Pediatric Care

Description of Rotation:

The primary emphasis of the rotation is to develop problem-solving skills in pediatric pharmacotherapy. This may include the establishment of a strong knowledge base in pediatric pharmacology and pharmacokinetics; and the ability to provide therapeutic interventions to enhance the overall management of pediatric patients. The educational experience will include evaluating literature, interviewing patients, interpreting data, assessing drug therapy, making recommendations for and monitoring drug therapy, and understanding and utilizing the evidence-based principles of medicine.

Goals of Rotation:

1. Utilize critical thinking and problem solving skills to identify, resolve and prevent drug related problems in the pediatric population
2. Develop clinical skills necessary to design, implement and monitor rational, safe, effective and individualized pharmacotherapeutic plans.
3. Demonstrate motivation to engage in self-directed learning and a desire to contribute to promotion of quality patient care and optimal drug therapy outcomes.

Facilitate student learning and critical thinking skills in a pediatric environment in order to:

1. Understand patient health care 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 of childhood
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:

1. Describe the symptomatology, physical findings, pathophysiology, diagnostic procedures, laboratory tests, primary and alternative pharmacotherapies, and non pharmacological treatments for disease states encountered during the rotation.
2. Describe and understand the general principle of immunization, including appropriate schedules as well as immunizations required in specific patient populations. Demonstration of proper injection technique may also be assessed.
3. Provide recommendations for medication dose adjustments based upon pharmacokinetic and pharmacodynamic principles.
4. Provide appropriate monitoring parameters for the chosen treatment plan (including efficacy, toxicity, side effects, and potential drug interactions).
5. Effectively communicate the drug treatment plan to the patient with appropriate precautions and expectations.
7. Counsel patients on commonly prescribed medications and devices (i.e. blood glucose meters, peak flow meters, inhalers, etc.).
8. Develop plans to manage commonly encountered disease states, which may include: hyperlipidemia, diabetes mellitus, hypertension, and asthma.
9. Discuss the benefits and limitations of alternative medicine (i.e., herbal therapy, biofeedback, etc.).
10. Document all appropriate recommendations and interventions.
11. Daily reviews of medical orders, patient charts and laboratory data will be performed to rule out any drug-related problems.
12. Utilize basic physical assessment skills to evaluate patients.
13. Describe the growth and development of the child and how this influences drug therapy
   a. Neonate
   b. 0-2 year old
   c. 2-6 year old
   d. 6-12 year old
   e. 13-17 year old
14. Characterize the differences and similarities in the pediatric patient care when compared to adult
   a. Legal rights
   b. Monitoring
   c. Third-party influences
   d. Toxicological risks
   e. Choice of therapy
15. Identify resources for children in abusive home environments or who require social services interventions

Activities:
1. Patient interviews and care plans
   a. Medication Therapy Management
   b. Patient goal setting
2. Case/ disease state presentations and discussions
3. Research drug information question
4. Educational programs
   a. Patients
   b. Care givers
   c. Medical Staff
   d. Students
5. Newsletter
6. Physical Assessment
7. Define patient goals for each disease state
8. Data collection
9. Required Readings
Common disease states encountered in the outpatient setting:

1. Sepsis
2. Sedation
3. Congenital heart disease
4. Neuromuscular blocking agents
5. Appropriate antibiotic usage
6. Epilepsy
7. Acute/chronic renal failure
8. Fluid and electrolytes
9. Liver failure
10. Acid/base
11. Solid organ transplant
12. Nutrition in the critically ill child
13. Growth failure
14. Vasopressors and inotropes
15. Hemodynamic monitoring
16. Asthma (acute and chronic)
17. Attention deficit disorder
18. Upper respiratory infections
19. Juvenile rheumatoid arthritis
20. Gastroesophageal reflux
21. Necrotizing enterocolitis
22. Meningitis
23. Osteomyelitis
24. Kawasaki's Disease
25. Reye's Syndrome
26. Tuberculosis
27. Cystic fibrosis
28. Pediatric AIDS
29. Poisonings
30. Erythropoietin
31. Pediatric hypertension
32. Chemotherapy supportive care
33. Febrile neutropenia
34. Immunizations
35. Sickle cell disease