“CORE CURRICULUM”
FOR
GENERAL SURGERY TRAINING

To all the assistants who consider continuos training necessity as an indispensable aspect of their lives

The Turkish Board of Surgery

PREFACE

Primary goal in general surgery specialization training is to ensure that the assistants obtain occupational proficiency. In that respect, training programs should be arranged in a way to assure that a specialist to gain the knowledge, skills and attitude that are required while carrying out his profession. On the other hand, the training provided should also accomodate, together with life-long learning and continuation of proficiency, the attainment of skills for gaining and using knowledge. Being trained under these circumstance, surgeons who know how to behave ethically, who are honest and who can always be respectul to others, who adopts in principle that following occupational codes is fundamental would be able to cure his patients in the most appropiate way and would experience the happiness and honor of serving the society.

The Turkish Board of Surgery considered that there is a need for organizing a core program in order to guide all the institutions that provide general surgery specialization training in our country, regarding the training activities they perform for the general surgery training. The proposal is conferred in the General Assembly of The Turkish Board Surgery in May 2004. Boards confirmed that organizing such a program is necessary and would have significant contributions to Turkish surgery education when it is actuated. Following the studies carried out, subject headings to base the training program that is considered to be prepared were determined, and The Turkish Board of Surgery was commissioned to prepare detailed content regarding these headings.

With the help of some of our collegues in various areas, The Turkish Board of Surgery prepared the Core Curriculum for General Surgery training draft by determining in detail the knowledge, skills and attitude objectives in such way to cover special subjects of general surgery and also the branches related to general surgery. Draft was approved in the General Assembly of The Turkish Board Surgery in May 2006 and decided that the Program should be distributed to all training institutions.

This program that is organized determines the proficiency objectives that assistants are required gain at every stage. We believe that this program, which seeks to build a dynamic frame that needs to be revised with all its dimensions and by paying attention to the developments over time, would be a significant guide for specialization training and for evaluating the level reached in training.

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This ***Core Cirruculum for General Surgery Training ,*** *which is prepared by The Turkish Board of Surgery (Dr.Ragıp Çam, Dr.Ercüment Kuterdem, Dr.İskender Sayek, Dr. Semih Baskan , Dr.Ertan Tatlıcıoğlu , Dr.Settar Bostanoğlu , Dr.Dursun Buğra, Dr. Mahir Özmen, Dr. Cem Terzi, Dr.Sadık Kılıçturgay) and by benefiting at a great extent from "Cox SS., et al. Surgical Resident Curriculum 2nd ed. Arlington, Virgini:The association of Program Directors in Surgery, 1995" is evaluated and approved in the General Assembly of The Turkish Board Surgery that met on the date 25.05 2006.*

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A- PROGRAM CONTENTS / GOALS

A-1. DEFINITION

A specialization training program is an organized process guiding the assistant, ensuring his/her work under supervision as well as professional and personal development and, at the same time, guaranteeing the provision of safe and suitable healthcare service to patients.

A-2. OBJECTIVES

To establish the academic, clinical and technical criteria for the organization of general surgical specialization training.

Create a training plan for clinics in our country providing specialization training in general surgery.

Ensure the compatibility of the training criteria with the medical specialization statute, Turkish Board of Surgery and principles determined by the Turkish Board of Surgical Co-Authorization.

Establish a guide that would simplify the process of individual studying by assistants

Ensure wide perception of the scope of general surgery and its interaction with other branches of science.

Ensure that general surgery assistants gain an increasing sense of responsibility relating to patient care and treatment during their training process.

Guide general surgery assistants to enable them to suitably use scientific methods and techniques while conducting their research.

Help general surgery assistants gain leadership and managerial skills.

Ensure the understanding of economic, legal and social aspects of the national healthcare system and the place of general surgery in this system.

Encourage lifelong continuous training.

A-3. OCCUPATIONAL PROFICIENCY

Acquisition of knowledge, skills and attitude expected by patients and the society from a physician practicing his occupation, acquisition of skills of lifelong learning, maintaining proficiency and accessing as well as using information, ethical conduct and thinking about others under any circumstances, adoption of the competence of acting in an honest and fair manner and showing respect towards the others as well as adoption of the principle of following professional rules and serving the society are required for occupational proficiency.

The proficiency should be evaluated with certain intervals during the period of assistantship. The evaluation processes will offer an opportunity to correct setbacks in the training.

Persons completing the general surgery specialization training should be encouraged to take the proficiency exams organized by The Turkish Board of Society of Surgery, the principle being adopted that the evaluation of occupational proficiency is a rule in surgery implementation of which is required by the occupation.

A-4. CORE COMPETENCIES

It should be ensured that an assistant at the general surgery specialization training possesses the knowledge and skills and develops necessary attitudes. In this framework, the assistant should be capable of performing the followings at the end of the training.

* Conduct seamless ethical and legal reasoning suitable for a competent surgeon.
* Show respect to social and cultural values of patients and their families during surgical care and treatment.
* Implement broad and sufficient knowledge gained on basic and private subjects of surgical disorder treatment.
* Demonstrate skills expected of a competent surgeon when implementing surgical techniques.
* Thing in many ways when making decisions affecting the life of patients and their families.
* Contribute to the development of public health and protective healthcare.
* Effectively cooperate with colleagues and other healthcare employees.
* Share knowledge with and pass it to colleagues, assistants, students and other healthcare employees.
* Educate patients and their families on the patients' requirements relating to their health.
* Strive for healthcare and treatment of patients at an affordable cost.
* See lifelong learning as a prerequisite for the maintenance of surgical knowledge and skills.

Seniority Definitions

There are three interim seniority levels in the surgery specialization training, namely A_1, A_2 and A_3. Each assistant starting his/her training is at the A_3 level. Assistants who have been in the program for 1 year shall be discussed at the evaluation meeting and if it is decided that they match the necessary criteria, they are promoted to the A_2 level. 2 years are spent at the A_2 level. At the end of this 2-year period, assistants found at the evaluation meeting to match the necessary criteria are promoted to the A_1 level. 2 years are spent at the A_1 level.

A-5. APPLICATION OF THE PROGRAM

The following methods are suggested for implementation at the core training program.

1. The Core Training Program schedule should be given to educators and assistants.
2. The program manager should promote dialog and cooperation among educators and assistants aimed at the implementation of this program. This dialog could be considered on the agenda of assistant training commissions or similar boards or during educative meetings or assistant training meetings. It should be considered in detail during such gatherings what requirements there are in place for the program, what and when the assistants are required to do and how it is to be supervised whether or not the assistants implement the applications determined.
3. The core training program should be used as a "checklist" during visits by educators, seminars and other education and training activities.

* The educators should determine what they could do for the program to reach its main goals in line with application and education conditions of their own clinics and hospitals.
* It should be determined what parts of the program could be learned independently and what parts require the assistance of educators as well as how and in what scope of learned knowledge is to be examined.
* A simple listing of criteria indicating the goals would be useful. This will allow determine theoretic knowledge to be learned and practical applications to be implemented.

4. Lessions and conferences should be held aimed at achieving the program goals.
    * It should be ensured by subjects covered at such gatherings that the assistants grasp the importance of the relationship between the theoretic knowledge and practical application in their training.
5. Connections should be established between knowledge and skills by regular measurement and evaluation for proficiency.
    * Especially assigning some educators to certain tasks could simplify the best use of the core training program by the assistants.
    * Learning goals should be reached at the end of the general surgery training program and all competencies should be ensured. The training program shall determine in what time the assistants are to reach proficiency on a certain subject offered as a part of the core training program.
    * The core training program has been designed so as to increasingly require the assistant's responsibility. Training goals have been separately indicated in a lot of parts of the program for senior and junior assistants. All targets based on proficiency have been developed staring from the basic and progressing towards more complexity.
    * Assistant qualifications could be determined by using fact verbal and written exams, skill evaluations and/or presentation during visits. It shall thus be possible to observe whether or not the knowledge, skills and attitudes acquired match the pre-established program targets.
6. The program should be officially brought into compatibility with clinical application protocols of the unit.
    * Skill training aimed at the acquisition of pre-determined skills should be maintained in the assistant training.
    * If the skill level attained does not match the minimum standards established in the program, this should be certified and effort should be made to correct the situation.
    * Focus should be established on lacking points of assistants not matching the minimum standards and a program should be determined for supportive training.
7. This training program should be capable of being adapted in whole or in part to conditions and goals of each educational institution.
8. An implementation / evaluation method should be created to evaluate incompatibilities, excesses or insufficiencies of the program.
    * Education resources, service requirements and rotation features characterizing the program should be evaluated.

* It should be determined what part of the training could be implemented within a specific period (of one or two years).
* The best learning strategies and methods should be determined that would ensure achievement of the goals.
* It should be examined whether or not the resources are sufficient for learning and sufficient resources should be provided.
* It should be determined whether or not official counseling / training would be necessary to maximize the knowledge and adaptability of educators for the functionality of the structure, contents and evaluation methods of the core training program.
* "Educator training" programs should be held to support educators providing training and conducting measurement and evaluation.

A-6. TEACHING AND LEARNING IN GENERAL SURGERY

Teaching Techniques

Although creative teaching offers unlimited possibilities, it should be useful to adopt some standard techniques.

1. Especially the educative meetings held weekly between the educations and assistants on the expectations from basic sciences are critically important during the first years. Level of knowledge on related subjects could be checked by asking questions to assistants implementing the classical give-and-take technique.
2. Educative visits should be paid on a weekly basis with a special emphasis on a detailed discussion of anatomy and physiopathology. The assistants should be participative and should not be allowed to remain passive. The educative sessions should be held with problem tackling methods and interactive discussion techniques.
3. Making clinical scenarios a part of the weekly morbidity and mortality conferences is a very effective method to encourage assistants' participation. This kind of activities ensure active participation of the assistants.
4. The conference provide necessary environment for educative classes. However, the educators should be aware of the importance of assistants' participation and implement the questions-and-answers techniques in their presentations. It would be also useful for this purpose if some conferences could be moderated by the assistants. Sessions involving the discussion of recent publications are recommended.
5. It is recommended to establish skills labs involving cadaver studies, animal models, laparoscopy and endoscopy simulators. Autopsy and cadaver dissection as well as operations conducted on models will ensure skill development.
6. It is especially important for junior levels to assist at a maximum possible number of operations during each rotation. Simple surgical maneuvers shall form the basis of necessary skills.
7. Direct communication with other branches is important in the planning and evaluation of treatment intervention.
8. Guides, especially computer-aided education guides based on the CD-ROM technology would be of great help in the education process.

A-7. MEASURING THE TRAINING RESULTS & EVALUATION OF THE PROGRAM

Result measurement

Measurement consists of tools and operations used to measure an individual's competence in occupational applications. There are three concepts that should be taken into account when measuring.

1- **Data accumulation**: Resources such as analysis of the information that would indicate the status of knowledge and skills gained by the assistant, exam scores received during the training process as well as contents of presentations and seminars moderated by the assistant, direct observation of reasoning, judgment and skills during operations and the assistant's record card could be used for data accumulation.

2- **Data analysis**: This is the second step in the measuring process. This analysis should involve comparison with the data of other educational units and with national databases, if any.

3- **Awareness of findings and comments**: Determined the suitability of the training application and any points that need to be corrected.

Recommendations for result measuring:

* The assistant should be informed about the measuring methods before the process starts.
* Opinions of educators and senior assistants who had a closer look onto the assistant's work should be obtained when evaluating an assistant.
* Educators' reports should contain a section where the assistant's measured skills are recorded.
* The assistant's skill level should be monitored using scoring forms.
* Educators should be fully responsible for the measurement and duly document the level of skills of surgery assistants they work with.
* Introduction of patients and treatment plants by assistant during visits should be evaluated.
* An assistant record card should be used for applications conducted by the assistant. It shall thus be possible to continuously record the things done by the assistant and timely detect lacking points that need to be corrected.
* Treatment requests submitted and patient observation notes kept by the assistant should be evaluated.
* A content evaluation system with scores assigned should be prepared relating to verbal presentations of the assistant.
* Regular written exams should be held. Such exams should be in the form of multiple choice tests or short and long reporting.
* Objective formal clinical exams could be held to measure skills and attitudes.
* Interactive classes with educators should be prepared using fact data.
* Assistants should be asked questions during visits and operations with the level of knowledge and skills attained by them recorded.

* It should be ensured that assistants periodically provide feedback to a program officer on the training program and its implementation in a pre-determined form. This feedback should be used to tackle insufficiencies.
* The assistants' level of performance at the patient's bed, skills during operations as well as assistance and leadership skills during complicated surgical interventions should be determined.

- The assistants' level of competency should determine their seniority progress in the training program implemented.

B- BASIC TOPICS

B-1. ANATOMY

BASIC GOALS

- To acquire necessary knowledge about anatomy for surgical practices.
- To use the knowledge about anatomy for the diagnosis and treatment of patients in and out of operating room.

GOALS FOR KNOWLEDGE

Junior Level

1. To know the general concepts of anatomy with respect to the following headings
    a. Macroscopic anatomy
    b. Cellular anatomy
    c. Molecular biology
2. To know the form, characteristics and functions of tissues pertaining to organs.
    a. Skin
    b. Circulatory system
    c. Nervous system
    d. Muscular-Skeletal system
    e. Respiratory system
    f. Digestive system
    g. Urinary system
    h. Genital system
    i. Sensory organs
3. To know particular anatomical forms concerning frequently applied surgical attempts like the following cases.
    a. Placement of central catheter
    b. Placement of bladder catheter
    c. Colonoscopy
    d. Tracheostomy
    e. Mastectomy
    f. Herniorrhaphy
    g. Cholecystectomy
    h. Placement of Swan-Ganz catheter
    i. Placement of thorax tube
    j. Practice of plaster for the legs
    k. Appendectomy
    l. Peptic ulcer surgery
    m. Colectomy
    n. Thyroidectomy
    o. Hydatid cyst operation
    p. Anal surgery

4. To recognize frequently encountered anatomical structures in other surgical units.
    a. Orthopedy
    b. Thoracic surgery
    c. Obstetrics and gynecology
    d. Urology
    e. Neurosurgery

5. To know the different images of the organs derived through several techniques.
    a. Direct graphies
    b. Investigations with contrasts
    c. Computed tomography
    d. Ultrasonography
    e. Magnetic resonance imaging
    f. Angiography
    g. Positron emission tomography

6. To list the resources pertaining to anatomical points, which are important for surgical attempts.
7. To define characteristics of developmental anomalies, human development and anatomical qualities of normal embryology.
    a. Appendicitis in pregnancy
    b. Placenta previa
    c. Omphalomesenteric remainders
    d. Diaphragm hernia
    e. Vater's syndrome
    f. Tracheoesophageal fistula
    g. Biliary atresia
    h. Malrotation
    i. Gastroschisis
    j. Urachal cyst
    k. Imperphorete anus
    l. Trisomy 18

8. To distinguish the following terms.
    a. Topographic anatomy
    b. Radiographic anatomy
    c. Supination
    d. Pronation
    e. Dorsal
    f. Ventral
    g. Median plane
    h. Midsagittal Plane
    i. Coronal plane

9.To compare human anatomy to that of frequently used animals such as rats, mice, dogs and pigs, and embryonic living beings including protozoa, bacteria and viruses.

Senior Level

1. To know embryological explanations for the major frequently encountered anomalies.
2. To define and explain anatomy including major operations listed below.
    a. Aort aneurism
    b. Whipple surgery
    c. Pneumonectomy
    d. Abdominoperineal resection
    e. Liver transplantation
    f. Bilateral radical neck dissection
3. To learn anatomical knowledge concerning different radiological techniques.

GOALS FOR SKILLS

1. To practice the knowledge of anatomy for the following cases.
    a. To diagnose general surgical diseases.
    b. To explain patients and their families about the following subjects:
        (1) Embryological causes of the diseases.
        (2) Planning of the surgical process
        (3) Progress of the diseases.
        (4) Explanation of complications
    c. To use this knowledge in the surgical practices that are planned based on seniority.
    d. Post operational care including follow-up in the long term.

B-2. PHYSIOLOGY

BASIC GOALS

- To learn about normal physiology and physiopathology leading to surgical diseases.
- To use of the knowledge of physiology to evaluate and treat the diseases.

GOALS FOR KNOWLEDGE

1. To explain of normal physiology including the following concepts.
    a. Cell growth and differentiation processes
    b. Endocrine and autocrine control of genetics and growth
    c. Normal pregnancy, embryology and obstetric
    d. Concepts of homeostasis and cellular mediator
    e. Normal nutrition and biochemistry of metabolism.
    f. Fluid mechanics and dynamics
    g. Hemostasis, coagulation, thrombogenesis, fibrinolysis
    h. Secretory and regulatory liver functions.
    i. Biomechanics of normal respiration and gas exchange
    j. Injury healing and inflammatory response.
    k. Oncogenesis
    l. Neuroendocrine control of secondary sex characters.
    m. Neurophysiology of hurt.
    n. Response to sepsis
    o. Immunization Response
2. To know normal values of frequently used clinical tests.
3. To know physiological changes of geriatric and pediatric patients and pregnant people with an immune suppressive diseases
4. To know practice of physiological principles for the treatment and tracking including the following concepts.
    a. Practice of Swan-Ganz catheter
    b. Artificial respiration support
    c. Investigation of liver functions
    d. Non-invasice vascular studies
    e. Evaluation of electrocardiography and echocardiography
    f. Evaluation of nutrition status
    g. Endocrine function studies.
5. To explain abnormal physiology within sophisticated diseases.
    a. Cardiac failure
    b. Renal failure
    c. Respiratry failure
    d. Immunity repression
    e. Malignant diseases
    f. Ileus
    g. Nutrition disorders / malnutrition

GOALS FOR SKILLS

1. To be able to interpret laboratory tests and clinical symptoms based on physiological concepts.
2. To evaluate the patients with a surgical diseases or severe physiological disorders.
    a. Liver failure
    b. Nutrition disorder / malnutrition
    c. Renal failure
    d. Hemorrhage
    e. Cardiac – lung failure
    f. Electrolyte imbalance
    g. Endocrine diseases such as Multiple endocrine neoplasia (MEN)
    h. Sepsis
    i. Shock
    j. Immune suppressive diseases.

3. To change treatment plans based on the changes which patients in pediatric or geriatric ages and pregnant patients experience.
4. To use clinical symptoms, laboratory tests and hemodynamic measures based on patients' physiological changes,
5. To change the treatment plans according to abnormal physiological values.
6. To form and define a treatment plan for the existing and possible nutrition support.
7. To interpret hemodynamic observation and to change the treatment to maintain homeostasis.
8. To maintain a physiology-based research project.
9. To resolve the problems interacting with normal hemostasis.
10. To analyze respiratory function tests and to resolve problems that lead to abnormal respiration

B-3. NUTRITION

BASIC GOALS

- To understand metabolic outcomes of surgical diseases and need for nutrition support.
- To know methods of nutrition evaluation and ways of nutrition support.
- To understand unique nutrition problems for specific clinical cases.

GOALS FOR KNOWLEDGE

1. To know the effects contributing to nutrition disorders of inpatients.
    a. Nutrition support
    b. Pre-operational examinations
    c. To limit oral intake based on the underlying disease.
    d. High stress conditions.
2. To know methods of nutrition evaluation.
    a. Loss of 10% of body weight.
    b. Value of serum albumin below 3.4 mg/dl.
    c. Immunization response disorder, anergic response and lymphocyte below 1500.
    d. Particular physical symptoms.

3. To be able to evaluate nutrition.
    a. Anamnesis
    b. Subjective global evaluation, MUST, NRS-2002
    c. Anthropometric measures.
    d. Laboratory mechanisms.
    e. Immunization measures.
4. To compute energy need by using the followings.
    a. Simple estimate (rest 25 kcal/kg-day, moderate stress 30 kcal/kg-day, severe stress 40 kcal/kg-day)
    b. Harris Benedict equation
    c. Nitrogen balance
    d. Basal metabolic table
5. To examine metabolic response regarding starvation, stress, and trauma
6. To state general rules for nutrition content.
    a. Proportion of non-protein calories to protein.
    b. Protein need
    c. Carbohydrate - fat balance
    d. Ventilation problem (its influence on respiratory coefficient.)
7. To know the indications and contra indications of enteral nutrition, as well as discussion of its benefits, to know its guidelines, possible complications and their treatments.
8. To discuss the indications, contra indication and costs of parenteral nutrition, to know how to do a parenteral nutrition, its follow-up and complication in detail.
9. To explain the rationale of using specific formulas for those patients:
    a. Congestive cardiac failure.
    b. Liver failure
    c. Kidney failure (renal failure)

   d. Respiratory failure
   e. Glucose intolerance
10. To explain up-to-date changes in surgical nutrition.
   a. Role of Glutamine
   b. Role of Arginine
   c. Growth factors
11. To discuss the role of possible symptoms gathered from nutrition disorders caused by particular diseases in the prevention of acquired or malignant diseases.

GOALS FOR SKILLS

1. To evaluate nutrition condition of inpatients.
2. To select the appropriate methods and maintain required follow-up.
3. To compute the nutrition requirements for the following diseases.
   a. Malignant diseases
   b. Stress, trauma
   c. Pacreatitis
   d. Enterocutan fistula
4. To place enteral and parenteral nutrition materials.
5. To provide above mentioned patients with nutrition support.
6. To know the diagnosis and treatment of Total Parenteral Nutrition (TPN) patients with calorie-vitamin imbalance
7. To be able to maintain surgical gastrostomy, jejunostomy and percutaneous endoscopic gastrostomy.
8. To know the complications of diagnosis and treatment of enteral and parenteral nutrition.
   a. Diarrhea
   b. Dehydratation
   c. Catheter sepsis
   d. Fatty liver
   e. Glucose intolerance

B-4. METABOLISM

BASIC GOALS

- To acquire metabolic fundamentals of using commodities and to understand diseases because of specific changes formed during interim metabolism
- To gain ability to practice knowledge about metabolism of the patients.

GOALS FOR KNOWLEDGE

I. Energy

1. To define transformation of energy into mechanical work, energy cycle and heat balance as well as fundamental energy units such as calorie and kilocalorie
2. To know ways of temperature loss and its relationship with energy balance.
3. To know how to measure oxygen consumption and carbon dioxide production through thermogenesis, and to measure energy balance through energy production and indirect calorimetry
4. To know the importance of respiratory coefficient in determining the way of using substrate and to know its relationship with respiration.
5. To know the relationship between metabolic velocity with respect to sex, age and body weight factors in the basal or resting state.
6. To regulate the daily energy need by using metabolic velocity formula.
7. To know the effects of unsteady heat, damage, burn, infection, hurt, fear, anxiety and starvation on the energy need.
    a. To predict the metabolic requirements of the critical patient based on using the above mentioned information and predictive (e.g. Harris-Benedict equation).

II. Temperature and Fuel Homeostasis

1. To know how the brain controls body temperature and regulates temperature changes with regard to stress and related variables.
2. To know mediators which are active in temperature and febrile response regulation changes dependent on oxygen consumption.
3. To know the differences of endogen, exogen and bacterial pyrogenes. To know relations with post traumatic fever and fever led by other diseases.

III. Hormonal Control of Body Fuel

1. To know the hormones, which are responsible for energy storage and mobilization and, to explain its influences.
2. To know the influences of glucagons and insulin on protein, fat and carbohydrate metabolism.
3. To know the influences of catecholamine secretion as a response to stress, and its outcomes of these influence on glucose, fat, protein as well as heat production metabolism.
4. To know the causes of post damage negative nitrogen balance and glucocorticoid effect on protein metabolism.

5. To know systemic influences of corticosteroids on the response against a damage and infection of the body.
6. To define the functions of growth hormone and thyroid hormone as an anabolic and catabolic mediator.

IV. Interim Metabolism

1. To explain processes of carbohydrate metabolism including glycogenesis and glycogenolysis, glycolysis and glyconeogenese.
2. To define the following metabolic processes.
    a. Glycogenesis and glycogenolysis
    b. Role of alanine and glutamate in deamination.
    c. Urea cycle
3. To explain lipid metabolism.
    a. Synthesis
    b. Catabolism
    c. Formation of ketone structure
    d. Tricarboxylic acid cycle (Acid Krebs cycle)
4. To know the role of macrophage and sitokins in the stress and metabolism
5. To state metabolic response in the short term starvation when euglycemia is maintained
6. To explain changes in use of substrate and fuel oxidation during starvation.
7. To define Alanine and Cori cycle, establish its relationships with changes in renal, hepatic and cardiopulmoner functions as a response to long term starvation.
8. To know the ways of nitrogen loss in starvation, damage and infection. To know the effects of these cases on glucose, fat and protein in the carbohydrate mechanisms.
9. To know changes observed in the human body in the following cases.
    a. Bed rest
    b. Complicated and uncomplicated operations
    c. Trauma
    d. Sepsis
10. To explain how protein metabolism is regulated through hormonal regulators. To know the relationship between oxygen consumption, heat regulation and energy balance.
11. To know hormonal regulation of glyconeogenese in cases of post trauma and critical patients.
12. To define caloric incorporation of endogenous substrate and to know the relationship between tissue loss and weight loss.
13. To be able to compare changes in interim metabolism caused by hypothermia and heavy exercises to that of observed following trauma, infection and prolonged critical illnesses.

GOALS FOR SKILLS

1. To diagnose daily energy requirements of the patients with critical illnesses in order to find their flexible metabolic requirements.
2. To compute the nitrogen balance of patients with critical illnesses and to maintain metabolic requirement and supply at positive level.

B-5 WOUND HEALING

BASIC GOALS

- To understand the physiology of wound healing
- To provide complex wound care in different settings.

GOALS FOR KNOWLEDGE

Junior Level

1. To define normal process of wound healing and to explain their relationship with the following topics.
    a. Anatomy
    b. Physiology
    c. Biology
    d. Biochemistry
    e. Microbiology
    f. Immunology
2. To know the influences of the following factors on wound healing.
    a. Nutrition
    b. Metabolic situation (including diabetes mellitus)
    c. Hematological situation
    d. Radiation
    e. Immunization response
    f. Growth factors
    g. Formation of super oxide radical
    h. Pharmacological intervention
    i. Infection - sepsis
    j. Chemotherapy
    k. Trauma
3. To explain the steps of normal wound healing.
    a. Inflammation
    b. Epitelisation
    c. Formation of granulation tissue
    d. Contracture, contraction
4. To know physiopathology of delayed wound healing because of microbiological physiology, virullence and body defense.
5. To know physiopathology of thermal, chemical and electrical burns.
6. To be able to explain aseptic technical principles of the following processes.
    a. Incision
    b. Debridement
    c. Wound covering
    d. Dressing, plaster splint
7. To know the principles of wound care.
    a. Debridement
    b. Traumatic wounds
    c. Burn wounds
    d. Chronic wounds

e. Compression wounds

8. To explain how to preserve and heal a wound through the following ways.
    a. Dressing
    b. Concept of humid wound healing
    c. To know potential problems in complicated wound healing cases including hyperbaric oxygen healing, animal or human bites, deep infections in hands, penetrant wounds and radiation.
9. To be able to explain post operational wound complications and their causes.
    a. Eventration
    b. Evisceration
    c. Fasciitis
10. To define gangrene and necrotizing fasciitis microbiology.
11. To explain the principles of appropriate incision selection with respect to the followings.
    a. Blood flow
    b. Points of tension
    c. Transport
    d. Power
    e. Cosmetics - esthetics
12. To explain the reasoning behind selection of appropriate wound covering and reconstruction in relation to wound healing.
    a. Primary and delayed primary covering
    b. Secondary healing
    c. Partial or full thickness skin graft
    d. Local flaps
    e. Microvascular flaps
    f. Other required flaps
    g. Composite grafts
13. To know the characteristics and use of different type of suture materials including absorbed and non-absorbed ones.
14. To know methods of abnormal or delayed wound healing caused by the following factors.
    a. Body resistance
    b. Infection
    c. Diabetes mellitus
    d. Radiation
    e. Ischemia
15. To be able to discuss treatment options for the following wound problems.
    a. Eventration
    b. Infection
    c. Hernia
16. To define pressure preventive equipments and beds to prevent compression wounds.
17. To know the difference between fetal and adulte wound healing.

GOALS FOR SKILLS

Junior Level

1. To maintain basic care for the damaged skin because of abrasion and small laseration including acute debridement, covering and change dressing.
2. To treat complex traumatic wounds taking the following factors into account.
    a. Hemorrhage treatment
    b. Control of acute pain
    c. Time of exploration
    d. Debridement
    e. Primary repair
    f. Secondary repair
3. To follow up the wound healings.
4. To be able to practice all kinds of dressing and plaster splint.
5. To practice frequently used incision and covering methods
6. To evaluate and initiate the treatment of thermal and non-thermal burns.
7. To debride and care wound with low or moderate level including trauma patients.
8. To practice all kinds of complex dressing material and plaster applications.
9. To make all kinds of incision and covering.
10. To debride and care for the sophisticated wounds.
11. To use local and regional skin flaps to cover challenging wounds.
12. To care and treat wound complications such as wound infection, eventration, evisceration, and incision hernia.

B-6 HEMATHOLOGY

BASIC GOALS

- To know physiology of cellular components of blood.
- To know how often hematological diseases influence on surgical diseases.
- To understand the normal and abnormal mechanisms of hemostasis, coagulation, and fibrinolysin.
- To know transfusion treatment, its indications and potential complications.

GOALS FOR KNOWLEDGE

I. Blood physiology

1. To define the fundamentals of hematopoesis including development of lymphocytes and hematopoietic cells from the multipotent cells.
2. To know the form, function, synthesis and analysis of hemoglobin.
3. To know the form, function, life progress, metabolic activity and analysis of erytrocytes
4. To know and compare the following frequently encountered anemia.
   a. Increased erythrocytosis
   b. Decreased erythrocytosis
   c. Increased erythrocytorrhexis
   d. Hemoglobinopathy
5. To explain the fundamental tasks of the followings when inflammation, immune response and infection appear.
   a. Granulocyte (polymorphoneutrophils, basophilics, eosinophils)
   b. Lymphocytes
   c. Monocyte
6. To know the characteristics of normal thrombocytes anatomy and physiology and to reconcile them with the frequently encountered thrombocyte disorders.

II. Hemostasis and Coagulation

1. To know the phases and characteristics of normal hemostasis.
   a. Vasoconstriction
   b. Thrombocyte aggregation
   c. Coagulation and clot retraction
2. To know cellular and metabolic events of thrombocyte activation.
3. To explain endogen procoagulation and anticoagulation in blood.
4. To know intrinsic, extrinsic and both pathways and activations of coagulation.
5. To explain the interactions of the following under the control of coagulation.
   a. Blood flow
   b. Endothelium
   c. Anticoagulants
   d. Fibrinolysis

6. To know the indications and methods which are frequently used for coagulation and homestasis.
    a. Partial thromboplast time
    b. Prothrombin time
    c. Hemorrhage time
7. To know the impact locations of the following drugs influencing coagulation
    a. Aspirin
    b. Kumadin
    c. Non steroid anti-inflammatory drugs
8. To detect congenital coagulopathies and to know diagnoses and treatments of the patients having elective surgery.
9. To know physiopathology and treatment of coagulopathies of the patients with stress, trauma, surgery and comorbid including the following diseases.
    a. Disseminated intravascular coagulation
    b. Delusional thrombocytopenia
    c. Mechanical cycle.
    d. Kidney failure
    e. Liver failure
    f. Hypothermia
10. To know the characteristics, diagnosis and treatments of the hypercoagulation cases appearing in the absence of the following.

a. Protein C
b. Protein S
c. Antitrombin III

III. Transfusion Treatment

1. To detect indications of blood transfusion.
2. To know preparation, preservation of the blood products as well as used materials
    a. Erytrocyte
    b. Thrombocyte (platelet)
    c. Fresh frozen plasma
    d. Cryoprecipitate
    e. Granulocyte
    f. Factor Concentrates
3. To determine the type of blood and blood type, and explain principles of transfusion treatment.
    a. Major and minor blood group antigens and their laboratory evaluations.
    b. Blood products and transfusion indications.
    c. Transfusion risks, diagnoses and complications.
    d. Indications and methods of autotransfusion and autologous blood donation.
    e. To know complications related to blood transfusion.
    f. Major and minor blood group antigens
    g. Role of autoantibodies.
    h.To know the differences between the blood screening, typing and compatibility tests.

4. To know characteristics, diagnosis and treatment of the following transfusion reactions.
    c. Febrile
    d. Hemolytic
5. To know hematological, systemic and potential end-organ effects of massive blood transfusion.
6. To evaluate the frequency and risk of transfusion-related infection.
    a. Acquired immune deficiency syndrome (AIDS)
    b. Cytomegalovirus
    c. Hepatitis
7. To define the benefits, indications and methods of autologous blood transfusion
8. To explain erythropoietin use for the patients with an accompanying disease.
9. To evaluate mechanics, practice and limitations of autotransfusion during the operation.

GOALS FOR SKILLS

1. To examine the risk of hematological morbidity prior to the operation based on following factors.
    a. Hemorrhage diathesis anamnesis
    b. Extent of surgical intervention.
    c. Potential vessel involvement
2. To evaluate recognized hematological diseases.
3. To practice and suppose attempts to act before, during and after the operations in order to diminish morbidity for the patients with hematological disorders.
4. To define and treat unexpected hemorrhages before and after the operations.
5. To evaluate risk of vessel related processes for the patients with anemic, neutropenic and coagulapathic disorders.
6. To define and treat sudden transfusion reactions.
7. To talk to patient and his/her family about the alternative methods of treatment to blood products treatment.
8. To recognize the patients with the risk of deep vein thrombosis and to know pharmacological and mechanical methods used for prophylactic purposes

B-7 ASEPSIS-ANTISEPSIS

BASIC KNOWLEDGE

- To internalize the concepts of asepsis and antisepsis.
- To know the methods and agents used for asepsis and antisepsis.

GOALS FOR KNOWLEDGE

I. Antisepsis

1. To know the antiseptic agents which are used to make the skin prepared and their practice.
2. To know how to do a hand antisepsis accurately.
3. To know the characteristics and toxic implications of the agents used for hand antisepsis.
    a. Chlorhexidine
    b. Povidone-iodine
    c. Hexachlorphene
4. To know toxic implications of antiseptic use and its negative influences on open wound healing.

II. Asepsis

1. To know the concept of sterilization.
2. To know the agents and methods of sterilization, their use and limitations.
    a. Temperature
    b. Autoclave
    c. Irradiation
    d. Rthylene Oxyde
    e. Chemical agents
    f. Glutaraldehit

III. Disinfection

1. To know when to use disinfection.
2. To know agents to use for disinfection.

IV. Operating Room Arrangement

1. To understand the principle of clean-to-dirty arrangement.
    a. For the patients
    b. For the personnel
    c. For the materials
2. To know the system providing the operating room with filtration against microorganisms in the air.
    a. Weather change
    b. Temperature and humidity adjustment.
3. To arrange the behaviors and clothing of the personnel.

GOALS FOR SKILLS

1. To be able organize the systems for asepsis practices in the operating room.
2. To be able disinfect the skin prior to operation.
3. To maintain hand antisepsis through the most convenient method.
4. To let regulations about sterilization methods to control, monitor, and be used accurately.
5. To be able to organize an operating room in accordance with the principles of asepsis and antiasepsis.
6. To evaluate and monitor asepsis and antiasepsis practices in the care and treatment of the patients as well as operation room.

B-8. SURGICAL INFECTIONS

BASIC GOALS

- To understand routes of transmission, diagnosis and treatment of the infections.
- To understand the typical clinics aspects and frequently encountered surgical infections.
- To know the methods used to diminish infectious complications of the surgical patients.
- To know the techniques used to hold the risk of contagion of viruses including Hepatitis and HIV/AIDS at a minimum level.

GOALS FOR KNOWLEDGE

I. Infection Mechanisms, Surgical Risks, Epidemiology

1. To know formation of infection in surgical patients with regard to cognation, patient risk factors and prevention methods.
    a. Gathered from the community
    b. Dependent of process
    c. Nosocomial
2. To explain other systemic factors that are influential in the formation of bacterial localization, virullance and infection- abscess
3. To discuss about primary and secondary peritonitis, its cognation routes, diagnosis and treatment.
4. To discuss how defense systems play their role in the inflammatory reaction against infection and abscess formation after dissemination, inflammation, loculation.
5. To evaluate the frequently encountered infections, precautions about them and infection risk that surgeon face with.
6. To evaluate advantages and disadvantages of barriers which are used to prevent cognation among the staff and the patients.

II . Surgical Infections

1. To define routes of transmission, diagnosis and treatment of the infections observed among surgical patients.
    a. Infections frequently observed among all the patients (pneumonia, urinary tract infection, skin infection)
    b. Infections treated by surgeons (complex skin infections, diabetic foot ulcers)
2. To know the diagnosis and treatment of post operational fever sources.
3. To explain intraabdominal abscesses.
    a. Etiology
    b. Bacterial contamination
    c. Surgical treatment
    d. Treatment failure
4. To discuss the physiology, diagnosis and treatment of necrotizing fasciitis by emphasizing on risk factors and symptoms of physical inspection.
5. To distinguish cellulitis, lymphangitis, lymphadenitis from cutaneus abscess and to explain a treatment approach for each.

6. To know principles for tetanus prophylaxis, and to explain the treatment principles of clostridium tetany.
7. To know the characteristics of surgically important fungal infections grouped as nosocomial, opportunistic, and socially acquired.
8. To explain the prevalence and routes of transmission of surgically important DNA and RNA viruses.
9. To distinguish patient risk factors, diagnosis and treatment strategies from the types of post-operational pneumonia.
    a. Unrelated to ventilator
    b. Ventilator related
    c. Depending on aspiration

III . Antibiotic Use in Surgery

1. To know the indications for the prophylactic antibiotic use.
    a. Gastrointestinal surgery
    b. Implantation practices
        (1) Vascular grafts
        (2) Orthopedic prosthesis
        (3) Breast implants
        (4) Meshes used for herniorrhaphy
2. To evaluate the cases that prophylaxy is not proposed.
    a. Burns
    b. Splenectomized patients
    c. Early phase in the aspiration.
    d. Abdominal irrigants
3. To know the importance of timing, dosage, and potential side effects of single or multiple use and treatment methods for prophylactic antibiotic use.
4. To know use of empirical antibiotic in clean and contaminated surgical wounds and early intraabdominal infections.
5. To know how microbiological data is gathered interpreted and antibiotic preference as well as its dose and exposure duration.
6. To know implication mechanisms, resistance mechanisms and applications of antimicrobial agents used intensely in surgical infections in addition to side effects and costs.
    a. Penisillin and its derivatives
    b. Cephalosporin
    c. Vancomycin
    d. Erythromycin and its derivatives
    e. Metronidazole
    f. Quinolons
    g. Aztreonam
    h. Sulfonamides
    i. Antifungal agents
    j. Aminoglycosides
7. To explain the general pharmacology of antibiotics, pharmacological changes of septic patients, penetration level into the infected medium and its influence on protein bonding.

GOALS FOR SKILLS

1. To know the diagnosis and treatment of infections which are frequently encountered among the surgical patients.
2. To diagnose basic and complex infections appearing after the operations. To change the treatment based on clinical, radiological and microbiological responses.
3. To diagnose and treat gangrene, necrotizing fasciitis and clostridium perfringens infections.
4. To know how to prepare elective surgical patients for appropriate parenteral and enteral prophylactic antibiotic when indicated.
5. To know how to regulate the treatment of aggressive soft tissue infections.
    a. Early debridement
    b. Urine and fecal diversion
    c. Reoperation
    d. Antibiotic use
    e. Post-operational intensive care, liquid and nutrition support.
6. To find the infection source of implanted tools, to confirm diagnosis, and maintain the appropriate treatments.

B- 9. FLUID AND ELECTROLYTE BALANCE

BASIC GOALS

- To understand normal fluid and electrolyte balance.
- To realize and treat fluid and electrolyte disorders and to gain ability to maintain balance.

GOALS FOR KNOWLEDGE

1. To define fluid distribution and compartments of the body.
2. To state normal distribution of intracellular and extra cellular fluid including the following factors..
    a. Distribution of normal sodium and water.
    b. Critical prediction of water and sodium balance.
    c. Maintenance requirements.
    d. Fluid treatment of burns.
3. To explain body fluids such as blood, extra cellular fluid, urine, saliva, gastric fluid,
4. To state changes of fluid and electrolyte balance appearing on the following situations.
    a. Trauma and burns
    b. Operation
    c. Non-operative treatments
5. To explain the functions of the following hormones to main fluid and electrolyte balance.
    a. Antidiuretic hormone
    b. Renin
    c. Angiotensin
    d. Steroids
    e. Aldosterone
    f. Sexual hormones
    g. Adrenocorticotrophic hormone (ACTH)
6. To understand the physiology of water and sodium imbalance.
    a. Water and sodium deficiency (extracellular fluid deficiency)
    b. Water and sodium surplus (enlargement of extracellular fluid)
    c. Hyponatremia (hyposmolarity)
    d. Hypernatremia (hyperosmolarity)
7. To know the treatment of water and sodium imbalance, benefits and complications of diuretics or fluid restriction.
8. To know normal potassium physiology, the causes and consequences of its deficiency or excess and treatment of potassium imbalances.
9. To relate electrolyte physiology to renal diseases.
    a. Inappropriate antidiuretic hormone release.
    b. Oliguria (Pre, Renal, Post)
    c. Principles and indications of dialysis.
10. To discuss the deficiency or excess of calcium, phosphorus and magnesium in the following conditions.
    a. Metastatic breast carcinoma
    b. Laennec cirrhosis related liver failure

c. Hyperparathyroidism
d. Milk-alkali syndrome
e. Alcoholism
f. Eclampsia

11. To know the treatment of low or high calcium, phosphorus and magnesium levels in the situations mentioned above.
12. To state the specific cases for newborns, babies and geriatric patients.
13. To know physiopathology of fluid and electrolyte problems in cardiac, aortic and peripheral revascularization (reperfusion damage included).
14. To know how to differentiate fluid and electrolyte problems regarding before, during and after the operation..

GOALS FOR SKILLS

1. To use fluid balance data of the patients as the indicator of general indicator of fluid balance.
2. To predict water and sodium balance through the evaluation of anaemnesia and physical treatment of the patient in the following cases.
   a. Patients applying emergency
   b. Pre-and-post-operational patients
   c. Long-term total parenteral nutrition patients.
3. To order for the nurses fluid and electrolyte treatment for the following situations.
   a. Sepsis
   b. Burn
   c. Major surgery requiring transfusion
   d. Acid
   e. Cardiac failure
   f. Malnutrition
   g. Fistulas (high-output intestinal)
4. To coordinate treatments related to nutrition, acid-base and electrolyte.
5. To practice the principles of fluid electrolyte treatment in the following cases.
   a. Newborn
   b. Baby
   c. Geriatric patients
   d. Cardiac bypass patients
6. To treat hypokalemia and hyperkalemia.

B-10. ACID-BASE BALANCE

BASIC GOALS

- To understand biochemistry and physiology of acid-base balance.
- To acquire skills regarding diagnosis and treatment of complex acid-base balance disorders.

GOALS FOR KNOWLEDGE

1. To explain biochemistry and physiology of hydrogen ion including the following factors.
    a. Henderson-Hasselbalch formula
        (1) Respiratory component (pCO_2)
        (2) Renal component (HCO_3)
    b. Production and consumption of hydrogen ion.
    c. Tampon systems
        (1) Acute (bicarbonate)
        (2) Chronic (bone, renal and pulmonary)
2. To explain biochemistry of membrane gas exchange occurring alveolar capillary surface (referring to the example of gas exchange)
3. To explain formation of hydrogen ion and physiology of renal excretion.
4. To define renal bicarbonate re-absorption and regeneration.
5. To outline the role of skeleton, kidneys and lungs to maintain normal pH.
6. To classify metabolic acidosis taking anion deficit and hyperchloremic acidosis into consideration.
7. To explain the causes of metabolic acidosis.
8. To interpret metabolic alcalosisun with regard to the following factors.
    a. Chlorine reacted alcalosis
    b. Chlorine resistant alcalosis
    c. Paradoxal aciduria
9. To define metabolic acidosis, respiratory acidosis and mixed anomalies, and conduct distinguishing diagnoses according to given pH, pCO_2 and HCO_3 values.
10. To predict the significance complications of primary disease while evaluating the patient.
    a. Shock
    b. Bowel obstruction
    c. Sepsis
11. To examine the causes of acid-base disorders and the determine treatment schema for the following situations.
    a. Several medical problems.
        (1) Diabetic ketoacidosis
        (2) Lactic acidosis
        (3) Renal tubular acidosis
        (4) Kidney failure
        (5) Respiratory failure
    b. Several surgical problems
        (1) Pylorus stenosis

(2) Gastric outlet obstruction
(3) Fistulas
(4) Ureteroileal ductus
(5) Shock

12. To explain the influences of acid-base imbalances on the following systems.
    a. Central nervous system, intracranial pressure
    b. Kidney physiology
    c. Pulmonary physiology

GOALS FOR SKILLS

1. To know all kinds of diagnoses and treatments of acid-base imbalances.
2. To know the diagnosis and treatment of complex and combined acid-base problems as a component of patient care.
3. To be cognizant of problem about more complicated acid-base imbalances (e.g. intensive care services with other metabolic disorders).
    a. Fluid and electrolyte balance disorders
    b. Total parenteral nutrition
    c. Kidney diseases
    d. Pulmonary diseases

C- RESUSCITATION AND CRITICAL PATIENT CARE

C-1. SHOCK AND RESUSCITATION

BASIC GOALS

- To understand physiopathology of shock and its types.
- To understand mechanism and physiopathology of cardiopulmonary arrest.
- To treat shock and treatment of cardiopulmonary arrest.

GOALS FOR KNOWLEDGE

1. To define categories of shock according to their types.
    a. Hypovolemic
    b. Cardiogenic
    c. Septic
    d. Neurogenic
    e. Anaphylactic
    f. Thermogenic (hypo and hyper-thermia)
2. To explain etiology and physiopathology of shock types.
3. To explain clinical tables and hemodynamic changes observed on different shock types.
4. To know diagnosis and treatment algorithms of shock types.
5. To discuss the following cases by including arrest mechanisms.
    a. Acute myocardial infarction
    b. Acute disrythmy
    c. Congestive cardial failure
    d. Pulmonary emboli
    e. Tension pneumothorax
    f. Penetrant or obtuse trauma
    g. Drug addiction
    h. Asphyxia
    i. Submersion
    j. Hypothermia
    k. Electrical injuries
    l. Acute paralysis
    m. Burns
    n. Hemorrhagic shock
6. To know the indications and pharmacokinetics of the following drugs.
    a. Lidocaine
    b. Bretylium
    c. Digoxin
    d. Propranolol
    e. Verapamil

f. Pronestil
g. Kinidin
h. Isoproterenol
i. Amiodoron

7. To know indications and appropriate techniques for cardioversion and defibrilation.
8. To know the symptoms and indications of acute airway obstruction and appropriate treatment interventions of adult and geriatric patients.
9. To know the effects of assisted mechanical ventilation on cardiovascular and respiratory system.
10. To know the method of ventilator support.
11. To explain etiology and treatment of carbon monoxide intoxication
12. To define indications and potential complications of surgical interventions.
    a. Central venous catheter
    b. Swan Ganz catheter
    c. Arterial route
    d. Tube thoracostomy
    e. Peripheral venous cutdown
    f. Pericardiosynthesis
    g. Thoracentesis
    h. Endotracheal intubation (oral and nasal)
    i. Resuscitation thoracotomy
    j. Diagnostic peritoneal lavage
13. To know the importance of resuscitative inspection during intermittent physical, hemodynamic monitorization and laboratory investigations.
14. To know clinical and laboratory indications for the transfusion of the following blood products.
    a. Erytrocyte suspension
    b. Fresh frozen plasma
    c. Thrombocyte suspension
    d. Cryoprecipitate
    e. Full blood
15. To know potential complications of using the products mentioned above.
16. To know the implications and indications of the following products in acute resuscitation.
    a. Desmopressine acetate
    b. Hespan and similar products
    c. Albumin
    d. Other macromolecular products.
17. To know the indications, use and potential complications of cardiovascular drugs.
    a. Dopamine
    b. Dobutamin
    c. Phenylephrine
    d. Epinephrine
    e. Norepinephrine
    f. Amrinon

GOALS FOR SKILLS

1. To be able to apply closed cardiac massage.
2. To be able to apply subclavian jugular vein catheterization and cutdown in saphenous vein
3. To recognize cardiac arrest and rhythm disorders.
4. To know indication, dose, contraindication and application methods of the following drugs.
    a. Morphine
    b. Lidocaine and procainamide
    c. Bretylium
    d. Propranolol
    e. Atropin
    f. Izoproterenol
    g. Verapamil
    h. Epinefrin ve norepinefrin
    i. Dopamin ve dobutamin
    j. Amrinon
    k. Calcium
    l. Cardiac glucoside
    m. Nitroglicerine and nitroprusside
    n. Furosemide
    o. Sodium bicarbonate
5. To anticipate volume deficit in acute trauma, burn and hemorrhage and to initiate replacement treatment..
6. To be able control external blood loss.
7. To be able to use of pneumatic antishock devices.
8. To realize apply airway obstruction symptoms and to apply the required treatment.
9. To practice closed defibrillation.
10. To complete trauma resuscitation training.
11. To practice endotracheal and nasotracheal intubations.
12. To practice cricothrotomy and tracheostomy.
13. To use mechanical respiratory devices.
14. To practice pulmonary artery catheterization.
15. To practice neurogenic, cardiogenic and septic shock treatments.
16. To treat stove in chest.
17. To treat carbon monoxide intoxication.

C-2. TRAUMA

BASIC GOALS

- To understand physiopathological implications of obtuse and penetrant trauma.
- To be able to maintain an effectice surgical care for a patient with complex multisystem injuries.
- To provide traumatized patients with services such as transfer, emergency, care in hospital and rehabilitation.

GOALS FOR KNOWLEDGE

Junior Level

1. To know anatomy, physiology and pathology which are required in general treatment of traumatic patients.
   a. Central nervous system
   b. Skeletal muscular system
   c. Hands / forearm
2. To know basic evaluation and principles for traumatic patients by using Resuscitation Protocol of Advanced Trauma.
3. To outline principles of basic intensive care.
4. To know about wound care including drains and tubes used in different cavities of human body.
5. To explain basic surgical principles.
   a. Sterile technique
   b. Incisions
   c. Wound covering
   d. Tying a knot
   e. Tissue treatment.
   f. Selection and use of operation devices.
6. To explain anatomy, physiology and pathology of entire body systems which were influenced by trauma including functional evaluations of the following systems.
   a. Central muscular system
   b. Cardiovascular system
   c. Respiratory system
   d. Gastrointestinal system
   e. Genitourinary system
   f. Extremity functions
   g. Nutrition situation.
7. To explain care and treatment principles of patient in intensive care unit.
8. To evaluate care and treatment of a muscular skeletal system trauma with regard to plaster, splint and traction.
9. To know about rehabilitation of patient in the initial and early period care.

10. To explain routes and indications of nutrition support for all the patients with trauma exposure.
11. To determine required trauma units for the primary evaluation and resuscitation.
12. To know pharmacological support for the patients with trauma, resuscitation and intensive care.
13. To know indications of the following basic surgical operations.
    a. Laparotomy
    b. Debridement of the damaged tissue.
    c. Support of muscular skeletal injuries
    d. Thoracotomy
    e. Hemorrhage control
14. To classify appropriate hospital and intensive care units.

Senior Level

1. To define different mechanics and ballistics injuries.
2. To know medical illnesses of patients with trauma such as diabetes or chronic obstructive lungs.
3. To know indications of immediate surgical interventions such as placement of Burr hole, cricothrotomy and cardiopulmoner support device.
4. To plan rehabilitation in order to resuscitate traumatic patient with all functions.
5. To evaluate to refer the patient to appropriate centers.
6. To evaluate types of support that society could maintain for traumatic patients such as social works, home care and vocational rehabilitations.
7. To examine the management of trauma centers including emergency transfer units, emergency, operation room, intensive care and rehabilitation as well as training of the employees.
8. To evaluate medical and legal trauma prevention measures (e.g. cascade or seat belt)
9. To evaluate economical dimension of patient care.

GOALS FOR SKILLS

Junior Level

1. To complete trauma and resuscitation training.
2. To participate in trauma evaluation, resuscitation, operation and intensive care practices actively.
3. To place all kinds of tubes.
4. To practice all kinds of dressing.
5. To cover different type of incisions through sterile techniques.
6. To evaluate intense care parameters under investigation and change care and treatment if needed.
7. To resuscitate injured patient and make a decision about operation.
8. To evaluate nutrition support and initiate the treatment.
9. To make a rehabilitation plan for traumatic patients.
10. To observe traumatic patient in intense care unit, and propose to change treatment based on the indications.

11. To make a pharmacological plan for patients during the resuscitation and intensive care.
12. To fulfill the following basic surgical interventions.
    a. Laparotomy
    b. Wound debridement
    c. Practice of traction for head and extremity.

Senior Level

1. To evaluate penetrant injuries by understanding injury mechanisms.
2. To control existing illnesses of the patients through consultation.
3. To fulfill all kinds of traumatic operations regarding thorax, abdomen, extremities and head through direct observation.
4. To help and observe the juniors in their observation.
5. To make a direct rehabilitation plan through appropriate consultation.

C-3. EMERGENCY MEDICINE

BASIC GOALS

- To maintain treatment of several surgical cases in emergency.
- To communicate with colleagues and institutions about preparation of patients for immediate situations and their transfer.
- To acquire the ability to evaluate all acute and hazardous cases and treat them effectively.
- To know about role of triage and disaster management and to practice that knowledge in emergency.

GOALS FOR KNOWLEDGE

Junior Level

1. To define primary care principles of the injured patient.
2. To complete trainings about basic life support, adult advanced basic life support, trauma advanced life support (trauma and resuscitation training: TRK), basic intensive care support and have a certificate.
    a. To know pre-hospital care including basic and advanced cardiac life support.
    b. To make triage for the emergency service.
    c. To take on responsibility as a member or leader of advanced trauma life support team.
    d. To coordinate patient transfer to the third step treatment centers.
3. To know basic principles of patient triage in emergency service.
    a. Initial treatment
    b. Outpatient treatment
    c. Delayed treatment
    d. Intended treatment
    e. Psychiatric evaluation
4. To set priorities for diagnosis and evaluation of disease or injury of patients who applied to the emergency service.
5. To know the necessity of appropriate, influential and cost effective investigations with limited resources.
6. To know Advanced Trauma Life Support Protocol (ATLS) to resuscitate and recovery of patients with a severe problem or injuries.
    a. To know ABC's of resuscitation.
    b. To learn importance of allergy, drugs, previous illnesses, last time of eating and events that caused injuries for anamnesis.
    c. To know the requirements of primary and secondary inspection.
7. To know how to provide the patient with a airway based on his or her situation.
    a. Nasal tampon / nasopharyngeal airway provision
    b. Mask and ambu help
    c. Endotracheal tube placement
    d. Surgical airway provision (tracheostomy with needle)
8. To define a typical action scenario for the following hazardous cases requiring immediate interventions

a. Multiple system trauma
b. Shock (cardiogenic, neurogenic, septic, hypovolemic)
c. Traumatic neurological injuries
    (1) Head trauma without any change in conscious.
    (2) Head trauma with change in conscious
    (3) Subaracnoid/subdural hemorrhage
    (4) Penetrating head trauma.
d. Thorax injuries (penetrating and obtuse)
e. Abdomen and pelvis injuries (penetrating and obtuse)
f. Vessel injuries (penetrating and obtuse)
g. Myocardial infarction
    (1) Complicated (hypertension and arrhythmia in addition to congestive cardiac failure)
    (2) Non-complicated
h. Pulmonary emboli
i. Diabetic ketoacidosis and other metabolic disorders.
    (1) Hyper and hypokalemia
    (2) Hyper and hyponatremia
    (3) Hyper and hypocalcemia
j. Gastrointestinal hemorrhage
k. Pancreatitis
l. Ectopic pregnancy
m. Phlebitis
n. Burns including inhalation burn
o. Intoxication

9. To define treatment and evaluation principles for the following less severe cases.
    a. Drug addiction and suicide attempt
    b. Attacks/coma
    c. Facial injuries
        (1) Face and skull incisions
        (2) Facial bones and jaw fracture
        (3) Nasal hemorrhage
    d. Pneumonia
    e. Cardial based or other chest pains
    f. Acute stomach
    g. Hand injury
    h. Long bone fractures
10. To know principles of evaluation and approach for the frequently encountered subtle problems.
    a. Evaluation of incisions
    b. Tetanus profilaxis
    c. Injury care
    d. Surgical repair of injuries
    e. Appropriate dressing
    f. Soft tissue infection
    g. Headache
    h. Infections of eyes, ears, noise and thorax.
    i. Bronchitis

j. Gastroenteritis
k. Hemorrhoid
l. Insect and animal bites
m. Follow-up suggestions

11. To know indications and methods for the following practices.
    a. Peritoneal lavage
    b. Thorax tube
    c. Pericardiocentesis
    d. Suprapubic placement
    e. Opening a central venous vessel path
    f. External/transvenous pacemaker
12. To have awareness about legal and medical responsibilities of the doctors who organized and accepted the transfer.
13. To learn about conditions requiring having an "informed consent" in an emergency.
    a. Vital cases
    b. Small surgery
    c. Seriously ill patients
    d. Patients with no informed consent
        (1) Amnesia about the event
        (2) Alcohol or drug use
        (3) Dementia
14. To know inspection and treatment of dental emergency cases that general surgons must know.
    a. Toothache
    b. Gingiva hemorrhage (gingivit, periodontit, HIV related hemorrhage cases)
    c. Broken, dislocated tooth
    d. Cellulitis , Ludwig angina
    e. Peritonsiller abscess (Quinsy)

Senior Level

1. To know need for teamwork approach for vital diseases or injuries. To let a team leader to know his or her own responsibilities as well as those of members responsibilities.
2. To know indications and appropriate approaches for immediate thoracotomy.
3. To make a decision about operational intervention in a traumatic or acute illness.
4. To make a hospital disaster plan including the following cases.
    a. A lot of injured people
    b. Burns
    c. Radiation damage
    d. Chemical matter injuries
    e. Environmental damage
        (1) Submersion
        (2) Stroke of lightning
        (3) Freezing
        (4) Epidemic infections.

5. To train society about principles of approaching patients with an advanced trauma.
6. To know responsibilities and being the leader of doctors of other branches in emergency service.

GOALS FOR SKILLS

Junior Level

Responsibilities to fulfill with the supervision of assistants with higher seniority, trainers and trainers of emergency service:

1. To make triage of patients with immediate trauma.
2. To stabilize the emergency situation of traumatized patients through the following preventions.
    a. Approach to fracture and detection
    b. Detection of neck vertebras (neck collar)
    c. Prevention of hypothermia
3. To know use of diagnosis protocols applied for immediate patients
4. To determine primarily mentioned diagnosis methods according to primary evaluations.
5. To know how to provide the patient with an airway through one of the following methods.
    a. Ambu – mask and respiratory application.
    b. Nasopharyngeal or oropharyngeal airway provision.
    c. Endotracheal intubation practice (oro and nasopharyngeal)
    d. Tracheostomy application
6. Opening central venous vessel paths.
7. To assist indication and (if present) acute resuscitation procedures.
8. To inform patients and their families about the current situation and expected events in the future. To discuss treatment and care options with patients and relatives and have their informed consent.
9. To provide patients without any emergent situation with appropriate treatment.
10. To work as a surgical consultant and evaluate discriminative diagnosis with seniors or trainers.
11. To determine the degree of burn and detection of patients who need operational intervention.
12. To know practice of immediate diagnosis and treatment procedures.
    a. Peritoneal lavage
    b. Chest tube insertion
    c. Pericardiocentesis
    d. Suprapubic catheter placement
13. To maintain small surgical intervention.
    a. Abscess drainage
    b. Wound covering
    c. Dislocation of unfamiliar objects
    d. Wound debridement
    e. Catheterization of the urinary bladder
    f. To diagnose and treat cellulites

Senior Level

Responsibilities to fulfill with the supervision of assistants with a higher seniority, trainers and trainers of emergency service:

1. To maintain hospital care on the venue or make the triage of patient with multi system trauma that requires an operation.
2. To make an immediate resuscitative thoracotomy if needed.
3. To evaluate emergency patients and fulfill required operations.
4. To lead in patient care, appointing tasks for those in peripheral level and consultation with doctors of other branches.
5. To work as a leader of the team that manages operational interventions because of trauma in thorax, abdomen, head and orthopedy.
6. To manage trauma services as it is supposed to be managed.

C-4. SURGICAL INTENSIVE CARE

BASIC GOALS

- To evaluate simple or complex multiple organ systems disorders, and diagnose and treat critical patients.
- To diagnose and treat interrelated system disorders of patients in emergent care units in an appropriate manner.

GOALS FOR KNOWLEDGE

Junior Level

Primarily, it is proposed to participate in Basic and Advanced Life Support and Critical Patient Care training.

I. Administrative Tasks

1. To define the tasks of surgeons in intensive care.
    a. Administration of unit (surgeon as administrator) (1) Triage of patients (2) Economical aspects (3) Date gathering and computer use (4) Infection control and Total quality management (5) Ethical issues (consent, lawyer authorization, wishes one state when alive)
    b. Consultation for specific surgical cases.
    c. To provide consultation among other non-surgical fields and to organize that.
    d. To determine indications to assign one as an inpatient for the following issues.
        (1) Medical indications (e.g. lung, heart, kidney related illnesses)
        (2) Surgical indications
3. To know indications of letting a patient leave intensive care unit.
    a. Medical indications
    b. Surgical indications
    c. Patients who can not be accepted to intensive care unit. (e.g. long term care, orders not to resuscitate)

II. General Physiology-Body as a Whole

1. To know the responses of the following systems to sepsis, trauma and surgical interventions, and adaptations mechanisms to pre and post –stress situations.
    a. Respiratory
    b. Homodynamic
    c. Kidney
    d. Metabolic
    e. Endocrine
2. To know prophylactic interventions which are frequently used in intensive care.
    a. Gastrointestinal hemorrhage prophylaxis (antacids, acid suppression drugs and surface preserving drugs.)
    b. Prophylactic antibiotic use (to know the difference between real prophylaxis and empirical and therapeutic use)

c. Prophylaxis for morbidity related to respiratory problems.
d. Prophylaxis for deep vein thromboembolism
e. Aseptic technical practices.
f. Taken for granted interventions
g. Skin preservation methods
h. Central vein catheter change through guidewire in high fever or clinical suspicion.

3. To know 1) influence mechanisms, 2) physiological implications, 3) influence spectrum, 4) implication period, 5) appropriate dose, 6) metabolism and means of disposal of body, 7) side effects 8) costs of the drugs which are frequently used for the treatment of critical patients.
    a. Vasopressor
    b. Vasodilator
    c. Inotropic materials
    d. Bronchodilators
    e. Diuretics
    f. Antibiotics/antifungal drugs
        (1) To know differences between empirical, therapeutic and prophylactic practices
        (2) To know classification of drug groups used to treat infections
    g. Antiarrhythmics
    h. Antihypertensive
        (1) Beta blocker use for hypertensive tachycardic patients
        (2) ACE inhibitor use for patients with congestive cardiac failure
        (3) Use of calcium channel blocker hypertensive patient with angina
4. To know indications and methods of providing nutrition support.
    a. To compare indications of parenteral and enteral nutrition in terms of selection and costs of nutrition fluids.
    b. Complications of parenteral and enteral nutrition and knowing methods to prevent them.
    c. To interpret symptoms of patients in an intensive care unit with enteral or parenteral nutrition regarding glucose, chlorine, sodium, phosphate, magnesium, rare-earth element and vitamin deficiency/ excess
    d. To anticipate protein calorie needs of patients of different health conditions and detect nutrition sufficiency by using frequently applied laboratory data.
5. To know the causes of post operational fever, empirical diagnosis methods and their treatments.
6. To know and apply treatment based on changes in the patients' clinical and laboratory parameters.
    a. To change intravenous fluid application according to expected stress response including metabolic, hormonal, cardiovascular and renal response (to remind stress hormone altitude and changes in glucose metabolism, to refrain from fluid loading for patients with high glucose)
    b. Effectiveness of prophylactic methods
    c. To evaluate nutrition situation of patients with protein loss (e.g. fistulas, drain locations or metabolic factors, infection, acute lung damage, hyperthermia, respiratory failure)

d. To evaluate post operational fever and treatment methods.
e. To know the indication to initiate artificial respiratory support.
f. To explain low cardiac out put, hypertensive /hypertensive conditions
g. To know evaluate and treat epilepsy attacks including the following methods.
    (1) ABC rule (airway, respiration, circulation), drawing blood for electrolyte, BUN-creatinine, glucose, calcium, magnesium levels.
    (2) Intravenous glucose / thiamine loading
    (3) Antiepileptic drugs (valium, Phenobarbital, dilantin)
h. To evaluate and treat acute respiratory failure depending on changes in airway, pump, and lung.

7. To know planning of the critical surgery patient with multiple medical problems.
    a. Cardial rhythm disorders
    b. Respiratory failure dependent on airway, cardial heartbeat power and parenchyma disorders.
    c. Hemodynamic imbalances in addition to acute / chronic kidney failure or need for specific fluid treatment (total parenteral nutrition)
    d. Specific problems regarding diabetes mellitus and nutrition support
    e. Hemodynamic balance disorder in acute/chronic kidney failure or respiratory failure.

III. Airway-Respiration

1. To know indications of initiating a respiratory support.
    a. Indications to initiate artificial respiratory and generally accepted level
    b. To evaluate airway.
    c. To detect sufficiency of respiratory muscles
    d. To evaluate characteristics of lung parenchyma (arterial blood gas and lung roentgenogram)
    e. To examine generally used respiratory values (tidal volume, maximum respiratory volume, static and dynamic compliance, functional residual capacity, positive end expiratory pressure (PEEP), auto-PEEP, airway pressures)
    f. Indications to give up artificial respiration and accepted values.
2. To know pathologies that lead to respiratory physiology, ventilation and perfusion.
3. To explain ventilation methods with ventilator mechanics, induction mechanisms and potential uses.
4. To know physiopathology of acute lung damage (or acute respiratory distress syndrome-ARDS) and approach to patients who have been tied to mechanic ventilator for a long time period.
    a. Pneumonia (aspiration and nosocomial)
    b. Acute kidney failure
    c. Cardiac failure
    d. To prevent malnutrition failure or relocation of body storages
    e. Systemic immune response syndrome (known as SRI, multiple organ dysfunction syndrome-MODS- or multiple organ system failure-MOSF-in the past)
    f. Sepsis
    g. Skin preservation problems
    h. Physical treatment (preservation and function of muscle mass)
    i. Psychological support for patients and their families.

5. To know approaches to frequently encountered respiratory problems of patients who survive by the help of artificial respiration device.
    a. Ventilated lung areas
    b. Bronchopleural or bronchoesophageal fistula
    c. Restricted cardiac muscle power (nonenlarging left ventricle, newly located myocardium infarct, vulvular disorders)
    6. To know the following treatments to repair respiratory functions.
    a. Bronchodilators (aerosol, parenteral drugs)
    b. Drugs which stabilize alveolus membrane (kromalin sodium, steroids)
    c. Diuretics
    d. Venouz dilators
    e. Painkillers and sedatives
    f. Mucolytic

IV. Circulation

1. To know and compare parameters of the following cardiac function parameters.
    a. Preload
    b. Afterload
    c. Myocardium contractility
2. To interpret the outcomes acquired through following invasive / noninvasive methods.
    a. Arterial catheters
    b. Central vein catheters
    c. Swan-Ganz catheter
    d. Brain pressure monitor
    e. End tidal carbon dioxide monitors
    f. Pulse oximeter
    g. Peripherical nerve simulators (in order to test neuromuscular blockage sufficiency)
    h. Foley catheters
    i. Intestinal pH monitors
3. To define and know treatment approach for patients who do not have hemodynamic balanced.
4. To detect cardiac functions and hemodynamic follow-up. To interpret the accuracy of data gathered through hemodynamic follow-up devices.
5. To know implications of appropriate fluid and drug treatments on cardiovascular system.
    a. Hypovolemic, hypotensive patient
    b. Hypotensive, patients with no volume insufficiency / excess
    c. Hypotensive, hypervolemic patient
    d. Hypotensive, oliguric patient
    e. Hypotensive, hypervolemic oliguric patient
    f. Hipovolemic, oliguric patient
    g. Hypotensive, oliguric hypoxic patient

V. Kidney

1. To classify main acid-base balance disorders according to unsteady physiology of the patient. (Metabolic acidosis and/or alcalosis, respiratory acidosis and/or alcalosis).

2. To know intravenous fluids selected for electrolyte replacement in complicated acid-base balance.
    a. Hyperchloremic, metabolic -acidotic patient
    b. Hypochloremic, metabolik-alcalotic patient
    c. Dehidrated, stupor, hyponatremic patient
    d. Patient with central diabetes insipidus
    e. Patient with hyponatremia, loaded volume and carbon dioxide involvement

VI. Central Nervous System

1. To know primary evaluation, observation and long-term treatment of frequently encountered neurological problems in intensive care.
    a. Attacks
    b. Coma
    c. Paralysis

VII. Stomach- intestine/liver

1. To know form and implications of stomach, pancreas, bile secretions and small intestine content loss (to know volume of fluids to substitute the insufficiency, and electrolyte content)

Senior Level

I. Administration

1. To know criteria which determine patient's need for intensive care before the operation.
    a. Existing diseases (heart, lung, kidney)
    b. To know what to do during the operation that are going to be need in intensive care.

II. General Physiopathology- Body as a Whole

1. To know how to use sepsis scores.
2. To know the difference between septic shock and hypovolemic shock.
    a. First clinical diagnosis and evaluation.
    b. Analysis of treatment options.
    c. To evaluate treatment options based on clinical parameters derived from observations.
3. To know tissue oxygen need and support. To show the contribution of the following components.
    a. To compute oxygen directed to tissues
    b. To compute oxygen consumption.
    c. To examine implications of heartbeat and different preload, heart muscle power and after load on oxygen transfer.
    d. To discuss implications of hemoglobin and oxygen saturation
    e. To explain load and intake of oxygen to pH, body temperature, 2,3 diphosphogliseride (DPG) related tissue.
4. To evaluate and know the following hemorrhage disorders.

a. Role of synthesis and demolition of blood vessels, thrombocyte, fibrin in normal hemostasis
b. Causes and treatment of disseminated intravascular coagulopathy (DIC)
c. Insufficient production, production demolition or dilution related thrombocytopenia.
d. Hemophilia A
e. Von Willebrand disease
f. Idiopathic thrombocytopenic purpura (ITP) as a cause of thrombocytopenia and thrombotic thrombocytopenic purpura (TTP)
g. Misapplication heparin or kumadin treatment
h. Liver failure
i. Tasks of protein C, S and lupus anticoagulant and its role in hemorrhage disorders.

5. To know specific problems encountered in intensive care and following surgical areas of research.
   a. Neurosurgery
   b. Urology
   c. Orthopedy
   d. Childhood surgery
   e. Cardial surgery
   f. Chest surgery
   g. Burns
   h. Trauma
6. To know how to approach patients with several physiological situations.
   a. Pre-operational problems related to patient's illnesses.
   b. Problems related to patient's illnesses.
   c. Post-operational problems related to patient's illnesses
7. To know nutrition and metabolic situation of patient in specific cases of illnesses.

III. Kidney

1. To know physiological principles and specific treatment approaches for the following complex acid-base balance problems.
   a Renal tubular acidosis (to differentiate type I and II)
   b High output loss in stomach-cardiac system of patients with failure in cardiac functions
   c To treat volume excess of patients with normal sodium level and hyponathermia.

IV. Stomach- intestine/liver

1. To know treatment of liver and kidney failure taking the following factor into account.
   a. Use of nutrition formulas specific to diseases.
   b. Use of toxic matters and their disposal of body. (Antibiotics, contrast matters, narcotics)
   c. Kidney failure support treatment, high dose diuretics, continuous veno-venous hemofiltration, continuous veno-venous hemodialysis , dialisis (peritoneal and hemodialysis)

V. Endocrine

1. To know treatment of the following endocrine disorders in critical intensive care patients.
    a. hypothyroidis / hyperthyroidis
    b. hyperparathyroidism / hypoarathyroidism (change in calcium and magnesium values)
    c. Excessive work of surrenal gland (Cushing disease and syndrome)
    d. Cortical insufficiency of surrenal gland (Addison disease)

GOALS FOR SKILLS

Junior Level

1. To know primary evaluation of critical patient following operation and how to approach such a patient.
2. To practice the following treatment attempts.
    a. To fix fluid disorders
    b. To make adjustment of respiratory support device
    c. To use pharmacological support drugs.
    d. To evaluate necessity and duration of antibiotic treatment
3. To practice the following processes.
    a. Orotracheal and nasotracheal intubations, nasogastric and bladder catheterization
    b. Arterial catheter
    c. Central venous catheter and pulmonary catheter placement
    d. Tube thoracostomy
    e. Tracheostomy
    f. Pericardiosynthesis
4. To care severe burn cases.
    a. To compute primary fluid need.
    b. To evaluate one in terms of hospitalization or transfer to centers for burn treatment.
    c. To evaluate respiratory support need.
    d. To know specific cases of special burns in the following examples.
        (1) Inhalation burn
        (2) Electricity burn
        (3) Hydrofluoric acid
        (4) Phosphor burn
5. To care patients with heavy trauma.
    a. To determine need for respiratory support
    b. To compute primary and maintenance fluid need
    c. Venous vessel path provision
    d. To evaluate need for operation
    e. To determine post operational hospitalization (support treatment or specialized services (spinal cord center, centers to reimplant traumatic amputations) transfer,
6. To care patients with sepsis.
    a. To know need for respiratory support.
    b. To compute primary and maintenance fluid need.

c. Venous vessel path and preservation through appropriate sterile techniques
d. Evaluation of operation need.
e. Evaluation of intensive care treatment
f. Prophylactic, empirical and therapeutic antibiotic practices
g. Follow-up for hemodynamic data
h. Initiation of rehabilitation process following damage is controlled.

Senior Level

1. To undertake entire patient care of those in intensive care unit beginning from hospitalization until their discharge from the hospital.
2. To follow invasive monitorization catheters, interpretation of the collected data, and adjustment of hemodynamic variables based on computed objectives.
3. To treat the following cases.
    a. Evaluation of multiple organ failure, support for organs in failure.
    b. Life threatening surgical infections (e.g. ascending myonecrosis or gangrene)
    c. Hypovolemic shock
    d. Kidney failure
    e. Nutrition disorder
    f. Liver failure
4. To provide transvenous / transthoracic path to insert pacemaker in heart immediately.
5. To apply immediate thoracotomy.
6. To compute nutrition and metabolic needs of patients.

C-5. BURNS

BASIC GOALS

- To understand concepts regarding burn injury and burn physiopathology.
- To have students gain ability to adapt these concepts into evaluation of a patient with burns, their resuscitation, clinical treatment and rehabilitation.

GOALS FOR KNOWLEDGE

1. To know histological and functional anatomy of skin, skin appendage and subcutaneous tissue.
2. To know physics and dynamics of thermal damage and spread of tissue damage.
3. To know criteria to evaluate patients with burns including burn types and inspection findings.
4. To control patients with burns based on the evaluations above, to plan first treatment for fluid resuscitation.
5. To know necessary clinical factors to let patients with burns to survive, and preserve their organs as well as their functions.
6. To know burn shock, immunization changes and principles of burned skin bacteriology.
7. To know principles of using local and systemic antibacterial agents for burned wounds.
8. To explain specific cases of electrical, chemical and inhalation burns and to know approaches for their treatment.
9. To know epidemiology, prevention, socio-economic and psychological implications of burns.
10. To know pathology, mortality, morbidity and healing process inhalation burns.
11. To evaluate burn wounds with respect to its depth, bacterial situation, healing potential and need for intervention.
12. To know physical characteristics of electrical burns and its pathology; evaluate its relationship with the following:
    a. Electrical current
    b. Input and output locations
    c. Deep skin involvement
    d. Neurological injury
    e. Vessel problems
13. To know indications and benefits of physical treatment and distraction treatment.
14. To know need for special care rehabilitation and hand anatomy.
15. To define indications of partial or full full-thickness graft indications, ways of removal, their application, immobilization and care.
16. To explain principles of wound contracture, state desirable and harmful implications.
    a. Initial treatment of burned patient.
    b. Covering the burn wound Burn
    c. Rehabilitation of burn patient
17. To explain the following terms.
    a. Compartment syndromes

b. Eschar contraction
c. fasciotomy and escharatomy incisions and techniques

18. To know pathology, treatment and sources of chemical burns, methods for protection against chemicals.
19. To know special cases of burns in childhood, their treatment and rehabilitation.
20. To know basic techniques of plastic surgery to prevent the following cases and indications or reconstructive interventions.
    a. Scar contracture
    b Related joint contracture
    c. Hypertrophic scar
21. To know activities of specific burn team or unit in the burn wound care.
    a. Physical treatment
    b. Distraction treatment
    c. Psychological counseling
    d. Recreational treatment
    e. Burn nursing

GOALS FOR SKILLS

1. To evaluate and follow burn patient, inform need for transfer to another center.
2. To practice fluid resuscitation protocols for children and adults.
3. To select and practice appropriate dressing materials and antibacterial drugs.
4. To discuss systemic implications in post burn critical patients based on the following.
    a. Sepsis
    b. Gastrointestinal implications
    c. Immunization problems
    d. Implications on heart and lung
5. Treatment of inhalation burn.
    a. Flexible laryngotracheoscopy
    b. Respiratory support treatment
6. To treat the wounds.
    a. Eschar formation
    b. Reepithelization
    c. Tengential and facial excision
    d. Debridement of deep tissues
    e. Practice and removal of skin graft
7. To evaluate electrical burns.
    a. Input and output wounds
    b. Implications on heart, vessel, nervous system and eyes
    c. Severe tissue damage
8. To initiate the treatment of chemical burns.
    a. Detection of its sources and types
    b. Treatment through delusion or neutralization
    c. Treatment of systemic implications of local chemicals
9. To maintain eschar contracture and edema control.
    a. Escharatomy techniques
    b. Fasciotomy techniques

10. To treat pediatric patients by consulting infantile intensive care unit about initial treatment, systemic support and special care needs.

D- GENERAL SURGERY

D-1. SURGICAL IMMUNOLOGY

BASIC GOALS

- To understand principles of general immunological and their application in surgical practices.
- To understand principles of patient care of patients with immunological disorders who will have a general surgical operation.
- To have information about molecular biology and understand new potential immune treatments to be practice in surgery.

GOALS FOR KNOWLEDGE

I. General Immunological Principles

1. To explain basic concepts of immune systems.
    a. Cells responsible for host defense
    b. Basic tasks of lymphocytes and macrophages
    c. Development of other cells out of pluripotent stem cell
2. To know functions of macrophages, secretion products and their roles as antigen server.
3. To explain ontogeny, function and roles of T lymphocyte in the cellular immunity and refusal of graft
4. To know about T cell receptor and its relationship with human leukocyte antigens (HLA).
5. To understand T cell activation, roles of CD4 and CD8 cells and related interleukins.
6. To explain role of B lymphocytes in the formation, development and differentiation of antibody, functional anatomy of immunoglobulin molecules.
7. To define immune functions of spleen, liver, thymus and bone marrow, to know their roles in the regulation of immune system.

II. Defense against Infection

1. To define flora, mechanic barriers, local hormones and chemical matters in epithelium of the following systems in the struggle of the body against infection.
    a. Gastrointestinal
    b. Respiratory
    c. Genitourinary
2. To define responses of body to infections in the following cases.
    a. If not confronted with antigens.
    b. If confronted with antigens
        1) Passive and active immunization
        (2) T cell memory activation
3. Roles of intravenous immunoglobulin and viral vaccines therapeutic and prophylactic.

4. To differentiate congenital and acquired immune failure cases including sepsis and severe burn.
5. To describe methods which test cellular immune integrity including skin and lymphocyte function tests.

III. Clinical Immunology

1. To define influence mechanisms of immunosuppressive drugs and possible side effects. To know causes of use, timing of use in organ transplantation and other medical practices.
    a. Prednisone
    b. Cyclosporine
    c. Azothiopurine
    d. Tacrolimus (FK506) and other novel drugs
2. To know agents used against refusal of acute transfer.
    a. Steroids
    b. Radiation treatment
    c. Polyclonal and monoclonal antibodies
3. To prepare use of polyclonal antibodies to treat transplant refusal, to explain their quality control and application. To define their side effects and application.
4. To explain approach to patients with immune failures
    a. Drug related iatrogenic immunesuppression
    b. Natural immune failure cases
    c. Cancer related immunity disorders.
5. To explain how to approach patients who are exposed to immunesuppression following transplantation or other severe surgical morbidity and complications.

IV. Tendencies in Immunology and Molecular Biology

1. To know new or processing drugs used in transplantation and other cases
2. To know reasoning and clinical fields application as well as potential limitations and side effects of beneath biological modificators which are used in today's oncology treatments.
3. To know gene transfer and clinical researches which are being studied.
4. To know importance of molecular biology and basic recombinant DNA techniques which are used to explain problems in immunology, oncology and pathology.
5. To explain importance and formations of transgenic animals and potential uses of experimental and critical transplantation applications.

GOALS FOR SKILLS

1. To use immune failure drugs for those who have been exposed to chronic treatment of general surgical operations during the operations.
2. To plan elective surgery by focusing on minimizing infections of patients with immune failure, and to maintain immediate surgical intervention for that high risk group. (i.e. perforated organ etc.).
3. To optimize immune conditions of patients with systemic failures following major surgery, burn, trauma, malnutrition.

4. To diagnose acute or chronic organ rejection based on clinical findings, symptoms and serum chemistry and radiological works.
5. To diagnose and treat wound infection and other complex disorders of patients with chronic immune failure, need elective or immediate surgery.
6. To follow levels and side effects of drugs in immunization failure.
7. To participate in the treatment of patient taking immune stimulator

D-2. ORGAN TRANSPLANTATION

BASIC GOALS

- To know the history of clinical transplantation and interpret guiding manuals preparing the patients for organ transplant.
- To understand basic principles guiding organ transplantation and immune repression.
- To know potential metabolic, physiologic and malign implications of immune repressors.

GOALS FOR KNOWLEDGE

I. Background /Preparation

1. To know history and development of transplantation.
    a. First practice in vessel surgery.
    b. The concept of "tolerance"
    c. First successful transplantations
    d. Initiation of immune repressors.
2. To explain concepts of transplantations with respect to anatomy and biology.
3. To know genetic locations and ways of heredity of human leukocyte antigens and differences of major histocompatibility class I and II antigens.
4. To have information about role of detecting tissue type of patients who are prepared for organ transplantation and the following activities.
    a. Natural, premeditated antibodies
    b. Acquired antibodies
    c. Panel reactive antibodies
    d. Influence of tissue type and adaptation on graft survival
5. To define criteria for organ and tissue donation and their application to critical patients.
6. To define brain death clinically, to know appropriate laboratory and radiological studies to support clinical criteria.
7. To make an appropriate plan for organ donators.
8. To know the techniques of developing organ preserving solutions and updated methods of preserving vascularized organs.

II. Clinical Transplantation

1. To know methods of timing used for today's organ transplantations.
2. To know necessity, appropriateness and other philosophical issues related to organ transplantation, HLA typing, PRA, blood group, age, waiting times.
3. To explain organ provision for potential organ receivers through united network of organ sharing. To discuss functions of local communities to optimize donor organ pool and to facilitate to receive and distribute organs.
4. To know indications of kidney, pancreas, heart, lung transplants and, patient and graft survival.
5. To know different drug schemas in initial, chronic period and rejection treatments

6. To define influence mechanism, dose schemas and side effects of immunosuppressive drugs.
    a. Azathiopurine
    b. Prednisone
    c. Antilymphocyte globulin
    d. Siklosporin
    e. Anti T3 monoclonal antibody
    f. Takrolimus (FK506) and other new immunosuppressive drugs
7. To know short and long term risks of chronic immunosuppression.
    a. Opportunist infections
    b. Cardiovascular problems
    c. Autoimmune diseases
    d. Lymphoproliferative diseases
    e. Rejection
8. To know diagnosis methods of hyperacute, acute and chronic organ rejections.
9. To know histological characteristics of all transplanted organ rejection and drug toxicity.

GOALS FOR SKILLS

1. To evaluate potential candidates for vacularized organ transplant from a living or cadaver.
2. To follow patients after vascularized organ transplants.
3. To participate in kidney, pancreas, liver and heart transplant team.
4. To follow immunesuppressive drug treatment and drug level and to treat potential toxicities.
5. To evaluate patients whom organ rejection is suspected of including the following factors.
    a. Laboratory and radiological investigations
    b. Provision of immunosuppressive agents
    c. Patient follow-up with respect to potential acute and chronic side effects.
6. To participate in multiple organ procurement from patient whose brain death occurred.
7. To define appropriateness criteria for organ transplant.
8. To define and treat post operational surgical complications.

D-3. ETHICAL AND LEGAL ISSUES IN SURGICAL APPLICATIONS

BASIC GOALS

- To know ethical and legal principles applicable for medical practices.
- To know and evaluate ethical and legal issues in surgical applications.
- To acquire ability of strategy development to resolve ethical and legal issues in surgical practices effectively.

GOALS FOR KNOWLEDGE

I. Ethical and legal issues about medical practice

1. To explain following concepts and evaluate their practices in surgery.
    a. Abortus
    b. Preliminary instructions
        (1) Patient self-determination
        (2) Letter of authority
    c. Well-being
    d. Bioethics
    e. Ethical rules
    f. Competence
    g. Confidentiality
    h. Continuity of care
    i. Care expenses
        (1) Cost-utility analysis
        (2) Expense control
        (3) Access to health services
        (4) Health service right
    j. Criminal law
    k. Death (including different legal definitions)
    l. Deontology ethics
    m. Do not resuscitate (DNR) order
    n. Hospital Ethics Committee
    o. Informed consent
    ö. Concepts of malpractice and complication
    p. Neglect
    r. Natural rights
    s. Nonfulfillment (not to fulfill a job ethically, or not to fulfill an ethical job.)
    ş. Palliative care
    t. Quality guarantee (issues related to continuous quality improvement)
    u. Quality of life
2. To define and evaluate similarities and differences between ethical and technical aspects of clinical decision making.
3. To know ethical and legal values and principles about surgery profession.

a. Criminal liability (Investigation of penal codes, primarily Turkish Penal Code, and providing practical suggestions)
b. Legal responsibility (lawsuits including financial compensation and compensation for mental anguish, investigation of related codes of contract law and cases of court decisions)
c. Professional liability (to inform procedures about investigation and jurisdiction regulations of Turkish Medical Association (TMA))
d. Administrative Responsibility (investigations and inspections within the institution, related codes of "laws of civil servants")

4. To evaluate professional and institutional resources and methods to resolve disagreements, ethical and legal issues.

II. Doctor – Patient Relationship

1. To investigate and explain ethical and legal characteristics of doctor – patient relationships
   a. Establishing a relationship
   b. Continuation of relationship including continuity of care.
   c. Rights of a patient about confidentiality of clinical information.
   d. Severance of relationship, abandonment of patient

III. Medical Records

1. To investigate ethical and legal aspects of medical record by fulfilling the following responsibilities
   a. Describing indispensable parts of records responding to both clinical and legal needs.
   b. Explaining role of inpatient/outpatient medical record and their following uses.
      (1) Accurate and full record of patients
      (2) Legal document
   c. Explaining legal consequences of changing or terminating medical records.

IV. Informed Consent

1. To analyze the concept of "informed consent" by fulfilling the following responsibilities.
   a. Definition of competence and its use in getting an informed consent.
   b. Determination of how to provide a patient to submit his or her consent voluntarily.
   c. Describing conditions of enrolled institutions for informed consent.
   d. Evaluating the statement regarding possible risks, which could be significant for the patient, have been explained.
   e. Discussing the importance of a second point of view in surgical decision making.
   f. Preparing a response for patient's rejection of the recommended treatment.
   g. Discussing ethical and legal aspects of prophylactic surgery applications.

h. To explain responsibilities of doctors in experimental interventions.

2. To know ethical and legal matters regarding death and related issues by taking the following things into consideration.
    a. Do not resuscitate (DNR) orders
    b. To suspend or continue the treatment
    c. To suspend or continue medical treatment lasting a life
    d. Nutrition and hydration
    e. Determination of death

V. Professional Responsibility

1. To determine appropriate approach to resolve the following problems.
    a. Doctor's fault
        (1) One's own fault
        (2) Any other one's fault
2. To know influences of refusing a medical treatment under the given conditions.
    a. If a treatment will be useless
    b. If a medical treatment causes a risk for doctors or other medical staff.
    c. If a doctor refuses treatment because of ethical reasons.
    d. If a doctor refuses treatment because of financial reasons.
3. To define ethical obligation of a doctor to participate in the following activities.
    a. Medical evaluation of doctors' or surgeons' personal activities
    b. General evaluations of surgical treatments.
4. To know confidentiality of records of medical evaluations
5. To discuss responsibilities of the profession to provide a better access to health services.
6. To discuss political and social activities in the profession.
    a. Membership and participation in professional associations.
    b. Communication with legislation.
    c. Social activism and education.

VI. Professional License and Certification

1. To describe procedures related to the following issues.
    a. Approval of assistant program
    b. Doctor/surgeon certification
    c. License
    d. Competence
2. To evaluate recertification.

VII. Professional Liability

1. To evaluate characteristics and issues in existing malpractice context by fulfilling the following tasks.

a. To define relationship between legal and medical professionalism and insurance industry in the resolution of malpractice accusations.
b. To discuss functioning and process of lawsuit in the resolution of malpractice accusations.
c. To know issues and objectives of legislation reform in civil justice system pertaining to professional responsibility.

2. To evaluate significance of the following variables.
   a. Potential lawsuit cases
   b. Techniques to refrain from malpractice/ manage the practice
   c. Legal neglect or neglectful scoring
   d. Distortion of proofs
3. To evaluate role, practice and procedures of professional responsibility.
   a. Risk management
   b. Quality guarantee
4. To evaluate lawyers representing the doctors in malpractice lawsuits and legal aspects of one-sided contacts.
5. Expertness in surgery.
6. Expertness in judicial justice (Institute of Forensic Medicine, Supreme Council of Health etc.)

GOALS FOR SKILLS

1. To evaluate different ethical concepts by giving examples of health administration especially those facts that made a rule or influenced medical ethics significantly.
2. To know how to behave in malpractice accusation including relations with claimants, lawyers and insurance corporations.
3. To take a proxy's informed consent including minor interventions.
4. To be able to maintain judicial practice in surgical applications.
   a. To know the definition and types of judicial events.
   b. To write a judicial report and understand its (theoretical and practical) significance
   c. To maintain a judicial surgical inspection (wound and its types)
   d. Judicial records – taking note-preservation of notes-sharing
   e. Judicial testimony
5. To participate in decisions and discussions about severance or continuity of treatment.
6. To make demands of patient and his/her family definite about severance or continuity of treatment.
7. To give instructions to restrict treatment in appropriate events.
8. To participate in detection and resolution of cases which surgical mistakes occurred.
9. To determine extent of personal participation in professional responsibilities.
10. To develop a plan for recognition and development of surgery or its minor branches
11. To participate in activities which surgical events have been evaluated.
12. To participate in management evaluation activities.

13. To overview options to reform health management system in Turkey, and define potential consequences of reform suggestions for surgical practice, patients' access to health services and costs of health service.

D-4. SURGICAL ONCOLOGY

BASIC GOALS

- To know biology, pathology, diagnosis, treatment and prognosis of neoplastic diseases.
- To maintain diagnosis, preparation for treatment, surgical treatment, competency in care and follow-up for cancer patients.

GOALS FOR KNOWLEDGE

Junior Level

1. To know death rates and frequency of five common benign and malign neoplasms encountered in Turkey with respect to men, women and children.
2. To evaluate particular solid neoplasms' tendency and frequency to increase or decrease.
3. To determine genetic factors among neoplastic patients with regard to known protooncogenes.
4. To know up-to-date theories of carcinogenesis.
5. To know tumor biology and natural pace of tumors.
6. To know diagnostic characteristics and differences of benign and malign neoplasms.
7. To know symptoms and signs of malign neoplasms.
8. To explain characteristics and uses of different phasing systems to evaluate malign neoplasms.
9. To know appropriate use of tumor markers, tumor secretion metabolytes and diagnostic cytologic techniques.
10. To know nutrition needs of cancer patients and their difference from other patients.
11. To define indications of curative and palliative treatment and treatment plans for all approaches.
12. To know up-to-date research topics in cancer immunotherapy
13. To know up-to-date techniques of genetic screening for cancer screening.
14. To define biological reasoning and current situation of mechanism of malignities in gene treatments.
15. To evaluate economical and psychosocial aspects of malign diseases and their implications on the treatment and care of cancer patients.
    a. Ethics of approaching to a cancer patient
    b. Rehabilitation
    c. Home care resources
    d. Patients support groups
    e. Family support groups
    f. Enterostomal care
    g. Cost control
    h. Procedures and authorities before being an inpatient
    i. Use of hospital's resources
    j. Tumor record data
16. To evaluate appropriate social services and community resources for all issues mentioned above.

Senior Level

1. To know frequently encountered malignities and typical symptoms and signs of different type of neoplasms.
2. To maintain both clinical and pathological classification of naoplasms by using tumor, nodule and metastasis (TNM) system.
3. To evaluate tumor phase in relation to prognosis
4. To compare treatment method practices of tumors' prognosis in the field of general surgery.
5. To know preparation of cancer patients by recovering metabolic and nutrition disorders.
6. To know post-operational screening and follow-up methods of frequently encountered malignities.
7. To know indications and implications of pharmacological support in post-operational period.
8. To know indications and means of initiating pre/post-operational nutrition support for cancer patients.
9. To explain basic principles of radiation oncology and its application to selected benign and malign lesions as primary treatment.
10. To know indications and methods of adjuvant treatments in the field of general surgery with respect to chemotherapy, radiotherapy, immunotherapy and gene treatment.
11. To define criteria and necessary procedures for intraoperative monitorization of cancer patients' cardiovascular and respiratory functions.
12. To know the necessity of holistic treatment in the treatment of cancer patients
13. To know and practice palliative and curative treatment plans.
14. To gather clinical and demographic data appropriate for tumor data bank.
15. To know indications and demands for appropriate consultation.
16. To know cancer research methodology, the extent to which research have enlightened and new attempts.

GOALS FOR SKILLS

Junior Level

1. To take full anamnesis and physical inspection in cancer patients.
2. To evaluate appropriate distinctive diagnoses for every cancer patient.
3. To excise benign lesions of skin, skin structure and breast. To maintain appropriate wound care and follow-up.
4. To excise skin cancers with appropriate limitations, to practice and follow-up appropriate covering methods.
5. To cover wounds in an appropriate manner following major resection.
6. To provide necessary care for colostomy and ileostomies
7. To arrange appropriate nutrition programs in pre/post operational period.
8. To assist colostomy, ileostomy operations and liver and lung wedge resections.
9. To maintain lymph nodule biopsy, breast biopsy and similar operations.
10. To participate in preparation for macroscopic pathological surgical structure.
11. To evaluate frozen section slides under supervision.
12. To create nutrition evaluation and nutrition support programs.

13. To maintain nutrition gastrostomy and tube jejunostomy.
14. To establish a relationship between clinical and pathological symptoms based on clinical table and operation symptoms of every cancer patient

Senior Level

1. To maintain care of cancer patients including all characteristics of them.
2. To maintain clinical and pathological classification of particular neoplasms by using TNM system.
3. To prepare patients for cancer surgery by taking nutrition and metabolic deficiencies into consideration.
4. To detect need for appropriate monitorization before and after operations and to practice it.
5. To provide appropriate support with pharmacological agents.
6. To maintain operation plan for malign disease treatment.
7. To maintain every kind of colostomy, covering colostomies and intestinal anastomosis.
8. To take on responsibility about psychosocial aspect of neoplastic diseases.
9. To maintain major and complex neck, thorax, stomach and breast operations under supervision.
10. To use appropriate social group in the care of cancer patient.
11. To contribute to education of junior assistants and to take on responsibility in educational planning.
12. To apply laser treatment by taking necessary precautions when indicated.
13. To participate in departmental meetings, evaluation of junior assistants and to take responsibility in at least one of hospital committees.
14. To maintain every kind of endoscopy (upper and lower gastrointestinal).

D-5. SURGICAL ENDOSCOPY

BASIC GOALS

- To know characteristics of different endoscopic devices and to acquire skills to use them in the diagnosis and treatment of diseases.

GOALS FOR KNOWLEDGE

Junior Level

1. To know normal anatomic and physiological characteristics of gastrointestinal system, airways and mediastinum.
2. To define endoscopic appearance of following sections. To know characteristics of normal and pathological appearances
    a. Hypopharynx
    b. Larynx entrance
    c. Esophagus
    d. Stomach
    e Duodenum
    f. Papilla Vateri
    g. Small intestines
    h. Colon and rectum
3. To define frequently encountered pathological cases
    a. Hypopharynx
        (1) Tumors
    b. Larynx entrance
        (1) Tumors
        (2) Vocal cord paralysis
    c. Esophagus
        (1) Esophagitis
        (2) Varices
        (3) Barrett esophagus
        (4) Esophagus tumor
        (5) Straits
    d. Stomach
        (1) Ulcers
        (2) Varices
        (3) Polyps
        (4) Erosive gastritis
        (5) Obstruction of stomach output
        (6) Bezoard
        (7) Marginal ulcer
        (8) Resection and anastomosis types
        (9) Tumors
    e. Duodenum
        (1) Ulcers
        (2) Polyps

(3) Inflammatory situations
(4) Tumors
(5) Diverticulums
(6) Straits

f. Small intestines
(1) Enteroclysis indications
(2) Crohn's disease
(3) Vascular dysplasia
(4) Tumors
(5) Diverticulums

g. Colon and rectum
(1) Polyps
(2) Diverticulums
(3) Inflammatory diseases
(4) Ischemia
(5) Tumors
(6) Melanosis coli

4. To realize standard triangulation during endoscopy
a. Stomach
(1) Cardia
(2) Fundus
(3) Corpus
(4) Incisura angularis
(5) Antrum
(6) Pylorus

b. Duodenum
(1) Bulbus
(2) Papilla Vateri
(3) Duodenum distal

c. Colon
(1) Rectum
(2) Rectosigmoid corner
(3) Sigmoid colon
(4) Descending colon
(5) Left flexure
(6) Transverse colon
(7) Right flexure
(8) Cecum
(9) Ileocecal valve
(10) Appendix orifice

5. To know indications of diagnostic and treating endoscopic operations
a. Upper gastrointestinal endoskopy
b. ERCP
c. Colonoscopy
d. Rectosigmoidoscopy

6. To define technical characteristics of endoscopic equipment
7. To have information about routine care and minor repairs of endoscopes
8. To know sources of error in operations.
9. To know endoscopic interventions methodologically.
    a. Patient preparation
    b. Intubation
    c. Biopsy techniques
    d. Cytology techniques
    e. Administration of biopsy material
    f. Polypectomy
10. To know sedation, analgesia and anesthesia applications during endoscopic interventions.
11. To define indications of scopic evaluation, dose adjustment and preservation methods from radiation.

Senior Level

1. To explain physiopathology of diseases which rigid or flexible proctosigmoidoscopy was indicated.
    a. Ulcerative colitis
    b. Crohn's disease
    c. Rectal polyp and tumors
    d. Pseudomembranous enterocolitis
    e. Ischemic colitis
    f. Rectal ulcers
    g. Anorectal tumors
    h. Sigmoid volvulus
2. To understand therapeutic maneuvers used during endoscopy.
    a. Dilatation
    b. Laser ablation
    c. Diverticulum repair
    d. Sclerotherapy
    e. Electrocautery use
    f. Polyp excision
3. To analyze diagnosis and treatment of gastrointestinal hemorrhages of endoscopy.
4. To know complication risks and prevention ways of endoscopic operations.
5. To define and categorize endoscopic appearances of different diseases.
6. To evaluate use of laparoscopy in surgical operations including the following activities.
    a. Indication and contraindications
    b. Technical and practical characteristics
    c. Post-operational care
    d. Comparison of open and laparoscopic with respect to morbidity and mortality.
    e. Complications
7. To evaluate legal and ethical issues about endoscopic operations

GOALS FOR SKILLS

1. To manipulate endoscope under supervision in routine operations.

2. To recognize pathologic appearances and to relate them to characteristic of patient
3. To observe and follow anesthesia and sedation techniques.
4. To prepare patients for different endoscopic operations.
5. To clear and disinfect endoscopic equipment under supervision.
6. To apply rigid sigmoidoscopy under supervision.
7. To apply flexible sigmoidoscopy under supervision.
8. To develop eye-hand coordination through models (maquette).
9. To assist following endoscopic operations.
    a. Upper gastrointestinal endoscopy
    b. Colonoscopy
    c. ERCP
10. To maintain the following operations in an advanced level.
    a. Non-complicated operations under supervisions
        (1) Removal of endometrial polyp
        (2) Endoscopic gastrostomy
    b. To apply upper gastrointestinal endoscopy under supervision
    c. To assist therapeutic endoscopic operations
        (1) Varix sclerotherapy
        (2) Removal of an unfamiliar object
        (3) Polypectomy
        (4) Gastrostomy
        (5) Stent applcations
        (6) ERCP
        (7) Mucosal resection
11. To determine what to expect from which operation and, based on that knowledge, endescopic interventions necessary for patients
12. To provide the patient with necessary information.

D-6. MINIMALLY INVASIVE SURGERY

BASIC GOALS

- To understand minimally invasive surgery applications and their risks.
- To understand technical and physiological principles of minimally invasive surgery.
- To let principles of minimally invasive surgery become an application philosophy that will guide development and evolution of surgical techniques of the future.

GOALS FOR KNOWLEDGE

I. General Inspection

1. To differentiate between conventional open and scope-assisted surgery including the following activities.
    a. Anesthesia characteristics
    b. Effect of pneumoperitoneum
    c. Cardiovascular stability
    d. Need for team participation
    e. Differences in (post operational) patient outcome
2. To know the physical limitations imposed on the user participating in minimally invasive surgery
    a. Surgeon fatigue and diminished proficiency over time.
    b. Two-dimensional perspective
    c. Visual limitations of scope and monitoring equipment
3. To know the factors affecting the decision to select a minimally invasive approach for a particular general surgery applications.
4. To maintain quality control in the education and valuation of surgical house staff in developing proficiency in minimally invasive surgery with respect to the concept of learning curve.
5. To know the mechanics and principles of using the following equipment/procedures:
    a. Cautery
    b. Laser
    c. Telescopic direction
    d. Insulation technique and hazards
    e. Maintaining visualization of operative field
    f. Dissection and knot tying
6. To know appropriate anesthetic management for minimally invasive techniques for surgery involving the abdomen, thorax, and joints.
7. To evaluate areas of current investigation in minimally invasive surgery including
    a. Virtual reality
    b. Use of robots/robotics
    c. Three-dimensional imaging systems

8. To learn protocols for appropriate cleaning, sterilization, maintenance and transplantation of minimally invasive intervention equipments.

9. To know the potential economic impact of increased utilization of operating room time, advanced equipment, and disposable instruments on health care costs.

II. Laparoscopic Cholecystectomy

1. To learn the indications and contraindications for laparoscopic cholecystectomy.
2. To know the technical aspects of preparing for and operating on a patient undergoing laparoscopic cholecystectomy.
3. To identify major considerations for the decisions involved in converting from laparoscopic to open cholecystectomy, including.
    a. Poor visibility Difficulty
    b. Hemorrhage control problems
    c. Evaluation and treatment of visceral or vascular injuries
4. To know management options for handling bile duct injuries, including immediate and delayed diagnosis and treatment.
5. Specify the indications and technique for choledoc exploration (common bile duct exploration (CBDE)) including use of percutaneous cholangiography and choledochoscopy

III. Additional Laparoscopic Procedures

1. To learn current theories, including advantages and disadvantages, regarding the use of laparoscopic anti-reflux procedures and myotomies.
2. To know the potential benefits and limitations of the following
    a. Laparoscopy-assisted colectomy
    b. Pre- and trans-peritoneal groin hernia repairs
3. To know other intra-abdominal laparoscopic procedures currently being performed including the following
    a. Adrenalectomy
    b. Gastrectomy
    c. Splenectomy

IV. Thoracoscopic Procedures

1. To know the potential applications of thoracoscopic surgery, including the following procedures
    a. Pulmonary resection
    b. Lung biopsy
    c. Pleurectomy
    d. Decortication

GOALS FOR SKILLS

1. To be able to provide assistance in laparoscopic surgery (e.g., manage camera, first assist).
2. To perform entry of body cavities using open and closed access techniques.
3. To perform minimum invasive surgery procedures of increasing complexity under supervision

4. To acquire the ability to convert from an minimal invasion to an open approach in a variety of surgical settings.
5. To complete additional minimally invasive surgery training as necessary through specialized courses at the home or outside institution to certify one's proficiency in performing currently practiced and widely accepted procedures.

D-7. RESARCH AND BIOSTATISTICS METHODS

BASIC GOALS

- To understand research principles and their practice in general surgery applications
- To have information about study designs and use of statistical methods, and their applications.
- To have information about role of clinical database in clinical research and patients treatments.
- To acquire the ability to critically evaluate data provided by pharmaceutical companies, producers of medical tools and devices.

GOALS FOR KNOWLEDGE

1. To know differences between the following study (research) types
    a. Descriptive or case series
    b. Case control (retrospective)
    c. Cohort (prospective / frequency)
    e. Clinical study
    f. Sequential (repeated measures)
    g. Crossbreeding
2. To discuss the following concepts related to study designs.
    a. Internal or external value determination (validity) (generalizability)
    b. Major limitations against internal and external value determination
    c. Randomization, random sampling
    d. Criteria to include or exclude a case for the study.
    e. Double blind, blocking, stratification
3. To explain the difference between the following measurement scales.
    a. Nominal
    b. Ordinal
    c. Interval
    d. Ratio
4. To determine the differences between the following data presentation techniques/methods.
    a. Frequency distribution
    b. Bar graph
    c. Probability table
    d. Histogram
    e. Frequency polygon
5. To know the differences the following statistical methods used to summarize or define the data.
    a. Mode, median

b. Distribution (range), standard deviation
c. Percentile, interquartile distribution
d. Rate, frequency and ratio

6. To interpret the following statistical evaluations
   a. Mortality, morbidity, cause related mortality rates
   b. Prevalence, frequency
7. To evaluate the relationship between two variables
   a. Pearson correlation coefficient
   b. Determination coefficient
   c. Spearman rank correlation
   d. Relative risk, odds ratio
8. To interpret concepts and terms which are related to drawing a conclusion out of the research data.
   a. Population or sampling
   b. Population distribution, sampling distribution, standard normal distribution
   c. Standard error or standard deviation
   d. Hypothesis test, null and alternative (research) hypothesis
   e. Parametric or non-parametric tests
   f. Confidence intervals
   h. Significance level, alpha level, p value
   i. Type I error, type II error, power analysis, power
9. To define concepts about the following significance tests and means comparisons.
   a. Independent and paired t-test (parametric tests)
   b. Wilcoxon rank-total test (Mann-Whitney U or Mann-Whitney-Wilcoxon Rank-total test) (non-parametric tests)
   c. Wilcoxon signed-ranks test (nonparametric tests)
   d. One-way variance analysis (ANOVA)
   e. Two-way ANOVA
   f. Repeated measures ANOVA
   g. Statistical interaction
   h. Planned comparisons
   i. Posterior or post-hoc tests such as Tukey, Scheffe, Newman-Keuls, Bonferroni and Dunnett.
10. To explain concepts and significance level related to comparison of rates.
    a. Z-approximation test
    b. Chi-square test
    c. McNemar test for paired groups to compare rates
    d. Sampling size and interpretation of chi-square statistics
    e. Fisher exact test
11. To know related concepts and significance level with regard to examining the relationship between two or more variables
    a. T test to examine significance of correlation.
    b. Fisher's Z transformation
    c. Confidence interval for relative risk and odds ratio

d. Simple and multiple linear regressions
e. Standard error of estimate
f. Confidence bars for regression line
g. Comparison of two regression lines
h. Examination of significance of regression line and regression coefficient.
i. Stepwise multiple regression
j. Logistic regression

12. To define the following concepts for the analysis of survival data
    a. Actuarial or life table analysis or Kaplan-Meier
    b. To compare two survival curves by using Gehan or generalized Wilcoxon test, log rank test and Mantel-Haenszel chi-square tests
    d. Cox regression
13. To interpret the following concepts related to diagnostic tests and interventions.
    a. Sensitivity and specificity
    b. Gold standard
    c. Predictive value of positive or negative test
    d. Index of suspicion or former probability
    e. Likelihood ratio method
14. To understand principles and concepts about medical research ethics.
    a. Helsinki Declaration
    b. Informed consent
    c. Institutional ethical committees and animal experiments committee
    d. Ethical use of animals in research
    e. Confidentiality and anonymity
    f. Authenticity and accuracy in publishing research data
15. To explain clinical data bases for the following procedures and concepts.
    a. Role of clinical databases in clinical research and outcome research
    b. Database terminology such as field, record, research, report production.
    c. Data coding, data entry and data separation
    d. Use of standardized databases such as hospital tumor records, trauma records.
    e. Database development

GOALS FOR SKILLS

1. To maintain a literature review based on computer databases such as Medline.
2. To compose a brief report of literature review including a synthesis of major findings and suggestions for surgical applications.
3. To evaluate articles critically by using the checklist given below.

Checklist for Literature Reading and Critical Reasoning

OUTLINE

----- Is a satisfactory abstract of the purposes and results of the study explained in this part?

INTRODUCTION

------ Are the purpose and rationale clearly stated? Are they plausible and persuasive

------ Is the literature review clearly discussed and associated to current study?

METHODS

----- Is the research design clearly stated?

----- Is the research sample(s) clearly defined? Is (are) selection method(s) of the sampling(s) clearly stated?

----- Are the data collection methods/strategies including reliability and validity clearly explained?

PROBLEMS

----- Are the characteristics of sample(s) described?

----- Are the results associated with the purpose and rationale of the study?

----- Are actual values presented? (e.g. not only statistical test results and p values, but also means, standard deviations or standard errors, percentiles.)

---- Are the subjects informed about the research? Did the researcher take informed consent?

DISCUSSION

----- Are the results of research clear supported by the data?

----- Do the authors draw conclusion(s) beyond the results gained through the data?

----- Are the research environment and subjects representative enough to generalize the results for other subjects and environments?

----- Are there major threats against internal and external validity which could influence the given results?

4. To overview frequently diagnostic procedures and accuracy of laboratory tests in surgical practice by defining sensitivity, specificity and predictive values.
5. To develop and apply a computer based clinical database by using statistical database package.
6. To prepare a case presentation or publishing.
7. To design and maintain a surgical research by fulfilling the following steps.
    a. To select a researchable topic by including a trainer.
    b. To overview the literature
    c. To formulize hypotheses.
    d. To determine key variables (both predictor and result), to decide the optimal level of measurement, to measure reliability.
    f. To select population and study sampling.
    g. To develop sampling selection attempts.
    h. To select measures.
    i. To conduct a study protocol and prepare application to submit institutional ethics committee.
    j. Data collection and investigation.
    k. Interpretation of results.
    l. To examine different journal formats and rules of writing.
    m. To write the text
    n. To examine techniques of proceedings and posters to present them effectively.

o. To convert the article into a presentation.
p. To present the article.

D-8. PATIENT PREPARATION AND CARE IN PREOPERATIVE PERIOD

BASIC GOALS

- After the parameters like age, sex, body weight and height are obtained firstly, the applicants complaints and his/her short summary, autobiography, genetic past, system intorragation and a physical examination with an evaluation of general body health should be performed on the patient, prior to a planned surgery.
- The preparation of the cure plan according to the symptoms and clinical diagnosis of the disease requiring a surgery on the patient.
- Determining the features of the planned surgery and striving out the possible risks of the anesthesia to be applicated on the patient.
- Before the elective major surgery interferences, the minimum routine studies must be known prior to surgical applications if, some supporting health problems of the patient are nonexistent.

GOALS FOR KNOWLEDGE

1. Intorragating all of the patient's system and learning how the pathological data, occurable at the end of those, would effect the surgery.
2. Recognizing how the pathologies and processes related with the upper and inferior respiratory system would effect post operational period of the surgery.
    a. Sinusitis, toncillits, inferior respiration infection
    b. Chronic obstructive pulmonary disease
    c. Pulmonary embolism
    d. Smoking
3. Recognizing that the respiratory reserves of the patient should be evaluated objectively in presence of acute and chronic pathology.
    a. Taking the throat and sputum cultures
    b. Frontial and rear pulmonary graphy
    c. Examine the blood aeriform
    d. Respiratory functional tests (like; forced vital caoacity = FVC, forced expiration volume at the first second = FEV 1)
4. Recognizing that the cardiac reserve should be evaluated in scope of the points mentioned below.
    a. Effort dyspnea, paroxysmal nocturnal dyspnea, palpitation story
    b. Hypertension or a transmitted myocardial infarction
    c. Cardiovasculer surgery narrative interference
    d. Searching the anticoagulant, anti-agregan, coronary dilatator or antihypertensive drug usage
5. To acquire how the problems related to Cardiovascular system occur, how the drugs used effect the surgery process and anesthesia and cause for complications.
6. To understand the importance of the cardiovascular system evaluations and to be aware of things to be done.
    a. Electrocardiogram
    b. Telecardiogram

c. Ecocardiography if required
d. Angiography or myocardium scintigraphy if required

7. Extensive interrogation related to gastrointestinal system and to understand the importance of physical examination.
   a. Persistent nausea-vomitings
   b. Gastroenteritis, inflammatory intestinal diseases
   c. Infectious hepatitis interrogation
   d. Demanding hepatitis markers
8. To learn what kind of preparations should be done before intestine surgeries and its importance.
9. Evaluating the genito-urinary system in scope of functional features and knowing the importance of kidney functions.
   a. urine ascent
   b. Infections
   c. Other functional features
10. Interrogating the prostate pathologies of male hernia patients to be operated and to know the importance of the evaluation with physical examination.
11. To understand the possible pregnancy of females in fertile age or otherwise to acquire the possible problems.
12. Routine demand of kidney function tests in genito-urinary system and full urine interrogation, taking samples in case of suspicion, overlapping the pregnancy, to understand the pregnancy test obligation.
13. Comprehend the importance of the detailed physical examnination in order to obtain the interrogation and existence of neurovascular problems in line of pathologies related to extremity.
14. Understand an arterial ischemia problem in extremitie and to know the requirements to be done.
   a. Examination of the pulse
   b. Search for existence of trophic failures in extremities.
   c. Evaluating the neuropathy with a practical neurologic examination on diabetes patients.
   d. Searching for varicosis, chronic venous insufficiency, faced hard venous thrombosis.
15. To know the importance of the evaluation of the general interrogation and physical examination done for the endocrine system and how their pathologies would effect the during and after surgery process.
16. To understand the importance of preparations mentioned below related to patients having endocrine system pathologies.
   a. To accept a patient with diabetes to operation as normoglycemic
   b. Taking the patient having hypo or hyperthyroidism into euthyroid condition.
   c. To be aware of measures to be taken in case of hypercortisolism.
17. Being aware that the evaluation of patients nourishment condition is important.
   a. Determine the ideal weight, body-mass index.
   b. To be aware of rush weight losses.
   c. Acquiring the alternations on nourishment habituations
   d. Detecting the existence of a malnutrition or morbid obesity

18. To know that during hematologic system interrogation especially the asthenia and hemorrhage affinity should be investigated carefully, the skin pale, petechia, purpura must be inspected regarding spillage, to be aware of the importance about liymphadenopathy search with palpation on the neck, axilla and inguinal areas, complete blood test and if required demanding peripheric emission and how their results should be evaluated.
19. To investigate if the patient faced a psychiatric problem and the related drug usage narrative and its importance, searching the alcohol or other addictions (especially morphine and its derives) and to acquire what related defect indications might be.
20. To acquire how the surgery process and following healing period would be effected, if the patient has received chemotherapy or other immun system supresible cures previously.
21. Inquiring what kind of measures should be taken for the patient in order to avoid infections on operated areas.

GOALS FOR SKILLS

1. Evaluating the diagnosis determined during the physical examination.
2. Evaluating the frontial and rear pulmonary graphy by considering the diagnosis like parenchyma, mediastenum, heart area, appearance of plonge goitre view.
3. Providing blood gases, ability of interpreting respiration test results, convincing smoking patients to leave the addiction prior to the surgery.
4. Cure the infections within the respiratory system by using suitable methods.
5. Evaluating cardiovascular system investigations like electrocardiography, telecardiogram, ecocardiography, angiography or thalium miocardium scintigraphy, if required decide for consultance with the cardiology clinic and consequently start with the suitable therapy.
6. To understand that patients, using anti-coagulant drugs or aspirin should give up medication them at least in 1 week before the surgery and start with, mostly low molecule containing, heparins.
7. Investigating the diagnosis related to aftermaths of the drug used on a digitalized patient and requesting blood digoxin level if necessary.
8. Starting with liquid replacement on patients having serious liquid lacking by applying central venous catheter and bladder sound.
9. To be aware of possible complications related to central venous catheter and their therapy and to obey the catheter care principles in respect of infective complications.
10. To know the necessary precautions to be taken within the hospital area for patients with active B and C-type hepatitis and training the collegues and assistant healthcare employees in scope of this subject.
11. Evaluating the patient's coagulation parameters and liver function tests and if necessary keeping fresh frozen plasma previouslt against the problems which may occure during the surgery.
12. Start with colon purification on the most suitable time for the patients to be send to elective intestinal surgery.
13. Evaluating the condition of the anorectum and also the prostate by rectal examination, to know that prostate pathologies should be cured firstly by patients with hernia.

14. Skill achievement for extremity examinations done in scope of arterial and venous circulation.
15. Search for the reasons of perfusion corruptions on extremities, requesting investigations like pressure measurements and angiography and interpreting their results.
16. One of the pharmacologic or mechanic thromboembolism prophylaxis methods should be chosen and applied for the surgery, in case of detecting varicosis, insufficiency related to the venous system,.
17. To evaluate a patient who might have a long lasting major interventions in terms of thromboemboly risks and select prophylaxis applications even though any pathology regarding venous system has been found.
18. Applying the required protocols for the preparations of patients who have diabetes, hyperthyroidism, hyperthyroidis, pheochromocytoma, hypercortisolism.
19. To provide preoperational nutrition support through parenteral, enteral or both of these routes after determining the protein-energy need of patient with severe malnutrition, to apply required means of access (e.g. central catheter, feeding tube or stoma)
20. To research causes of anemia, thrombopenia or leukocytosis that are detected in full blood count. To prefer erytrocyte suspension (when needed) for operation instead of full blood count, to know the criteria about thrombocyth need.
21. To have patient have a shower one day before the operation in order to prevent surgical site infections, to know how to epilate hairs of operation region in the operation room by a machine and prophylactic antibiotic applications.

D-9. PATIENT CARE IN POSTOPERATIVE PERIOD

BASIC GOALS

- To know the approaches of follow-up in the operation room after the operation and awaken unit
- To know fluid electrolyte treatment and nutrition support in the post-operative period.
- To understand the importance of pain treatment in post operative period.
- To maintain pulmonary care in the post operative period.
- To understand importance of approach toward thromboemboly and early mobilization in the past operative period.
- To maintain follow-up of gastrointestinal period in the post operative period.
- To maintain care and follow-up of operation wounds

GOALS FOR KNOWLEDGE

1. To know how to take a patient to the stretcher after the operation.
2. To know remarkable points in the follow-up of awaken unit.
3. To know importance of hemodynamic follow-up especially after first 24 hours following operation and to know important parameters of follow-up.
4. To learn use and dose of narcotic analgesics for severe pain problems in the first day and early period after the operation, patient control analgesy applications and terms of use of the devices.
5. To know basic principle while maintaining fluid and electrolyte replacement during the post operational period.
    a. To compute patient's fluid need based on his or her age, weight, and clinical diagnoses.
    b. To compute electrolyte (e.g. Na, K, CL) need and replacement principles.
    c. To learn fluid restriction in such processes as congestive cardiac failure and chronic kidney failure
    d. To know necessity of bladder sound and central catheter to maintain regular follow up of critical patient.
    e. To understand the importance of hourly urine output and to know consequences and solutions of kidney hemorrhage especially in the post operational period.
    f. To learn that fluid need of patients with fever, drain or severe loss from the stoma will increase.
    g. To know electrolyte content of gastrointestinal fluids.
    h. To know the content of parenteral fluids qualified as crystalloid and colloid.
6. To know that patients need nutritional support if start time for post operational oral nutrition will be 5 days or more.
    a. To know that the hemodynamic of a patient should be stable before starting any kind of nutritional support.
    b. To learn the necessity to prefer enteral route in nutritional support applications when gastrointestinal channel is convenient for nutrition intake as well as advantages of enteral nutrition and their application styles.
    c. To learn application characteristics and complications of parenteral and enteral nutrition.

7. To understand the importance of regular auscultation of lungs in the post operational period and to be able to interpret the inspection results.
8. To learn crucial points in lung care and respiration exercises in the post operational period.
9. To know significant issues about abdomen inspection in the post operational period.
10. To understand importance of evaluating lower extremities in terms of venous thromboemboly and early mobilization.
11. To learn surgical wound types, learn operation wound care based on asepsis and antisepsis rules, and to learn the concepts such as incision site infection, evisceration, and eventration.

GOALS FOR SKILLS

1. To take precautions while patients are taken to a stretcher, their transportation, and locate them in intensive care unit and apply how to provide the most convenient positions for them.
2. To let patient take narcotic analgesic drugs with appropriate doses in the operation day and the following day after operation to control pain or to prefer patient control anesthesia, to maintain a careful follow-up of lungs regarding possible complications with the awareness that a patient with pain has a difficulty in respiration.
3. To provide fluid electrolyte treatment based on principles of effective fluid electrolyte, to evaluate the extent to which the patient's fluid need is met by measuring central venous pressure and hourly urine output through central venous catheter and ladder sound, to know especially the importance of kidney hemorrhage in the early post operational periods and to meet the fluid need and to preserve the patient from acute tubular necrosis, to replace them by taking patient's loss from drains or stomas and their content into account.
4. To initiate nutritional support at an appropriate level primarily through enteral route for the patient whose oral intake will be late, to meet vitamin and element needs throughout the nutritional support.
5. To control lungs of the patients during their post-operational visits, to provide respiration exercises when needed.
6. To evaluate abdomen through inspection for the upcoming complications. To evaluate fluids drained from nasogastric tube and to specify patient's transition process to oral nutrition.
7. To evaluate diameter difference in lower extremities especially the difference between two extremities in calf region or to apply methods like Homans test, to ask doppler ultrasonography if there is no suspect toward thromboemboly
8. To dress in operation wounds according to asepsis and antiasepsis conditions, to diagnose upcoming infections in the wounds, to take culture samples, to drain collections, to evaluate the amount and content of fluids coming from drains.

D-10. ACUTE ABDOMEN

BASIC GOALS

- To understand surgical, medical and nonspecific factors causing suddenly emerging stomachs.
- To differentiate the causes of sudden stomachs
- To define acute abdomen situations requiring surgical intervention
- To main follow-up in necessary cases, to plan preoperational support treatments
- To acquire the ability to maintain timely operations for patients who are thought to have surgical acute abdomen.

GOALS FOR KNOWLEDGE

Junior Level

1. To examine anatomical and embryological structure and physiological characteristics of intra, retro and juxta peritoneal tissue and organs.
    a. Anatomy, embryology, physiology and microbiology of intra-abdominal and retroperitoneal organs and gastrointestinal tract
        (1) Embryological development, rotation and fixation of "fore-gut and hind-gut"
        (2) Anatomy and hemorrhage of intra-abdominal digestive channel
        (3) Anatomy of abdominal cavity and its relation with lower thorax, pelvis and retroperitoneum
        (4) The relation of periton level and GİS lumen with fluid and electrolyte balance
        (5) Physiology of GI secretion and motility
        (6) Nutritional needs of surgical patients
    b. Normal flora of GI tract
    c. Immunological characteristics of GI tract, and its relationship with sepsis trauma
    d. Principles of wound healing in GI tract
    e. Biliary and pancreatic obstruction and diagnosis and treatment principles of infections.
2. To know characteristics and physiopathology of suddenly emerging stomachs
    a. Parietal pain
    b. Visceral pain
    c. Referred pain
3. To know pathological processes causing acute abdomen
    a. Perforation
    b. Obstruction
    c. Ischemia
    d. Inflammation
    e. Hemorrhage
    f. Embryologic anomalies causing acute abdomen
        (1) Stricture

(2) Stenosis
(3) Artesia
(4) Malrotation

g. Congenital and acquired motility disorders
h. Causes of paralytic ileus

4. To know factors that form pathologies causing acute abdomen
   a. Neoplasic
   b. Traumatic
   c. Infectious
   d. Neurogenic
   e. Vascular
5. To know diseases which are composite of acute abdomen and require medical treatment.
   a. Peptic ulcer
   b. Hiatus hernia
   c. Upper and lower GIS malignancies
   d. Gastroparesis
   e. Inflammatory intestinal diseases
   f. Diverticulitises
6. To know different kinds of pains causing acute abdomen across different pathologies.
   a. Obtuse pain
   b Severe pain
   c. Colic pains
7. To know pain localizations according to pathologies that lead to acute abdomen and their dispersal regions.
8. To know the importance of evaluating duration of pain in anamnesis.
9. To know the importance of inquiring accompanying symptoms of pain.
   a. Anorexia
   b. Nausea, vomiting
   c. Syncope
   d. Fever
   e. constipation / diarrhea
   f. Hematemesis / melena
   e. Hematuria / dysuria
   g. Vaginal flow
10. To know that systemic inspection as well as abdomen inspection is important for those who are suspected of acute abdomen.
11. To know the following details to diagnose acute abdomen.
    a. The story
       (1) Pain
       (2) Anorexia / nausea / vomiting
       (3) Intestinal functions
       (4) Previous episodes
       (5) Previous operations
       (6) Syncope
       (7) Fever

(8) Hematemesis / melena
(9) Haematuria / dysuria
(10) Vaginal flow

b. Physical detection
(1) Inspection
(2) Auscultation
(3) Percussion
(4) Palpation

c. To know evaluation and indications of visualization methods.
(1) Outpatient lung graphy and detection of free air under the diaphragm
(2) Outpatient abdominal plain graph and evaluation of air-fluid levels
(3) Abdominal ultrasonography
(4) Abdominal computerized tomography
(5) Mesenteric/splanchnic angio

d. Rigid endoscopy and sigmoidoscopy

Senior Level

1. To know which investigations are needed for diagnosis according to anamnesis and inspection findings, and to know diagnostic values.
   a. Levels of investigations
      (1) Hemoglobin, hematocrit, leukocyte
      (2) Urine
      (3) Lung graphy
      (4) Outpatient/inpatient direct abdomen graphy
      (5) EKG
      (6) Abdominal USG
      (7) Abdominal BT
   b. Level tests
      (1) Tests of liver functions
      (2) Amylase
      (3) Pregnancy test
      (4) Hemorrhage / coagulation tests
      (5) Hidden blood in stool
   c. Level tests
      (1) Selective angiography
      (2) ERCP
      (3) Contrasted conventional inspections
      (4) Diagnostic peritoneal lavage
      (5) Laparoscopy
2. To know diseases that must be considered in the diagnosis.
   a. Emergent situations accompanying hypotension
      (1) Abdominal aorta rupture /aneurysm
      (2) Myocardial infarction
      (3) Ruptured ectopic pregnancy
   b. Emergent cases causing rigidity in abdomen

(1) Peritonitis
(2) Diabetic ketoacidosis
(3) Uremic peritonitis
(4) Typhoid, tuberculosis
(5) Familial Mediterranean fever
(6) Lead and fungal toxicity
(7) Primary bacterial peritonitis

c. Diseases of which symptoms and findings can not be precisely localized
(1) Abdominal aorta aneurysm
(2) Mesenteric ischemia
(3) Intestinal obstruction
(4) Pancreatitis
(5) Apandisitis in the early period
(6) Inflammatory intestinal diseases
(7) Infectious enteritis
(8) Metabolic reasons
(a) Addison disease
(b) Hypercalcemia
(9) Toxic reasons
(a) Iron, ethanol, methanol toxicity
(10) Genetic diseases
(a) Porphyry
(b) Sickle cell anemia
(11) Autoimmune diseases
(a) Mesenteric vasculitis
(b) Henoch-Schonlein puerperal

d. Diseases that can localize symptoms and findings
(1) Epigastria region
(a) Ischemic cardial diseases
(b) Pericarditis
(c) Pneumonia, pleuritis, empyema, pulmonary emboly
(d) Esophagitis, esophagus perforation
(e) Peptic ulcer activation / perforation
(f) Acute pancreatitis
(g) Proximal small intestinal obstruction
(2) Right upper quadrant
(a) Hepatobiliary diseases
- Acute cholecystitis, cholangitis, hepatitis, hepatic abscess subphrenic abscess
(b) Ascending retrocecal appendicitis
(3) Left upper quadrant
(a) Abdominal aorta aneurisms rupture / dissection
(b) Splenic artery aneurism rupture / dissection
(c) Spleen rupture, splenic infarct
(d) Pancreatitis, pancreatic pseudocyst
(e) Subdiaphragmatic abscess

(4) Right lower quadrant
    (a) Acute appendicitis
    (b) Gynecologic pathologies
    (c) Meckel's diverticulitis
    (d) Crohn's disease
    (e) Duodenum ulcer perforation
(5) Left lower quadrant
    (a) Acute diverticulitis / diverticulitis perforation
    (b) Colonic obstruction
(6) Hypogastric region
    (a) Distal small intestinal obstruction
    (b) Pelvic inflammatory disease
    (c) Inflammatory intestinal disease
    (d) Endometriosis

3. To know characteristics pertaining to acute abdomen in specific cases.
    a. Acute abdomen in elderly patients
    b. Patients with sepsis
    c. Patients with multiple traumas
    d. Patients in post operational period
    e. Patients in intensive care

GOALS FOR SKILLS

Junior Level

1. To take detailed anamnesis, to differentiate acute abdomen symptoms
2. To detect and interpret findings about acute abdomen in physical inspection
3. To prepare the patient before the operation.
4. To maintain laparotomy, to cover laparotomy incisions.
5. To know and apply incisions and their locations according to pathology
6. To maintain appendectomy
7. To maintain gastrostomy
8. To maintain Meckel's diverticulitis
9. To place primary suture in duodenum peptic ulcer perforation
10. To apply surgical interventions in strangulated hernia without complications
11. To apply adhesiolysis and detorsion in intestinal obstructions.
12. To fulfill cholecystectomy in acute cholecystitis.
13. To take on responsibilities of the following applications in the postoperative period.
    a. Nasogastric tube
    b. Intra-abdominal drains
    c. Care of intestinal fistulas
    d. Dressing abdominal incisions

Senior Level

1. To maintain laparotomy, exploration.
2. To maintain intestinal resections, anastomosis, and stomas.
3. To apply surgical intervention for strangulated hernia with complications.
4. To maintain necessary processes in evisceration.
5. To be able to maintain tumor related intestinal obstructions

6. To maintain necessary surgical interventions to treat mesentery ischemia.
7. To maintain surgical interventions related to bile ducts
8. To maintain splenectomy and splenography when needed.

D-11. ABDOMINAL SURGERY

MAIN GOALS

Recognizing the anatomy, physiology and physiopathology and the clinical indications of the diseases of the abdominal space and pelvis.

Achieving skills for the diagnosis of abdomen and pelvis diseases which require surgical attempts and preparing and applicating its therapy plan.

GOALS FOR KNOWLEDGE

Junior Level

1. Explaining the embryologic development of the peritoneal space and the position of the abdominal organs.
2. Learning the abdomen's anatomy comprising the organs and anatomic spaces as well.
    a. Musculoskeletal case (especially the anterior abdominal partition)
    b. Micro omentum
    c. Subfrenic areas
    d. Morrison pouch
    e. Foramen Winslow
    f. Douglas pouch
    g. Real pelvis
    h. Lateral spaces
    i. Retroperitoneum content
    j. Major lymph node groups and drainage pathes
3. Learning the the absorption and secresion functions of the peritonal surfaces and diaphragm.
4. Learning the anatomy of the omentum and its role during the reactions shown against inflamatory acts.
5. Evaluating the indications seen in the acute abdomen and acquire their physiopathology
    a. Reference pain
    b. Rebound/ sensitivity
    c. Defance
    d. Rigidity
6. Describing the anamnesis features, physical examination diagnosis, somatic and viceral pain mechanisms in the diseases mentioned below.
    a. Acute appendicitis
    b. Intestines obstruction
    c. Perforated ulcer
    d. Ureteral colic
    e. Diffuse peritonitis
7. Explaining the reference pain mechanism in cases mentioned below.
    a. Spleen rupture
    b. Biliary colic
    c. Basal lobe pneumonia
    d. Renal colic

e. Pankreatitis
f. Inguinal hernia

8. Learning the reasons for paralytic ileus.
   a. Electrolyte imbalance after surgery
   b. Retroperitoneal pathologies
   c. Trauma
   d. Extraperitoneal disease (central nerve system, lung)
9. Learning the disgnostic investigations notified in articles 6 and 7.
   a. Direct x-rays
   b. Contrast gastrointestinal films
   c. Ultrasonografyography
   d. Computerized tomography
   e. Biliary tests
   f. Kidney analysis
10. Evaluating the wound complications.
   a. Learning the risk factors for surgery area infection
   b. Learning the added factors to evenration and evisceration
   c. Learning the frequently met clinic indications
   d. Learning the biliary system, upper GI system and the wound infection rates of colorectale surgery
11. Definition of anatomic placement of intrabdominal abscess and determine related diseases.
   a. Left subphrenic area
   b. Right subphrenic area
   c. Subhepatic area
   d. Micro omentum
   e. Intestine-ance interspace
   f. Pelvis
   g. Left paracolic area
   h. Right paracolic area
   i. Psoas muscle
12. Comparing the percutaneous and open drainage on the abscess types above, definition of the most reliable and effective approach in scope of both technics.
13. Learning the features of intestinal fistules features and definition of the organs having the most relationship.
   a. Esophageal
   b. Gastric
   c. Enteric (and duodenal)
   d. Colonic
14. Understanding the fistule formation mechanism in cases mentioned below.
   a. Surgery complications (intestines injury and abscess formation)
   b. Inflamatuary intestines disease
   c. Acute pacreatitis
   d. Presence of foreign body or prosthetic material.
15. Knowing the place of the fistulegram during intraabdominal fistule and abscess diagnosis.
16. Evaluating the factors hindering the fistule healing.
17. The evalution of surgery or conservative cure preferences of the fistules mentioned in article 13.

18. Definition of the anatomy, clinic indications, cure approaches and complications of the hernia types mentioned below.
    a. Direct, indirect, inguinal and femoral
    b. Sliding hiatal
    c. Paraesophageal
    d. Ventral
    e. Umbilical
    f. Spigelian
    g. Paraduodenal
    h. Obturator
    i. Lumbar
    j. Parastomal
    k. Diaphragmatic
        (1) Posterolateral (Bochdalek`s hernia)
        (2) Anterior (Morgagni)
        (3) Traumatic
    l.Internal
    m.Petit (Lumbar)
19. Definition of Richter hernia and its clinic diagnosis.
20. Definition of Sliding hernia and repairing.
21. Learning the difference between incarceration and strangulation.

Senior Level

1. Learning the surgical cure methods of the areal hernias mentioned in article 18.
2. Learning the using way of prostetic materials and the related infections or the cure approach during relapse..
3. Learning the most appropriate incision during the surgery of localizations mentioned below.
    a. Abdominal space, liver, gall path, spleen, thin insentines, pelvis
    b. Retroperitoneal organs kidney, adrenale, abdominal aorto
    c. Toraco-abdominal aorto
4. Learning the wound healing technics for the incisions mentioned above (including suture materials).
5. Learning the retention suture usage and its method.
6. Learning the logic and technics of the peritoneal dialysis.
    a. Renal failure
    b. Peritoneal infection
7. Learning the theraphy of seconder peritoneal infections related to peritoneal dialysis catheter.
8. Definition of the ascites physiopathology and its therapy in cases mentioned below.
    a. Malignancy
    b. Liver diseases (cirrkosis, Budd-Chiari syndrome)
    c. Cyllosis chute
    d. Pancreas fistule
    e. Cardiac failure
    f. Gall leakage
9. Learning the indications and complications of peritoneovenose shunt usage.
10. Definition of the etiologic, clinic indications and therapies of the diseases mentioned below and learning the frequently faced peritoneal tumors.

a. Desmoid tumors
b. Rectus case hematoma
c. Retroperitoneal fibrosis

11. Definition of frequently faced retroperitoneal tumors (clinic indications, cures and prognoses).

GOALS FOR SKILLS

Junior Level

1. Evaluation of acute abdomen and diagnosis.
2. Attending to inguinal and umbilical area hernia repaartion surgeries and getting the anatomy and reparation information.
3. Interpreting the cases mentioned below with the radiologist.
   a. Abdominal direkt graphies (free air, air-fluid levels)
   b. Pseudoobstruction, volvulus, acid presence, atelectasis and pneumonia
   c. Upper GİS radiolojic investigations
   d. Barium colonography
   e. Abdominal ultrasonography and BT
4. Evaluating the abdominal wounds and be able to cure ..
   a. Infection
   b. Fasiitis
   c. Evisceration
   d. Evantration
5. Be able to perform the prior and after surgery plan for the patient having acute abdomen.
6. Helping on healing abdominal incision and train on the suture technics.

Senior Level

1. Application of all kind abdomen incision and incarcerete.
2. Cure of wound complications like infections and evisceration. Placing a retension suture if required.
3. Learning the torakoabdominal ve retroperitoneal approaches in order to resch the kidneys, aorto and iliac arteries during the surgery under ones assistance.
4. Performing laparotomy for acute abdomen.
5. Let the assistant to perform the simple hernia reparation.
6. Performing surgical drainage for intraabdominal abscess.

D-12. DIGESTIVE SYSTEM

MAIN GOALS

* Understanding the anatomy, physiology and physiopathology of the nourishment and digestive system.
* Developing solving skills for problems on nourishment and digestive system diseases through surgical intervention

GOALS FOR KNOWLEDGE

Junior Level

Defining main principles regarding digestive system diseases.

a. The anatomy, embryology and biochemistry of the Gastrointestinal system
   (1) Primitive intestines embryologic development including normal rotation and fixation
   (2) The histology of the digestive system including differentiation of the cell types.
   (3) The systemic blood circulation beginning from the osofagus till the anus, portal venous drainage, neural endocrine axle and anatomy paying special attention to the lymphatic drainage.
   (4) Abdominal anatomy, sub-thorax, retroperiton, its relation with the pelvic bottom
   (5) Mucosal transport including food and water absorbsion mechanism
   (6) Elektrolyte and acid base regulation places

b. Gastrointestinal system physiology
   (1) The phases of grinding and digestion
   (2) Neuroendocrine control of secretion and motility
   (3) Neural and hormonal local control of the mucosal ejection and absorbsion
   (4) Entero-hepatic circulation
   (5) Neuromuscular control of defecation
   (6) Digestion of cofactors like sugar, fat, protein, vitamin.
   (7) Mucosal regeneration speed
   (8) The nourishment requirements of the surgical patients

c. Normal bacterial flora in the uooer and sub-gastrointestinal system

d. The immunological features of the astrointestinal system and the trauma of this barrier, sepsis, burn, malnutrition and how it is effected from cronic diseases

e. Intestinal healing principles
   (1) The tissue integrity of the normal gastrointestinal system
   (2) The suture and stapler techniques in the intestines

2. Description of the points of the gastrointestinal diseases mentioned below.

a. Infections occuring in and out the gastrointestinal channel including peritoneum.
b. The embryoloic anomalies of the gastrointestinal channel
(1) Stricture
(2) Stenosis
(3) 'Web' s
(4) Atresia
(5) Duplication
(6) Malrotation
b. Congenital originated and acquired failures related with the intestines motility
c. Gastrointestinal channel neoplasia
d. Proximal gastrointestinal channel ulceration
e.Cause of gastointestinal channel embolism
f. Paralitic ileus mechanism and its reasons
g. Bleeding reasons in the gastrointestinal channel
h. Perforation reasons in the gastrointestinal channel
i. Abdominal abscess formation or seconder peritonitis reasons
j. Short intestines and malabsorption situations
k. Acute and cronic mesenteric ischemia
l. Portal hypertension and venous thrombosis
m. Inflamatuar intestines disease
n. Acute abdomen reasons
o. Intestinal ostomy approaches
ö. Traumatic damage on abdominal organs
3. Be aware of digestive systems routin diagnostic investigations base features.
a. Anamnesia
(1) Pain
(2) Nausea, vomiting
(3) Intestinal function
(4) Previous attacks
(5) Faced surgeries
b. Physical examination
(1) Inspection
(2) Osculation
(3) Perkusion
(4) Palpation
c. Radiologic analysis
(1) Barium stomach duodenum graphies
(2) Thin intestines passage graphy
(3) Enteroclisis
(4) Ultrasonography
(5) Computerized tomography
(6) Magnetic resonance display
(7) Barium colonography

(8) Angiography
(9) Nuclear scintigraphy

d. Function Tests
(1) Manometry
(2) pH measurement
(3) Stomach fluid analysis
(4) Hormon levels
(5) Absorbtion tests

4. Being aware of the actual medical approaches and possible limitations, describing the role of surgical attempt when the medical attempt fails.
   a. Peptic ulcer disease
   b. Esophageal varicosis
   c. Upper and sub-gastrointestinal system bleeding
   d. Gastroparesis
   e. Inflamatory intestines disease
   f. Diverticulitis

Senior Level

1. Be aware of the digestive systems multisystem diseases physiopathology including neurohumeral and hormonal relations.
2. Describing the physiologic reasons for the gastrointestinal surgeries mentioned below.
   a. Vagotomy pyloroplasty
   b. Gastric resection for the ulcer disease
   c. Thin intestines resection and anastomose
   d. Ostomy formation
   e. Resection in the gastrointestinal channel with the nodes for the tumor
   f. Bypass in the gastrointestinal channel
   g. Pancreaticcyst drainage (internal and external)
   h. Abdominal and retroperitoneal abscess drainage (percutaneous or surgery)
3. Detailed description of the standart intraoperative technics and alternatives of the surgeries mentioned above.
4. Be aware of the indication and contraindications of the digestive systems diagnostic and therapeutics endoscopy.
5. Evaluating the surgical attempts of the digestive system in case of their complex diseases.
   a. Short intestines syndrome
   b. Achalasia
   c. Barrett’s oesophagus
   d. Intestinal poliposis
   e. Inflamatory intestines disease
6. Be aware of intreoperative and end of surgery approach to digestive sytems prior to the surgery.
   a. Reoperative abdomen
   b. Unsuccessful peptic ulcer and reflux surgery

c. High debility gastrointestinal fistules
d. Inflamatuar intestines disease along with stricture, pochostomy and perineal fistule
e. Relapse colon malignity
f. Carcinosis

GOALS FOR SKILLS

Junior Level

1. Evaluation of patients who complaint about gastrointestinal channel.
2. Be able to assist esophagus, stomach, thin intestines and anorectum surgeries.
3. Be able to perform less complicated surgeries.
    a. Gastrostomy
    b. Meckel's diverticulectomy
    c. Appendectomy
    d. Hemorrhoidectomy
    e. Anal fissurectomy and fistulectomy
    f. Incision and drainage for perirectal abscess
4. Committing care on patients after their surgery
    a. Nasogastric tube
    b. Intestinal tubes
    c. Intraabdominal drains
    d. Intestinal fistules
    e. Abdominal incisions (simple and complicated)
5. Evaluating and organizing the nutrition requirements of the patients till the normal gastrointestinal system function is achieved (enteral and parenteral).
6. Monitoring the surgical patients in the clinics.

Senior Level

1. Performing the first consultation fort the patients suffering under gastrointestinal channel problems and issue the selective diagnosis and first therapy.
2. Helping the assistants and professor by complex digestive system cases.
3. Performing gastrointestinal surgeries under supervision including following points
    a. Vagotomy
    b. Pyloroplasty
    c. Stomach resection for ulcer
    d. Stomach resection and lymphadenectomy for stomach cancer
    e. Thin intestines resection and anastomose
    f. Pancreatic cyst drainage
    g. Abdominal and retroperitoneal abscess drainage
    h. Adhesion lysis
    i. Enterotomy reparation
    j. Colon resection
    k. Ostomy formation
4. Developing endoscopy skills during diagnosis and therapy
    a. Diagnostic esophagogastrostomy
    b. Endoscopic control of gastrointestinal system hemorrhage
    c. Percutaneous endoskopic gastrostomy (PEG)

d. Intestinal pinch dilatation
e. ERCP assistance
f. Diagnostic colonoscopy
g. Polypectomy

5.Choosing and interpreting appropriate diagnostic issues before and after the surgery.
6.Helping the beginning assistants during diagnosis, surgical therapy and monitoring of the digestive system diseaeses.
7.Coordination of different specializations during complex gastrointestinal problems.
a. Varicosis hemorrhage
b. Biliary obstruction
c. Cronic varicosis
d. Inflammatory intestines disease
e. Cronic abdomen pain
f. Cronic constipation
g. Localized and advance malignities
8. Performing relaparatomy against gastrointestinal problems
9. Monitoring the care after surgery of gastrointestinal systems surgical diseases.
10. Providing information flow to the patient, regarding operations to be done.

D-13. LIVER, BILE DUCT AND PANCREAS

MAIN GOALS

Gathering information about the anatomy, physiology and physiopathology of the liver, gall path and pancreas.

Comprehending the therapy principles in case of liver, bile duct and pancrease diseases and injuries, which are appropriate for surgery.

GOALS FOR KNOWLEDGE

Junior Level

Liver and bile duct

1. Be aware of the anatomy, frequently faced variations of the liver and bile duct.
2. Be aware of the liver and bile duct physiology and functions.
   a. Glucose metabolism
   b. Protein synthesis
   c. Coagulation
   d. Drug metabolism
   e. Reticuloendotelial system
   f. The locality of the gall within the fat metabolism
3. Comprehend the physiopathology of the gall formation, components, functions and bile stone formation.
4. Gall formation and combination, bile stone formation effecting the biliary system and be aware of diseases which cause for biliary obstruction.
5. Recognizing the gall's entero-hepatic circulation.
6. Inspection of the hepatitis patient and performing the his/her distinctive diagnosis.
7. Recognizing the types of the liver cysts (parasites and nonparasitary) and therapy principles.
8. Recognizing the reasons and therapy of the Pyogenic abscesses.
9. Recognizing the diagnosis and therapy of the diseases mentioned below.
   a. Liver metastatic lesions
   b. The primer malignities of the liver and gall pathes
   c. Liver benign tumors
10. Recognizing infestious hepatitis types including points mentioned below.
    a. Invasion ways
    b. Diagnosis
    c. Serolojic evaluation
    d. Natural motion
11. Recognizing the physiopathologies, diagnosis and cures of the diseases mentioned below.
    a. choledochus cyst
    b. Caroli's disease
    c. sclerosant cholangitis

d. Primer biliary cirrhosis
e. Seconder biliary cirrhosis
f. Cholangitis
g. Bile stone ileus
h. Bile stone pacreatitis
i. Benign biliary stricture
j. Acute cholecystitis
k. symptomatic bile stone
l. acalculosis cholecystitis
m. Biliary dyskinesia (dysfunctional gall)
n. Congenital biliary atresia

Pancreas

1. Recognizing the anatomy and vascular structures of the pancreas.
2. Comprehend the physiology of the pancreas, including the endocrine and exocrine functions and hormonal regulation.
   a. Endocrine islet cells
      (1) Alpha (glucagon)
      (2) Beta (insulin)
      (3) Delta (somatostatin)
      (4) Nonbeta (pancreatic polypeptide)
   b. Exocrine asigner cells
      (1) Lipase
      (2) Amylase
   c. Hormonal regulation
      (1) Secretin, bicarbonate secretion
      (2) cholecystokinin enzyme secretion
3. Comprehend the physiopathology of the pacreatitis.
   a. Bile stone
   b. Alcohol related
   c. Trauma
   d. Related to steroit tenancy
   e. End of surgery
   f. Post-ERCP
   g. Idiopatic
4. Recognizing the diagnosis, evaluation and coservative therapy.
5. Recognizing the role of the peritoneal lavage.
6. Recognizing the pancreatitis complications.
   a. ARDS
   b. Hypovolemia
   c. Pseudocyst
   d. Abscess
   e. Infectes pancreas necrosis
7. Recognizing the surgery indications during pancreatitis therapy.
8. To know timing of surgery in colelitiasis pankreatitis

9. Evaluating the pancreatitis with the Ranson principles and recognizing its relation with the prognosis.
10. Explaining the pancreas carcinoma physiopathology.
    a. Anamnesis and indication and diagnosis
    b. Diagnostic evaluation
        (1) Computerized tomography
        (2) Ultrasonography
        (3) ERCP
        (4) Percutaneous transhepatic cholangiography (PTK)
        (5) Arteriography
        (6) Laparoscopy, laparotomy
    c. Indications
        (1) Surgical and nonsurgical gall drainage
        (2) Percutan and endoscopic stenting
        (3) Rescktion
        (4) gastro-jejunostomi at the same session, bypass
11. Clinic evaluation of the pancreatic pseudocysts and explaining the therapy approach.
    a. Pseudocyst complications (hemoorhage, infection, rupture)
    b. Drainage timing
        (1) percutaneous or surgical drainage
        (2) External and internal drainage indication
        (3) Options of the internal drainage process
12. Describing the pancreatic ascites diagnosis and its therapy.

Senior Level

Liver and bile duct

1. Comparison of laparoscopic and apparent cholecystectomy.
2. Evaluating the approach to the choledochus stones.
    a. Apparent or laproscopic choledochus expolaration
    b. ERCP
3. Recognizing the liver cirrhosis and physiopathology of the portal hypertension.
    a. The ethyology of cirrhosis (alcohle and hepatitis)
    b. The ditinctive diagnosis the portal hypertension (prehepaticus, hepatic, posthepaticus)
    c. Ascites, encephalopathy and the conservative approach to cirrhosis complications
    d. The child classification of the cirrhosis and prognose and its surgical mortality relation
    e. Surgical therapy on the cirrhotic patient
    f. The medical cure of esophagus varicosis Including vasopressin Sengstaken blakemore's balloon, sclerotheraphy and transjugular intrahepatic portosystemic shunt (TIPS)
    g. Surgical therapy of esophagus varicosis hemorrhage
        (1) Definition of surgery indications
        (2) Correct method choice
            (a) Selective and nonselective shunt

(b) Devascularization

(c) Esophageal transaction

h. Patient selection during ascites therapy peritoneo-venous shunt, surgical approach and recognizing complications.

4. Recognizing Budd-Chiari syndrome.
5. Recognizing the indications and containdications of liver transplantation on the children and adults.

Pancreas

1. Definition of the chronic pancreatitis ethyology, physiopatology and therapy.
   a. Surgery indications
   b. Selecting the appropriate surgical attemts
      (1) Longitudinal pancreaticogegunostomy (Puestow Gillesby operation)
      (2) Caudal pancreaticogegunostomy (Duval operation)
      (3) Subtotal pancreatectomy
      (4) Pancreatoduodenectomy
   c. The role of the Gee's disease ganglion ablation during pain control (chemical splancnisectomy).
2. Recognizing the cronic pancreatitis complications including pain, fat malabsorption and diabetis.
3. Definition of the diagnosis, evaluation and surgical therapy of the pancreas cyctic neoplasms (mücinous and serous cystedenoma).
4. Evaluating the assess and therapy of the pancreas isle cell tumors mentioned below.
   a.Gastrinoma (Zollinger Elison Syndrome)
   b.Glukagonoma
   c. Somatostatinoma
   d. Insulinoma
   e. VIPoma (Verner Morrison Syndrome, WDHA Syndrome)
5. Recognizing the surgical approach on pancreas diseases.
   a. pancreato-duodenectomy (Whipple act)
   b. Distal pancreatectomy
   c. Total pancreatectomy
   d. Subtotal pancreatectomy (distal 95%)
   e. Longitudinal pancreaticogegunostomy (Puestow act)
   f. The internal drainage of pseudocyst (cystogastrostomy, cystoduodenostomy, Roux-en-Y cystojejunostomy)
6. Describing the appropriate therapy options of the operation above and with its benefit-loss evaluation.
7. Describing the frequently faced complications during the surgical cure of the pancreas diseases.
8. Recognizing the approach principles during the surgery of pancreas diseases.

GOALS FOR SKILLS

Junior Level

Liver and bile duct

1. Taking anamnesis by focusing on the liver and bile duct and performing physical examination.
2. Selecting and interpreting the correct lab and radiologic evaluations most appropriate for the dignosis ot a hepatitis patient.
    a. Alkaline phosphatase, AST (serum glutamat-oxalacetate transaminase ”SGOT”), ALT (serum glutamat-pyruvate transaminase ”SGPT”), direct and indirect bilirubin, prothrombin time, partial thromboplastin time
    b. Endoscopic retrograde cholangiopancretography (ERCP)
    c. Percutaneous transhepatic cholangiography (PTK)
    d. Liver and spleen scintigraphy
    e. Hepatobiliary nuclear display (HIDA)
    f. Oral cholecystogram
    g. Ultrasonographiography
    h. Computerized tomography
    i. Arteriophlebography
3. Giving assistance during the hepatobiliary surgical operation of the patient.
4. Giving assistance during the cure of the patient suffering under Esophagus varicosis hemorrhage.
    a. Vasopressin
    b. Sengstaken blakemore's balloon
    c. Sclerotheraphy
5. Applying uncomplicated hepatobiliary surgery under supervison (laparoscopic and open cholecystectomy).
6. Assisting major hepatobiliary surgeries.

Pancreas

1. Taking anamnesis by focusing on the pancreas and performing physical examination.
2. Selecting and applying the correct lab and radiologic evaluations during the evaluation of the pancreatic disease.
    a. Serum amylase and lipase
    b. Urinamylase
    c. Computerized tomography
    d. Ultrasonogphyography
    e. ERCP
    f. Arteriography
3. Attending the therapy of patients having acute pancreatitis.
4. Assisting during pancreas related surgeries.
5. Applying minor pancreatic acts like pseudocyst external drainage or internal drainage with cystogastrostomy.

Senior level

Liver and bile duct

1. Performing the detailed evaluation of patients having liver and gall path disease and planning the appropriate conservative and surgical therapy.
2. Applying more complex hepatobiliary surgery through direct observation.
    a. Laparoscopic cholecistectomy and cholangiography
    b. Coledoc expolation and choledoscopie
    c. Biliary drainage attempts
        (1) Choledochoduodenostomy
        (2) Roux-en-Y and loop choledocogegunostomy
        (3) Choledocogegunostomy
        (4) sphincteroplasty
    d. Drainage of liver abscess
    e. Peritoneoveneus shunt
    f. Complicated cholecystectomy (acute, gangrenous)
    g. Simple liver resection
3. Coordinating the care of hepatobiliary.
    a. Initial evaluation
    b. Appropriate diagnostic activities
    c. Consultations
    d. Operative approach
4. Attent to complex hepatic and biliary surgeries.
    a. Anatomic liver resection
    b. Portosystemic shunts
        (1) Portacaval , end to side, sidetoside
        (2) Mesocaval
        (3) Distal splenorenal (Warren)
        (4) Central splenorenal
    c. The complex attempts on extrahepatic gal path.
        (1) Cholangiocarcinoma
        (2) choledochus cyst
        (3) Benign biliary stricture
    d. Liver transplantation
    e. Kasai attempt (hepatoportoenterostomy)

Pancreas

1. Performing the detailed evaluation of patients having pancreatic disease and planning the appropriate conservative and surgical therapy.
2. Performing the gradually increasing complex pancreatic surgery.
    a. Roux-en-Y cystojejunostomy and internal drainage of pseudocyst
    b. Longitudinal pancreaticojejunostomy (Puestow attempt)
    c. Distal pancreatectomy
    d. Biliary bypass for carcinoma
3. Attend to the care, initial evaluation, appropriate diagnostic activities of patients with complex pancreas disease.

a. Pancreatic abscess and infected pancreatic necrosis
b. Cystadenoma
c. Periampullary carcinoma
d. The endocrine tumprs of pancreas

4. Assisting complex pancreatic operations like below and/or application.
a. Whipple surgery
b.Total or subtotal pancreatectomy
c. Pancreas abscess or infected necrosis surgery debridement or drainage
d. The surgical expolaration of pancreas islet tumors
e. The local resection of ampulla tumors

D-14. COLON-RECTUM and ANUS

MAIN GOALS

To...

comprehend the anatomy, physiology and physiopathology of the colon, rectum, ano-rectal area and pelvis.

understand the clinic indications of colon, rectum, ano-rectal areal diseases.

Preparing diagnosis and cure plan for colon-rectum and anus disease wich require surgery and acquiring application skills.

INFORMATIN TARGETS

Junior Level

1.Recognizing the anatomy and physilogy of the colon.
   a.Allocation within the abdomen
   b.Arteries and floats, veins, lymphatics
   c.The molitility, flora, duty accorfing to sections.
2.Recognizing the anatomy of the rectum.
   a. Definition of the border within the pelvis, ligaments, fascial structure and mesorectum, recognizing its neighbourhood with structure surrounded, arteries, vein,lymph and verve structures.
3.Recognize the anus ve anal channel anatomy.
   a. Definition of anal access (vergence) and channel, anorectal annulus, the structure of sphincter muscles and differencies, spaces around the anal channel, recognizing the interior structures of anal channel.
4. Recognizing the pelvic base anatomy.
5. Recognizing the ano-rectal physiology in scope of following points.
   a. Anal continence and thir operation mechanism of the structures performing this function.
   b. Defecation
6. To acquire the standard knowledge of maintaining following physiological tests which investigate the functions of the duct and anorectum, which parameters are considered throughout the process, what these findings mean for diagnosis with respect to functions and disease.
   a.Ano-rectal manometry
   b.Defecography
   c.Endorectal ultrasonographiography (ERUS)
   d.Balloon-push test
   e.Colon transmission duration
7. Recognizing the features of the disease in the anamnesis of the diseases mentioned below, the etiology, pathogenesis, the examination methods required for clinic examination diagnosis of the patient and preparing for surgery.
   a. Colon and rectum cancer
   b. Molecular genetic changes during colorectal carcinogenisis
   c. Herediter nonpoliposis colorectal cancer (HNPCC)
   d. The benign diseases of the colon
      (1) Diverticular disease

(2) Volvulus
(3) The imitative cloggage of the colon

e. Anal cancer and perianal precanserous diseases.
f. Inflamatory intestines diseases
(1) Ulcerative colitis
(2) Crohn's disease

g. Familyal adenomatous polyposis (FAP), desmoid tumor.
h. Polyps.
i. Anorectal benign diseases
(1) Hemorrhoid
(2) Perianal apscess and fistule
(3) Fissure
(4) Anal stenosis
(5) Condyloma acuminate

j. Sinus pilonidalis
k.Functional diseases
(1) Colonic inercia
(2) Rectal prolapsus
(3) Rektocele
(4) Solitary rectal ulcer
(5) Anal incontinence.

l. The rarely faced colon and rectum diseases
(1) Malign tumors except Adeno-cancer
(2) Vascular ectasias
(3) Retrorectal tumors

Senior Level

1. Evaluation of the diseases mentioned above by comprising those below.
   a. Performing distinctive diagnosis
   b. Diagnose surgical indications
   b. Recognizing conservative and different surgical therapy methods and be able to discuss on required them to be applied.
2. Be able to discuss on complications occureable after the therapy and what kind of measures are required to avoid them.
3. Recognizing, especially how the perodic supervisions of these patients should be done after the surgery.

GOALS FOR SKILLS

Junior Level

1. Be able to perform anorectal examination
2. Monitoring the tests performed in the endoscopy unit
3. Be on duty as a second assistant during the surgeries
4. Be able to perform perianal abscess, single pake hemoroidectomy, sinus pilonidalis (simple), fissur anal surgeries under the control of the senior assistant or an expert.

Senior Level

1. Be able to perform following surperies
    a. Right-left hemicolectomy
    b. Segmental colon resections
    c. Urgent colon phenomenon
        (1) Perforating incisory duct wounds
        (2) Volvulus
        (3) Colon tumor obliterations
    d. Benign anorectal diseases
        (1) Hemoroid
        (2) Fissura
        (3) Non complicated fistulas
        (4) Sinus pilonidalis
        (5) İleostomy – colostomy of stomas (ileostomy-colostomy)
        (6) Letting the junior assistants to perform surgeries under the experts supervision, work as primer assistant during rectum cancer and pouch surgeries.
2. Be able to perform rectoscopy, sigmoidoscopy inspections.
3. Work as an assistant during the colonoscopic inspection

D-15. ENDOCRINE SURGERY

MAIN GOALS

- Acquiring either normal and pathologic endocrine anatomy and physiology information.
- Applying those informations on the surgical therapies of the patients.

GOALS FOR KNOWLEDGE

1. Recognizing the anatomy, histology, physiology and biochemistry of the organs below.
   a. Thyroid glands
   b. Parathyroid glands
   c. Hypothalamus
   d. Pituitary gland
   e. Endocrine pancreas
   f. Adrenal gland
   g. Gastrointestinal system as an endocrine organ
   h. Gonads as an endocrine organ
2. Recognizing the oscillation and control of the following items.
   a. Thyroxin and thyroid stimulant hormone
   b. Calcium, vitamin D
   c. adrenocorticotrophic hormone, cortisol
   d. Insuline, glucagon
   e. catecholamines (epinephrine, norepinephrine, dopamine)
   f. Gastrin, secretin, cholecystokinin
   g. Serotonin, histamine
   h. Estrogen, progesteron, testosteron (and their oscillation factors)
   i. Oxitocin, vasopressin
   j. growth hormone
   k. Melanocyte stimulant hormone
   l. Prolactin
   m. Motilin, gastric inhibitör peptide, enteroglucagon, vazoactive intestinal peptide
   n. Somatostatin
3. Learning subjects below during endocrine pathology.
   a. Criteria for malignite diagnosis
   b. To use the chromosomal anomalies as an diagnosis device.
   c. The clinic epidemiologic characteristics of the patients by sporadic and familial diseases.
   d. Multiple endocrine neoplasia (MEN) type I, MEN II ve familial nonMEN syndromes
   e. Needle aspiration biopsy
   f. DNA ploidy
4. Recognizing clinic neurodocrinology concept, amine precursor uptake decarboxylase (APUD) system and endocrine syndromes.

5. Comprehend surgical approaches during endocrine system diseases.
    a. Diseases with surgical indications during prime therapy, diseases where surgery is not primer.
    b. Surgical approach differences during benign and malign disease.
    c. The curative and paliative features of surgical therapy
    d. Surgical therapy oriented to target organ and primer organ
    e. The importtance of the lesion location during endocrine troubles
6. Recognizing the physiopathology, clinic featurs and therapy principles of the following diseases.
    a. Solitary thyroid node
    b. Multinodular thyroid gland
    c. Tyrotocsicose
    d. Primer, seconder and tetiary hyperparathyroidism
    e. Insulinoma, glucuganoma, vipoma
    f. Zollinger Ellison syndrome
    g. Gastrointestinal carsinoid tumors
    h. Endogenic hypercortisolism (Cushing syndrome and Cushing disease, seconder pituitary gland, adrenal and ectopic reasons)
    i. Pheochromocytoma
    j. Primer hyperaldosteronism
    k. Adrenal mass found to be incidental
    l. Galactorrhea
    m. Gigantism, dwarfism
7. Recognizing the preparationns prior to surgery and therapy in following cases and diseases.
    a. Hypercalcemic attack
    b. Thyroid attack
    c. Pheochromacytoma
    d. Hyperaldosteronism
    e. Endogenic hypercortisolism
    f. insülinoma, gastrinoma
    g. Graves' disease, hashimoto's disease
    h. Carcinoid crisis
    i. Adrenal insufficiency crisis
8. Recognizing distinctive diagnosis features.
    a. Hypercalcemia
    b. Hypoglycemia
    c. hypergastrinemia
    d. The highness of serum thyroxine level
    e. The higness of ACTH level
    f. The lowness of TSH level
9. Evaluating the surgical approaches on following structures.
    a. Left adrenal gland
    b. Right adrenal gland
    c. Frontial pituitary gland
    d. Head of pancreas
    e. Body, tail of pancreas
    f. Lower parathyroid glands
    g. Upper parathyroid glands
    h. Retrosternal goitre

10. Recognizing controversial areas within the endocrine surgery.
    a. Zollinger Elison syndrome
    b. Thyrotoxicosis
    c.Genetic researching for neuroendocrine syndromes
11. Comprehending the importance of the anaesthesia in the endocrine surgery
    a.The airway control during the throat surgery
    b.Cardiovascular attempts during thyroid and pheochromocytoma surgeries
    c. fluid and electrolyte therapy
1. Evaluating new inquiry results in endocrine surgery.
2. Recognizing the following developments in approaches to endocrine problems.
    a.New localization techniques (metaiodobenzylguanidine MIBG, sestamibi, selektive venous sampling, intraoperative tumor localization, rapid parathyroid hormone (PTH) analyses)
    b.New diagnostic tests (sensitive TSH, C-peptide, fine needle aspiration)

GOALS FOR SKILLS

Junior Level

1. Be able to perform the preassessmen of the patients suspected having endocrine disease.
2. Pre-and post operative care to the patients received endocrine surgery.
3. Monitoring of phenomenons which got endocrine surgery.
4. Detailed inspection of patients suspected to have endocrine disease.
5. Performing Pre-and post operative care on patients who are under endocrine system disease watch.
6. Active participation in thyroid, parathyroid ve adrenal glands and pancreas surgeries.
7. Active participation in Pathology labaratory practises.

Senior Level

1. Planning the surgical approach during endocrine diseases.
2. Participation and application in adrenal, pancreas, thyroid, parathyroid surgery.
3. Evaluating those patients having complex endocrine disease and executing distinctive diagnosis.
4. Application of adrenal, pancreas, thyroid and parathyroid surgeries.
5. Independent evaluation of different andocrine surgical diseases, performing pre-and after operation care and surgery.

D-16. BREAST SURGERY

MAIN GOALS

- Acquiring required information regarding the anatomy, physiology and phuysiopathology of the breast.
- Developing surgical therapy skills on breast diseases.

GOALS FOR KNOWLEDGE

Junior Level

1. Recognizing the breast anatomy.
    a. The histologic glandular structure of the breast
    b. The vascular structure of the breast
    c. The lymphatic circulation of the breast
    d. Axilla anatomy
2. Recognizing the hormonal features of the breast.
3. Recognizing the frequency, epidemiyology and risk factors related to breast cancer.
4. To maintain discriminative diagnosis of breast mass mentioned below.
    a. Fibroadenoma
    b. Cyst
    c. Abscess
    d. Fibrocystic illness
    e. Fat necrosis
    f. Cancer
5. Recognizing the genetic and environmental factors related to breast cancer.
6. Recognizing the biologic behaviours of pathologic types, natural flow and prognoses of following breast cancers.
    a. Infiltrating (Invasive) ductal carcinoma (IDC)
    b. Ductal carcinoma in situ
    c. Infiltrating lobular carcinoma
    d. Lobular carcinoma in situ
7. Recognizing the clinic features, natural flows, pathologic features and therapies of the following benign breast diseases.
    a. Lactational breast abscesses
    b. Chronic recurrent subareolar abscess
    c. Adenocytoma
    d. Atypic epithelial hyperplasia
    e. Fibroadenoma
8. Recognizing the clinic deceision steps during approach to breast block.
9. Recognizing the role of the mamography in breast diseases (general indications, usage and limitations).

Usage;

    a. When-to whom?
    b. How?
    c. What are the normal mamographic diagnosis?
    d. What are the diagnosis leading to malignancy thinking?
    e. BIRADS classifacation

f. Microclassifications (when does it lead to malignancy thinking ?)

10. Recognizing the role of histologic/cytologic diagnosis methods like ponction, fine needle aspiration biopsy, open biopsy, mammographic needle localization and biopsy.
11. Recognizing the place, importance and problems of the frozen inspection in the breast diseases.
12. Recognizing the the base principles of the methods used/using on the breast cancer surgical cure.
    a. Radical mastectomy
    b. Modified radical mastectomy
    c. Breast protecting surgical and axillary dissection
        (1) Marked block excision
        (2) Extended block excision
        (3) Quadranectomy
13. Evaluating the mechanic and achievement of the stereotactic needle biopsy.
14. SLNB (Sentinel Lymph Node Biopsy)
    a. The meaning and importance of teh SLN concept
    b. Indications
    c. Its technics (Blue ink-gamma prob use-combined)
    d. Evaluation methods
15. Performing the diagnostic evaluation and distinctive diagnosis of various type breast papilla.
16. Phasing on breast cancer patients.
17. Explaining the importance of the team approach to the patient with newly breast cancer diagnosed in order to simplify the discussions on the options (surgeon, oncologist, plastic surgeon and psychologist).

Senior Level

1. Recognizing the features, diagnosis and therapies of the infrequently faced breast lesions like mentoned below.
    a. Inflammatory carcinoma
    b. Paget's disease
    c. Lactiferous channel fistule
    d. Mondor's disease
    e. Cystosarcoma filloides
    f. Bilateral breast carcinoma
    g. Male breast carcinoma
2. Recognizing the role of adjuvant chemotherapy and radiotherapy on the breast cancer therapy.
3. Recognizing the importance of the estrogen and progesteron receptor on the breast cancer therapy and prognose.
4. Recognizing the main topics during metastatic breast cancers therapy.
    a. Chemotherapy
    b. Radiation therapy
    c. Hormone therapy
5. Recognizing the physiologic changes on the breast during pregnancy and breast problems and the approach to breast cancer diagnosed during pregnancy.
6. Performing tje main care before, during and after the surgery.
7. Performing the long term monitoring of the breast cancer patient

a. What should be the frequency of the regular physical examination ?
b. Display methods and timing related to breast (remaining breast/the other breast).
c. Inspections and timing regarding metastase.

8. Recognizing the problems after mastectomy regarding breast reconstruction.
   a. Choosing the reconstruction method
   b. Reconstruction timing
9. Evaluating the polemical areas of actual therapies of breast diseases.
   a. Actual concepts in cancer therapy.
   b. Cancer prevention techniques
   c. The role of different adjuvant therapy programmes.
   d. The biologic behaviour of the lesions like lobular carcinoma in situ.
   e. The advantages and frequency of researching programs.
   f. The relation of mammographic paranchyma patterns with further occureable breast cancer determination.
10. Assessment and evaluation of breast cancer inquiries.
    a. To know the role of genes which are inclined to breast cancer.
    b. Monoclonal antibodies
    c. Breast determinants with Her-2 neu, cathepsin D and chromosome analysis.

GOALS FOR SKILLS

Junior Level

1. Understanding the importance of the anamnesis during the evaluation of breast disease patients.
   a. Related risk factors
   b. Previous breast problems
   c.New indications
2. Acquisition of gradually increasing breast physical examination and determine the vriation sof the normal breast.
3. Applications of simple operations.
   a. The diagnostic fine needle aspiration on the cysts
   b. Drainage of simple breast abscesses
   c. Keen needle biopsy of breast block
   d. Open biopsy of flesh blocks
4. Evaluation of frequently faced lesions like fybroadenom, cyst, mastitis, cancer.
5. Evaluation of suspicious lesions for malignancy like stellat lesions or suspicious microcalcification.
6. Performing surgical operations like open breast biopsy, simple mastectomy and intraductal papilloma in parity of a senior.
7. Acquiring information in sufficient level for the pathologic evaluation of the surgical piece.
8. Acquiring the indications of the tissue evaluation for the ostrogene and progestrone receptors.
9. Providing to train the patient for self breast examination.

Senior Level

1. Independent evaluation of a new breast disease patient with anamnesis and physical examination and demanding appropriate diagnostic tests (like mammography, ultrasonographiography or fine needle aspiration).
2. Preparing a diagnosis and therapy plan for the frequently faced breast problems and breast carcinoma.
3. Cooperation with the cancer team and the other members during explaining the possibilities to the newly diagnosed breast cancer patient.
4. Performing more advanced breast operations under an experts control.
    a. Radical mastectomy
    b. Modified radical mastectomy
    c. Breast protective surgical and axillary desection
    d. Lactiferous channel fistule excision
    e.Marking biopsy (chord marking in accompany of mammography/ultrasonography)
5. Appliccation of all main breast operations.
    a.Mastectomy
    b.Lumpectomy
    c.Lapping operations
6. Acquiring the main experiences in breast reconstruction and cosmetic surgery techniques.
7. Evaluating the physical condition of the patients who applied for augmentation and reduction mammoplasty.
8. Recognizing different adjuvant therapy types.
    a. Chemoteraphy
    b. Hormone therapy
    c. Radiation cure
    d. Biological response modificators.
9. Be aware of infrequently faced breast diseases.
    a. Inflammatory carcinoma
    b. Paget’s disease
    c. Lactifer channel fistule
    d. Mondor’s disease
    e. Bilateral breast cancer
    f. Male breast cancer
    g. Cystosarcoma
10. Evaluation of bone marrow transmission on breast cancer diseases.
11. Comprehending the features of local relapse and systemic metastatic within the breast disease prognose.

D-17. SKIN AND SOFT TISSUE

A. SKIN TUMORS

MAIN GOALS

* Comprehending the diagnosis and therapy in skin and benign tumors of connective tissues.
* Acquisition of skins vascular tumors, therapy indications and the methods.
* Be able to make diagnosis and therapies of tumors belong to skin junctions.
* Comprehending the ethiologic factors, diagnosis methods and therapy principles in malign tumors of the skin.

GOALS FOR KNOWLEDGE

1. Recognizing the lesions observed on the skin and cause for diagnosis failures in some cases.
    a. Vesicle, bulla, cyst
    b. Macule, papule, pustula
    c. Eczematoid lesion,
    d. Fissure, telangiectasia, ulcer
    e. Verruciform
2. Recognizing the clinic features and therapy options of benign skin localizations frequently faced.
    a. Epidermal lesions
        (1) Epidermoid cyst
        (2) Pilary cysts
        (3) Dermoid cysts
    b. Solid epithelioma tumors of the skin
        (1) Basal cell papilloma
        (2) Cutaneous horn
    c. Connective tissue tumors
        (1) Hypertrofic scars and keloids
        (2) Dermatofibroma
        (3) Soft fibroma
        (4) Lipoma
    d. Vascular tumors
        (1) Hemangioma
        (2) Nevus Flamneus
        (3) Sturge-Weber Syndrome
        (4) Klippel-Trenaunay Syndrome
        (5) Capillary hemangioma
        (6) Cavernous hemangioma
        (7) Kasbach-Merritt Syndrome
        (8) Lymphamgioma
        (9) Glomus tumor
    e. Neural tissue tumors
        (1) Granular cellular myoblastoma

3. Recognizing the features and therapy options of the Nevus clinic features hahving malignancy inclination.
    a. Nevus with cellulary nevus
        (1) Junctional nevus
        (2) Compound nevus
        (3) Intradermal nevus
    b. Giant pigmented nevus
    c. Blue nevus
    d. Spitz nevus
4. Recognizing the diagnosis and therapy of the skin junction tumors.
    a. Hidradenitis suppurativa
    b. Trichoepithelioma
5. Recognizing the precancerous lesions, their clinic features and therapy approaches.
    a. Actinic keratosis
    b. Leukoplakia
    c. Bowen' disease
    d. Keratoacanthoma
    e. Radiation dermatitis
    f. pseudo epitheliomatous hyperplasia
    g. Xeroderma pigmentosium
    h. Paget's disease
6. Recognizing the ethyologic factors effective on the formation of malignancy tumors.
    a. Age, sex
    b. Pigmentations
    c. Heredity
    d. X-rays
    e. Chemical agents
    f. Scars and ulcerations
7. Recognizing basal cellulary skin cancer types, performing distinctive diagnosis and comprehend the therapy principles.
8. Recognizing squamous cellulary skin cancer types, performing distinctive diagnosis and comprehend the therapy principles.
9. Recognizing malignancy melanoma diagnosis, clinic features and therapy principles.
    a. Early diagnosis
    b. Growth features
    c. Pathologic features
        (1) Clark Classifications
        (2) Lymphatic invasion
        (3) Hematogenous invasion
    d. Phasing
    e. Therapy principles

GOALS FOR SKILLS

1.Biopsy ability on precancerous skin lesions.
2. Preparing a surgical therapy plan by bewaring of permanent and functional sequela.
3. Be able to make surgical excision for local control
    a. Be able to plan and apply the local excisions brightness
    b. Be able to close the defect after excision
        (1) Primer closing

(2) Grefting
(3) Reconstruction with fleps.

4. Be able to make lymph node biopsy on required patients.

B. SOFT TISSUE TUMORS

MAIN GOALS

* Comprehending the pathologic features and natural development according to the tissues caused for soft tissue tumor localizations.
* Evaluating the indication and diagnosis of their clinic features.
* Evaluating the the biopsy methods for the diagnosis, recogizing the limitations.
* Comprehending the preparations to be done preoperation and evaluating the surgical attempts.
* Evaluating the features and therapy options of the relapses.

KNOWLEDGE GOALS

1. Recognizing the hystologic structures of the tissues originated from the soft tissue tumors and the pathologic features.
    a. Visseral sarcoma
    b. Plain muscle tissue
    c. Fibrous tissue
    d. Adipose tissue
2. Recognizing various deployment ways according to the anatomic localisations.
3. Recognizing the biopsy methods and indications to be applied for diagnosis.
    a. Cor biopsy
    b. Incisional biopsy
    c. Excisional biopsy
4. Recognizing the devolopments and clinic features of the hystologic types.
    a.Rhabdomyosarcoma
    b. Leiomiosarcaoma
    c. Lyposarcoma
    d. Synovial sarcoma
    e. Neurogenic sarcoma
    f. Fibrosarcoma
    g. Malignant fibrous histiocytoma
    h. Hemangiopericytoma
    i. Malignant meningioma
    j. Epithelioid sarcoma
5. Recognizing the evaluation prior to surgery in order to determine the local, regional and distal invasion of the tumor.
    a. Computerized tomography
        (1) Abdominal
        (2) Thoracal
    b. Bone scintigraphy
    c.Angiography
6. Evaluating the therapy options.
    a. Surgical therapy approaches
        (1) Radical recestions

(2) Resections done by protecting the organ tissue
(3) The compartment resection on the extremities

b. Evaluation of adjuvant/neoadjuvant therapy approaches
(1) Rediotherapy preoperation.
(2) Firstly resection after then radiotherapy
(3) Brachytherapy

7. Recognizing the prognostic factors of the tumors.
a. Tumor size
b. Its differentiation
c. Its Localization
d.The lymph node eclipse
e.Vessel nerve involvement

8. Recognizing relapse types.
a.Local relapse
b. Lung metastasis
c. The other distal organ metastasis

9. Recognizing the therapy approaches on the local relapses and evaluating the options.
a. Excision
b. Amputation
c. Systemic / intraarteriel chemotherapy
d. Radiotherapy

GOALS FOR SKILLS

1. Be able to apply required biopsy methods in order to diagnose.
a. Incisional biopsy
b. Excisional biopsy
2. Be able to use und interprete the required supporting diagnosis methods.
3. Be able to perform the attempts for surgical therapy.
a. Extensive excision
b. Radical resections
c. Muscle group resections
d. Compartment resections
e. Amputations

D-18. VASCULAR SURGERY

MAIN GOALS

* Getting information about the anatomy, physiology, and physiopathology of the vascular system, including acquired and congenital diseases.
* Learning the care before, during and after the surgery during the operational approach of the arterial, venous and lymphatic diseases.

GOALS FOR KNOWLEDGE

Junior Level

1. Defining the arterial and venous system anatomy.
2. Defining the main arterial and venous hemodynmy.
3. The anatomy, pathology and physiopathology of the arter partition.
4. Recognizing the main clinic diagnosis of the following vascular diseases.
    a. Obstrctive arterial disease
    b. Aneurysmal Artery disease
    c. Thromboembolic disease (arterial and venous)
    d. Chronic venous insufficiency and lymphatic obstruction
    e. Portal hypertension
    f. Congenital vascular malformations
5. Evaluating the vascular system of the patient with anamnesis and physical examination.
6. Acquire the situations related to atherosclerotic vascular diseases.
    a. Diabetes mellitus
    b. Hypertension
    c. Kidney failure
    d. Congestive cardiac (heart) failure
    e. Hyperlipidemia
    f. Cigarette
7. Defining the baneful diagnosis of vascular diseases and acquiring the requirement of urgent attemps.
8. Acquiring the appropriate diagnosis methods in order to evaluate vascular diseases.
    a. Angiography
    b. Computerized tomography
    c. Magnetic resonance imaging (MRI) and magnetic resonance angiography (MR angio)
    d. Doppler ultrasonographyography
9. Acquire the categories, ethiology and therapy possibilities of vascular diseases.
    a. Venous diseases
        (1) Varicose vein disease
        (2) Postphlebitic syndrome
        (3) thromboembolic disease
        (4) Pulmonary embolism
    b. Lymphatic diseases

(1) The anatomy of the lymphatic system and lymphatic return
(2) Congenital lymphatic anomalies
(3) Acquired lymphatic disease
(4) Surgical operations on lymphatic diseases

c. Arterial disease
(1) Atherosclerosis and related failures
(2) Aortic and the other aneurysms
(3) Inflammatory vascular disease
(4) Atherosclerosis vascular disease
(5) Arterial embolic disease
(6) Arteriovenouss fistule or malformation
(7) Extracranial cerebrovascular disease
(8) Neurovascular compression syndromes (thoracicOutlet syndrome)
(9) Renovascular hypertension
(11) Degenerative arterial disease
(12) Trauma

10. Recognizing the role of the prınciples of the noninvasive tests and vascular lab and limitations.
11. Recognizing the main principles of the Doppler ultrasonography and bedside arterial, venous doppler test application.
12. Recognizing the natural flow of the vascular diseases medically cured.
    a. Carotid artery stenosis
    b. Abdominal aort aneurysm
    c. Chronic femoral artery occlusion
13. Acquiring the evaluation of the major vascular surgical operations preoperative and post operative care principles.
14. The risk evaluation of the main elements of the nonoperative patient care with vascular disease and recognizing the prevention methods.
15. Recognizing the role of the anticoagulant agents, antithrombocyte agents.
16. Recognizing the role of the Endothelium in atherosclerosis, thrombosis and thrombosis
17. To know its hemodynamic and physiopathology.
    a. Claudication
    b. Transient ischemia attack,
    c. Paralysis,
    d. Mesenteric angina,
    e. Angina pectoris,
    f. Renovascular hypertension,
    g. arteriovenouss fistule
18. To know the critical arterial stenosis concept.
19. Recognizing the distinctive diagnosis of the acute arterial and acute abstruse ven occlusion.
20. Recognizing the principles of the angiography.
    a. Indications and complications (including kidney failure bound related to contrast).

b. The principles and technics of the intraoperative angiography
c. The principles and technics of urgent angiography

21. Recognizing the indication and contraindications to the anticoagulation and thrombolytic therapy.
22. Recognizing the the surgical amendable reasons and diagnostic methods.
23. Evaluating the diffuculties faced during the surgical care of patients having vascular disease.
24. Recognizing the influence mechanism of the pharmacologic agents and their roles during the therapy.
    a. Vasopressors
    b. Vasodilator
    c. Adrenergic blocker agents
    d. Anticoagulants
    e. Antithrombocyte agents
    f. Thrombolitics
25. Recognizing the general principles of the vascular surgery technics.
    a. Vascular control and suture
    b. Endarterectomy
    c. Angioplasty
    d. Bypass greft
26. Evaluating the operative risks of the patients on these areas.
    a. Cardiac
    b. Pulmonary
    c. Renal
    d. Metabolic
    e. Anaesthesia
27. Recognizing the coagulation factors and interaction mechanisms.

Senior Level

1. Recognizing the congenital vascular, arterial-venous and lymphatic system diseases.
2. Recognizing the physiologic and the organ specific clinic features of the vascular diseases like renovascular hypertension, portal hypertension and kidney failure.
3. Evaluation of various surgery approaches to vascular systems.
    a. Incision and view area
    b. Behaviour to vascular tissue
    c. Vascular bypass grefting principles
    d. Urgent vein surgery
    e. Reoperative vascular surgery
    f. Endarterectomy principles
4. Recognizing the Access to the major veins and disection.
5. Recognizing the surgical indications for claudication, abdominal aorto aneurysm, carotid stenosis and amputation.
6. To be aware of balloon angioplasty and vascular stent indications and complications.
7. To be aware aneurysm disease's pathogenesis and its complications.
8. Recognizing the ethiology, microbiology and therapy of the diabetic foot infection.
9. Preventing and therapy of the during and after the surgery period occureable complications (including the greft infections, ischemia intestines, greft thrombosis nd extremity ischemia).

10. The role of the angioplasty on the unsuccessful peripheric vascular grefts and be able to evaluate the reconstruction and extremity ischemia diagnosis.
11. Recognizing the vascular surgery principles during reoperating patients due to vascular pathology.
12. Be aware of endoluminal therapies in case of acute tissue ischemia or major hemorrhage (traumatic or rupture aneurysm).
13. To know characteristics of congenital arterial, venous and lymphatic diseases
14. To know treatment options of chronic venous failure and patients with venous ulceration.
15. To know different type of suture and graft materials.
16. To know the diagnosis and treatment of renovascular hypertension.
17. Recognizing the therapy of the following vascular failures and surgical technics to be applied.
    a. Abdominal aortic bypass or aneurismectomy
    b. Carotid stenosis
    c. Femoral poplyteal occlusion
    d. Tibial arterial occlusion
19. Be aware of ciritic factors during the decision phase on vascular surgery.
    a. Risk benefit rate
    b. Morbidity and mortality possibility
    c. Pre- and postoperative evaluation
    d. Noninvasive laboratory, doppler inspection
    e. The role of progressive radiologic tchnics, angioplasty, BT, MR and M rangiography
20. Evaluating the decision processes during vascular diseases including following diseases.
    a. Mesenteric vascular disease
    b. Renovascular disease
    c. Aneurysm disease
    d. Chronic and acute arterial congestions
    e. The surgical diseases of venous system
21. Recognizing the approaches to prostetic greft infections.
    a.Diagnosis
    b.Options for revascularization.
    c.Different greft materials
22. To be aware of frequently faced major vascular problems complications.
    a. Carotid endarterectomy
    b. Aortic reconstruction
    c. Lower extremity vascular reconstruction

GOALS FOR SKILLS

Junior Level

1. The evaluation of the patients dor vascular disease.
2. Acquisition of basic surgical skills.
    a. Node setting
    b. Vision area and retraction
    c. Instrumentation data
    d. Incisions

e. Closing the incisisons
f. Act on the greft material

3.Acquisistion of basic operations performation skills on varicose ven surgery.
a. Ligation and stripping process
b. Veneous stasis ulcers approach
c. Venous thrombosis approach

4. Active participation in the amputations as an assistant.
a. Demarkation level
b. Toxicity control

5. Participation in providing venous path providing processes.

6. Providing arterial or arteriovenous path.
a. Incision
b. Closing the incision

7. Control of the traumatisis or diseased veins.
a. Vascular clamp
b. Vein loop

8. Performing thromboendarterectomy and trombectomy.

9. To apply appropriate vascular coupler techniques.

10. Performing sempatectomy processes.

11. Performing the evaluation preoperative and postoperative cares on patients who will receive major vascular surgery.

Senior Level

1.Be able to make appropriate incision and provide a view.
a. Abdominal aortic and branches
b. Peripheral arterial system
c. Carotid
d. Arteriovenous fistule

2.Be able to make the vascular control of the major veins.
a. Aortic
b. Vena cava

3.Active participation and performance in endarterectomy and bypass grefting.

4.Participation in the following attempts
a. Aortic aneurysm repair
b. Carotid endarterectomy
c. Aortic- iliac occlusive disease
d. Femoral poplyteal occlusive disease
e. Peripheric vascular trauma

5. Application of supporting methods during the surgery including thrombolitic therapy.

6 Approach to prostetic greft infections.
a. Diagnosis
b. Revascularization alternatives
c. Selecting the appropriate greft materials.
d. Timing

7. Approach tı the frquently faced major vascular processes.
a. Carotid endarterectomy
b. Aortic reconstruction
c. Lower extremity vascular reconstruction

E – OTHER AREAS RELATED TO GENERAL SURGERY

E-1. OBSTETRICS AND GYNECOLOGY

MAIN GOALS

* Acquisition of diagnosing the basic gynacology pathologic cases and getting the information of recognizing the discernment of gynacologic and abdominal pathologies requiring surgery.
* Solving gynacologic problems like urgent attempts, including pathology/trauma pelvic and abdonimal organs.

GOALS FOR KNOWLEDGE

1. Recognizing to perform a complete gynacologic examination including also an accurate anamnesis and physical examination.
2. Recognizing the anatomic relation between the pelvic organs and lower intra-abdominal organs.
3. Recognizing the phtsiology and endocronogy related with endometrial function (hypotalamic hypofiser overian axe and menstrual function)
4. Recognizing the physiology and physiopathology of the gynocologic cases and diseases mentioned below
    a. İntrauterine pregnancy
    b. The benign diseases of the overs (complications of the cysts, torsion and hemorrhage
    c. Ectopic pregnancy
    d. Over,uterus, cervix uterine, vaginal and vulva cancers
5. Be able to make the distinctive diagnosis of the pelvic blocks / pathologies mentioned below.
    a. Cysts
        (1) Benign ovarian cysts (functional, neoplastic)
        (2) Malign ovarian cysts
    b. Tumors
        (1) Benign solid tumors (uterus, ballons, overs)
        (2) Malign solid tumors (primer or metastatic)
    c. Infectious blocks
        (1) Salpengitis or appendicitis
        (2) Tubo-ovarian abscess
    d. Fibroid uterus or other intra abdominal blocks
    e. A bleeding ovarian cyst
6. Evaluating the informations provided by the following inspection methods

a. Display (ultrasonography, computerized tomography, magnetic resonance display)
b. The cytology of the ascites fluid

7. To be aware of the main principles of therapies preferred for following cases.
   a. Uterine hemorrhage
   b. Ectopic pregnancy
   c. Overian cysts having hemorrhage, growth or torsion
   d. Endometriosis
   e. Overian ,uterus, vagina and vulva carcinoma
   f. Fibroids
8. Being aware of the histerectomi indications.
9..Recognizing the surgical and pathologic phasing of overian and uterus tumors.
10. Be aware of the following surgical attempt principles
   a. Histerectomy
   b. Salpingectomy
   c. Ooferectomy
   d. Laparoscopy
11.Recognizing the approach to the over block faced incidentaly in laparotomy by taking the following points into account.
   a. Biopsy or oophorectomy
   b. Surgical phasing (peritoneal lavage, contralateral ovarian biopsy, omentectomy)
   c. Consultation (family, cynecologist)
12. Defining the main subjects about the surgical therapy of the pregnant patient including following items.
   a.Appendicitis (difficult to diagnose, requirement of a different surgical)
   b.Cholecystitis (medical cure prior to surgical trial)
   c. Intestinal obstruction (confusing indications, operative approach, nutritional support in the end of the surgery)
   d. Breast block (interfuse with the physiologic changes on the breast, special care during surgery, lactation and complications after the surgery)
   e.Trauma (Special diagnostic measures for the therapy of the fetus and mother)
13. Specifying possible physiolocigal effects to pregnant woman and/or to growing child when they are subject to the following agents.
   a. Anesthesia
      (1) Influences of the frequent anesthetic agents, inhalation and conduction
      (2) Catastrophic events : unsuccessful endotracheal intubation, pulmonary aspiration, total spinal block
   b. Drugs
      (1) Evaluating the risks regarding drugs
      (2) Recognizing the drugs which cause fatal effects by getting through the placenta.
   c. Radioterapy
      (1) Its effect on fertility
      (2) Its effect on the fetus
14. Being able to make the distinctive diagnosis of the ectopic pregnanacy.

a. Indications and diagnosis
b. Qualitative and quantativa human chorionic gonadotropin
c. Abdominal and vaginal ultrasonographiography

15.Evaluating the indication and controindication of the laparoscopy on the pregnants including following points.
a. Recognizing the diagnosis and therapy of the ectopic pregnancy
b. Being aware of controindications
(1) Previous laparotomies
(2) Severe cardiac disease
(3) Peritonitis
(4) Intestines obstruction

GOALS FOR SKILLS

1. Achieving Pelvic examination.
2. Attending gynacologic surgeries.
a. Assistance capability during the gynacologic surgery within the early education period.
b. Surgical applications capability under supervision for the senior assistant
(1) Pelvic laparoscopy
(2) Oopherectomy
(3) Salpingectomy
(4) Histerectomy
3. Performing distinctive diagnosis of pelvic infection and blocks by taking the following points into account.
a. Common infections (endometritis, salpengitis, tubo-ovarian abscess)
b. Common microorganism (gonococcus, chlamidia, anaerobic bacterium)
c. Seperate the diagnosis in pelvic and abdominal examinations (block, sensitivity, peritoneal irritation diagnosis, ultrasonogrpphy display, fever, leucocytosis)
4. Describing all of the normal pelvic structures during the laparotomy visually and with palpation.
5. Performing radical inguinal disection and assisting the related gynaecologic surgical attempts for carcinoma.
6. Ectopic pregnancy diagnosis
7. Diagnosis capability on pregnancy
a. The story
(1) Menstrual story
(2) Early pregnancy indications
b. Physical examination
c. Pregnancy tests
8. Recognizing the frequently feaced gynaecologic problems on pregnant women.
a. Venereal diseases
b. Acquise immunite insufficiency syndrome
c. Human papilloma virus infection
d. Uterus leiomyoma
9. Performing uncomplicated deliveris.

10 Be able to perform cesarean section in urgent cases.

11. Be able to perform the therapy and care on the pregnant patient in case of acute trauma.

12. Be able to perform laparoscopy on pregnant patients if required.

E-2. UROLOGY

MAIN GOALS

* Understanding the anatomy, physiology and physiopathology of the genito-urinary system.
* Acquiring solving skills on regular and urgent genito-urinary problems in various conditions.

GOALS FOR KNOWLEDGE

1.Describing the normal anatomy and phsiology of the genito-urinary system comprising the following structures.
   a. Kidneys
   b. Ureters
   c. Bladder
   d. Prostat, vesicula seminalis and vas deferens
   e. Urethra (male and female)
   f. Male genitals including erectile function and testicular function.
   g. Basic adrenal anatomy and functions
2. Recognizing the main concepts about genito-urinary diseases.
   a. The anatomy, physiology, biology, microbiology, immunulogy and embryology of the genito-urinary system.
   b. The physiopathology of the urinary tract disease.
   c. The endocrine function of the kidney.
   d. Composing the water, electrolyts and acid –base balance.
3. Recognizing the execution of anamnesis and physical examination related to genito-urinary system disease comprising the following points.
   a. Anamnesis
      (1) Pain
         (a) Renal
         (b) Vesical
         (c) Prostatic
         (d) Penile
         (e) Testicular
      (2) Hematuria
         (a) Painful, painless
         (b) İnitial, terminal, total
         (c) The existence of clot
      (3) Diagnosis of lower urinary system pathologies
         (a) Irritative
         (b) Obstructive
   b. Physical examination

(1) Kidneys
    (a) Side blocks
    (b) Peritoneal diagnosis
    (c) Irritability diagnosis of nerve roots
(2) Bladder
(3) Scrotum and its content
(4) Rectal examination (to evaluate the prostat)
(5) Pelvic examination on women

4. Definition of pathologic anatomy and physiopathologies of noncomplex genito-urinary diseases as in the following examples.
    a. Tumors (renal,ureteral, bladder, testicular, adrenal)
    b. Stones (renal, ureteral, bladder)
    c. Trauma (testis, upper and lower urinary tract)
    d. Renal infections
    e. Prostat cancer
    f. Benign prostatic hyperplasia and bladder exit obstruction
    g. Reflux and pyelonephritis
    h. Bbb syndrome , Hipospadias
    i. Cryptorchidism and ve varicosele
    j. Incontinence (stress, overflow, neurogenic)
    k. Testis torsion
    l. Impotence and Peyronie disease
    m. Ureteral stricture disease
    n. Priapism
5. (TNM) classification in base of tumor, nodular and metastasis in kidney, bladder, prostat and testis tumors.
6. Recognizing the indications of the regular diagnosis processes on urology.
    a. Cystoskopy (ureteral catheterization)
    b. Bladder catheterization
    c. Intravenous pyelogram
    d. Cystogram (retrograde ureteropyelogram)
    e. The computerized tomography and ultrasoonogrphy of the genito-urinary system.
    f. Urography in trauma
    g. MRI use indications
    h. Retrograde uretrogram
    i. Transrectal ultrasonography
7. Evaluation of regular therapy processes and indications in genito-urinary disease.
    a.Bladder catheterization
    b.Suprapubic cystostomy
8. Definition of transuretral prostat resection and other endoscopic urologic processes.
9. Ephasizing the features of a clear and appropriate demand for the urologic consultations.
10. Describing the genito-urinary systems embryology in order to discuss following items.

a. Congenital anomalies
b. Radical nefrectomy
c. Ureterolithotomy
d. Radical sistectomy
e. Radical retropubic prostatectomy
f. Perineal prostatectomy
g.Orchiectomy
h. Radikal orchiectomy

11.Recognizing the complex genito-urinary problems/processes below.
a. Penile implants
b. Radical surgery
c. Laser surgery
d. Endoscopic urology
e. Congenital anomalies
f. Pediatric urology
g.Urologic oncology
h.Stone disease
i. Complex urologic infections
j. Renal function and bladder physiology
k. Urologic trauma including iatrogenic
l. Lithotripsy

12.Discussing on therapy options regarding ureteral injuries including following points.
a. Ureteroureterostomy
b. Percutaneous drainage
c. Urgent nefrectomy

GOALS FOR SKILLS

1. Completing and recording an urologic anamnesis and physical examination.
2. Examination and diagnosis in acute cases related to scrotum and its comprehension.
3. The arrangement of water (fluid) , electrolyte and acid/base balance.
4. Performimg the required radiologic inspections and distinctive diagnosıs of a prostatic block found during the regular examination.
5. Planning and starting appropriate therapy under supervision for he urologic diseases.
   a. The distinctiva diagnosis for hematuria
   b. Obstrüctive uropathy diztinctiva diagnosis
   c. Simple infections
   d. Resistant infections
   e. Stone disease, renale neoplasia, transitional call neoplasia
   f. Prostat cancer
6. Monitoring patients with genito-urinary disease, cured residentialy or afoot.
7. Writing clear and appropriate demand for urology consultations.
8. Bladder catheterization.

9.Performing urologıc evaluatıon, diagnosis activities and required therapy in trauma cases.
10.Demanding intravenous pyelography (IVP), BT and ultrasonography and ealuate their results.
11.Cystoscopy and ureteral catheterization.
12.Applying sctoral surgery for hydrocele, torsion and varicosele.
12.Taking a uretography in trauma cases and interpreting.
13. Taking a cystography in trauma cases and interpreting.
14.Being able to make perkutaneous and open cystostomy.
15.Being able to make nephrectomy on diseases or trauma.
16.First aid, uretographies, cystogrphies, catheterization and cystostomy capabilities on genito-urinary trauma congrously.

E-3. THORACIC SURGERY

MAIN GOALS

- Featuring that the anatomy, physiology and physiopathology of the thoracic pathologies are understood in relation with the general surgery.
- Effective application of this concept for diagnosis and therapy, on the thoracic patients to be cured by the general surgery.

GOALS FOR KNOWLEDGE

1. Learning the thoracic anatomy and physiology by adding the anatomic and functional relations to it.
    a. Breast wall
    b. Accessory muscles of the respiration
    c. Phrenitis
    d. Mediastinum
    e. Trachea, segemntal and subsegmental bronches
    f. Lungs
    g. Esophagus
    h. Heart and pericardium
    i. Centreal vessels and primary branches
    j. Peripheric nerves (vagus, sympatics, intercostals, phrenic, recurrent laryngeus)
2. Learning the following modulities by acquiring the indications and limitations on the breast surgery attempts.
    a. Endoscopy/thoracoscopy
    b. Standart and positional roentgenography
    c. Ultrasonographyography
    d. Computerized axial tomography (BT) and megnetic resonance display (MRI).
    e. Tracheostomy
    f.. Intubation and ventilator support
    g.. Central intravenous
    h.Thoracic tubes
3. General evaluation of the following diseases diagnosis and therapy principles.
    a. Hydrothorax and hemothorax
    b. Pulmonary inflitrations and blocks
    c. Abnormal cardiac silhouettes
    d. Plevral effusion
    e. Fractures (clavicles, sternum, costal, scapula and spine)
    f. Mediastinal blocks
    g. Infectious processes
    h. Neoplastic processes (esophageal, pulmonary, extrapulmonary)

4. Recognizing following processes and their indications.
    a. Needle aspiration
    b. Thoracic tube placement
    c. Mediastinoscopy
    d. Thoracoscopy
    e. Median sternotomy
    f. Torachotomy
5. Recognizin the usage time of diagnostic and therapotic tests like below mentioned ones.
    a. Bronchoscopy and esophagoscopy (flexible and rigidity)
    b. Thoraxoscopy
    c. Toracotomy in the emergency sevice
    d. Aortic cross clamp
    e. Standart torachotomy and median sternotomy (Chamberlain and book attempts)
    f. Perycardial pane/ pericardiocentesis
    g. Lung biopsy/fine needle aspiration (İİAB)
    h. Pulmonary resection
6. Recognizing the mechanics of the ventilation support by completing the following activities and the clinic application of the mechanic ventilation.
    a. Comparison of the venitlator types
    b. Recognizing the indications fort he ventilators.
    c. Showing the adjustment of the ventilators
    d. Detaching from the ventilators (weaning)
    e. Evaluation of the detache parameters
    f. Evaluating complicated vetilator problems.
7. Recognizing the changes on the thoracic anatomy and physiology resulted from the following points.
    a. Abdominal surgeries
    b. Mediastinoscopy
    c. Thoracotomies
    d. Sternotomies
    e. Thoracoscopy
    f. Thoracoplasty
    g. Vertebra surgeries
    h. Neck surgeries
8. Recognizing the various incision types used in the thorax surgery.
    a. Apical resections
    b. Pneumonectomy
    c. Esophagectomy
    d. Mediastinal attempts
    e. Tracheal/bronchial attempts
    f. Esophageal stenosis and diverticulum
    g. Thorachoplasty

9. Recognizing the diagnosis and therapy approaches in thorax obtuse and penetrance traumas.
10. Learning the special tharapy in thorax trauma.
    a. Neck
    b. Esophagus
    c. Nerves
    d. Mediastinum
    e. Bone thorax
    f. Diafram
11. Evaluation of the inflitrates, infectious and neoplastic events in the thorax and acquisition of appropriate therapy.
12. Recognizing the diagnosis and therapy of surgical complications.
    a. Fistules (bronchopleural, pleurockutanous, tracheoesophageal, arteriovenouss)
    b. Esophageal leakage
    c. Locule hemothorax
    d Hemorrhage in the end of the surgery
    e. Empyema
    f. Air leakage
13 Learning the diagnostic and therapeutic indications for the usage of following modilities.
    a. Rigidity and flexible bronchoscopy
    b. Esophagoscopy
    c. Mediastynoscopy (servical or parasternal)
    d. Torachoscopy
    e. Laser bronchoscopy
14. Evaluation of the sugical operations used in following cases.
    a. Tracheal and bronchial injuries requiring resection or replacement.
    b. Thoraxoplasty
    c. Esophageal resection/reconstruction
    d. Anti-reflux attempts
    e. The sleeve resection of the trachea/brounch due to tumor.
    f. Thorax wall recunstruction by using myocutane flaps and/or synthetic materials.

GOALS FOR SKILLS

1.Demanding and iterpreting the appropriate tests fort he diagnosis.
2. Diagnosis and first therapy of costa, clavicula, sternum, scapula and spinal breaches.
3. Evaluating the patients for the thorax surgery in scope of risk factors, be a candidate for sugıcal resection, pulmonary function tests and disability apt in the end of the surgery.
4. Takeing patients opinion about their preparation in general thorax diseases.
5. The usage, adjustment and arrangement of the mechanical ventilators.
6. Being able to observe and perform the following processes.
    a. Thorax tube placement

b. Making thoracentesis
c. Placement of central and venous catheter.
d. Making simple endoscopic attempts.
e. Making tracheostomy
f. Performing naso-oropharingeal/tracheal anaesthesia for the endoscopic processes.

7. Using the data obtained during the diagnostic and therapeutic attempts, on the evaluation and planning of thorax pathology therapies.
8. Sugical therapy of the empyema.
9. Placement of Swan Ganz catheter and performing cardio vascular moniorization and calculation fo the following items.
   a. Pressures
   b. Cardiac output
   c. Systemic vascular resistance
10. Performing all thoracic diagnostic and therapeutic ancopic processes and/or observing.
11. Costa resection, therapy of the empyema cavities, making plevral and lung biopsy, paticipating in lung resections and mediastinoscopy/mediastinotomy.
12. Therapy of thoracic trauma.
13. Giving medical and surgıcal therapy for the infectious events in the thorax.
14. Applying all pharmacotherapies related to thoracic surgery.
15. Therapy of medical cases related to surgıcal attempts on the thorax.

E-4. ORTHOPEDICS

MAIN GOALS

* Recognizing the anatomy, physiology and physopathology of the Musculoskeletal system.
* Acquisition skills on operative issues prior to surgery and care after surgery in different conditions, for patients having orthopedic problems.

GOALS FOR KNOWLEDGE

1. Definition of the main anatomic structurs of the skeletal system.
2. Describing the physiology and biochemistry of bone growth and maturation.
3. Be aware of the functioniality of all genuine bones wihin the human body.
4. Recognizing the appropriate protocol for the analysis of the skeletal system by using the appropriate skill during anamnesis and physical exam.
5. Analysis of using radiologic displays like, magnetic resonance (MRI), computerized axial tomography (BT), arteriogrphy and direct graphies for the analysis and therapy of orthopedic pathologies mentioned below.
    a. Musculoskeletal tumors
    b. Isolated extremity injuries
    c. Spinal injury or fracture
    d. Pelvic trauma
    e. Vascular injury
    f. Urological injury
6. Recognizing the main care of patients having musculoskeletal systems acute trauma, including correct analysis of all extremities neurovascular condition and documentation.
7. Describing the main therapy principles of orthopedic trauma including following points.
    a. Compartment pressure problems and usage of fasciotomy
    b. Close reduction and indications and limitations of covering with plaster.
    c. Open reduction of fractures and indications of internal fixations.
    d. Skeletal traction indications and its methods.
    e. Early mobilization and rehabilitaion principles.
    f. Fat embolism diagnosis and therapy
8. Explaining the therapy of open fractures including following points.
    a. Timing
    b. Stabilization priorities
    c. İrrigation and debridman
    d. Early fixation
    e. Mobilization
9. Analysis of following diseases which are effecting the musculoskeletal system.

a. Inflammatory diseases (romatoid arthiritis, ststemic lupus eritematosis (SLE), psoriatic arthiritis, Retier's syndrome)
b. İnfectious diseases (septic artrit, osteomyelitis)
c. Metabolic diseases (osteomalaci,a hyperparathyroidism, hyperthroidism)

10.Recognizing the therapy of the muscluoskeletal tumors including following points.
a. Analysis and phasing
b. Choosing and applying the appropriate biopsy, for example;
(1) Open or fine needle biopsy
(2) Frozen section or permanent section
c. Adjuvant therapy options
(1) Chemoterapy
(2) Radiation

11. Recognizing the therapy of nerve injuries resulting due to musculoskelatal trauma including following items.
a. The response of the nerves against the injury
b. Analysis of nerve injury
c. The tranmission of the impulses from different points within the peripheric nerve system.
d. Surgical repair options

12.Comprehending the indications and controindications of the articulation aspiration.

13.Analysis of the amputation indications and surgical approaches under the following conditions.
a. Trauma
b. Ischemia
c. Infection
d. Tumors
e. Prosthesis

14. Recognizing seconder developing infection/sepsis of prostetic implants and analysing the therapy strategies.

GOALS FOR SKILLS

1. Taking anamnesis, physical exam and recording the diagnosis in orthopedic failures including following items.
a. Trauma
b. Congenital malformations
c. Degenerative diseases
d. İnflammatory situations
e. Neoplasia
2. Appropriate diagnostic display for the orthopedic pahologies and lab activities and their interpreting.
a. Laboratory analysis for safe surgical operation preoperative as required.
b. Direct graphy analysis (especially servical vertebra and primer skeleton films)
c. Spinal column and knee MR

3. Immobilizing the servical vertebra.
4. Applying triage on patients faced musculoskeletal injuries in case of cataclysm.
5. Attending to the therapy of orhopedic traumes in the extremities.
    a. Splinting covered fractures
    b. The covered reduction of the fractures
    c. The reduction of the dislocations
    d. Applying traction
    e. Plastering
    f. The debridement and irrigation of the open extremity fractures
    g. The open reduction and internal fixations of the extremity fractures
6. Monitor the compartment pressure in oorthopedic trauma and start with the apropriate therapy including fasciotomy.
7. Monitor the trauma patients against fat embolia and start with the suitable cure.
8. Attending to diagnostic and therapeutic artroscopy atempts like those one mentioned below.
    a. Partial menisectomy (knee)
    b. Shoulder artroscopy (diagnostic)
9. Joining the amputation therapy.
    a. Determine the amputation level
    b. Make lower extremity amputation in agreeable cases
    c. Manage the rehabilitation of the patient having amputation in appropriate cases.
10. Attending to the therapy of musculoskeletal tumors including following points.
    a. Planning and applying the incisional biopsy for the soft tissue tumor.
    b. Analysis and phasing the soft tissue prior to the surgery.
    c. Attending to the planning, resection and extramith rescue discussions of the soft tissue tumors.
11. Joining the prostetic articulation replacement.
12. Participation in therapies of congenital, development oriented and other musculoskeletal deficiencies on children.
    a. Cerebral paralysis
    b. Myelomeningocele
    c. Muscular dystrophia
    d. Development oriented buttock dislocation
    e. Talipes equinovarus

E-5. ANESTHESIOLOGY

MAIN GOALS

* Recognizing the physiopathology of the pain and understend the therapy principles.
* Understand the regional and genral anaesthesia principles and pharmacology in pain control.
* Achieving the skills to use those principle during the therapy of the surgical patients.

GOALS FOR KNOWLEDGE

1. Recognizing and analysing the following concepts related to local, regional and general anaesthesia usage.
    a. Careful cardiovascular, respirutary and neurologic monitorizations should be done for a safe anaesthesia.
    b. No anesthetic is safer then the other one. The disadvantage and benefit rate should be evaluated for each event seperately.
    c. Some advantages of the regional anaesthesia are;
        (1) Reducing hemorrhage
        (3) Less development of the acute vein thrombosis.
    d. Much better results can be achieved from combined regional and general anaesthesia applications in certain sub-groups.
        (1) In case of serious cardiovascular diseases and major abdominal or thoracic surgical attempt is required
        (2) In case of serious pulmonary disease and major abdominal or thoracic surgical attempt is required
    e. Providing analgesia with epidural catheter would contribute the patient healing positively during-after the surgery.
2. Recognising the things to do absulately during the analysis prior to the anaesthesia.
    a. Reviewing the systems with anamnesia and physical exam especially paying attention on cardiovascular and pulmonary disease.
        (1) The effect of cronic drugs (for example Kumadin, insulin)
        (2) The effects of the drugs before the surgery (for example Demerol, atropin)
        (3) The effects of the drugs in the end of the surgery (for example örneğin antihipertansives, antiemetics)
    b. The anatomic and physiologic variables effecting the success of the anaesthesia
        (1) Airway anatomy
        (2) Skeletal deformities
        (3) Neuromuscular diseases (malign hypertermy anamnesia)
        (4) Aspiration risk (pregnancy, scleroderma, hiatal hernia)
    c. Making the ASA (American Society of Anesthesia) analysis.
        (1) There is not an organic disease
        (2) Easy or medium systemic disease
        (3) Serious systemic failures

(4) Serious fatal systemic failure

(5) It's a serious patient, has very less chance to survive

3. Describing the pharmacokinetics and pharmacodynamics of the anesthetic agents.
4. Recognizing the usage and monitorizations of the drugs used for cedaton and analgesia in form of including following points.
   a. Minimum anesthetic monitorization (puls oximetry, electrocardiogramm, blood pressure)
   b. Indications of patient controled analgesia (PCA).
   c. The importance of the periodic analysis in determination of following points:
      (1) Conscious level
      (2) Pulmonary situation on sedatized patients
5. Recognizing the application principles of the anaesthsia methods mentioned below and comparison of their efficiencies.
   a. General
   b. Spinal
   c. Regional
   d. Local
6. Recognizing the potential benefits of the regional and local anaesthasia including following items.
      a. Facing less respiratuary depression
      b. Facing less systemic effects (liver and kidney toxity)
      c. Facing less cardiac depression
7. Describing the potential complications related to the usage of the regional anaesthesia.
   a. Spinal anesthetics (headache, leakage of cerebrospinal fluid [BOS], menengitis)
   b. Regional nerve blocks (perineural hematoma)
8. Recognizing the indications of antispasmodic usage.
9. Recognizing endotracheal and nasotracheal intubatio technics and potential complications.
10. Recognizing the potential physiologic sequela of the anaesthasia in different figures.
      a. Acute
      b. Subacute
      c. Chronic
11. Evaluating the risk-benefit rate of the anaesthesia in certain cases.
   a. Frequent risks but serous up to medium morbidity (Nausea in the end of surgery, vomid, sore throat)
   b. Rare risks with major morbidity (malign hyperthymia)
   c. Certain disease cases (miocardial, pulmonary, neuromuscular)
12. Recognizing the therapeutics options for patients having cronic pain,
13. Recognizing the required steps in scope of general anaesthasia perspectivw during the analysis in the end of the patients surgery.

GOALS FOR SKILLS

1. Providing the airways on adults and children by applying the following points as required.
    a. Physical evolutions
    b. Oral/nasal support devices
    c. Aspiration technics for fresh air continuation
2. Nasal ve oral intibution capability.
3. Recognizing the indications and diagnosis and therapies of the complications caused by the anaesthatic agents.
    a. Cardiovascular collapse
    b. Acute metabolic failures
    c. Malign hyperthymia
4. Performing the care and analysis of the patients care before and after the surgery.
5. Recognizing the risks of possible side effects of the drugs used for pain control.
6. Being able to use suitable monitorization devices.
7. Providing vein path on children and adults.
8. Aplying general anaesthesia and monitoring the entrance and exit of the general anaesthesia phases.
9. Being able to apply spinal anaesthesia on chosen patients.
10. Urgent tracheostomy capability.

E-6. PATHOLOGY

MAIN GOALS

- Understanding the surgical pathology principles and showing capability in gaining and interpreting of surgical pieces.

GOALS FOR KNOWLEDGE

1. Recognizing the indications and contraindications and limitations of the biopsy technics mentioned below.
    a.Fine needle aspiration
    b.Stereotactic biopsy
    c.Embre biopsy
    d.Incisional biopsy
    e.Excisonal biopsy
2.Recognizing the movement methods of the samples obtained with the methods mentioned above.
3.Describing the role of the needle aspiration on the diagnosis and therapy of the following items.
    a.Breast pathology
    b.Ovarian pathology
    c.Thoracic and adominal fluid collections
4.Recognizing the indications and principles of the grain preparation methods.
    a.Hematoxylin eosin colouring
    b.Immunhistositology
    c.Special colourings (enolase, argentaffine etc….)
5.Recognizing and interpreting the genetic analysis of the neoplastic grains.
    a.Ploidy situation
    b.Mitotic activity
    c.Cell cyclus phase

GOALS FOR SKILLS

1.Fine needle aspiration, ember, incisional and excisional biopsy capability and being able to evaluate he results of each with the professor surgeon, patolog and patient.
2.Review and analysis capability of surgical pathology report details with the surgical professor.
3.Definition of the intraoperative macroscopic diagnosis and capability to evaluate the distinctive diagnosis with the surgeon team and patolog.
4.Inspecting the histology over intraoperative frozen section and patafine blocks prepared in the end of the surgery and evaluating by dicussing with the surgeon team and the patolog.
5.Gained diseases and joining to autopsies of traumatic deaths.
6.Evaluating the anamnesis, surgery diagnosis and proposed therapies by joining the multidiciplinary councils where the surgeons, the patolog, radiologist and oncologist take place.