood. Enuresis and encopresis, school refusal, selective mutism, preschool problems.
		6. Psychiatric aspect of somatic disease & disorders, psychosomatic disorders, epilepsy and psychiatry
		7. Family conflict and problems, school and peer factors. Disorders of adolescence, suicide and deliberate self- harm, anorexia and bulimia nervosa, substance use disorders, schizophrenia and allied disorders,
		8. Continuities of childhood psychiatric disorders into adult life.
		9. Approaches to treatment: basic range of treatment methods -description, indications and contraindications for different treatment interventions, outcomes. Indications for in patient and day patient care.
		10. Child psychiatric services: general description. Basic information on different agencies involved in the care of children and their functions. Residential homes borstal and penal institutions.
		11. Legal aspects of child care: child protection, child abuse. Rights of the children adolescents. Role of the psychiatrist.
		Psychiatry of Intellectual Disability:
		1. Evolution of concept of learning disability and Learning Disability Psychiatry.
		2. Current status of learning disability- broad and narrow view.
		3. Learning disorders: epidemiology, aetiology, clinical features, diagnoses and treatment of Reading disorder, Mathematics disorder, Writing disorders, other learning disorders.
		4. Mental Retardation: Nosological evolution and present nomenclature. Classification, epidemiology, aetiology (Genetic, perinatal and acquired factors), clinical features, diagnosis, assessment (psychiatric interview, physical examination, neurological examination, laboratory tests, hearing and speech evaluation, psychological assessment), comorbid psychopathology, treatment and prevention.

		<p>5. History and development of learning disability services. Multidisciplinary team approach and role of child and adolescent psychiatrist, Learning disability psychiatrist and general psychiatrist in the team. Liaison among educational, health and social agencies. Special education and community services for learning disabilities.</p>
<p>Addiction medicine</p>	<p>3</p>	<p>1. Overview: terminology- substance abuse, dependence, withdrawal, intoxication. Classification of disorders associated with the use and abuse of alcohol and other psychoactive substances.</p> <p>2. Epidemiology and basic pharmacology: alcohol, cannabis, the stimulants (amphetamine, cocaine, caffeine, pemoline etc.), hallucinogens, inhalants, nicotine, solvents and nitrites, opiates, phencyclidine, sedatives, hypnotics and other anxiolytics (benzodiazepine and barbiturates).</p> <p>3. Classification, aetiology, presentation and diagnostic criteria, comorbidity, assessment and treatment of substance use related disorders. Personality aspects of drug additions.</p> <p>4. The interaction of substance and alcohol use with psychiatric disorders. Substance induced psychiatric disorders.</p> <p>5. Strategies for prevention of substance abuse. Role of different agencies. Drug control act and regulations.</p> <p>6. Assessment and management of nonsubstance additive and related syndromes.</p> <p>7. Arguments for and against the various types of prescribing and treatment modalities.</p> <p>8. Substance misuse related medical, psychiatric and social complications and their impact on public health.</p> <p>9. Social reintegration and rehabilitation.</p>

<p>Biostatistics and research methodology</p>	<p>3</p>	<p>Basic concepts: definition, importance, uses in medical science and limitations, Concepts of scale of measurement, sampling methods, frequency and probability distributions, summary statistics and graphs, tables, outlines, plots Types of data - categorical, ordinal, continuous. Descriptive and inferential statistics: tests of significance, non-parametric and parametric tests, estimation and confidence intervals. The advantage of confidence intervals over p values. Specific tests: t-test. Chi-square test, Mann-Whitney U, confidence intervals for difference between means proportions, mode, medians. Brief introduction of other methods, factor and cluster analysis. Ideas of reliability and validity. Sensitivity, specificity and predictive values of research measures. Bias, particularly-cross-cultural biases. Diagnostic agreement measured by kappa and intra-class correlation. Data analysis: inputting, editing, listing, exploring and analysing data. Presenting results, Inferring the cause and effect relationship, Confounding factors. Analyses: meta-analysis, survival analysis, analysis of covariance, regression and correlation. Research methodology: Candidates should be able critically to examine the design, methodology, results and appraisal of published research, with reference to following areas: Principles and criteria for literature reviews, meta-analysis, Concepts of incidence, Prevalence and population at risk, z test. Sampling techniques, case identification, and case registers mortality and morbidity statistics, Measurements in psychiatry, their advantages and limitation. Research methodology, study design, generation of hypothesis, hypothesis testing, and designing research proposals (type of research study will emphasize on epidemiological surveys and clinical trials and Data analysis and statistics).</p> <p>Research Methodology:</p> <ul style="list-style-type: none"> • Residents should be able critically to examine the design, methodology, results and appraisal of published research, with reference to following areas: <ul style="list-style-type: none"> * Principles and criteria for literature reviews, Meta - analysis, concepts of incidence, prevalence and population at risk. * Sampling techniques, case identification, and case registers mortality and morbidity statistics. * Measurements in psychiatry, their advantages and limitation. * Assessment and management of nonsubstance additive and related syndromes. * Research methodology, study design, generation of hypothesis, hypothesis testing, and designing research proposals (type of research study will emphasize on epidemiological surveys and clinical trials). * Data analysis and statistics.
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Clinical psychiatry	3	1. Phenomenology and Psychopathology
		2. Disease concept in psychiatry: Evolution of concept of mental disorders. "Medical Model" in its present status. Guiding principles of abnormal behaviour. Criteria of mental disorder
		3. Classification of psychiatric disorders: History and development of classification. Current approaches to Classifications. ICD and DSM Classification. Clinical features of disorders
		4. Aetiology of psychiatric disorders: Evolution of aetiological concepts with deferent perspectives. Multifactorial aetiological aspects- biopsychosocial model. Biological-genetic, neurostructural, neurobiochemical, Psychosocial-behavioural, cognitive, stress and stressors
		5. Assessment of psychiatric disorders: Principles of assessment. The psychiatric interview, clinical examination and record keeping. Neuroimaging & laboratory investigations. Measurements in psychiatry. Neuropsychological tests- rating scales and measures
		6. Management of psychiatric disorders: Principles of management- Multimodal aspects and Multidisciplinary team
		7. Biological treatment: Psychotropics and psychotherapeutics, ECT and its application. Neurological effects of ECT, Other forms of biological treatments.
		8. Psychological treatment: Fundamentals of Counselling and Psychotherapy, Different modes of therapy and principles of assessment
		9. Social treatment: Principles and approaches of social therapy. Different social therapies and its applications
		10. Psychiatry services: Evolution of Psychiatry services. Services delivery systems. Primary Care Psychiatry services, General Hospital Psychiatry services. Community psychiatry services. Services with special settings. Need -based service delivery and feasible service development. Service evaluation.

	<p>Psychopharmacology:</p> <p>1. General principles: a brief historical review of the development of psychotropic drugs and classification of psycho tropics. The principles of rational prescribing of psychotropics. Pharmacokinetics: general principles of absorption, distribution, metabolism and elimination. Comparison of different routes of administration as they affect drug availability, elimination and access to the brain through blood-brain barrier. Relationship between plasma drug level and therapeutic response. Pharmacodynamics: synaptic receptor complexity, subtypes of receptors, phenomenon of receptor up/down regulation. The principal CNS pharmacology of psycho tropics with particular attention to their postulated mechanism of action in achieving therapeutic effect at both synaptic, molecular and system levels. These groups mainly include antipsychotics, mood stabilizing agents, antidepressants, anxiolytics, sedatives-hypnotics, psycho stimulants, anti-Alzheimer and antiepileptic agents, anticollenergetic-antiperkinsonian drugs, alpha2 adrenergic receptor agonists, beta adrenergic receptor antagonists, cholinesterase. Knowledge about advancement of psychotropics. Adverse effects: understanding dose related adverse reactions associated with main groups of drugs used in psychiatry with appropriate corrective action. Evaluation of risks and benefits of psychotropic drugs in acute, short and long-term use including effects of withdrawal. Evaluation of drugs: research methodology for drug trials including principles of design, randomization, blindness (double-blind technique), statistical power, duration, rating scales, exclusion criteria.</p>
	<p>2. Major topics to be covered:</p> <ul style="list-style-type: none"> • Approaching to Psychiatric Diagnosis and Classification • Aetiology and Clinical Profile of Dementias • Organic Delusional, Mood and Personality Disorders • Concept and Typology of Schizophrenia • Biological Basis of Schizophrenia • Course, Outcome and Prognosis of Schizophrenia • Brief and Reactive Psychosis • Etiological Theories of Mood Disorders • Subtypes of Depressive Disorders and their Clinical Relevance • Course and Outcome of Mood Disorders • Paranoid Disorders • Concept and Typology of Personality Disorders • Antisocial Personality Disorders • Anxiety disorders: Nosological status and natural history • Reactions to severe stress • Current concept of dissociative disorders • Somatization disorders: Diagnosis and clinical features • Nosological status and clinical features of Neurasthenia • Nonorganic sleep disorders • Recent advances in eating disorders • Management of premature ejaculation • Psychiatric aspects of homosexuality • Biological basis of anxiety • Habit and impulse disorders • Comparative pharmacology of antipsychotic drugs

	<ul style="list-style-type: none"> • Short-term side effects of antipsychotic drugs and their management • Tardive dyskinesia: pathophysiology and management • Recent advances in antidepressant drug therapy • Management of a suicidal patient • Role of Lithium in Psychiatric disorders • Adjuncts and alternatives to Lithium in the management of mood disorders • Drug treatment of generalized anxiety and panic disorders • Recent advances in drug treatment of obsessive compulsive disorders • Electro-convulsive Therapy: current trends • Human Rights of psychiatric patients • Ethics in Psychiatry • Epidemiology of psychiatric Illness in Old Age • Current Issues in Management of Elderly Psychiatric Patients. • Integration of Mental Health into Primary Care • Dementia: Differential Diagnosis and Management • Delirium: Differential Diagnosis and Management • Psychiatric Syndromes with Epilepsy • Neuro-psychiatric Sequel of HIV Infection • Consultation-Liaison Psychiatry • Psychological Aspects of Cardio-vascular Disorders • Psychological Aspects of Gastro-intestinal Disorders • The Terminally Ill Patient and Family • Psychological Aspects of Breast Cancer • Obesity • Concept and Assessment of Disability • Concept and Measurement of Quality of Life • Neuro-psychologic Assessment and its Relevance to Psychiatric Diagnosis and Management • Stress and Psychological Disorders • Psychological Aspects of Organ Transplantation • Forensic psychiatry
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FIELD POSTING

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:

- I. Integrate clinical experiences from previous specialty rotations and be able to work competently in a district hospital.
- II. Work with district health administration personnel and be familiar with local public health activities, including those at Basic Health Unit (BHU).
- III. Demonstrate familiarity with the functions and activities of non-government organizations working in the district.
- IV. 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.

- I. Demonstrate clinical knowledge and skills commensurate with his level of training by managing cases presenting in Psychiatry in district hospitals.
- II. Be able to implement the principal strategies for addressing public health problems in the district, particularly those based on Primary Health Care concepts, including:
 - a. Health education
 - b. Essential drugs
 - c. Immunization
 - d. Oral rehydration
 - e. Sanitation
 - f. Vitamin A supplementation
 - g. Water supply
 - h. Family planning
 - i. Nutrition
 - j. Maternal and child health, Safe motherhood
 - k. Community participation
- III. Be able to describe the organization of the health care delivery system at the district level, including public health, clinical services and traditional medicine.
- IV. Be able to describe the role and function of non-government agencies operating in the district.
- V. Be able to identify and refer those patients which require specialized hospital services.
- VI. Make contacts with BHU staff and assist them in making appropriate referrals to the district hospital.
- VII. 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.

EXAMINATION SYSTEM AND OVERVIEW

	Examinations	Schedule	Components		Total Marks	% Weightage [†]
			Written	Practical		
Term 1-2	Institute Examination I	End of term 1	Paper I – V (Each paper) MCQ: 50% SAQ = 5 marks * 10	OSPE = 20 stations * 3 mins = 100 marks	600	Exams = 10 % (CA = 5 %)*
	Continuous assessment(CA)		Mini-Cex, DOPS, CBD, 360-degree feedback, log book/portfolio		100	
Term 3-4	Continuous assessment(CA)		Mini-Cex, DOPS, CBD, OSLE, 360-degree feedback, log book		100	(CA = 5 %)*
	Institute Examination II	End of term 4	Paper I & II (Each paper) MCQs: 50 marks SAQ = 5 marks * 6 SLEQ = 10 marks * 2	OSCE, 10 stations (5 mins each) 100 marks short case (2): 50 marks * 2 Long case (1): 100 marks (OSLER)	400	Exams = 20 %
Term 5-6	Continuous assessment(CA)		Mini-Cex, DOPS, CBD, OSLE, 360-degree feedback, log book/portfolio		100	(CA = 5 %)*
	Submission of Thesis	End of term 6	Thesis content and Presentation: 25 marks each Oral /viva voce: 50 marks		100	Thesis = 20 %
Term 7-8	Continuous assessment(CA)		Quality improvement project during 7 th term (July-December) with report writing and submission to Dean's office through supervisor for QI project		100	(CA = 5 %)*
	Institute Examination III	End of term 8	Paper I & II (Each paper) MCQs: 50 marks SAQ = 5 marks * 6 SLEQ = 10 marks * 2	OSCE, 10 stations (5 mins) 100 marks short case (2): 50 marks * 2 Long case (1): 100 marks (OSLER)	500	Exams = 30 %
Total Cumulative percentage						100 %

Continues assessment (CA): Preferably by a faculty member but in special situations a senior resident can do as a part of peer assessment

CA: will be assessed 6 monthly basis (term)

*** Institute examination I, II, thesis and III are considered bar exams, a candidate must secure minimum of 50% separately in each theory paper, OSCE and Cases

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Institute Examination I:

Paper I: Anatomy and Physiology

Paper II: Biochemistry, Pharmacology and General Pathology

Paper III: Emergency Medicine and Patient safety

Paper IV: Laboratory Medicine, Chemical Pathology and Radiology

Paper V: Biostatistics, Epidemiology and Research

Institute Examination II:

Paper I: Neurology with Neuropsychiatry

Paper II: Clinical Psychiatry

Submission of Thesis:

Thesis Defense Examination

Institute Examination III:

Paper I: Adult Psychiatry

Paper II: Specialties in Psychiatry (Forensic, Child and Adolescent, Addiction, Psychosomatic and Liaison Consultation)

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, supervisors, course coordinator, 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 is 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.

The entire curriculum will be re-evaluated every 5th year with the scope to incorporate and keep with the pace of recent development in the field of medical education in order to provide maximum learning opportunities to our learners.

Annexure: I

FoPGM/Psychiatry-Portfolio 2018

Name:.....






Batch:

Placement:

Date from:

To:

Portfolio Assessment form: Global assessment of the 5 competency domains of learning

Portfolio Assessment Scale (Global ratings)		Domains of learning in Psychiatry								
 Not learned = 1  Needs further training = 2  Satisfactory = 3  Competent = 4  Mastery = 5		Communication skills and Patient-Doctor relationship	Applied Professional Knowledge and Skills	Community Health and Context of Psychiatry	Professional and Ethical Role	Organizational and Legal dimensions and information technology/e-health				
Frequency Check (✓) as applicable		Assessor Check (✓) as applicable						Total Score	Average Score	Signature
Completion of Term/Rotation		Resident								
Completion of Term/Rotation		Specialist Supervisor								
At the end of assessment period	Term 1 Term 2-4 Term 5-6 Term 7-8	Course Coordinator								
Term Score (T)	Term 1 Term 2-4 Term 5-6 Term 7-8									

Guideline for assessors

The residents develop competency in cognitive, psychomotor and affective domains (described under five domains of Psychiatry) and progress towards mastery. The milestones are colour coded as red, orange, green, blue and grey, representing as not learned, needs further training, satisfactory, competent and mastery respectively. The following descriptions under each domain shall guide the assessors while coding the milestones. Log books, formative assessment tools and professional judgments based on workplace assessment are used to code the milestones

Domain 1: Communication skills and Patient-Doctor relationship

- I. Demonstrate behaviors that convey caring, honesty, genuine interest, empathy, and respect for patients and their families appropriate to person and socio-cultural context
- II. Accurately identifies patient's emotion and maintain professional boundaries
- III. Cultivate positive relationships with patients, families, and team members
- IV. Recognize communication conflicts in work relationship and sustain therapeutic and working relationships during complex and challenging situations
- V. Demonstrate a professional interest and curiosity in patient's story
- VI. Review with patient/family on general indication, dosing, parameters, common side effects of prescribed psychopharmacological agents

Domain 2: Applied Professional Knowledge and Skills

- I. Obtain medical and complete psychiatry history with mental state examination
- II. Demonstrate psychiatric formulation and differential diagnosis
- III. Demonstrate sufficient knowledge in psychopathology and wide range of psychiatric conditions
- IV. Identify and apply potential treatment and management options; Psychopharmacology, psychotherapy and social intervention including ECT
- V. Lead to multidisciplinary team care
- VI. Recognize and manage patients in crisis or with acute presentation
- VII. Describe and explain the stages of normal physical, social, and cognitive development through the life cycle
- VIII. Demonstrate knowledge in clinical neurosciences (eg. indication for Neuro diagnostic and Neuro physiological testing, understanding meaning of abnormal findings, and significance of abnormal findings)
- IX. Know how to order neuropsychological testing, and understanding meaning of abnormal findings
- X. Demonstrate some additional skills in addiction medicine, child psychiatry and geriatric psychiatry

Domain 3: Community Health and Context of Psychiatry

- I. Know and make use of community mental health system of care, self-help group, other community resources, and social network (consultation to non-psychiatric providers and non-medical system)
- II. Discuss conflict of interest and management
- III. Coordinate patient access to community and system resources
- IV. Incorporate disorder specific support and advocacy groups in clinical care
- V. Describe preventive measures and rehabilitation programs
- VI. Assist primary treatment care team, provide recommendation and discuss integrating mental health and medical care in treatment planning

Domain 4: Professional and Ethical Role

- I. Display familiarity with basic ethical principles (eg. Confidentiality, informed consent, professional boundaries)
- II. Display increasing autonomy and leadership in taking responsibility for ensuring that the patient receives the best possible care
- III. Display compassion, integrity, respect for others, sensitivity to diverse patient population, adherence to ethical principles
- IV. Development and execution of lifelong learning through constant self-evaluation, including critical evaluation of research and clinical evidence

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

- I. Demonstrate written communication with patients, families, colleagues, and others that are relevant
- II. Use discretion and judgment in inclusion of sensitive patient's material in the medical record
- III. Participate in the development of changes in organizational rules, policies, and procedures and also in professional community
- IV. Accountability to self, patients, colleagues, and the profession
- V. Information sharing and record keeping

**360 degree feedback form
(Interpersonal and communication skills)**

Residents must be able to demonstrate interpersonal and communication skills that result in effective information exchange and teaming with patients, their families, and professional associates.

1. Assessment by: Self Others
2. Name of Resident:

Competency group: Communicates effectively to create and sustain a therapeutic relationship with patients and families					
	Not Applicable	Rarely demonstrates (<25-50% of the time)	Sometimes demonstrates (25% of time)	Demonstrates in most cases (50-75% of the time)	Demonstrates in majority of cases (>75% of the time)
Obtains historical information from appropriate individual (patient, caregiver, etc)	NA	1	2	3	4
Makes appropriate introductions and explains personal roles	NA	1	2	3	4
Respects privacy of patient/family by using various areas in facility for conversation, exams, etc	NA	1	2	3	4
Shows evidence of being able to sustain a continuing relationship with the patient	NA	1	2	3	4
Uses appropriate language at the proper developmental/educational level for the patient and/or caregivers/family members	NA	1	2	3	4
Uses a variety of techniques to elicit information from the patient	NA	1	2	3	4
Uses effective listening skills to elicit information	NA	1	2	3	4
Makes the patient comfortable enough to extract all necessary information when engaging in probing conversation	NA	1	2	3	4
Ensures the patient understands instructions	NA	1	2	3	4
Provides instructions to patients in a variety of ways	NA	1	2	3	4

Competency: Work effectively with others as a member or leader of a health care team or other professional group					
	Not Applicable	Rarely demonstrates (<25-50% of the time)	Sometimes demonstrates (25% of time)	Demonstrates in most cases (50-75% of the time)	Demonstrates in majority of cases (>75% of the time)
Familiarizes with the health care team member	NA	1	2	3	4
Shows respect to team members and provides information when needed	NA	1	2	3	4
Facilitates team communication when in role of team leader	NA	1	2	3	4
Assumes the role of consultant where appropriate	NA	1	2	3	4
Provides constructive verbal and written feedback to other members of the health care team	NA	1	2	3	4
Medical records are thorough, readable, and done on time	NA	1	2	3	4

Date evaluated:

Case based discussion (CbD)

1. Department:

2. Brief case description:

3. Setting: OPD Ward Emergency ICU

4. Degree of difficulty: Low Moderate High

5. Basis for case discussion:

Inpatient record Discharge summary OPD prescription

Please score the trainee on the scale shown. Please note that your scoring should reflect the performance of the student against that which you would **reasonably expect at their stage of training** and level of experience. Please mark 'Unable to Comment' if you feel you have not observed the behaviour.

Assessments	Well below expectation	Below expectation	Borderline	Meets expectation	Above expectation	Well above expectation	Unable to Assess
Clinical assessment	1	2	3	4	5	6	UTA
Investigations & referrals	1	2	3	4	5	6	UTA
Management plan	1	2	3	4	5	6	UTA
Follow up & future planning	1	2	3	4	5	6	UTA
Record keeping	1	2	3	4	5	6	UTA
Overall clinical judgment	1	2	3	4	5	6	UTA

Feedback	
What went well?	
Any suggestion for improvement	

11. Assessor's Name and signature:

--

Trainee's reflection. What have I learnt? and Where I need to focus for improvement?

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12. Trainee's name and signature:

Date: D/M/Y

--

Direct Observation of Procedural Skills (DOPS) form

- 1. Department:
- 2. Procedure:
- 3. Setting: OPD Ward Emergency
- 4. Conducted: on a patient during simulation exercise
- 5. Degree of difficulty: Low Moderate High
- 6. Reason for added difficulty:
- 7. Time pressure: Elective Critical
- 8. Number of times same procedure done before:

9. Assessment	Significant input required from assessor	Some guidance provided by assessor	Able to manage independently	Unable to assess
Clinical knowledge	<i>Understand indications and contraindication, understands relevant anatomy</i>			
	1	2	3	UTA
Consent	<i>Properly explain the procedure to patient and obtains informed verbal consent</i>			
	1	2	3	UTA
Preparation	<i>Properly explains the procedure and appropriately prepares for the procedure ensure assisting staff is present</i>			
	1	2	3	UTA
Infection control	<i>Demonstrates aseptic technique and follows universal precautions</i>			
	1	2	3	UTA
Technical ability	<i>Demonstrates manual dexterity and confidence; demonstrate adequate skill and practical fluency</i>			
	1	2	3	UTA
Patient interaction	<i>Communicates, reassures the patient, eye contact with patient for discomfort</i>			
	1	2	3	UTA
Insight	<i>Knows when to seek assistance, abandon procedure or arrange alternative care to prevent harm to patient</i>			
	1	2	3	UTA
Documentation	<i>Documents the episode including problems and complications; Clear post-procedure to the patients and staffs</i>			
	1	2	3	UTA
Team interaction	<i>Provides clear instructions to assisting staff and conveys relevant information concerning the patient and plans to team members</i>			
	1	2	3	UTA
Overall performance	1	2	3	

Feedback	
What went well?	
Areas that needed supervisory input	
Suggestions for getting greater independence	

11. Assessor's Name and signature:

Trainee's reflection on The procedure & learning

12. Trainee's name and signature:

Date: D/M/Y

**Mini – Clinical Evaluation
(Mini- CEX) Form**

Department: _____ Date: _____

Resident: _____ R-1 R-2 R-3 R-4

Patient Problem/Dx: _____

Setting: OPD Ward Emergency Other _____

Patient: Age: _____ Sex: _____ New Follow-up

Complexity: Low Moderate High

Focus: Data Gathering Diagnosis Therapy Counseling

Medical Interviewing skills (O Not Observed)	Facilitates patient’s telling of story; effectively uses questions/directionsto obtain accurate, adequate information needed; responds appropriately to affect, non-verbal cues.								
	1	2	3	4	5	6	7	8	9
	Unsatisfactory			Satisfactory			Superior		
Physical Examination Skills (O Not Observed)	Follows efficient, logical sequence; balances screening/diagnostic stepsfor problem; informs patient; sensitive to patient’s comfort, modesty.								
	1	2	3	4	5	6	7	8	9
	Unsatisfactory			Satisfactory			Superior		
Humanistic Qualities/ Professionalism	Shows respect, compassion, empathy, establishes trust;attends to patient’s needs of comfort, modesty, confidentiality, information.								
	1	2	3	4	5	6	7	8	9
	Unsatisfactory			Satisfactory			Superior		
Clinical Judgement (O Not Observed)	Selectively orders/performs appropriate diagnostic studies, considers risks,benefits.								
	1	2	3	4	5	6	7	8	9
	Unsatisfactory			Satisfactory			Superior		
Counseling Skills (O Not Observed)	Explains rationale for test/treatment, obtains patient’s consent, educates/ counselsregarding management.								
	1	2	3	4	5	6	7	8	9
	Unsatisfactory			Satisfactory			Superior		
Organization/Efficiency (O Not Observed)	Prioritizes; is timely; succinct.								
	1	2	3	4	5	6	7	8	9
	Unsatisfactory			Satisfactory			Superior		
Overall Clinical Competence (O Not Observed)	Demonstrates judgment, synthesis, caring, effectiveness, efficiency.								
	1	2	3	4	5	6	7	8	9
	Unsatisfactory			Satisfactory			Superior		

Mini-CEX Time: Observing _____ Mins Providing Feedback: _____ Mins

Evaluator Satisfaction with Mini-CEX

1 2 3 4 5 6 7 8 9 HIGH

Resident Satisfaction with Mini-CEX

1 2 3 4 5 6 7 8 9 HIGH

Feedback	
Which aspect of the encounter went well?	
Suggested areas of improvement?	

9. Assessor's name and signature:

10. Trainee's reflections on patient and areas of learning:

11. Trainee's name and signature

Date: D/M/Y

Note 1: Reprinted with permission from the American Board of Internal Medicine, www.abim.org.

Note 2: Discussed in: Norcini JJ, Blank LL, Arnold GK, Kimball HR. The mini-CEX (Clinical Evaluation Exercise): a preliminary investigation. *Ann Intern Med* 1995;123:795-9.

Note 3: General Practice Curriculum, KGUMSB,2016

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Name:.....Placement:

Date from:..... To:..... Term.....

Sl. No.	Date	Learning activity	Remarks (observed, Assisted, Performed, Attended, Presented, Participated etc)	Sig. of supervisor

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ANNEXURE II

GENERIC CURRICULUM

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)

MEDICAL EDUCATION: (30 Hours)

FUNDAMENTALS OF BASIC SCIENCE

- I. Fundamental principles and applications of anatomy
- II. Fundamental principles and applications of physiology
- III. Fundamental principles and applications of biochemistry
- IV. Fundamental principles and applications of pharmacology
- V. Fundamental principles and applications of pathology

BASIC LIFE SUPPORT AND ADVANCE CARDIAC LIFE SUPPORT SKILLS

BLS

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

ACLS

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

RADIO-DIAGNOSIS AND IMAGING

Plain Radiographs

- I. Identify normal anatomy on PA, AP, and lateral chest films
- II. 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
- III. Identify normal anatomy on four views of the abdomen
- IV. Recognize abnormal abdominal films including ileus, small bowel obstruction, large bowel obstruction, free air, and calcifications
- V. Identify normal anatomy of the spine and long bones in both adults and children
- VI. Recognize abnormal bone radiographs including fractures, degenerative joint disease, osteoporosis (including vertebral collapse), and primary versus metastatic bone malignancy
- VII. Identify normal anatomy on barium enema, and upper gastrointestinal series

Computed Tomography

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

Magnetic Resonance Imaging

- I. Discuss principles of magnetic resonance imaging, including differences in abilities and applications of MRI versus CT
- II. Identify normal anatomy on MRI of the head and spine
- III. 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

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

Mammography

- I. Discuss basics of normal and abnormal mammograms
- II. Discuss indications and utility of mammography, including usefulness as a screening method and as a surgical tool for resection and biopsy.

Nuclear Medicine

- I. Discuss general principles and therapeutic uses of nuclear medicine
- II. 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

- I. Discuss diagnostic and therapeutic principles of angiography
- II. Discuss indications for obtaining angiograms
- III. Discuss applications and utility of MRA angiograms
- IV. Recognize normal anatomy of the great vessels and other vasculature on angiograms
- V. Discuss indications for angiograms for abnormal processes including subarachnoid hemorrhage 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

- I. Ultrasound-guided vascular access
- II. Paracentesis
- III. Thoracocentesis, chest tube insertion and management
- IV. Ultrasound-guided cyst aspirations and soft tissue biopsy

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- V. Embolization procedures
- VI. Vertebroplasty
- VII. Vascular stenting
- VIII. Thyroid ablation therapy
- IX. Thrombolytic therapy for PE/DVT

LABORATORY MEDICINE

Foundations of Laboratory Medicine

- I. 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;
- II. 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 (eg, pregnancy);
- III. 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);
- IV. 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).
- V. Distinction between testing appropriate to the clinical laboratory and those relating to research environment;
- VI. External and internal validation of clinical laboratory tests;

Chemical Pathology and Immunology

- I. Basic principles of toxicology - the diagnosis and management of common clinical toxicology scenarios (eg, overdoses of acetaminophen, antidepressants, salicylates, ethylene glycol, ethanol, opiates, methanol);
- II. 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;
- III. Principles of therapeutic drug monitoring, including the determination of peak and trough levels vs random drug levels;
- IV. Uses of metabolic testing, including electrolytes, acid-base balance, osmolality, and blood gases; interpret results for the above tests;
- V. Tests relevant to diagnosis of myocardial infarction and acute coronary syndrome,

- cardiovascular and stroke risk, and congestive heart failure;
- VI. Criteria for the laboratory diagnosis of diabetes mellitus and biochemical changes that are seen in diabetic ketoacidosis and nonketotic hyperosmolar coma;
 - VII. Evaluation of renal function, and criteria for chronic kidney disease; review basic microscopic urinalysis, and describe key abnormal findings;
 - VIII. Laboratory evaluation of hepatic, pancreatic, and gastrointestinal tract pathology;
 - IX. Common tests used for plasma protein analysis, including total protein, albumin, serum protein electrophoresis, and immuno-fixation electrophoresis and their disease-specific relevance;
 - X. 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;
 - XI. Role of testing for tumor markers, including the differences in their uses for screening, diagnosis, prognosis, and therapeutic monitoring;
 - XII. Tests available for use in reproductive biology, both prenatal and postnatal
 - XIII. Common approaches used in endocrinology testing, including pituitary-adrenal, parathyroid, and thyroid testing; stimulation and suppression test physiology and interpretation.

Molecular Diagnostics

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

Hematology

- I. Methods for determination of the complete blood count, including measured vs calculated values, indications for manual vs automated leukocyte differential, and important interferences;
- II. Physiology of normal hematopoiesis and the erythrocyte, leukocyte, and platelet response to pathologic stimuli;
- III. Significance of erythrocyte, leukocyte, and platelet morphologic variations on the peripheral smear; know the types of leukocytes defined in the differential and their significance;
- IV. Laboratory evaluation and differential diagnosis of anemia, erythrocytosis, leukopenia, leukocytosis, thrombocytopenia, and thrombocytosis;
- V. Laboratory evaluation, both cellular and chemical, of body fluids, including urine and cerebrospinal, pleural, peritoneal, pericardial, and joint fluid;
- VI. Physiology of coagulation, including the mechanisms of action of naturally occurring and therapeutic anticoagulants;
- VII. Laboratory tests used to diagnose common bleeding and thrombotic disorders, including the hemophilias, platelet disorders, von Willebrand disease, and

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- acquired bleeding diatheses; describe appropriate testing strategies for monitoring hemostatic and anticoagulant therapies;
- VIII. Evaluation of hemoglobinopathies, and be able to diagnose common hemoglobinopathies such as sickle cell disease when presented with patient data;
- IX. General principles of flow cytometric, molecular, and cytogenetic approaches used in the evaluation of leukemias, lymphomas, and related neoplastic disorders;

Microbiology

- I. 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;
- II. 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;
- III. Factors affecting turnaround time in microbiologic workups, eg, fastidious organisms requiring special media and longer incubation times, as well as unusual tests performed infrequently;
- IV. 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;
- V. 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, eg, viral hepatitis and HIV;
- VI. Mechanisms of action of antimicrobial drugs of different classes; interpret the antimicrobial susceptibility report ;
- VII. 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

- I. 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 (eg, hematopoietic cytokines, autologous donations, and intraoperative blood salvage);
- II. 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 (eg, expected hemoglobin and platelet count increments);
- III. Pathophysiology, presentations, and acute management (and prophylaxis) of the different types of transfusion reactions;
- IV. 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;
- V. Importance of blood specimen labeling, 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).
- VI. 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;
- VII. Define “massive transfusion,” and describe the special needs of the patients in terms of metabolic derangements and the administration of blood products;
- VIII. Various kinds of blood donors (eg, autologous, directed, altruistic) and the important elements of screening pre-donation;
- IX. Clinical use of therapeutic phlebotomy; various types of apheresis procedures, and examples of how each is used;
- X. The HLA system and its role in transfusion and transplantation;

INFECTION CONTROL

- I. Concept of infection prevention and control
- II. Common misconceptions of infection prevention and control
 - a. Incidence of infections at the health care facility
 - b. Prevalence of infections in the community
 - c. How infections are transmitted
 - d. HIV and HBV
 - e. Use of screening
 - f. Feasibility of adhering to appropriate infection prevention and control practices

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- III. Need for infection prevention and control in the
 - a. Health care facility
 - b. Home
 - c. Community
 - d. Individual
 - e. Institution
 - f. Home
 - g. Community
 - h. Consequences of non-compliance
- IV. Levels of responsibility.
- V. Definitions:
 - a. Acute care settings
 - b. Ambulatory care settings
 - c. Long-term care settings
 - d. Home-based care
 - e. Community-based care
 - f. Standard Precautions
 - g. Transmission-Based Precautions
 - h. Isolation
- VI. Common infections in each care setting and methods of prevention
- VII. Factors predisposing staff, patients, families, and visitors to infection
- VIII. Description and methods of
 - a. Standard Precautions
 - b. Transmission-Based Precautions
 - c. Isolation
- IX. Antisepsis
 - a. Definition
- X. Antiseptics
 - a. Types and their uses
- XI. Principles of
 - a. Decontamination
 - b. Cleaning
 - c. Disinfection
 - d. Sterilization
- XII. Categories of disinfectant, their uses and limitations
- XIII. Calculation of strengths of disinfectants
- XIV. National standards and regulations governing infection prevention and control in health care facilities, homes and communities
- XV. Barriers to implementation
 - a. Lack of knowledge
 - b. Misunderstanding of associated risks
 - c. Inadequate equipment and supplies
 - d. Poor supervision
 - e. Other

- XVI. Quality assurance process
 - a. Definition
 - b. Standards
 - c. Indicators
 - d. Audit

PATIENT SAFETY

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

MEDICAL LAWS AND ETHICS

- I. Medical Law and Ethics
 - a. Importance in the ambulatory healthcare settings
 - a. Codes of Ethics
 - b. 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
 - a. Controlled substances
 - b. Contracts
 - c. Statute of Limitations
 - d. 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

BASIC EPIDEMIOLOGY

Principles of epidemiology

- I. Definition
 - a. Epidemiology
 - b. Epidemiology approach
 - c. Uses of epidemiology
- II. Phases of epidemiology approach
 - a. Descriptive epidemiology
 - ◇ What is the problem
 - ◇ Frequency of the problem
 - ◇ Who is involved
 - ◇ Where is the problem
 - ◇ When did it occur
 - b. Analytic epidemiology
 - ◇ Analysis of causes of disease
 - c. Experimental epidemiology
 - ◇ Clinical or community trials
 - d. Evaluation epidemiology
 - ◇ Measuring the effectiveness of different health services
- III. Key components of epidemiology data
 - a. What
 - b. Who
 - c. Where
 - d. When
 - e. How
 - f. Why
- IV. Sources of epidemiology data
 - a. Census
 - b. Vital statistics
 - c. Morbidity data
 - d. Mortality data
 - e. Reports of notifiable diseases
 - f. Hospital records
 - g. Private physicians' offices
 - h. Disease registers
 - i. Community
 - j. Other
- V. Measurements and their calculations
 - a. Ratios
 - b. Proportions
 - c. Incidence rates
 - d. Prevalence rates
 - e. Demographic rates

- VI. Relationship between predictive value and disease prevalence
- VII. Screening
 - a. Definition
 - b. Screening tests
 - c. Validity and reliability of screening tests
 - d. Screening programmes
- VIII. Surveillance
 - a. Definition
 - b. Methods
 - c. Approaches
- IX. Preparation of tables and graphs
 - a. Graphs
 - b. Histograms
 - c. Population pyramids
 - d. Bar charts
 - e. Pie charts
 - f. Scatter diagrams
 - g. Maps.

Infectious disease process

- I. Definition
 - a. Carrier
 - b. Endemic
 - c. Epidemic
 - d. Pandemic
 - e. Immunity
 - f. Immune response
 - g. Herd immunity
 - h. Immunoglobulins
 - i. Host response
 - j. Hypersensitivity
 - k. Infection
 - l. Infectivity
 - m. Pathogenicity
 - n. Virulence
 - o. Immunogenicity
 - p. Sporadic
- II. Dynamics of disease transmission
 - a. Chain of infection
- III. Classification of the mechanisms of disease transmission
 - a. Contact transmission
 - b. Direct transmission
 - c. Indirect transmission

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- d. Droplet transmission
- e. Airborne transmission
- f. Common vehicle transmission
- g. Vectorborne transmission
- IV. Description
 - a. Immunity
 - b. Host response
 - c. Herd immunity
 - d. Carrier
- V. Nosocomial infection
 - a. Definition
 - b. Modes of transmission
 - c. Preventive measures
- VI. Risk factors for the occurrence of communicable diseases among population groups
 - a. Extremes of age
 - b. Presence of underlying disease/infection
 - c. Natural/Passive immunity
 - d. Trauma/Invasive procedures
 - e. Medications
 - f. Lifestyle
 - g. Cultural
 - h. Socio-economic
 - i. Environmental
 - j. Organization of health services

RESEARCH AND BIostatISTICS

Research methods

- I. Definition of common terms and concepts used in research
 - a. Quantitative research
 - b. Qualitative research
 - c. Variable
 - d. Subject
 - e. Sampling
 - f. Population
 - g. Pilot study
 - h. Validity
 - i. Reliability
 - j. Bias
- II. Types of research
 - a. Historical
 - b. Descriptive
 - c. Experimental
- III. Basic research process

- a. Identification of problem
 - b. Statement of problem
 - c. Definition of terms
 - d. Statement of hypothesis
 - e. Identification of assumptions
 - f. Literature search
 - g. Definition of setting: geographical, population, etc.
 - h. Definition of population to be studied
- IV. Problem statement
- a. Characteristics of a problem statement
- V. Methods of sampling and collection
- a. Sampling methods
 - b. Probability methods
 - c. Non-probability methods
 - d. Data collecting methods
 - ✧ Questionnaire
 - ✧ Interview
 - ✧ Observation
 - ✧ Focus group discussion
 - ✧ Document search
- VI. Principles of data collection, analysis, and interpretation
- a. Pre-testing of instrument
 - b. Validity
 - c. Reliability
 - d. Control for bias
 - e. Statistical analysis
 - f. Interpretation
 - ✧ Meaning
 - ✧ Limitation
 - ✧ Usefulness
- VII. Strengths and limitations of sources of health data
- a. Organizing data
 - b. Analyzing data
 - c. Interpreting data
 - d. Implications of findings
 - e. Limitations
 - f. Summarizing
 - g. Conclusion
 - h. Recommendations
- VIII. Ethical and legal issues relevant to research
- a. Consent
 - b. Benefits

- c. Confidentiality
- d. Acknowledgement
- e. Other
- IX. Research methods relevant to clinical practice
 - a. Surveys
 - b. Case studies
 - c. Experiments
 - d. Case-control studies
 - e. Cohort studies
- X. Design a research proposal in one's area of practice or related fields
- XI. Writing the research report
- XII. Presentation of study.

Biostatistics

- I. Definition of terms
 - a. Statistics
 - b. Biostatistics
 - c. Vital statistics
 - d. Descriptive statistics
 - e. Inferential statistics
- II. Purposes of statistics
 - a. Summarization of data
 - b. Comparison of data sets
 - c. Research methodologies
- III. Types of statistics
 - a. Descriptive
 - b. Inferential
- IV. Uses of statistics in clinical practice /public health
 - a. Surveillance
 - b. Presentation of data
 - c. Epidemiology
 - d. Identification of public health problems
 - e. Policy analysis and formulation
 - f. Planning
- V. Calculation of the following measures of central tendency
 - a. Mean
 - b. Median
 - c. Mode
- VI. Measures of variation and their calculation
 - a. Range
 - b. Variance
 - c. Standard deviation

- VII. Theoretical distribution of variables
 - a. Normal distribution
 - b. Binomial distribution
- VIII. Relationship between sample statistics and population parameters
 - a. Sample mean and population
 - b. Sample proportion and population proportion
 - c. Sample variance and population variation

