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## **HIV PEDIATRIC PHARMACY ELECTIVE ROTATION HIV Advanced (Year 2) Pharmacy Residency Program**

### **SITE**

- Immunodeficiency Clinic, Children's Hospital of Eastern Ontario (CHEO)
- CHEO is a tertiary care pediatric facility serving the Eastern Ontario and Western Quebec regions with a catchment population of 1.5 million
- the clinic serves approximately 25 HIV+ pediatric patients and 130 HIV-exposed pediatric patients ranging from a few days old to less than 18 years of age
- the medical team is comprised of HIV/infectious disease specialists, pediatric residents and fellows
- in addition, to medicine, the comprehensive interdisciplinary team comprises of nursing, pharmacy, social work, nutrition and psychology
- ongoing clinical HIV research at CHEO presently involves phase III studies, open-label/expanded access, pharmacokinetics, and epidemiological studies

### **DURATION OF ROTATION**

4 weeks

### **PRECEPTOR**

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### **MEDICAL DIRECTOR OF HIV PROGRAM**

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### **RESIDENT'S CONTACT INFORMATION**

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## **GOAL**

The goal of this elective rotation is to familiarize the resident with basic pediatric pharmacokinetic and pharmacodynamic concepts as they relate to the pharmaceutical care of pediatric HIV patients.

## **OBJECTIVES**

1. Through completion of assigned readings and discussion of therapeutic plans, the resident should be able to contrast pediatric pharmacology to adult pharmacology utilizing pharmacokinetic principles, such as clearance and volume of distribution; and pharmacodynamic principles, such as dose response (altered sensitivity and tolerance).
2. By attending HIV clinic and following HIV pediatric patients, the resident should be able to explain the differences between pediatric and adult HIV disease by utilizing differences in etiology, pathophysiology, signs, symptoms, and complications of HIV. The resident should also be able to explain these differences as they relate to newborns, infants, children and adolescents.
3. The resident should be able to develop a therapeutic plan for each pediatric age group, prioritise the potential adverse effects of each drug treatment, and demonstrate patient monitoring strategies for each drug treatment.
4. The resident is to develop patient counselling strategies and demonstrate these strategies for each HIV drug treatment. These strategies are to accommodate the various pediatric age groups (newborns, infants, children and adolescents). The ability to incorporate various patient adherence tools is to be demonstrated.
5. Utilizing pediatric drug dosage and administration guidelines, the resident should be able to calculate an appropriate dose based on a patient's age, weight, and height; and interpret how to administer each medication.
6. Through a case presentation to pharmacy staff, the resident is to demonstrate pediatric knowledge of a HIV topic. The provision of pharmaceutical care is also to be demonstrated by emphasizing how drug-related problems were identified, solved and preventive strategy established.
7. Through participation in a pharmacy journal club, the resident is to demonstrate the ability to critically appraise pediatric medical literature and highlight the differences (strengths/weaknesses) between adult and pediatric study designs.
8. The resident is to participate in pediatric HIV research by completing a small project or a finite component of an ongoing CHEO HIV research project. The research project will be assigned under the guidance of the HIV Medical Director.

## SUGGESTED READING LIST

1. Panel on Antiretroviral Therapy and Medical Management of Children Living with HIV. Guidelines for the Use of Antiretroviral Agents in Pediatric HIV Infection. Available at <http://aidsinfo.nih.gov/contentfiles/lvguidelines/pediatricguidelines.pdf>.
2. Panel on Opportunistic Infections in HIV-Exposed and HIV-Infected Children. Guidelines for the Prevention and Treatment of Opportunistic Infections in HIV-Exposed and HIV-Infected Children. Department of Health and Human Services. Available at [http://aidsinfo.nih.gov/contentfiles/lvguidelines/oi\\_guidelines\\_pediatrics.pdf](http://aidsinfo.nih.gov/contentfiles/lvguidelines/oi_guidelines_pediatrics.pdf)
3. Panel on Treatment of HIV-Infected Pregnant Women and Prevention of Perinatal Transmission. Recommendations for Use of Antiretroviral Drugs in Pregnant HIV-1-Infected Women for Maternal Health and Interventions to Reduce Perinatal HIV Transmission in the United States. Available at <http://aidsinfo.nih.gov/contentfiles/lvguidelines/PerinatalGL.pdf>.
4. Guidelines for the Prevention of Mother-to-Child HIV Transmission. Information and Practice Guidance for Health Practitioners in Ontario: Working with HIV-infected Women with Inadequate Control of HIV, and Women with Unknown HIV Status Who Present in Labor Version date: January 20, 2017. <http://www.ohtn.on.ca/wpcontent/uploads/2017/02/MTCT-prevention-guidelines-January-20-2017>
5. Prevention of vertical HIV transmission and management of the HIV-exposed infant in Canada in 2014. *Can J Infect Dis Med Microbiol* Mar/Apr 2014; 25(2):75-77.
6. Tan DHS, et al. Canadian Guideline on HIV Pre-Exposure Prophylaxis and Nonoccupational Postexposure Prophylaxis. Updated version, June 13, 2018. *Canadian Medical Association Journal* Nov 2017;189 (47):E1448-58.
7. Kuhar DT, et al. Updated US Public Health Service guidelines for the management of occupational exposures to human immunodeficiency virus and recommendations for postexposure prophylaxis. *Infect Control Hosp Epidemiol* 2013;34:875–892.

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09/2019