Pharmacogenetics

Description of Rotation: The student will utilize evidenced-based literature to extract drug metabolism information related to specific drug-drug, drug-gene interactions. With the preceptor, the student will consult with physicians and other pharmacists and reviews patient medication regimens and pharmacogenetic test results in GeneMedRx, a gene-drug-drug interaction software program, to make succinct summary reports on any potential intervention needed to lower adverse drug reaction and treatment failure risk. Sometimes this will be a component of more comprehensive MTM service.

Goals of Rotation:
Facilitate student learning and critical thinking skills in pharmacogenetics in order to:

1. Understand patient healthcare needs.
2. Apply evidence-based medicine.
3. Enhance and reinforce didactic course work.
4. Develop interpersonal communication skills.
5. Describe the pathophysiology of common illness.
6. Explain monitoring parameters given the particular disease state and the treatment regimen (including efficacy, toxicity, side effects, and potential drug interactions).
7. Provide non-pharmacological treatment for disease states.

Learning Objectives:
Upon completion of this rotation the student should be able to:

Activities:
1. Review patient medication lists for gene-drug interactions
2. Review patient medication lists for gene-drug-drug interactions
3. Integrate pharmacogenetics into a software program for analysis purposes
4. Incorporate the pharmacogenetic information into medication therapy management.

Common disease states encountered in the pharmacogenetic setting (list not inclusive):
Cardiovascular diseases
Psychiatric illnesses
Oncologic disorders
Infectious diseases
Potential longitudinal activities to accomplish at site:

1. Identify and collect appropriate drug-related monitoring parameters for each assigned patient
2. Maintain an adequate patient data base for each assigned patient
3. Identify and prioritize drug-related problems for each assigned patient
4. Assess the appropriateness of each assigned patient’s drug therapy
5. Construct a detailed pharmacotherapeutic plan for each assigned patient
6. Present all patient data in a concise and meaningful fashion
7. Provides evidence-based regimens and monitoring plans for each patient
8. Obtain and write-up a patient medication history
9. Provide medication information to a unique cultural and socioeconomic diverse patient
10. Counsel a patient on their medications
11. Provide a verbal therapeutic plan recommendation to another health-care professional
12. Perform medication reconciliation for patients
13. Interpret diagnostic tests results for patient/caregiver/or preceptor
14. Make a warfarin dosage adjustment based on patient parameters
15. Assess the significance of a drug-drug interaction
16. Adjust a drug dose in a patient with renal insufficiency
17. Determine monitoring parameters for a patient being treated for an infectious disease
18. Assist in explaining to a patient or caregiver their health-insurance options
19. Prepare a written pharmacokinetic consultation
20. Prepare a handout for case presentation
21. Prepare an article for a newsletter or publication
22. Prepare a patient education sheet
23. Prepare a written drug information response in a practice setting
24. Provide an education presentation to pharmacists
25. Provide an education presentation to other health care professionals
26. Lead a Journal Club discussion
27. Participate in a Patient/Medication Safety Review or error reduction program
28. Participate in a discussion of a pharmacist role in ethical issues related to any of the following topics: end of life care, professional behavior, clinical research, and pharmacy current event/hot button issue