KIDNEY TRANSPLANTATION
GOALS & OBJECTIVES

UCSF PGY 1

[Please note that all listed Goals & Objectives and Responsibilities & Expectations are IN ADDITION TO those listed in the UCSF Common Goals & Objectives]

PATIENT CARE
GOALS & OBJECTIVES

1. Interpret the results of focused clinical evaluations (history, physical examination, laboratory data) performed on patients undergoing assessment for kidney transplantation to
   a. Identify patients who are candidates for kidney transplantation
   b. Identify the findings that constitute contraindications to proceeding with kidney transplantation.
2. Perform at least 6 clinical evaluations on patients being assessed for kidney transplantation, specifically incorporating the physical examination of the
   a. Chest
   b. Abdomen
   c. Lymphatic system (adenopathy)
   d. Peripheral vascular system (pulses)
   e. Lower extremities
   f. GU system
   g. Neurologic system
3. Assume primary responsibility for the postoperative management of at least 6 kidney transplant patients, including
   a. Writing postoperative orders
4. Interpret the results of focused clinical evaluations (history, physical examination, laboratory data) performed on patients undergoing assessment for kidney transplantation to construct a risk benefit analysis including
   a. Cardiac risk factors
   b. Infectious risk factors
   c. Rejection risk factors
5. Interpret the results of focused clinical evaluations (history, physical examination, laboratory data) in postoperative kidney transplant patients to identify and develop treatment plans for the following postoperative changes
   a. Decreased urine output
   b. Decreased blood pressure
   c. Hypertension
   d. Chest pain
   e. Shortness of breath
   f. Pulmonary edema/fluid overload
   g. Hyperkalemia in a patient with renal insufficiency
   h. Fever
   i. Hyperglycemia
6. Determine an appropriate evaluation plan for patients with a functioning kidney transplant who develop deterioration of renal function.
7. Interpret the results of focused clinical evaluations (history, physical examination, laboratory data) performed on patients undergoing assessment for pancreas transplantation to
   a. Identify patients who are candidates for pancreas transplantation
   b. Identify the findings that constitute contraindications to proceeding with pancreas transplantation.

RESPONSIBILITIES & EXPECTATIONS

1. Write admission and inpatient orders under the supervision of the resident/fellow/attendings
2. Be present at morning attending rounds, prepared to present patients in an organized and succinct manner.
3. Update daily census, including medications
4. Implement the clinical decisions made by the team (on rounds, during the day) in a timely manner
   a. Arrange consultations
   b. Schedule diagnostic tests
   c. Schedule therapeutic procedures
5. Notify the senior resident/fellow/attending if unable to implement the clinical decisions
6. Communicate the results of consultations, diagnostic tests and therapeutic procedures to the team in a timely manner

**MEDICAL KNOWLEDGE**

**GOALS & OBJECTIVES**

1. Describe the evaluation process, including medical and psychosocial components, for the
   a. Live kidney transplant donor
   b. Kidney transplant recipient
2. Identify immunosuppressive medication
   a. Classes
   b. Mechanisms of action
   c. Toxicities
3. Describe the immunology of rejection including
   a. T cell and B cell involvement
   b. Risk assessment methods
   c. HLA testing, the role of PRA
   d. Cross-matching
   e. Diagnosis
   f. Treatment
4. Describe the anatomy of
   a. The kidneys, including
      i. Renal artery and vein
      ii. Ureter
      iii. Bladder
   b. The iliac arteries and veins
   c. The pancreas, including
      i. Blood supply
5. Describe the major steps involved in performing the following procedures
   a. Kidney transplant
   b. Donor nephrectomy
   c. Transplant nephrectomy
6. Interpret the results of clinical evaluations to identify the patient who requires acute dialysis
7. Compare access methods for dialysis
8. Assess the risk of dialysis complications
9. Compare common opportunistic infections in transplant recipients in terms of
   a. Presenting signs and symptoms
   b. Treatment
   c. Prevention

**RESPONSIBILITIES & EXPECTATIONS**

1. Complete the online ASTS curriculum module for kidney transplantation

**TECHNICAL SKILLS**

**GOALS & OBJECTIVES**

1. demonstrate proficiency in
   a. one-handed knot tying
   b. two-handed knot tying
2. assist during at least 3 kidney transplant procedures
3. during at least 3 kidney transplant procedures
   a. close the fascia
   b. close the subcutaneous layer
   c. close the skin
4. assist during at least one
   a. peritoneal dialysis catheter insertion
   b. hemodialysis catheter insertion
   c. vascular access procedure

**RESPONSIBILITIES & EXPECTATIONS**
1. see UCSF Common Goals & Objectives

**PRACTICE-BASED LEARNING AND IMPROVEMENT**

**GOALS & OBJECTIVES**
1. analyze the causes of common complications of kidney transplantation
2. read and critically assess the literature

**RESPONSIBILITIES & EXPECTATIONS**
1. participate in the weekly Transplant M&M conference to review and analyze treatment outcomes
2. present at least one review of a complication and the relevant literature at one of the service teaching conferences
3. document patient outcomes by maintaining a log of patients treated and their clinical results
4. meet with the faculty education representative at least three times during the rotation (beginning, midpoint, exit) to review goals & objectives.

**INTERPERSONAL AND COMMUNICATION SKILLS**

**GOALS & OBJECTIVES**
1. communicate effectively as a member of the multidisciplinary team that rounds together, in a way that allows all members of the team to participate in formulation of plans of care for transplant patients.
2. communicate effectively with patients with long-standing chronic illness.

**RESPONSIBILITIES & EXPECTATIONS**
1. counsel and educate patients and their families regarding postoperative wound care
2. review discharge medications, particularly immunosuppressants, with at least one post-transplant patient
3. complete discharge summaries the day before discharge
4. mentor 3rd and 4th year medical students assigned to rotate on the service
5. obtain informed consent for surgical procedures
6. obtain consent for postmortem examinations from family members.

**PROFESSIONALISM**

**GOALS & OBJECTIVES**
1. Describe the ethics of organ donation, brain death, withdrawal of support, and the separation of the transplant team from the team caring for the patient who is a potential donor
2. Describe the ethics of living donation, considering donor health and well-being.
3. Discuss the ethics of compensation of donor families or living donors.
4. Discuss the ethics of various organ allocation schemes, emphasizing utility, efficiency, justice.
5. Discuss the conflicting interests of individual transplant patients vs. the waiting list as a whole

**RESPONSIBILITIES & EXPECTATIONS**
1. attend at least one kidney transplant selection conference

**SYSTEMS-BASED PRACTICE**

**GOALS & OBJECTIVES**
1. compare the overall healthcare costs of dialysis with the costs of renal transplantation
2. describe the payment system for, including the role of Medicare
   a. dialysis
   b. renal transplantation
3. analyze barriers to renal transplantation for different patient populations

**RESPONSIBILITIES & EXPECTATIONS**
1. attend at least one kidney transplant selection conference
2. attend twice-weekly multidisciplinary rounds
GOALS & OBJECTIVES

1. Analyze the results of focused clinical evaluations to determine relevant positive and negative findings in potential transplant recipients.
2. Optimize the preoperative preparation of patients accepted for kidney transplantation.
3. Analyze the results of focused clinical evaluations (history, physical examination, laboratory data) performed on patients undergoing assessment for kidney or pancreas transplantation to construct a risk benefit analysis considering all the potential comorbidities listed in Medical Knowledge G&O #1.
4. Analyze the results of postoperative monitoring to manage patient recovery after kidney or pancreas transplantation.
5. Analyze the results of postoperative monitoring to identify and manage complications after kidney or pancreas transplantation.
6. Use evidence-based medicine to reduce the risk/incidence of perioperative complications after kidney or pancreas transplantation.

RESPONSIBILITIES & EXPECTATIONS

1. Assist the PGY 1 in the daily update of the patient census list and medications.
2. Unless in the operating room, attend KTU rounds every weekday.

GOALS & OBJECTIVES

1. Identify the optimal method of evaluating comorbidities for planned kidney transplant recipients, including
   a. Cardiac—indications for
      i. Echocardiography, resting and stress
      ii. Stress test, exercise and pharmacologic
      iii. Cardiac catheterization
   b. Pulmonary—indications for
      i. Arterial blood gases
      ii. Pulmonary function tests
   c. Coagulation abnormalities—hypercoagulable states, bleeding diatheses
   d. Rheumatologic—lupus
   e. Infectious diseases—active, latent (+PPD)
   f. Malignancy—history of, concurrent
2. Assess the risk of recurrence of the primary disease after kidney transplantation, e.g. lupus, IgA nephropathy, diabetic glomerulosclerosis, FSGS, MPGN
3. Compare the different categories of rejection and their manifestations in kidney and pancreas transplant recipients.
4. Assess the special management issues in general and vascular surgery patients with
   a. Kidney transplants
   b. Pancreas transplants
5. Determine the optimal evaluation and management for post-pancreas transplant
   a. Hyperglycemia
   b. Hyperamylasemia
   c. Hyperlipasemia

RESPONSIBILITIES & EXPECTATIONS

1. Complete the online ASTS curriculum module for kidney transplantation.
TECHNICAL SKILLS

GOALS & OBJECTIVES

1. For kidney transplant patients describe and perform the techniques for exposure of
   a. Iliac artery
   b. Iliac vein
   c. Native ureter

2. For kidney transplant patients describe and perform the anastomotic techniques for
   a. Artery
   b. Vein
   c. Ureteroneocystostomy
   d. Uretero-ureterostomy

3. Describe the steps of a pancreas transplant, including
   a. Options for venous drainage
   b. Options for exocrine drainage

4. Describe the back-table vascular reconstruction for a pancreas transplant

5. Perform at least four procedures for dialysis access – peritoneal dialysis, AV fistula, AV graft
   a. demonstrate proficiency in one and two handed ties, using 3-0,4-0,5-0 and 6-0 sutures

6. Perform at least ten iliac artery and vein exposures, using both retroperitoneal and transperitoneal approaches

7. Perform/assist in at least eight kidney transplants (deceased donor and living donor)
   a. demonstrate proficiency in knot tying as above
   b. demonstrate proficiency in vascular anastomoses, both arterial and venous (renal artery and renal vein) – to have total warm ischemia time <30 minutes
   c. demonstrate proficiency in performing a ureter to bladder anastomosis.
   d. Take PGY-1 through wound closure (teaching assistant).

8. Scrub in and assist on at least four living donor nephrectomies.

9. Scrub in on at least one pancreas transplant

10. Participate in at least one deceased donor procurement
    a. Perform median sternotomy
    b. Mobilize right colon
    c. Mobilize left colon
    d. Perform Kocher maneuver
    e. Expose aorta, IVC
    f. Cannulate aorta and vena cava and inferior mesenteric vein
    g. First assist excision of organs, blood vessels

11. Participate in the care of transplant patients in the intensive care unit.


RESPONSIBILITIES & EXPECTATIONS

1. In preparation for performing or assisting with an operation
   a. Review
      i. The patient’s history
      ii. The planned procedure
      iii. The patient’s anatomy, e.g the number of renal arteries in the donor
      iv. The specific technical considerations
   b. Interview and examine the patient to identify
      i. the indication for the operation
      ii. the patient’s significant comorbid conditions
      iii. the patient’s immunologic risk factors
      iv. the patient’s history of dialysis and quantity of daily native urine output

2. write the postoperative orders for each procedure you perform, and communicate the specific issues to all team members

3. when directed dictate the operative report of procedures you have performed

PRACTICE-BASED LEARNING AND IMPROVEMENT

GOALS & OBJECTIVES

1. Identify the most common technical complications in the immediate post op period for kidney transplant recipients, including presentation, incidence, diagnosis, prevention and treatment

2. Describe a CUSUM analysis with respect to expected outcomes.
RESPONSIBILITIES & EXPECTATIONS
1. maintain a case log, including complications and outcomes
2. present complications at weekly M&M conferences, describing the event, precipitating factors and preventive methods
3. meet with the faculty education representative at least three times during the rotation (beginning, midpoint, exit) to review goals and objectives.

INTERPERSONAL & COMMUNICATION SKILLS

GOALS & OBJECTIVES
1. demonstrate the skills needed to lead a surgical team, including effective organization and supervision of more junior members of the team.
2. Complete comprehensive, timely and coherent medical records, accurately and clearly documenting clinical activities

RESPONSIBILITIES & EXPECTATIONS
1. Supervise PGY-1s in performing
   a. history & physical examinations
   b. writing orders
   c. arranging consultations
   d. ordering diagnostic tests
   e. scheduling therapeutic procedures
   f. dictating discharge summaries
2. Mentor and supervise the junior residents and medical students.
3. Dictate the discharge summary for each patient whose procedure you performed

PROFESSIONALISM

GOALS & OBJECTIVES
1. Describe the ethics of organ donation, brain death, withdrawal of support, the separation of the transplant team and the team caring for an injured patient or patient with brain injury
2. Describe the ethics of living donation, considering donor health and well-being.
3. Debate the pros and cons of financial compensation for organ donation.
4. Discuss the ethics of various organ allocation schemes, emphasizing utility, efficiency, justice.
5. Discuss the conflicting interests of individual transplant patients vs. the waiting list as a whole

RESPONSIBILITIES & EXPECTATIONS
1. attend at least one kidney transplant selection conference
2. share on call responsibilities with the PGY 1 and the fellow
   a. Cover for the fellow one day on the weekends for rounds.
   b. Cover the PGY-1 and hold the pager such that the PGY-1 can be sent home after rounds once or twice a week to ensure 100% compliance with work hour rules
   c. Take up to two nights of in-house call a month on the KTU service
   d. Be available to scrub on kidney transplants, donor nephrectomy, AV-fistulas, deceased donor multi-organ procurements, as well as cases on the liver transplant service as needed.
3. Self-monitor your own work hours as well as the PGY-1 hours to ensure compliance. Notify fellow and attendings, or Dr. Hirose or Dr. Roberts of any issues related to work-hours compliance.

SYSTEMS-BASED PRACTICE

GOALS & OBJECTIVES
1. Describe the current system for organ allocation, including the current function and proposals for change.
2. Describe matching criteria for a kidney transplant.
3. Describe a global package contract for services.

RESPONSIBILITIES & EXPECTATIONS
1. assure that patients have access to transplant-related medications at the time of discharge
2. attend at least one kidney transplant selection conference
3. attend twice-weekly multidisciplinary rounds