POST LIVER TRANSPLANT

• Overview of post coordinator role
• Discharge process
• Care Prep
• Common reasons for readmission
• T-tube care
• Other patient care issues
• Vaccines in the post transplant phase
• Telemedicine in the post OLT phase
• Post OLT elevated LFTs pathway
POST TRANSPLANT COORDINATORS

Kevin "The King" Go Ask Alice
Susan "Susie Cakes" & Kat "the menace" Meneses
"Her Majesty" Anna
"Beam me up" Scotty!
"Dee-ah-nah" (Diana) Una (Oonagh) #1
"Apple Jacks" AJ

What does a post coordinator do?
• Discharge teaching after transplant
• Oversees lifelong care of the transplant recipient
  - Lab follow up => total lab dosing for 2017: 10,688
  - Clinic follow up => total clinic visits for 2017: 3,433
• NP post coordinators have a broader role
• The post adult program follows approximately 1500 active patients
• The average experience of post coordinators => 20 years in liver transplant
• Main point of contact for the patient/caregiver once discharged
• Triage issues

Typical Day
• Multiple lab reviews per day
• Dealing with urgent/emergent issues first then daily non-urgent issues
• Initiating pathway if warranted, transfers, ER admissions
• Telemedicine
• Medication refills / prior authorizations
• Multiple phone calls to/from patients/caregivers
• Clinics:
  - Tuesday – 45-50 patients
  - Wednesday – overflow clinic
  - Thursday – fresh transplant patients (no max number of patients)
In-House Rotation

• Every 2 weeks a post coordinator rotates in-house to help with the discharge of new transplant recipients. PAGER 89067.
• LAT (Life After Transplant) class every Tuesday at 12:30pm. Location: 8ICU Conference Room
• Participates in MDR
• Discharge Agreement
• Coordinates discharge teaching by pharmacy, nutrition, diabetes educators and PT.
• Works with pharmacist and discharge NP regarding medications upon discharge.

Discharge Agreement

• Signed by the patient and coordinator
• Patient understands responsibilities of being a transplant patient (including but not limited to):
  - Requiring life-long follow up (clinic appointments and lab draws)
  - Medication adherence
  - Medication precautions
  - Identifying urgent issues (including rejection/infection)
  - Abstinence from drugs & alcohol
  - Vaccinations
  - Travel precautions
  - Exercise precautions

Requirements for Discharge

• Caregiver must attend LAT class
• Caregiver must attend nutrition class
• Diabetes teaching (if warranted)
• PT input
• Disposition determined: home vs facility
• Medication teaching by pharmacist (Jennifer Tsui et al.)
• Discharge agreement signed
• DMEs (durable medical equipment) arranged (Case Managers)
• Home Health (Case Managers)
Facilities

CarePrep

• Inter-disciplinary QI initiative (Christine Kiamzon)

• A program designed to engage and allow caregivers of post-transplanted patients in the care of the patient while in the hospital.

• Interdisciplinary team identifies high risk, post-transplant patients with multiple needs and poor family involvement, and coordinates intensive training and education for the patient/families at the bedside in an effort to get them safely transitioned home (or to facility) and reduce readmissions due to their high risk multiple needs, while reducing unnecessary LOS days related to barriers in dispo planning

• To help caregivers be more comfortable, competent and safe with the care they will provide at home

Enrollee Criteria

• Fresh Post Transplanted patient who has been here for >30 days
• Fresh Post Transplanted patient who is identified to go to a SNF or other facility
• Post Transplanted patient who has been re-admitted AND is now identified to go to a SNF
• “Fast Track” patients
  - Fresh Post Transplanted patient who has been here less than 30 days
  - Clinically ready to go home in the next 2 weeks
  - Family has been involved or NOT been involved since transplant

AND...

• Must require > 1 high-risk needs
  - Skilled nursing: g-tube
  - Skilled nursing: extensive wound care
  - Skilled nursing: trach
  - Skilled nursing: drains
  - Skilled nursing: glucometer and insulin administration
  - Physical therapy

• Poor caregiver involvement prior to CarePrep initiation

UCLA Health
Referral Process
- Identified in multi-disciplinary rounds
- Nursing initiates team meeting with SW, coordinator, CM and family/patient
- Family meeting to discuss needs, anticipated dispo location, dispo date and expectations
- Nursing coordinates calendar of events with team
- CarePrep patient identified in huddle and communicated in Nursing Worklist (in EHR)
- Patient/families begin teaching on identified days
- Followed up by Nursing that teaching is done
- Discussed daily in multi-disciplinary rounds

Clinic/Lab Schedule
- Post-Surgical Clinic every Thursday x 4 weeks
- Post-Hepatology Clinic every other Tuesday x 2 weeks
  - then every 4 weeks
  - Advanced per hepatology/NP coordinator
- Lab schedule
  - 1-2 times per week for 4 weeks
  - advances to weekly then to monthly as labs stabilize and graft matures.
- Long term stable patients:
  - seen yearly
  - labs quarterly

Post Surgical Clinic (postsurg)
- Patient Population:
  - Newly discharged post-transplant patients are followed weekly for four weeks or until surgical issues have resolved.
  - Older post transplant patients with new surgical issues such as hernia repairs, biliary issues, requiring surgery, etc.
  - Patients discharged to facilities will be seen prior to discharged to home, telemedicine will be used to monitor pts while they are in the facility.
- Post Surg Clinic averages 15-20 patients
- Clinic Location: Pfleger Liver Clinic – 200 Medical Plaza, Suite 214
  - Day: EVERY Thursday. EVERY WEEK (if Thurs is a holiday, clinic is on Wed)
  - Time: 8:00am – until we finish (usually around noon)
Post Hepatology Clinic (posthep)

- Patient Population:
  - Patients who have completed the 4 postsurg clinic visits and has no surgical issues.
  - Older post transplant patients with no surgical issues.
- Posthep Clinic averages 45-50 patients
  - Day: EVERY Tuesday  Time: 8:00am – 12:00pm
  - Posthep overflow clinic
  - Day: EVERY Wednesday  Time: 8:00am – 12:00pm
- Clinic Location: Pfleger Liver Clinic – 200 Medical Plaza, Suite 214

Support Group

UCLA LIVER & INTESTINAL TRANSPLANT SUPPORT GROUP

EVERY WEDNESDAY
1:00 pm - 2:00 pm
200 Medical Plaza, Room 206

Re-Admissions

- 480 post transplant re-admissions in 2017
- Sources:
  - 21% direct admits
  - 7% clinic to ER
  - 57% home to ER
  - 15% transfers from OSH
Infection, Rejection & other complications

- Complications usually happen during the first year after transplant.
- Rejection and infection are the two most common complications.
- Approximately 20% of liver transplant recipients have at least one episode of rejection.

Signs and Symptoms of Infection include:

- **Fever** of 100.5 degrees Fahrenheit or higher (patients are instructed to take their temperature daily for the first month and as needed)
- **Redness, Swelling** and/or **cloudy or foul smelling drainage** from any wound or drain site
- **Cough** a persistent cough that lasts longer than 2 days with or without trouble breathing or shortness of breath
- **Rash or Sore** on your skin, or in your mouth
- **Urinating** frequently or burning upon urination or an unusual drainage
- **Diarrhea** (5 or more liquid stools) over 24 hours without improvement

Signs and Symptoms of Rejection include:

- **Fever** of 100.5 degrees Fahrenheit or higher
- **Discomfort** that is new on the right side of your abdomen, where your liver is located
- **Jaundice**, the whites of the eyes look yellow in sunlight; skin looks yellow
- **Dark Urine** that is the color of tea or Coca-Cola
- **Stools** are pale or chalk-colored
- **Pruritis**
- **Note**: Liver function tests will elevate well before these signs and symptoms appear. These are very LATE symptoms of rejection.
Danger signs:

- Chest Pain or Shortness of Breath, Dyspnea
- Sustained fever greater than 100.5 degrees Fahrenheit, any sign or symptom of infection/rejection.
- ANC less than 1000
- Persistant HTN
- Altered LOC or physical and mental behavior. Signs of medication toxicity such as seizure, chronic headache and severe tremors.
- Vomiting or diarrhea lasting longer than 24 hours.
- Acute abdominal pain or upper and/or lower GI bleeding
- Acute increase in serum Creatinine above 1.5. A magnesium less than 1.0.
- Hematocrit less than 26 or signs and symptoms of anemia.
- Any sign or symptom of rejection or infection.
- Profuse wound drainage from an incision or drain entry site.
- An acute dehiscence of the wound.
- Dislodgement or manipulation of the T-Tube or other surgical tube or drain.

Care of the T-Tube

- The tube splints the fragile bile duct anastomosis and is not removed for three to six months after transplant.
- A suture secures the tube to the skin at the entry site.
- If the suture is not intact the tube can be dislocated. If the tube is pulled out more than 1 inch it can fail to drain the biliary system and bile peritonitis can result. Bile Peritonitis is a life threatening event.
- If the tube is dislocated or if the suture is no longer intact the tube must be secured to the skin with tape to prevent further movement in or out of the entry site. The team must be notified immediately.
- If the tube begins to leak bile secure the tube this is an URGENT issue.

T-Tube Dressing Care (Form#10693)
Medication Interactions

- Immunosuppressive medications are metabolized by the Liver's Cytochrome P450 enzymatic pathways. This can induce or inhibit the pathway causing an increase or decrease in blood levels of medications → resulting in toxicity or rejection.
- Example: Fluconazole (or many of the anti-fungal medications) causes the immunosuppression levels to be increased → take note of when medication is being stopped.
- Example: Biaxin and Erythromycin. These medications are NEVER to be given as it may cause nephrotoxicity.
- The transplant center must be notified if any new medications are added by other providers.

Other Patient Care Issues

- Staples, Sutures, Drains and Tubes will be removed by the Transplant Center during clinic visits.
- Fresh flowers and plants are allowed in patient rooms however the water tray must be kept dry and should not be handled by the patient. Fresh flowers should be discarded after two days.
- Bottled water is preferred. Municipal city water is allowed. No showering while in a facility.
- If pets are allowed in patient rooms the patient must perform hand washing after the visit and should not directly handle pet waste.
- Patients are NOT to have any contact with birds.

Other Patient Care Issues

- The patient must receive antibiotic prophylaxis prior to any dental visit. Dental work is discouraged until the patient's prednisone dose is at 5 mg per day or less. An active dental infection should be treated.
- Eye exams are discouraged until the patient's prednisone dose is 5 mg per day or less. Prednisone will affect the patient's corrective lens prescription and will result in incorrect treatment.
Other Patient Care Issues

- The risk for skin cancer rises after a liver transplant due to the immunosuppression medications. The immune system is less able to detect and destroy cancer cells.
- The patient must limit his exposure to direct sunlight. A sunscreen with SPF of 15 or greater must be used on exposed skin.
- Avoid staying outside during the peak sun hours (10am-4pm)
- Hats, long sleeve shirts and long pants should also be worn.
- Patients must see a dermatologist annual for skin checks.

Vaccines

- No live virus vaccines should be given to the patient.
- Killed virus vaccines such as the flu vaccine and the pneumovax vaccine are allowed after 6 months from transplant. Patient should not get the nasal "flu mist".
- Patient cannot have a shingles vaccine (live virus) and cannot be near a family member with active shingles (lesions must be dry).
- New shingles vaccine SHINGRIX is currently NCT allowed for our post transplant patients.
- If patient plans to travel overseas at some point, they will need a UCLA Travel Clinic appointment to arrange appropriate vaccines or vaccine alternatives.
- Recommended vaccines post-transplant:
  - Influenza yearly (inactivated only)
  - Tdap, Pneumococcus (PPSV23) and Prevnar (PCV13) (if have not had pre-transplant)

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Vaccines

<table>
<thead>
<tr>
<th>Vaccination</th>
<th>Pre Transplant Low Risk (≤ 20)</th>
<th>Pre Transplant High Risk (≥ 20)</th>
<th>Post-transplant 9 months of rejection</th>
<th>Post-transplant 9 months absence of rejection</th>
<th>Post-transplant 2 months current treatment rejection</th>
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<tbody>
<tr>
<td>Influenza (inactiv)</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>ND</td>
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<tr>
<td>Pneumococcus* (PCV13)</td>
<td>Yes</td>
<td>No</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
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<tr>
<td>Shingles (live)</td>
<td>Yes</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>NO</td>
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*Shingrix is likely safe to administer after solid organ transplantation, but data regarding safety and efficacy in immunocompromised patients is currently lacking.
Travel
- Patients are instructed to stay near UCLA after transplant.
- If travelling – patients are instructed to always take EXTRA MEDICATION.
- Medications should never be in a checked bag.

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<thead>
<tr>
<th>Length of Time from Transplant</th>
<th>Places Allowed to Travel</th>
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<tbody>
<tr>
<td>1 to 3 months</td>
<td>All of California, Nevada, and Arizona</td>
</tr>
<tr>
<td>3 to 6 months</td>
<td>The Western United States</td>
</tr>
<tr>
<td>6 to 12 months</td>
<td>The entire United States</td>
</tr>
<tr>
<td>12 months</td>
<td>Canada, Mexico, and abroad</td>
</tr>
</tbody>
</table>

How can the bedside nurse help with discharge teaching?
- Reinforce discharge teaching
- Medication teaching
- Wound care
- T-tube care (if applicable)
- Identify barriers to discharge and communicate with team
- Reinforce to family/caregivers that they need to be available for discharge teaching to ensure no delay in discharge
- Review patient instructions in the AVS prior to pt discharge => when to get labs drawn and clinic appointment

Telehealth
- Using iPad/smartphone and the Zoom Program (which has now been integrated in CareConnect) we are able to remotely round on patients in facilities once or twice weekly.
- Telehealth Assessments include
  - Vital Signs, Daily Weight
  - Appetite, caloric intake, blood sugar control, bowel habits
  - Progress towards Physical Therapy Goals
  - Direct Visual assessment of incisions, T-tube sites, drains, tubes, wounds, lower extremity edema and mental status.
- Any old or new issues can be addressed during a telehealth session.
Telehealth
- Telehealth clinic visits are also used in lieu of face to face clinic visits for the appropriate patient.
- Currently does NOT take the place of yearly visits, but can be used in between.

Post Transplant Elevated LFTs Pathway (post ELF):
- Significant savings from avoiding admissions and/or saving bed days
- Addresses possible rejection episodes rapidly and decreases ER admissions
- OUTPATIENT abd u/s & liver bx (transjugular or percutaneous) done the same day or next day
- preliminary biopsy results obtained same day or next day depending on the time of biopsy
- If admission warranted – pt directly admitted

In Conclusion…