Guidelines

for

Competency Based Training Programme

in

DNB- Plastic Surgery

(3Years Course)

NATIONAL BOARD OF EXAMINATIONS

Medical Enclave, Ansari Nagar, New Delhi-110029, INDIA
Email: mail@natboard.edu.in Phone: 011 45593000

CONTENTS

PROGRAMME GOAL

The goal of DNB in Plastic Surgery course is to produce a competent surgeon who:

- Recognizes the health needs of adults and carries out professional obligations in
- keeping with principles of National Health Policy and professional ethics;
- Has acquired the competencies pertaining to plastic surgery that are required to be practiced in the community and at all levels of health care system;
- Has acquired skills in effectively communicating with the patients, family and the
- community;
- Is aware of the contemporary advances and developments in medical sciences.
- Acquires a spirit of scientific enquiry and is oriented to principles of research
- methodology; and
- Has acquired skills in educating medical and paramedical professionals**.**

PROGRAMME OBJECTIVES

At the end of the DNB Plastic Surgery, the student should be able to:

- Recognize the key importance of medical problems in the context of the health priority of the country
- Practice the specialty of plastic surgery in keeping with the principles of professional ethics;
- Identify social, economic, environmental, biological and emotional determinants of adult Plastic Surgery and know the therapeutic, rehabilitative, preventive and promotion
- Measures to provide holistic care to all patients;
- Take detailed history, perform full physical examination and make a clinical diagnosis;
- Perform and interpret relevant investigations (Imaging and Laboratory);

- Perform and interpret important diagnostic procedures;
- Diagnose illnesses in adults based on the analysis of history, physical examination and investigative work up;
- Plan and deliver comprehensive treatment for illness in adults using principles of rational drug therapy;
- Plan and advise measures for the prevention of diseases;
- Plan rehabilitation of adults suffering from chronic illness, and those with special needs;
- Manage emergencies efficiently;
- Demonstrate skills in documentation of case details, and of morbidity and mortality data
- Relevant to the assigned situation;
- Demonstrate empathy and humane approach towards patients and their families and respect their sensibilities;
- Demonstrate communication skills of a high order in explaining management and prognosis, providing counseling and giving health education messages to patients, families and communities.
- Develop skills as a self-directed learner, recognize continuing educational needs; use appropriate learning resources, and critically analyze relevant published literature in order to practice evidence-based medicine;
- Demonstrate competence in basic concepts of research methodology and epidemiology;
- Facilitate learning of medical/nursing students, practicing surgeons , para-medical health workers and other providers as a teacher-trainer;
- Play the assigned role in the implementation of national health programs, effectively and responsibly;
- Organize and supervise the desired managerial and leadership skills;
- Function as a productive member of a team engaged in health care, research and education.

ELIGIBILITY CRITERIA FOR ADMISSIONS TO THE PROGRAMME

(A) DNB Plastic Surgery Course:

1. Any medical graduate with MS/DNB General Surgery qualification , who has qualified the ***Entrance Examination*** conducted by NBE and fulfill the eligibility criteria for admission to DNB ***Super Specialty*** courses at various NBE accredited Medical Colleges/ institutions/Hospitals in India is eligible to participate in the Centralized counseling for allocation of DNB Plastic Surgery seats purely on merit cum choice basis.

2. Admission to 3 years DNB Plastic Surgery 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 a month
6. Clinical Audit-Once a Month
7. A poster and have one oral presentation at least once during their training period in a recognized conference.
8. Attendance of one National conference 0f Association of Plastic Surgeons of India and one speciality conference / regional conference is a must (specialty conference means Cleft lip and palate conference, Hand , Microsurgery, Burns or Aesthetic surgery.. Regional means State or Zonal meetings)
9. One paper publication – preferably peer reviewed. (in the beginning let us say that at least acceptance letter must be got before going in the practical exam. They can go for the exams but the result could be withheld till the paper acceptance is got.. This will get them more academically oriented)

Microsurgery Lab Course: All trainees must undergo a week long microsurgery lab course. Trainees must become proficient in using loupes and microscope. (Please make this mandatory. There are units which don't even insist on wearing loupes, and don't have microsurgery facility. Such trainees when they pass out are at a disadvantage.) Lab courses are available in Mumbai, Chennai and Coimbatore.

Fracture Fixation Course: recommended to attend the AO course on fracture fixation cranio maxilla facial and hand. (Very important so that we create trainees with stuff. In Engineering it is said that India creates most engineers but most are unemployable. The same may come to us if we don't get them trained well in modern techniques)

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: 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.

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/ dissertation 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.

SYLLABUS

1st year

- Basics / Basic theory, assisting in major procedures with assistants

2nd year

- Peripheral postings, Basic surgeries independent responsibility

3rd year

- Major surgeries – assisting the professors and doing major surgeries under supervision.

Clinical Skills

- An understanding of burns assessment and resuscitation
- An understanding of burn wound excision and grafting
- An understanding of burn wound dressings
- An awareness of the roles of nursing staff, physiotherapists and occupational therapists in rehabilitation
- Wound care – both acute and chronic and techniques for cover.
- Basics of Skeletal fixation of fractures. (needed for both facial fractures and hand fractures)

Management of and relationships with the Plastic Surgery outpatient and inpatient

- Principles of Reconstructive Surgery
- Principles of Aesthetic Surgery
- Management of Acute Trauma
- Malignant Skin Tumours
- Benign Skin Conditions
- Administration
- Basic sub-specialty training in:

  Burns
  Paediatric Plastic Surgery
  Head & Neck Tumours
  Elective Hand Surgery
  Burns
  Hands

Head and Neck Tumours
Cleft Lip and Palate
Reconstruction of Genitalia
Oculoplastic Surgery
Limb Trauma
Aesthetic Surgery - Very important not to miss out on the future.
Acute and Chronic Wound care with special emphasis on Diabetic Foot Care.

Syllabus

Theory

Principles, Techniques, and Basic Sciences

- Techniques and principles in Plastic Surgery
- Wound Healing: Normal and Abnormal
- Wound care
- The Blood Supply of the Skin
- Muscle flaps and their Blood supply
- Transplant Biology and Applications to Plastic Surgery
- Implant Materials and biomaterials
- Principles of Microsurgery
- Microsurgical Repair of Peripheral Nerves and Nerve Grafts
- Tissue Expansion

Plastic surgery and innovation in medicine

- History of reconstructive and aesthetic surgery
- Psychological aspects of plastic surgery
- The role of ethics in plastic surgery
- Business principles for plastic surgeons
- Medico-legal issues in plastic surgery
- Photography in plastic surgery
- Patient safety in plastic surgery
- Local anesthetics in plastic surgery
- Evidence-based medicine and health services research in plastic surgery
- Genetics and prenatal diagnosis

- Principles of cancer management
- Stem cells and regenerative medicine

Aesthetic

- Managing the cosmetic patient
- Aesthetic Surgery of the Face
- Nonsurgical skin care and rejuvenation
- Botulinum toxin (BoNT-A)
- Soft-tissue fillers
- Facial skin resurfacing
- Anatomy of the aging face
- Forehead rejuvenation
- Blepharoplasty
- Secondary blepharoplasty:
- Asian facial cosmetic surgery
- Cutaneous Resurfacing: Chemical Peeling, Dermabrasion and laser resurfacing
- Filler Materials
- Botulinum Toxin
- Structural Fat grafting
- Blepharoplasty
- Rhinoplasty
- Liposuction
- Abdominoplasty and Lower Truncal Circumferential Body Contouring
- Facial Skeletal Augmentation with Implants
- Osseous Genioplasty
- Hair Transplantation

Facelift

- Facelift: Principles
- Facelift:Introduction to deep tissue techniques
- Facelift: Platysma-SMAS plication

- Facelift: Facial rejuvenation with loop sutures, the MACS lift and its derivatives
- Facelift: Lateral SMASectomy
- Facelift: The extended SMAS technique in facial rejuvenation
- Facelift: SMAS with skin attached –.
- Facelift: Subperiosteal facelift
- Secondary deformities and the secondary facelift

Neck rejuvenation

Structural fat grafting

Skeletal augmentation

Anthropometry, cephalometry, and orthognathic surgery

Hair restoration: A comprehensive review of techniques and safety

Abdominoplasty procedures

Lipoabdominoplasty

Lower bodylifts

Buttock augmentation

Upper limb contouring

Post-bariatric reconstruction

Aesthetic genital surgery

Breast

1. Anatomy for plastic surgery of the breast
2. Cosmetic Surgery of the Breast

- Breast augmentation
- Secondary breast augmentation
- Current concepts in revisionary breast surgery
- Endoscopic approaches to the breast
- Iatrogenic disorders following breast surgery
- Mastopexy

- Breast Reduction
  - Reduction mammaplasty
  - Inferior pedicle breast reduction
    - Superior or medial pedicle
    - Short scar periareolar inferior pedicle reduction (SPAIR) mammaplasty
    - The L short-scar mammaplasty
    - Periareolar technique with mesh support
    - Sculpted pillar vertical reduction mammaplasty
  - Revision surgery following breast reduction and mastopexy
- Augmentation Mammoplaty and its Complications
- Mastopexy and Mastopexy Augmentation
- Breast Reduction: Inverted-T Technique
- Vertical Reduction Mammoplasty
- Gynecomastia
- Breast Reconstruction: Prosthetic Techniques
- Latissimus Dorsi Flap Breast Reconstruction
- Breast Reconstruction: Tram Flap Techiniques
- Breast Reconstruction- Free Flap Techniques
- Nipple Reconstruction
- Reconstructive Surgery of the Breast
- Breast cancer: Diagnosis therapy and oncoplastic techniques
  The oncoplastic approach to partial breast reconstruction
- Patient-centered health communication
- Imaging in reconstructive breast surgery
- Expander-implants breast reconstruction
- Latissimus dorsi flap breast reconstruction
- The bilateral pedicled TRAM flap
- Free TRAM breast reconstruction
- The deep inferior epigastric artery perforator (DIEAP) flap
- Alternative flaps for breast reconstruction
- Omentum reconstruction of the breast
- Local flaps in partial breast reconstruction
- Reconstruction of the nipple-areola complex

- Congenital anomalies of the breast
- Poland syndrome
- Contouring of the arms, breast, upper trunk, and male chest in the massive weight loss patient
- Fat grafting to the breast

Principles of Craniofacial distraction

Skin and Soft Tissue

- Dermatology for Plastic Surgeons
- Mohs Micrographic Surgery
- Congenital Melanocytic Nevi
- Malignant Melanoma
- Thermal, Chemical and Electric Injuries
- Principles of Burn Reconstruction
- Radiation and Radiation Injuries
- Lasers in Plastic Surgery

Congenital Anomalies And Pediatric Plastic Surgery

- Embryology of the Head and Neck
- Vascular Anomalies
- Cleft Lip and Palate
- Non syndromic Craniosynostosis and Deformational Plagiocephaly
- Craniosynostosis syndrome
- Craniofacial Microsomia
- Orthognathic Surgery
- Craniofacial Clefts and Hypertelorbitism
- Miscellaneous Craniofacial Conditions
- Otoplasty and Ear Reconstruction

Head and Neck

- Soft tissue and Skeletal injuries of the Face
- Head and Neck Cancer and Salivary Gland Tumors
- Skull Base Surgery
- Craniofacial and Maxillofacial Prosthetics
- Reconstruction of the Scalp, Calvarium and Forehead
- Reconstruction of the Lips
- Reconstruction of the Cheeks
- Nasal Reconstruction
- Reconstruction of the Eyelids, Correction of Ptosis and Canthoplasty
- Facial Paralysis Reconstruction
- Mandible Reconstruction
- Reconstruction of Defects of the Maxilla and Skull Base
- Reconstruction of the Oral Cavity, Pharynx and Esophagus
- Tumors of Head & Neck

Cleft Lip and Palate and Craniofacial Anomalies

- Embryology of head and neck (excluding central nervous system).
- Regional anatomy of head and neck.
- Embryogenesis of cleft lip and palate.
- Cleft lip and palate, alveolar clefts.
- Velopharyngeal incompetence.
- Orthodontics, speech therapy in cleft lip and palate.
- Principles of craniofacial surgery.
- Rare craniofacial clefts, Tessier’s clefts.
- Craniosynostosis, hypertelorism, craniofacial microsomia

Trunk and Lower Extremity

- Thoracic Reconstruction
- Abdominal Wall Reconstruction
- Lower- Extremity Reconstruction
- Foot and Ankle Reconstruction
- Reconstruction of the Perineum
- Lymphedema
- Pressure Sores
- Reconstruction of the Penis
- Diabetic Foot Care (growing epidemic and plastic surgeons can make a difference – **but only when they are well trained with the unique features pertaining to care of the Diabetic foot.)**

Hand

- Plastis Surgeons and the Development of Hand Surgery
- Principles of Upper Limb Surgery
- Radiologic Imaging of the Hand and Wrist
- Soft- tissue Reconstruction of the Hand
- Fractures and Ligamentous Injuries of the Wrist
- Fractures, Dislocations, and Ligamentous Injuries of the Hand
- Tendon Healing and Flexor Tendon Injury
- Repair of the Extensor Tendon System
- Infections of the Upper Limb
- Tenosynovitis
- Compression Neuropathies in the Upper Limb and Electrophysiologic Studies
- Thumb Reconstruction
- Tendon Transfers
- Congenital Hand Anomalies
- Duputyren's Disease
- Replantation in the Upper Extremity
- Upper Limb Arthritis

- Upper Limb Amputation and Prosthesis
- Management of Spastic Hands
- Basic principles of Wrist Surgery

Burns

- Thermal burns.
- Electrical burns.
- Chemical burns.
- Radiation burn.
- Pathophysiology of burn shock.
- Nutrition in burns.
- Facial burns.
- Tangenital excision and sequential excision.
- Reconstruction of burn hand and upper extremity.
- Post burn contractures –treatment of sequelae.
- Burn wound infection, sepsis.
- Principles of planning in event of burn disaster.
- Organization of Burns Unit
- Principles of Skin Banking

General Principles

- History of Plastic Surgery and its broad scope at the present time.
- Anatomy and functions of skin.
- Split skin grafts and full thickness skin grafts, their take and
- Subsequent behaviour.
- Local skin flaps.
- Pedicled skin flaps and tubs.
- Unstable scar and scar contracture.

- Care of wounds, dressing, techniques and splints.
- Wound healing.
- Grafts – fat, fascia, tendon, nerve, cartilage, bone.
- Infective skin gangrene.
- Hospital infections.
- Suture instruments.
- Surgical instruments.
- Implant materials used in Plastic Surgery.
- Principles of genetics and general approach to the management of congenital malformations.
- Flaps-Fasciocutaneous muscle, musculocutaneous, congenital malformations.
- Local anaesthesia, nerve blocks, regional anaesthesia.
- Principles of anaesthesia for infants, adults, hypothermia, hypotensive anaesthesia.
- Tissue expansion.
- Keloid, hypertrophic scans.
- Endoscopy in Plastic Surgery.

Topics to be included in all subjects:

- **Biostatistics, Research Methodology and Clinical Epidemiology**
- **Ethics**
- **Medico legal aspects relevant to the discipline**
- **Health Policy issues as may be applicable to the discipline**

Competencies

- Acquisition of basic surgical skills in instrument and tissue handling.
- Incision of skin and subcutaneous tissue: Ability to incise superficial tissues accurately with suitable instruments.
- Closure of skin and subcutaneous tissue: Ability to close superficial tissues accurately.
- Knot tying: Ability to tie secure knots.
- Haemostasis: Ability to achieve haemostasis of superficial vessels.
- Tissue retraction: Use of suitable methods of retraction.
- Use of drains: Knowledge of when to use a drain and which to choose.
- Tissue handling: Ability to handle tissues gently with appropriate instruments.
- Skill as assistant: Ability to assist helpfully, even when the operation is not familiar

Knowledge & Clinical Skills

1. Incision of skin and subcutaneous tissue:

- Langer's lines
- Healing mechanism
- Choice of instrument
- Safe practice
- Basic Surgical Skills course
- Closure of skin and subcutaneous tissue:
- Options for closure
- Suture and needle choice
- Safe practice
- Ability to use scalpel, diathermy and scissors
- Closure of skin and subcutaneous tissue:
- Accurate and tension free apposition of wound edges

2. Knot tying

- Single handed
- Double handed
- Superficial
- Deep
- Instrument

3. Choice of material

4. Haemostasis:

- Techniques
- Tissue retraction:
- Choice of instruments
- Use of drains:
- Indications
- Types
- Management/removal
- Tissue handling
- Choice of instruments
- Control of bleeding vessel (superficial)
- Diathermy
- Suture ligation
- Tie ligation
- Clip application
- Tissue retraction:
- Tissue forceps
- Placement of wound retractors
- Use of drains:
- Insertion
- Fixation
- Removal

Practical

History, examination and writing of records:

- History taking should include the back ground information, presenting complaints and history of present illness, history of previous illness, family history, social and occupational history and treatment history.
- Detailed physical examination should include general examination and systemic examination (Chest, Cardio-vascular system, Abdomen, Central nervous system,locomotor system and joints), with detailed examination of the abdomen.
- Skills in writing up notes, maintaining problem oriented records, progress notes, and presentation of cases during ward rounds, planning investigations and making a treatment plan should be taught.

Bedside procedures & Investigations

- Therapeutic skills: Venepuncture and establishment of vascular access,
- Administration of fluids, blood, blood components and parenteral nutrition,
- Nasogastric feeding, Urethral catheterization, Administration of oxygen,
- Cardiopulmonary resuscitation, Endotracheal intubation.

Clinical Teaching

- General, Physical and specific examinations of Maxillofacial & Hand Injuries should be mastered. The resident should able to analyse history and correlate it with clinical findings. He should be well versed with all radiological procedures like CT Angio, CT
- Face with 3D Reconstruction and X-Ray of face. He should present his daily admissions in morning report and try to improve management skills, fluid balance, and choice of drugs. He should clinically analyse the patient & decide for pertinent Investigations required for specific patient.

Teaching Programme

- General Principals
- Acquisition of practical competencies being the keystone of postgraduate medical education, postgraduate training is skills oriented.
- Learning in postgraduate program is essentially self-directed and primarily emanating from clinical and academic work. The formal sessions are merely meant to supplement this core effort.

Teaching Sessions

- The teaching methodology consists of bedside discussions, ward rounds, case
- presentations, clinical grand rounds, statistical meetings, journal club, lectures and seminars. Along with these activities, trainees should take part in inter-departmental meetings i.e clinico-pathological and clinico-radiological meetings that are organized regularly.
- Trainees are expected to be fully conversant with the use of computers and be able to use databases like the Medline, Pubmed etc.
- They should be familiar with concept of evidence based medicine and the use of guidelines available for managing various diseases.

Teaching Schedule

- Following is the suggested weekly teaching programme in the Department of Plastic Surgery:
  1. Central Teaching Once a week
  2. Seminar / Journal club Once a week
  3. Case Presentation Once a week
  4. Cath conference Once a week
  5. File Audit/Stat Meet. Once month
  6. Grand Round/Interdepartmental Meet Once a month
- Each unit should have regular teaching rounds for residents posted in that unit.
- Thenrounds should include bedside case discussions, file rounds (documentation of case history and examination, progress notes, round discussions, investigations and management plan), interesting and difficult case unit discussions.

- Central hospital teaching sessions will be conducted regularly and MCh residents would present interesting cases, seminars and take part in clinico-pathological case discussions.

Conferences and Papers

- A resident must attend at least one conference per year.
- One paper must be presented in at least 3 years**.**

Schedule of Posting

- OPD: Twice a week
- OT: Twice a week
- Emergency: Twice a week
- The DNB resident should do the dressings of the patient that have been operated/assisted by them and of patients in Burns ICU.
- The DNB resident should note down the History and examination of admitted patients and should daily put progress notes in files.
- The normal working hours will be from 8.00 AM to 8.00 PM. When on emergency duty, the resident is supposed to stay overnight in the resident room.
- The resident shall be posted in other departments as per the following schedule:
  Orthopedics 15 days
  Onco surgery 15 days
  Radiology 15 days
  Anesthesia 15 days

Job Responsibilities

Outdoor Patient (OPD) Responsibilities

- The working of the residents in the OPD should be fully supervised.
- They should evaluate each patient and write the observations on the OPD card with date and signature.

- Investigations should be ordered as and when necessary using prescribed forms.
- Residents should discuss all the cases with the consultant and formulate a management plan.
- Patient requiring admission according to resident's assessment should be shown to the consultant on duty.
- Patient requiring immediate medical attention should be sent to the casualty services with details of the clinical problem clearly written on the card.
- Patient should be clearly explained as to the nature of the illness, the treatment advice and the investigations to be done.
- Resident should specify the date and time when the patient has to return for follow up.

In-Patient Responsibilities

- Each resident should be responsible and accountable for all the patients admitted under his care. The following are the general guidelines for the functioning of the residents in the ward:
- Detailed work up of the case and case sheet maintenance:
- He/She should record a proper history and document the various symptoms.
- Perform a proper patient examination using standard methodology.
- He should develop skills to ensure patient comfort/consent for examination. Based on the above evaluation he/she should be able to formulate a differential diagnosis and prepare a management plan.
- Should develop skills for recording of medical notes, investigations and be able to properly document the consultant round notes.
- To organize his/her investigations and ensure collection of reports.
- Bedside procedures for therapeutic or diagnostic purpose.
- Presentation of a precise and comprehensive overview of the patient in clinical rounds to facilitate discussion with senior residents and consultants.
- To evaluate the patient twice daily (and more frequently if necessary) and maintain a progress report in the case file.
- To establish rapport with the patient for communication regarding the nature of illness and further plan management.

- To write instructions about patient's treatment clearly in the instruction book along with time, date and the bed number with legible signature of the resident.
- All treatment alterations should be done by the residents with the advice of the concerned consultants and senior residents of the unit.
- **Admission day**
- Following guidelines should be observed by the resident during admission day.
- Resident should work up the patient in detail and be ready with the preliminary necessary investigations reports for the evening discussion with the consultant on duty.
- After the evening round the resident should make changes in the treatment and plan out the investigations for the next day in advance.
- **Doctor on Duty**
- Duty days for each Resident should be allotted according to the duty roster.
- The resident on duty for the day should know about all sick patients in the wards and relevant problems of all other patients, so that he could face an emergency situation effectively.
- In the morning, detailed over (written and verbal) should be given to the next resident on duty. This practice should be rigidly observed.
- If a patient is critically ill, discussion about management should be done with the consultant at any time.
- The doctor on duty should be available in the ward through out the duty hours.

Care of Sick Patients

- Care of sick patients in the ward should have precedence over all other routine work for the doctor on duty.
- Patients in critical condition should be meticulously monitored and records maintained. If patient merits ICU care then it must be discussed with the senior residents and consultants for transfer to ICU.
- Resuscitation skills
- At the time of joining the residency programme, the resuscitation skills should be demonstrated to the residents and practical training provided at various work stations.

- Residents should be fully competent in providing basic and advanced cardiac life support.
- They should be fully aware of all advanced cardiac support algorithms and be aware of the use of common resuscitative drugs and equipment like defibrillators and external cardiac pacemakers.
- The resident should be able to lead a cardiac arrest management team.
- Discharge of the Patient
- Patient should be informed about his/her discharge one day in advance and discharge cards should be prepared 1 day prior to the planned discharge.
- The discharge card should include the salient points in history and examination, complete diagnosis, important management decisions, hospital course and procedures done during hospital stay and the final advice to the patient.
- Consultants and DM Residents should check the particulars of the discharge card and counter sign it.
- Patient should be briefed regarding the date, time and location of OPD for the follow up visit.

In Case of Death

- In case it is anticipated that a particular patient is in a serious condition, relatives should be informed about the critical condition of the patient beforehand.
- Residents should be expected to develop appropriate skills for breaking bad news and bereavements.
- Follow up death summary should be written in the file and face sheet notes must be filled up and the sister in charge should be requested to send the body to the mortuary with respect and dignity from where the patient's relatives can handed over the body.
- In case of a medico legal case, death certificate has to be prepared in triplicate and the body handed over to the mortuary and the local police authorities should be informed.
- Autopsy should be attempted for all patients who have died in the hospital especially if the patient died of an undiagnosed illness.

Bedside Procedures

- The following guidelines should be observed strictly:
- Be aware of the indications and contraindications for the procedure and record it in the case sheet. Rule out contraindications like low platelet count, prolonged prothrombin time, etc.
- Plan the procedure during routine working hours, unless it is an emergency.
- Explain the procedure with its complications to the patient and his/her relative and obtain written informed consent on a proper form. Perform the procedure under strict aseptic precautions using standard techniques. Emergency tray should be ready during the procedure.
- Make a brief note on the case sheet with the date, time, nature of the procedure and immediate complications, if any.
- Monitor the patient and watch for complications(s).

OT responsibilities

- The 1st year resident observes the general layout and working of the OT, understands the importance of maintaining sanctity of the OT, scrubbing, working and sterilization of all the OT Instrument, know how of microscopes. He/ She is responsible shifting of OT patients, for participating in surgery as 2nd assistant and for post operative management of patient in recovery and in ward.
- The 2nd year resident is responsible for pre op work up of the patient, surgical planning and understanding the rationale of surgery. He/she is the first assistant in surgery and is responsible for anticipating intra op and post op complications and managing them.
- The final year resident should be able to perform minor/medium/major surgeries independently and assist in medium/major/extra major surgeries. He/she should be able to handle all emergencies and post op complications independently and is responsible for supervision and guidance of his/her juniors.

Medico-Legal Responsibilities of the Residents

- All the residents are given education regarding medico-legal responsibilities at the time of admission in a short workshop.

- They must be aware of the formalities and steps involved in making the correct death certificates, mortuary slips, medico-legal entries, requisition for autopsy
- They should be fully aware of the ethical angle of their responsibilities and should learn how to take legally valid consent for different hospital procedures & therapies.
- They should ensure confidentiality at every stage

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 thesi 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
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.

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. Afemale 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.

DNB COURSE	NO. OF ACADEMIC LEAVE
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 extra-ordinary 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

PART – I	**CONDUCT OF THEORY EXAMINATION**	Candidate has to appear for Theory Exam and it will be held for One day.
PART – II	**FEEDBACK SESSION ON THE THEORY PERFORMANCE**	Candidate has to appear for his/her Theory Exam Assessment Workshop.
PART – III	**WORK PLACE BASED CLINICAL ASSESSMENT**	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 ***Three/ 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 ***Three/ 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:

- Basic sciences applied to the specialty
- General Reconstruction
- Skin and soft tissue
- Research methodology

Paper II:

- Head and Neck
- Aesthetic surgery
- Breast
- Hand and Microsurgery

Paper III:

- Trunk and Lower Extremity
- Genitalia
- Recent advances and Investigations

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.

Rotation of DNB Candidates in Other institutions

No single unit in the country can boast to be good in all aspects of the wide gamut of Plastic Surgery. This is not a character exclusively of DNB institutions but much worse in M Ch institutions. To compensate it, the DNB candidates must be rotated in other units specializing in areas of gap in the host institution.

Period: 2 months mandatory, and 3 months upper limit.

Location : It can be to both the approved DNB institutions or institutions which have M Ch. (Reason: Institutions like Tata Memorial or Amrita which do a lot of Head and Neck are M Ch institutions. Likewise Ganga Hospital, Coimbatore is a DNB institution and a lot of M Ch students visit the place for Hand and Microsurgery and Limb reconstruction. So it is better to keep it as both DNB and M Ch institution.) under exceptional circumstances a non teaching institution can be accepted provided the DNB supervisor agrees and vouches for the quality of work of the chosen institution.

RECOMMENDED TEXT BOOKS AND JOURNALS

Suggested Books

- Paediatric Burns-Total Management of the Burned Child by Marella L Hanumadass and K Mathangi Ramakrishnan
- Total Burn Care – David Herndon. 4th Ed.
- Neligan P. Ed Plastic surgery – 6 Volume set 4th Edition , 2017.
- Grabb & Smith: Plastic surgery
- Mc Gregor: Fundamental techniques of Plastic surgery
- Mc Carthy: Current therapy in Plastic surgery
- Rees: Aesthetic plastic surgery
- Green's: Operative Hand surgery
- Grab's: Encyclopedia of flaps
- Plastic and Reconstructive Surgery Ed. Karoon Agrawal
- Practice Manual of Microvascular Surgery – Acland RD and Sabapathy SR
- Flaps and Reconstructive Surgery – Wei and Mardini. 2nd ed
- Maxillofacial Surgery – Peter Ward Booth, 2 vol set. 2nd ed.

Suggested Journals

- Plastic and Reconstructive Surgery journal
- Journal of Plastic Reconstructive and Aesthetic Surgery
- Burns
- Plastic Surgery Clinics
- Hand Clinics
- Journal of Hand Surgery (am)

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