Maine Medical Center
Maine Transplant Program
Policies and Procedures
Pharmacy Policy

Purpose
To define the process by which pharmacy services are provided to living donors and transplant patients during the evaluation, surgical, and follow up phases of transplantation or donation.

Policy
1. All potential transplant recipients and living donors being presented to the multidisciplinary team (Transplant Candidate Review-TCR) for patient selection will be evaluated by a transplant pharmacist either by patient interview (telephone or in person), record review and/or participation in the transplant and donor selection committee. Candidates in evaluation and being presented to TCR will have had a pharmacologic evaluation in the previous 24 months.

2. All transplant recipients and living donors will have their pharmacy needs evaluated during their hospital stay (assessment and care planning) Any recommendations for discharge will be included in the patient medical record.

3. The Transplant pharmacy specialist is available to post transplant patients to provide medication education and assess the patients' adherence to their medication regimen. In addition the transplant pharmacist is available on a consultative basis to the outpatient transplant clinic. The following triggers may be used for the clinic staff to prompt consultation with the transplant pharmacist:
    - Change in immunosuppressive drug therapy
    - Complicated medication regimens
    - Patients with high likelihood of drug-drug interactions
    - Patients with treatment related adverse effects
    - Patients who are non adherent to their medication regimens

4. Documentation of the inpatient pharmacy evaluation will reside in the patient record and documentation of outpatient evaluation will reside in the electronic medical record at the clinic.

5. Cross coverage will be provided by the pharmacy department when the transplant dedicated transplant clinical pharmacy specialist is unavailable.

6. The pharmacologic services can also be performed by a PGY-1 pharmacy resident under the supervision of a transplant pharmacy specialist.

7. Pharmacy Services may include (although are not necessarily limited to) the following:

- Participating in inpatient care rounds as part of the multidisciplinary team and assist the transplant team with the design, implementation, and monitoring of medication regimens
- Participating in TCR (Transplant Candidate Review) and QAPI (Quality Assurance and Performance Improvement) committee
- Discussing medication order clarifications with the prescriber and documentation of any changes in patient and pharmacy records and informing others of medication order changes
- Approving computerized physician medication orders
- Monitoring of drug therapy to evaluate appropriateness of use, dose, dosage form, regimen, route, therapeutic duplication and drug interactions
- Providing medication education to newly transplanted patients.
- Providing medication education to living donors in terms of which medications to avoid (i.e. NSAIDs).
- Providing pharmacokinetic consultations as required
- Preventing, detecting, monitoring, documenting, and reporting adverse drug reactions and medications errors
- Participating in the drug therapy management of medical emergencies
- Promoting the use of the formulary by converting non-formulary orders to formulary when possible, and also coordinating procurement of non-formulary drugs when necessary
- Maintaining and updating a patient profile with demographics, diagnosis, allergies, and current medications both in inpatient and outpatient setting
- Reconciling home medications for admitted patients
- Counseling patients on discharge medications as necessary
- Facilitating discharge planning and smooth transition to alternate site of care or the outpatient pharmacy
- Precepting and mentoring pharmacy practice residents on transplantation rotation
- Providing staff development support to nurses and physicians
- Assessing adherence to the immunosuppressive regimen in post transplant period in the outpatient setting

Original Date: 1/26/10

Revised Dates: 2/8/10, 10/30/12, 1/9/15, 8/14/15, 7/20/18, 9/23/20, 3/30/21

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Addendum: Pre-transplant Medication Transition Protocol

Purpose
To outline the Maine Transplant Program Procedure on medication transition to kidney transplantation.

Background
The transition from either advanced chronic kidney disease or dialysis to successful transplantation is associated with major changes in medication needs. These include:

1. Lack of further need for phosphate binders and "renal" multivitamins
2. Reduced requirement for antihypertensive medications
3. Potential for pharmacokinetic interactions

In addition, decisions need to be made regarding the continuation of some pre-transplant medications such as:

1. Statins
2. Antiplatelet therapy
3. Anticoagulation
4. Psychotropic medications

Policy
Medication verification with specific reference to transition from ESRD to transplantation will be performed prior to transplantation:

1. Living donor transplant recipient medication transition will be performed as part of the preoperative process by the transplant nephrologist at Maine Transplant Program.
2. Deceased donor transplant recipient medication transition will be performed as part of the preoperative process by the nephrologist at Maine Medical Center

Procedures
1. Phosphate binders will be stopped immediately before transplantation. They will only be resumed for hyperphosphatemia due to allograft dysfunction or post-transplant AKI.
2. Multivitamins prescribed for the purpose of replacing those lost during dialysis will be stopped immediately before transplantation.
3. ACEI/ARBs will be stopped prior to transplantation.
4. Diuretics will be stopped prior to transplantation
5. Non-dihydropyridine calcium channel blockers (verapamil/diltiazem) are preferably stopped prior to transplantation to prevent predictable pharmacokinetic drug interactions with immunosuppression. An exception may be made if a patient is on such an agent to mitigate atrial fibrillation.
6. Statins prescribed prior to transplantation will be continued to lower the risk of atherosclerotic cardiovascular disease events.
7. Aspirin will be continued peritransplantation
8. Clopidogrel will be continued peritransplantation unless discontinuation is cleared with the patient's cardiologist
9. Warfarin therapy is addressed separately in the Anticoagulation Protocol
10. Pre-transplant psychotropic medications should be continued peri-transplantation unless advised otherwise by psychiatry.
11. Antiseizure medications such as phenytoin and phenobarbital are to be avoided at all costs due to the risk of rejection induced by PK interactions leading to inadequate IS levels. Carbamazepine analogues are to be

avoided if possible due to risk of myelosuppression.

Original Date: 8/8/12

Revised Dates: 6/12/15, 6/8/18, 3/30/21