

Guidelines  
for  
Competency Based Training Programme  
in  
**DNB- FIELD EPIDEMIOLOGY**



**NATIONAL BOARD OF EXAMINATIONS**

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## **INTRODUCTION**

Major advances in improvement of health over the next decade will be through the development and application of population based preventive programmes. Health service delivery systems are undergoing rapid changes. With issues such as AIDS, population explosion, natural and man-made disasters, pandemics like SARS, bird flu etc. challenging public healthcare issues, it has become very urgent to prepare a task force of experts in dealing with the domain of public health in the world in general and India in particular. In our country, where lack of basic awareness about health care can lead to making a large section of our human resource as a liability instead of an asset, the need for specialized programmes in Public Health cannot be more emphasized.

These programmes are primarily aimed at developing a cadre of trained public health professionals in the country with limited focus on applied epidemiology and health systems.

Specialist in Field Epidemiology are needed under the International Technical, Operational, and Professional Support Services Project to implement and develop the field epidemiology training program to strengthen , prevent, respond and contain disease threats.

## **PROGRAMME GOAL**

The aim is to strengthen India's public health capabilities and health systems. The primary goal is to foster the professional development of field trained epidemiologists who are competent in using epidemiology to tackle a wide range of contemporary public health problems.

The program emphasizes on problem solving skills among public health leaders to provide public health service to the national and sub-national health authorities and to create a culture of critical thinking.

## **PROGRAMME OBJECTIVES**

The DNB Field Epidemiology students should be able to:

### **Epidemiological & Public Health**

- Train and mentor medical doctors to improve disease surveillance, detection, and response to outbreaks by providing classroom training in applied epidemiology and leading applied activities and field investigations.
- Build self-sustaining institutionalized capacity in country.
- Collaborate with ongoing efforts of other USG and non-USG partners in country to strengthen disease surveillance, response efforts, biosecurity/biosafety, and workforce capacity, and assist the country in reaching Global Health Security and International Health Regulation goals.
- Ensure continued support of Ministries of Health and engage local counterparts.
- Apply knowledge of the discipline of public health in real world situations in India. Gain knowledge of the factors influencing local, national, global, legislative and social public health policies.

## **Communication and IEC**

- Apply broad-based interdisciplinary skills for problem solving.
- Health Education (Information, Education, Communication)
- Appreciate principles of communication and barriers to effective communication.
- Principles, methods and evaluation of health education.
- List various methods of health education with their advantages and disadvantages.
- Select and use appropriate media (simple audiovisual aids) for effective health education.
- Use every opportunity for health education of the individual, family and the community
- Learn the concept of Behaviour change communication apply its principles in prevention and control of diseases
- Communicate effectively with individuals, family and community using tools and techniques of information, education and communication.

## **Management & Leadership**

- a) Project Management for the Public Health Professionals
- b) Monitoring & Evaluation
- c) Team Building
- d) Leadership skills
- e) Supervisory Skills
- f) Financial Management
- g) Time management
- h) Interpersonal Skills

## **Teaching & Mentoring**

- Training Development Techniques
- Training Delivery Techniques
- Mentoring Skills

## **Responsibilities of Student of DNB Field Epidemiology**

- Work with technical staff at the Ministry of Health and other partners in country to develop and implement a training plan for field epidemiology for public health professional at the basic and intermediate levels.
- Travel to the field (local sites within country) to conduct trainings and assist with participants' investigations and field work.
- to attend a two-week orientation session
- Review and adapt the existing Basic and Intermediate Field Epidemiology curriculum as may be required in consultation with the Ministry of Health, WHO, and other partners in country.
- Liaise with Ministry of Health to identify participants for the basic and intermediate field epidemiology trainings.
- Collaborate with MOH to convene a Steering Committee to guide program implementation.
- Coordinate with identified partners to ensure logistical support for the didactic and field trainings of selected participants is in place.
- Conduct the planned basic and intermediate field epidemiology trainings together with Ministry of Health, and identified partners.
- Mentor and supervise participants of the basic and intermediate programs.
- Train MOH supervisors and mentors of the basic and intermediate participants.
- Guide participants in preparing their presentations for dissemination of their findings and recommendations.
- Assist national health authorities to develop adequate and timely field investigations in response to acute public health problems such as epidemic outbreaks, clusters of disease cases, and case investigations.

- Advise MOH in the identification and acquisition of opportunities for participant projects, and sources of funding that help secure annual budgets for the adequate development of an institutionalized FETP.
- Assist mentors and participants in the intermediate program with the design and implementation of applied epidemiological research projects.
- Assist with the selection and training of graduates as mentors for future participants.
- Coordinate the organization and facilitation of stakeholder and dissemination meetings in country.
- Participate in disease surveillance and outbreak investigation and response activities of the Ministry of Health together with graduates and participants.
- Work with MOH and other training institutions to integrate basic and intermediate field epidemiology curriculum into an in-service program for MOH staff.
  - Provide technical assistance to the MOH.
  - Liaison between investigating agencies and, the MOH, and partners to coordinate GHS activities in the country.
  - Conduct periodic Steering Committee meetings to guide program implementation
  - Periodic (monthly or as otherwise agreed upon) calls with country support staff in Headquarters

## **ELIGIBILITY CRITERIA FOR ADMISSIONS TO THE PROGRAMME**

### **(A) DNB Field Epidemiology Course:**

1. Any medical graduate with **MBBS** qualification , who has qualified the **Entrance Examination** conducted by NBE and fulfill the eligibility criteria for admission to DNB **Broad Specialty** courses at various NBE accredited Medical Colleges/ institutions/Hospitals in India is eligible to participate in

the Centralized counseling for allocation of DNB Field Epidemiology seats purely on merit cum choice basis.

2. Admission to 3 years post MBBS DNB Field Epidemiology course is only through **Entrance Examination** conducted by NBE and Centralized Merit Based Counseling conducted by National Board of Examination as per prescribed guidelines.

### **Duration of Course: 3 Years**

Every candidate admitted to the training programme shall pursue a regular course of study (on whole time basis) in the concerned recognized institution under the guidance of recognized post graduate teacher for assigned period of the course.



## TEACHING AND TRAINING ACTIVITIES

The fundamental components of the teaching programme should include:

1. Case presentations & discussion- once a week
2. Seminar – Once a week
3. Journal club- Once a week
4. Grand round presentation (by rotation departments and subspecialties)- once a week
5. Faculty lecture teaching- once fortnightly or monthly
6. Clinical Audit-Once a Month
7. At least one poster and one oral presentation in a recognized conference during their training period.

The rounds should include bedside sessions, file rounds & documentation of case history and examination, progress notes, round discussions, investigations and management plan) interesting and difficult case unit discussions.

The training program would focus on knowledge, skills and attitudes (behavior), all essential components of education. It is being divided into theoretical, clinical and practical in all aspects of the delivery of the rehabilitative care, including methodology of research and teaching.

**Theoretical:** The theoretical knowledge would be imparted to the candidates through discussions, journal clubs, symposia and seminars. The students are exposed to recent advances through discussions in journal clubs. These are considered necessary in view of an inadequate exposure to the subject in the undergraduate curriculum.

**Symposia/seminars:** Trainees would be required to present a minimum of 20 topics based on the curriculum in a period of three years to the combined class of

teachers and students. A free discussion would be encouraged in these symposia. The topics of the symposia would be given to the trainees with the dates for presentation.

**Clinical:** The trainee would be attached to a faculty member to be able to pick up methods of history taking, examination, prescription writing and management in rehabilitation practice.

*Bedside:* The trainee would work up cases, learn management of cases by discussion with faculty of the department.

*Clinico-socio-environmental case:* Study of the index case in the field to learn about environment and social aspect of health and diseases

**Journal Clubs:** This would be a weekly academic exercise. A list of suggested Journals is given towards the end of this document. The candidate would summarize and discuss the scientific article critically. A faculty member will suggest the article and moderate the discussion, with participation by other faculty members and resident doctors. The contributions made by the article in furtherance of the scientific knowledge and limitations, if any, will be highlighted.

**Research:** The student would carry out the research project and write a thesis in accordance with NBE guidelines. He/she would also be given exposure to partake in the research projects going on in the departments to learn their planning, methodology and execution so as to learn various aspects of research.

**Epidemic Investigation:** The student would carry out at least two epidemic investigations during the period of training.

## SYLLABUS

- Background and History of Epidemiology
- Principles of Epidemiology for Public Health
- A brief review of the basic principles of epidemiology
- Epidemiological Methods
- Principles and Methods of Applied Infectious Disease Epidemiology
- Epidemiology of Chronic (non-communicable) disease and injury
- Fundamentals of Public Health Surveillance
- Field epidemiology
  - Introduction to Epidemiology; History and Description of Field Epidemiology; Public Health Literature Review; Descriptive Study Design; Framing the Problem; Descriptive Data Analysis; Data Management and Data Mining ; Analytic Study Design; Introduction to Sampling; Measures of Association and Impact; Causation
  - Surveillance
  - The field investigation
  - Operational aspects of epidemiologic field investigations
  - Conducting a field investigation
  - Surveys and sampling
  - Using a computer for field investigations
  - Designing studies in the field
  - Describing the findings: descriptive epidemiology
  - Analyzing and interpreting data: Analytical epidemiology
  - Developing interventions
  - Communicating epidemiologic findings
  - Dealing with the public and the media
  - Special considerations
    - Legal considerations in surveillance and field epidemiology

- Entomology
  - Role of vectors in the causation of diseases.
  - Steps in management of a case of insecticide toxicity.
  - Identifying features of and mode of transmission of vector borne diseases.
  - Methods of vector control with advantages and limitations of each.
  - Mode of action, dose and application cycle of commonly used insecticides
- Vaccinology and Immunization practices for the field epidemiologist
- Investigations in health-care settings
- Investigations in out-of-home child care settings
- Field investigations of environmental epidemics
- Field investigations of occupational disease and injury
- Field investigations from the state and local health department perspective
- Epidemiologic practices in low-income countries
- Terrorism preparedness and emergency response for the field epidemiologist
- Field investigations of natural disasters and complex emergencies
- Laboratory support for the epidemiologist in the field
- Designing studies in the field
- Health Systems and National Rural/Urban Health Mission
- Social and Behavioural sciences
- Lab & Bio-safety
  - a) Introduction to the Laboratory Role in Public Health
  - b) The Role of the Laboratory in the Field
  - c) Reproducibility & Validity
  - d) Specimen Management in the Field
- Introduction to Disease Prevention and Control  
Introduction to Public Health; Burden of Disease Measurements; Role of the Laboratory in Public Health; Reproducibility and Validity; Ethics

- Introduction to Health Management
- Financial Management; Project Management for the Public Health Professional; Total Quality Management; Strategic Planning; Team Building, Supervisory Skills, Time Management, Interpersonal Skills; Leadership; Marketing; Conflict Resolution
- Basis of Environmental Health
- Society determinants of health and Primary and Health Care
- Public Health Economics; Prevention Effectiveness
- Anatomy and Physiology of an Outbreak Team
- Embarking on an Outbreak Investigation
- Case Finding and Line Listing: A Guide for Investigators  
Epidemic Curves Ahead
- Hypothesis Generation During Outbreaks and Hypothesis-Generating Interviews
- Developing a Questionnaire
- Interviewing Techniques
- Selecting a Study Design
- Introduction to Forensic Epidemiology
- Forensic Epidemiology Investigations
- Cohort Studies for Outbreak Investigations
- Case-Control Studies for Outbreak Investigations
- Conducting Traceback Investigations
- Conducting Environmental Health Assessments
- Data Analysis Basics: Variables and Distribution
- Data Analysis: Simple Statistical Tests
- Advanced Data Analysis: Methods to Control for Confounding (Matching and Logistic Regression)
- Collecting Specimens in Outbreak Investigations
- Laboratory Diagnosis: An Overview
- Laboratory Diagnosis: Molecular Techniques

- Laboratory Diagnosis in Outbreak Investigations
- Contact Tracing
- Laboratory Biosafety Levels
- Mapping for Surveillance and Outbreak Investigation
- Rapid Needs Assessments and GIS
- Cluster Investigations of Non-Infectious Health Events
- Introduction to Public Health Surveillance
- Public Health Surveillance Systems
- Cancer and Cancer Prevention
- Cardiovascular
- Clinical
- Environmental and Occupational
- Epidemiologic Methods
- Aging
- Infectious Disease (including mathematical modeling)
- Molecular and Genetic
- Neuro-Psychiatric
- Nutritional
- Pharmacoepidemiology
- Reproductive, Perinatal and Pediatric
- Epidemiological perspective on burden of communicable diseases and practical application of epidemiological methods for specific diseases, burden of non-communicable diseases with special emphasis on cardiovascular diseases and cancers and strategies for their prevention and control

**Other areas in which knowledge is to be acquired:**

- Biostatistics, Research Methodology and Clinical Epidemiology
- research communication
- Ethics

- Medico legal aspects relevant to the discipline
- Health Communication
- Health Management
- Project Management
- Health Policy issues as may be applicable to the discipline

## **POSTINGS**

### **First Field Posting**

- Public health situation analysis
- Outbreak investigation/s
- Secondary data analysis

### **Second Field Posting**

- Description and evaluation of health programme
- Outbreak investigation/s

### **Third Field Posting**

- Outbreak investigation/s
- Data collection for dissertation

### **Field posting outcomes**

- Field projects
- Public health situation analysis
- Secondary data analysis
- Outbreak investigation
- Programme evaluation

## Competencies

### **CORE COMPETENCIES:**

- Understand the scope and concepts and master the methods in epidemiology
- Plan, implement manage and evaluate public health surveillance
- Respond to and Investigate the outbreaks
- Conduct public health research in accordance with principles of human subject protection
- Communicate public health information to lay and professional audiences
- Conceptualize the elements of health systems to effectively design, develop, implement and evaluate the public health interventions
- Comprehend the biological, social, behavioural, environmental determinants affecting health
- Operational research,
- Communication and programme management and evaluation.
- Use epidemiologic practices to conduct studies that improve public health program delivery
- Analyze epidemiological data using appropriate statistical methods
- Manage a public health surveillance system
- Use laboratory resources to support epidemiologic activities
- Develop written public health communications
- Develop and deliver oral public health communications
- Use computers for specific applications relevant to public health practices
- Manage a field project
- Manage staff and resources
- Be an effective team leader and responsible member
- Apply simple tools for economic analysis
- Train & mentor public health professionals
- Evaluate & prioritize the importance of diseases or conditions of national public



## **THESIS PROTOCOL & THESIS**

The candidates are required to submit a thesis at the end of three years of training as per the rules and regulations of NBE.

### **Guidelines for Submission of Thesis Protocol & Thesis by candidates**

Research shall form an integral part of the education programme of all candidates registered for DNB degrees of NBE. The Basic aim of requiring the candidates to write a thesis protocol & thesis/dissertation is to familiarize him/her with research methodology. The members of the faculty guiding the thesis/dissertation work for the candidate shall ensure that the subject matter selected for the thesis/dissertation is **feasible, economical** and **original**.

### **Guidelines for Thesis Protocol**

The protocol for a research proposal (including thesis) is a study plan, designed to describe the background, research question, aim and objectives, and detailed methodology of the study. In other words, the protocol is the 'operating manual' to refer to while conducting a particular study.

The candidate should refer to the NBE Guidelines for preparation and submission of Thesis Protocol before the writing phase commences. The minimum writing requirements are that the language should be clear, concise, precise and consistent without excessive adjectives or adverbs and long sentences. There should not be any redundancy in the presentation.

The development or preparation of the Thesis Protocol by the candidate will help her/him in understanding the ongoing activities in the proposed area of research. Further it helps in creating practical exposure to research and hence it bridges the connectivity between clinical practice and biomedical research. Such research exposure will be helpful in improving problem solving capacity, getting

updated with ongoing research and implementing these findings in clinical practice.

Research Ethics: Ethical conduct during the conduct and publication of research is an essential requirement for all candidates and guides, with the primary responsibility of ensuring such conduct being on the thesis guide. Issues like Plagiarism, not maintaining the confidentiality of data, or any other distortion of the research process will be viewed seriously. The readers may refer to standard documents for the purpose.

The NBE reserves the right to check the submitted protocol for plagiarism, and will reject those having substantial duplication with published literature.

## **PROTOCOL REQUIREMENTS**

1. All of the following will have to be entered in the online template. The thesis protocol should be restricted to the following word limits.

- Title : 120 characters (with spacing) page
- Synopsis [structured] : 250-300
- Introduction : 300-500
- Review of literature : 800-1000
- Aim and Objectives : Up to 200
- Material and Methods : 1200-1600
- 10-25 References [ICMJE style]

2. It is mandatory to have ethics committee approval before initiation of the research work. The researcher should submit an appropriate application to the ethics committee in the prescribed format of the ethics committee concerned.

## **Guidelines for Thesis**

1. The proposed study must be approved by the institutional ethics committee and the protocol of thesis should have been approved by NBE.
  
2. The thesis should be restricted to the size of 80 pages (maximum). This includes the text, figures, references, annexures, and certificates etc. It should be printed on both sides of the paper; and every page has to be numbered. Do not leave any page blank. To achieve this, following points may be kept in view:
  - a. The thesis should be typed in 1.5 space using Times New Roman/Arial/ Garamond size 12 font, 1” margins should be left on all four sides. Major sections viz., Introduction, Review of Literature, Aim & Objectives, Material and Methods, Results, Discussion, References, and Appendices should start from a new page. Study proforma (Case record form), informed consent form, and patient information sheet may be printed in single space.
  - b. Only contemporary and relevant literature may be reviewed. Restrict the introduction to 2 pages, Review of literature to 10-12 pages, and Discussion to 8-10 pages.
  - c. The techniques may not be described in detail unless any modification/innovations of the standard techniques are used and reference(s) may be given.
  - d. Illustrative material may be restricted. It should be printed on paper only. There is no need to paste photographs separately.

3. Since most of the difficulties faced by the residents relate to the work in clinical subject or clinically-oriented laboratory subjects, the following steps are suggested:
  - a. The number of cases should be such that adequate material, judged from the hospital attendance/records, will be available and the candidate will be able to collect case material within the period of data collection, i.e., around 6-12 months so that he/she is in a position to complete the work within the stipulated time.
  - b. The aim and objectives of the study should be well defined.
  - c. As far as possible, only clinical/laboratory data of investigations of patients or such other material easily accessible in the existing facilities should be used for the study.
  - d. Technical assistance, wherever necessary, may be provided by the department concerned. The resident of one specialty taking up some problem related to some other specialty should have some basic knowledge about the subject and he/she should be able to perform the investigations independently, wherever some specialized laboratory investigations are required a co-guide may be co-opted from the concerned investigative department, the quantum of laboratory work to be carried out by the candidate should be decided by the guide & co-guide by mutual consultation.
4. The clinical residents are not ordinarily expected to undertake experimental work or clinical work involving new techniques, not hitherto perfected OR the use of chemicals or radioisotopes not readily available. They should; however, be free to enlarge the scope of their studies or undertake experimental work on their own initiative but all such studies should be feasible within the existing facilities.
5. The DNB residents should be able to freely use the surgical pathology/autopsy data if it is restricted to diagnosis only, if however,

detailed historic data are required the resident will have to study the cases himself with the help of the guide/co-guide. The same will apply in case of clinical data.

6. Statistical methods used for analysis should be described specifically for each objective, and name of the statistical program used mentioned.

### **General Layout of a DNB Thesis:**

- **Title-** A good title should be brief, clear, and focus on the central theme of the topic; it should avoid abbreviations. The Title should effectively summarize the proposed research and should contain the PICO elements.
- **Introduction-** It should be focused on the research question and should be directly relevant to the objectives of your study.
- **Review of Literature** - The Review should include a description of the most relevant and recent studies published on the subject.
- **Aim and Objectives** - The 'Aim' refers to what would be broadly achieved by this study or how this study would address a bigger question / issue. The 'Objectives' of the research stem from the research question formulated and should at least include participants, intervention, evaluation, design.
- **Material and Methods-** This section should include the following 10 elements: Study setting (area), Study duration; Study design (descriptive, case-control, cohort, diagnostic accuracy, experimental (randomized/non-randomized)); Study sample (inclusion/exclusion criteria, method of selection), Intervention, if any, Data collection, Outcome measures (primary and secondary), Sample size, Data management and Statistical

analysis, and Ethical issues (Ethical clearance, Informed consent, trial registration).

- **Results-** Results should be organized in readily identifiable sections having correct analysis of data and presented in appropriate charts, tables, graphs and diagram etc.
- **Discussion**—It should start by summarizing the results for primary and secondary objectives in text form (without giving data). This should be followed by a comparison of your results on the outcome variables (both primary and secondary) with those of earlier research studies.
- **Summary and Conclusion-** This should be a précis of the findings of the thesis, arranged in four paragraphs: (a) background and objectives; (b) methods; (c) results; and (d) conclusions. The conclusions should strictly pertain to the findings of the thesis and not outside its domain.
- **References-** Relevant References should be cited in the text of the protocol (in superscripts).
- **Appendices** -The tools used for data collection such as questionnaire, interview schedules, observation checklists, informed consent form (ICF), and participant information sheet (PIS) should be attached as appendices. Do not attach the master chart.

## **Thesis Protocol Submission to NBE**

1. DNB candidates are required to submit their thesis protocol within 90 days of their joining DNB training.
2. Enclosures to be submitted along with protocol submission form:
  - a) Form for Thesis Protocol Submission properly filled.
  - b) Thesis Protocol duly signed.
  - c) Approval letter of institutional Ethical committee. (*Mandatory, non receivable of any one is liable for rejection*)

## **Thesis Submission to NBE**

1. As per NBE norms, writing a thesis is essential for all DNB candidates towards partial fulfillment of eligibility for award of DNB degree.
2. DNB candidates are required to submit the thesis before the cut-off date which shall be 30th June of the same year for candidates appearing for their scheduled December final theory examination. Similarly, candidates who are appearing in their scheduled June DNB final examination shall be required to submit their thesis by 31st December of preceding year.
3. Candidates who fail to submit their thesis by the prescribed cutoff date shall NOT be allowed to appear in DNB final examination.
4. Fee to be submitted for assessment (In INR): 3500/-
5. Fee can be deposited ONLY through pay-in-slip/challan at any of the Indian bank branch across India. The challan can be downloaded from NBE website [www.natboard.edu.in](http://www.natboard.edu.in)
6. Thesis should be bound and the front cover page should be printed in the standard format. A bound thesis should be accompanied with:
  - a. A Synopsis of thesis.
  - b. Form for submission of thesis, duly completed

- c. NBE copy of challan (in original) towards payment of fee as may be applicable.
  - d. Soft copy of thesis in a CD duly labeled.
  - e. Copy of letter of registration with NBE.
7. A declaration of thesis work being bonafide in nature and done by the candidate himself/herself at the institute of DNB training need to be submitted bound with thesis. It must be signed by the candidate himself/herself, the thesis guide and head of the institution, failing which thesis shall not be considered.

***The detailed guidelines and forms for submission of Thesis Protocol & Thesis are available at [www.natboard.edu.in.thesis.php](http://www.natboard.edu.in.thesis.php).***



## **LOG BOOK**

A candidate shall maintain a log book of operations (assisted / performed) during the training period, certified by the concerned post graduate teacher / Head of the department / senior consultant.

This log book shall be made available to the board of examiners for their perusal at the time of the final examination.

The log book should show evidence that the before mentioned subjects were covered (with dates and the name of teacher(s)) The candidate will maintain the record of all academic activities undertaken by him/her in log book .

1. Personal profile of the candidate
2. Educational qualification/Professional data
3. Record of case histories
4. Procedures learnt
5. Record of case Demonstration/Presentations
6. Every candidate, at the time of practical examination, will be required to produce performance record (log book) containing details of the work done by him/her during the entire period of training as per requirements of the log book. It should be duly certified by the supervisor as work done by the candidate and countersigned by the administrative Head of the Institution.
7. In the absence of production of log book, the result will not be declared.

## Leave Rules

1. DNB Trainees are entitled to leave during the course of DNB training as per the Leave Rules prescribed by NBE.
2. A DNB candidate can avail a maximum of 20 days of leave in a year excluding regular duty off/ Gazetted holidays as per hospital/institute calendar/policy.
3. MATERNITYLEAVE:
  - a. A female candidate is permitted a maternity leave of 90 days once during the entire duration of DNB course.
  - b. The expected date of delivery (EDD) should fall within the duration of maternity leave.
  - c. Extension of maternity leave is permissible only for genuine medical reasons and after prior approval of NBE. The supporting medical documents have to be certified by the Head of the Institute/hospital where the candidate is undergoing DNB training. NBE reserves its rights to take a final decision in such matters.
  - d. The training of the candidate shall be extended accordingly in case of any extension of maternity leave being granted to the candidate.
  - e. Candidate shall be paid stipend during the period of maternity leave. No stipend shall be paid for the period of extension of leave.
4. Male DNB candidates are entitled for paternity leave of maximum of one week during the entire period of DNB training.
5. No kind of study leave is permissible to DNB candidates. However, candidates may be allowed an academic leave as under across the entire duration of training program to attend the conferences/CMEs/Academic programs/Examination purposes.

<b>DNB COURSE</b>	<b>NO. OF ACADEMIC LEAVE</b>
DNB 3 years Course (Broad & Super Specialty)	14 Days
DNB 2 years Course (Post Diploma)	10 Days
DNB Direct 6 years Course	28 days

6. Under normal circumstances leave of one year should not be carried forward to the next year. However, in exceptional cases such as prolonged illness the leave across the DNB training program may be clubbed together with prior approval of NBE.
7. Any other leave which is beyond the above stated leave is not permissible and shall lead to extension/cancellation of DNB course.
8. Any extension of DNB training for more than 2 months beyond the scheduled completion date of training is permissible only under extraordinary circumstances with prior approval of NBE. Such extension is neither automatic nor shall be granted as a matter of routine. NBE shall consider such requests on merit provided the seat is not carried over and compromise with training of existing trainees in the Department.
9. Unauthorized absence from DNB training for more than 7 days may lead to cancellation of registration and discontinuation of the DNB training and rejoining shall not be permitted.

#### 10. Medical Leave

- a. Leave on medical grounds is permissible only for genuine medical reasons and NBE should be informed by the concerned institute/hospital about the same immediately after the candidate proceeds on leave on medical grounds.
- b. The supporting medical documents have to be certified by the Head of the Institute/hospital where the candidate is undergoing DNB training and have to be sent to NBE.
- c. The medical treatment should be taken from the institute/ hospital where the candidate is undergoing DNB training. Any deviation from this shall be supported with valid grounds and documentation.
- d. In case of medical treatment being sought from some other institute/hospital, the medical documents have to be certified by the Head of the institute/hospital where the candidate is undergoing DNB training.

- e. NBE reserves its rights to verify the authenticity of the documents furnished by the candidate and the institute/hospital regarding Medical illness of the candidate and to take a final decision in such matters.

11.

- a. Total leave period which can be availed by DNB candidates is  $120+28 = 148$  days for 6 years course,  $60+14=74$  days for 3 years course and  $40+10 = 50$  days for 2 years course. This includes all kinds of eligible leave including academic leave. Maternity / Paternity leave can be availed separately by eligible candidates. Any kind of leave including medical leave exceeding the aforementioned limit shall lead to extension of DNB training. It is clarified that prior approval of NBE is necessary for availing any such leave.
- b. The eligibility for DNB Final Examination shall be determined strictly in accordance with the criteria prescribed in the respective information bulletin.

# EXAMINATION

## FORMATIVE ASSESSMENT

Formative assessment includes various formal and informal assessment procedures by which evaluation of student's learning, comprehension, and academic progress is done by the teachers/ faculty to improve student attainment. Formative assessment test (FAT) is called as "Formative" as it informs the in process teaching and learning modifications. FAT is an integral part of the effective teaching. The goal of the FAT is to collect information which can be used to improve the student learning process.

Formative assessment is essentially positive in intent, directed towards promoting learning; it is therefore part of teaching. Validity and usefulness are paramount in formative assessment and should take precedence over concerns for reliability. The assessment scheme consists of Three Parts which has to be essentially completed by the candidates.

The scheme includes:-

Part I:- Conduction of theory examination

Part-II :- Feedback session on the theory performance

Part-III :- Work place based clinical assessment

### Scheme of Formative assessment

<b>PART – I</b>	<b>CONDUCT OF THEORY EXAMINATION</b>	Candidate has to appear for Theory Exam and it will be held for One day.
<b>PART – II</b>	<b>FEEDBACK SESSION ON THE THEORY PERFORMANCE</b>	Candidate has to appear for his/her Theory Exam Assessment Workshop.
<b>PART – III</b>	<b>WORK PLACE BASED CLINICAL ASSESSMENT</b>	After Theory Examination, Candidate has to appear for Clinical Assessment.

The performance of the resident during the training period should be monitored throughout the course and duly recorded in the log books as evidence of the ability and daily work of the student

#### 1. Personal attributes:

- **Behavior and Emotional Stability:** Dependable, disciplined, dedicated, stable in emergency situations, shows positive approach.
- **Motivation and Initiative:** Takes on responsibility, innovative, enterprising, does not shirk duties or leave any work pending.

- **Honesty and Integrity:** Truthful, admits mistakes, does not cook up information, has ethical conduct, exhibits good moral values, loyal to the institution.
- **Interpersonal Skills and Leadership Quality:** Has compassionate attitude towards patients and attendants, gets on well with colleagues and paramedical staff, is respectful to seniors, has good communication skills.

## 2. Clinical Work:

- **Availability:** Punctual, available continuously on duty, responds promptly on calls and takes proper permission for leave.
- **Diligence:** Dedicated, hardworking, does not shirk duties, leaves no work pending, does not sit idle, competent in clinical case work up and management.
- **Academic ability:** Intelligent, shows sound knowledge and skills, participates adequately in academic activities, and performs well in oral presentation and departmental tests.
- **Clinical Performance:** Proficient in clinical presentations and case discussion during rounds and OPD work up. Preparing Documents of the case history/examination and progress notes in the file (daily notes, round discussion, investigations and management) Skill of performing bed side procedures and handling emergencies.

**3. Academic Activity:** Performance during presentation at Journal club/ Seminar/ Case discussion/Stat meeting and other academic sessions. Proficiency in skills as mentioned in job responsibilities.

## FINAL EXAMINATION

The summative assessment of competence will be done in the form of DNB Final Examination leading to the award of the degree of Diplomate of National Board in Emergency Medicine. The DNB final is a two-stage examination comprising the theory and practical part. An eligible candidate who has qualified the theory exam is permitted to appear in the practical examination.

### Theory Examination

1. The theory examination comprises of **Four** papers, maximum marks 100 each.
2. There are 10 short notes of 10 marks each, in each of the papers. The number of short notes and their respective marks weightage may vary in some subjects/some papers.
3. Maximum time permitted is 3 hours.
4. Candidate must score at least 50% in the aggregate of **Four** papers to qualify the theory examination.

5. Candidates who have qualified the theory examination are permitted to take up the practical examination.
6. The paper wise distribution of the Theory Examination shall be as follows:

**Paper I:** Principles, Methods & practice epidemiology

**Paper II:** Health Systems in India, Biostatistics, Principles & methods of Surveillance

**Paper III:** Dynamics of Disease Transmission, Epidemiology of communicable diseases and Outbreak Investigations, Entomology & Vector Management

**Paper IV:** Dynamics of Non-Communicable disease, Health promotion and health communication

**a) Practical Examination:**

1. Maximum Marks: 300.
2. Comprises of Clinical Examination and Viva.
3. Candidate must obtain a minimum of 50% marks in the Clinical Examination (including Viva) to qualify for the Practical Examination.
4. There are a maximum of three attempts that can be availed by a candidate for Practical Examination.
5. First attempt is the practical examination following immediately after the declaration of theory results.
6. Second and Third attempt in practical examination shall be permitted out of the next three sessions of practical examinations placed alongwith the next three successive theory examination sessions; after payment of full examination fees as may be prescribed by NBE.
7. Absentation from Practical Examination is counted as an attempt.
8. Appearance in first practical examination is compulsory;
9. Requests for Change in center of examination are not entertained, as the same is not permissible.
10. Candidates are required not to canvass with NBE for above.

**Declaration of DNB Final Results**

1. DNB final is a qualifying examination.
2. Results of DNB final examinations (theory & practical) are declared as PASS/FAIL.
3. DNB degree is awarded to a DNB trainee in the convocation of NBE.

## RECOMMENDED TEXT BOOKS AND JOURNALS

- Leon Gordis 5<sup>th</sup> ed. Textbook of Epidemiology
- Bhattacharya Susmita. Epidemiology Principles and Practice.
- Michael Gregg. Field Epidemiology
- MacDonald Author. Methods in Field Epidemiology.
- Michael C. Samuel. *Field Epidemiology*.
- Mark S. Dworkin. Cases In Field Epidemiology: A Global Perspective
- J. Kishore. A Dictionary of Public Health
- J. Kishore. National Health Programmes of India: National Policies and Legislations related to Health.

### List of major Epidemiology and related journals

- Epidemiology International
- Journal of Communicable Disease
- International Journal of Tropical Medicine and Public Health
- Journal of Epidemiology and Community Health
- International Journal of Preventive, Curative and Community Medicine
- International journal of epidemiology
- Journal of Analytical Research in Clinical Medicine
- Frontiers in Public Health
- Journal of Medical Bacteriology
- Emerging Microbes and Infections
- Journal of Applied Medical Sciences
- Perspectives In Medical Research
- Advances in Epidemiology
- Nepal Journal of Epidemiology
- Emerging Themes in Epidemiology
- Asian Journal of Epidemiology Infection
- Ecology & Epidemiology
- Epidemiology Research
- Journal of Molecular Epidemiology and Genetics



- Risk Management and Healthcare Policy
- Epidemiology, Biostatistics and Public Health
- The Internet Journal of Epidemiology
- International Journal of Infectious Diseases
- Clinical Epidemiology
- Journal of Clinical Medicine
- Open Epidemiology Journal
- National Medical Journal of Medical Science
- International Journal of Infection
- Journal of Cancer Epidemiology
- Journal of Oral Health and Oral Epidemiology
- Iranian Journal of Infectious Diseases and Tropical Medicine
- Journal of Arthropod-Borne Diseases
- MMWR : Morbidity & Mortality Weekly Report
- National Journal of Medical Research
- Indian Journal of Community Medicine
- International Journal of Parasitology Research
- Journal Safety Promotion and Injury Prevention
- Clinical Practice and Epidemiology in Mental Health
- International Health
- Journal of Chronic Diseases

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