ONTARIO SEXUAL ASSAULT/ DOMESTIC VIOLENCE TREATMENT CENTRES (SATCs)

MEDICAL GUIDELINES

FOR HIV POST-EXPOSURE PROPHYLAXIS (HIV PEP) FOR SEXUAL ASSAULT VICTIMS/SURVIVORS

Written by Dr. Mona Loutfy

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Reviewed by Dr. Anita Rachlis, Dr. Alice Tseng, Dr. Susan MacNair, Dr. Sue Comay, Dr. Fiona Smaill, Norah Holder (RN), Julie Phillips (NP), Rai Therrien (RN), Dr. Claire Touchie, Sheila Macdonald (MN), Hilde Zitzelsberger (RN) and Heather Humphries

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Reviewed by KTA Advisory Committee members: Nancy DiPietro (RN), Jennifer Keeler (RN), Sheila Macdonald (MN), Carol Maxwell (RN), Dr. Anita Rachlis, Dr. Fiona Smaill, Debbie Toppozini (RN), and Dr. Alice Tseng & SATC teams from Chantel's Place (Peel Region Sexual Assault Program), Kingston General Hospital Sexual Assault/Domestic Violence Program, Sioux Lookout Assault Care and Treatment Program, Hospital for Sick Children Scan Unit, Women's College Hospital Sexual Assault/Domestic Violence Care Centre

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ONTARIO SATC MEDICAL GUIDELINES FOR ADMINISTERING
HIV POST-EXPOSURE PROPHYLAXIS STARTER KIT IN CASES OF SEXUAL ASSAULT

Prepared April 2003 (revised April 2007)

BACKGROUND:

- HIV post-exposure prophylaxis (PEP) is recommended to prevent transmission of HIV following occupational and non-occupational exposures such as unprotected sexual activities and injection drug use[1]
- The Ministry of Health and Long-Term Care endorses this program and fully funds HIV PEP medications for all at-risk sexual assault victims/survivors receiving care at any of Ontario's 34 Sexual Assault Treatment Centres (SATCs)
- Heterosexual transmission is increasing (⅓ of HIV-positive test reports in Canada, 2005)[2]
- Women are twice as likely as men to contract HIV during (vaginal) intercourse[3]
- 39% of Canadian women have experienced at least one incident of sexual assault since the age of 16[4]
- Fear of HIV infection is common among sexual assault victims/survivors post-assault
- Access to HIV PEP following sexual assault has been inconsistent in Ontario to date

[1] CDC. 2005. Antiretroviral Postexposure Prophylaxis After Sexual, Injection-Drug Use, or Other Non-occupational Exposure to HIV in the United States: Recommendations from the U.S. Department of Health and Human Services. *MMWR*. 54(RR-2): 1-20.

[2] Public Health Agency of Canada. 2006. *HIV and AIDS in Canada: Surveillance Report to December 31, 2005*. Surveillance and Risk Assessment Division, Centre for Infectious Disease Prevention and Control

[3] European Study Group. 1992. Comparison of female to male and male to female transmission of HIV in 563 stable couples. *BMJ*. 304: 809-13.

[4] Federal/Provincial/Territorial Ministers Responsible for the Status of Women. 2002. Assessing Violence Against Women: A Statistical Profile.

PURPOSE:

To provide a guide to Registered Nurses (RNs) working with Medical Doctors (MDs) on the management of the baseline visit and on administering the 5-day HIV PEP starter kit to sexual assault victims/survivors.

Using this guideline, RNs will carry out sexual assault-related management, counselling, laboratory testing, HIV testing and arrange for follow-up*;* MDs will write the prescription for the HIV PEP drugs.

Each SATC is linked with an HIV expert in or close to their area. HIV experts are available for consultation during business hours.

USE:

HIV PEP is used to prevent the transmission of HIV after sexual assault. It consists of a 28-day course of Combivir® and Kaletra®. Combivir® is a tablet that combines the two anti-HIV drugs: zidovudine and lamivudine (3TC). Kaletra® is a tablet that combines the two anti-HIV drugs: lopinavir and ritonavir (ritonavir is in a small dose and is used to boost the level of the active component, lopinavir).

At the Initial Visit, a sexual assault victim/survivor assessed to be at risk of HIV acquisition will be offered a 5-day starter kit. The initial dose is to be taken immediately, unless health and/or drug contraindications are present (**see Appendix 1D**). In the case of contraindications, administration of Combivir® only is recommended until appropriate bloodwork can be completed. HIV PEP must be started as soon as possible post-assault to maximize effectiveness given the speed at which HIV replicates in the human body. HIV PEP is not given if more than 72 hours have passed since the assault (exposure).

DOSAGE:	Combivir®	1 tablet twice a day x 5 days
	Kaletra®	2 tablets twice a day x 5 days

Both drugs may be taken together at the same time and can be taken with or without food.

INDICATIONS:
To be initiated within 72 hours post-assault with any victim/survivor who has been sexually assaulted when vaginal, anal or oral penetration with a penis has occurred, regardless of condom use or ejaculation, or with any victim/survivor who does not remember the sexual assault (e.g., drug-assisted).

CONTRAINDICATIONS / DRUG INTERACTIONS:
The RN must take a health history including history related to medication (including alternate therapies and vitamins), recreational drug use, kidney, liver, pancreatic and blood diseases to identify contraindications.

All clients who accept HIV PEP should have baseline bloodwork done (CBC, electrolytes, blood sugar, creatinine, AST, ALT, ALP, bilirubin, CK and amylase). Clients with a history of chronic kidney or liver disease require additional baseline hepatic function tests (i.e., albumin, INR PT, and PTT). A history of hepatitis does not automatically rule out the use of HIV PEP. However, in the event of acute symptomatic illness or severely elevated liver enzymes (> 5X upper limit of normal), HIV PEP use may be contraindicated, or dosage adjustments may be necessary. The RN should consult a MD and the MD may want to consult the HIV expert affiliated with their site.

Combivir® is **contraindicated** in clients who have:
* taken myelosuppressive or hemotoxic drugs within two weeks of starting HIV PEP drugs;
* a history of bone marrow insufficiency or severe anemia; and/or
* acute pancreatitis

Kaletra® is **contraindicated** in clients with acute or advanced liver failure.

See Appendix 1D for a list of all contraindicated medications

Kaletra® interacts with many different drugs by affecting the liver cytochrome P450 drug metabolizing enzymes. If the client is on any of these medications, consult with the designated MD. If the RN has any concerns about interactions with any other drug, contact a MD or Pharmacist before or at the client's follow-up visit.

Non-essential medications and alternate therapy including vitamins should be discontinued during HIV PEP. Recreational drug use should be discontinued for the duration of the HIV PEP regimen.

Kaletra® can decrease the effectiveness of long-term use birth control pills, so a barrier form of contraceptive (e.g., condom) should be used for the 28-day regimen and for up to 2 months after Kaletra® is discontinued. It does not affect the effectiveness of high-dose, short-course emergency contraceptives such as Ovral® and Plan B®.

The use of Combivir® and Kaletra® during pregnancy has not been extensively studied. Antiretroviral drugs are often avoided in the first trimester due to general concerns of teratogenesis. If the assailant is known to be HIV-positive or has HIV risk factors, the risk of HIV transmission outweighs the risk of teratogenesis, and HIV PEP should be given immediately regardless of the client's pregnancy status. If the client is pregnant, the RN is advised to consult an MD, who may wish to consult an HIV expert.

The safety of Combivir® and Kaletra® in breastfeeding has not been established. Clients who begin HIV PEP should discontinue breastfeeding. Clients who choose not to take HIV PEP should be informed that the rate of HIV transmission in breast milk is approximately 1 in 4 in order for them to make informed choices about breastfeeding (based on meta-analysis data from Van de Perre, P. Postnatal transmission of human immunodeficiency virus type 1: the breastfeeding dilemma. *American Journal of Obstetrics and Gynecology*. 1995; 173: 483-487.).

MEDICAL GUIDELINE PRACTICE COMPONENTS:

IMMEDIATE CARE FOR ALL CLIENTS

1. Acute medical urgency needs of clients must always take precedence over the discussion of HIV PEP.

2. Determine time elapsed since the assault. If more than 72 hours have passed since the potential exposure, HIV PEP should not be offered.

3. Carry out the HIV Risk Assessment to determine whether the victim/survivor is at risk of HIV transmission. All at-risk victims/survivors are eligible to be offered HIV PEP **(see Appendices 1A & 1B)**.

FOR CLIENTS PRESENTING > 72 HOURS POST-EXPOSURE

4. If more than 72 hours have passed and the client is deemed at *no risk* of HIV transmission (no penetration and/or no contact with assailant body fluid), review the HIV Risk Pamphlet with them. Reassure them that they are at no risk, that HIV PEP is not recommended and that no follow-up for HIV is required. All other sexual assault-related follow-up is done as per the usual routine.

5. If more than 72 hours have passed and the client is deemed *at risk*:
    I. If the assailant is known to be HIV-positive, consult with MD and/or HIV expert.
    II. For all other clients assessed at risk of HIV exposure, recommend a baseline HIV test. Inform the client of opportunities for anonymous testing (if available in your area) and discuss reporting requirements of a positive test result if test done on-site. If the client consents to on-site testing, draw blood for immediate testing or for storage for 7 months for future testing (where storage is possible). For immediate HIV tests, write "STAT, HIV PEP" on the requisition. Review content of *HIV Risk Assessment* pamphlet and recommend follow-up HIV testing at week 4-6, and months 3 and 6 months post-assault.
    III. Review list of resources in the *HIV Risk Assessment* pamphlet for information and ongoing support.

FOR CLIENTS PRESENTING ≤ 72 HOURS POST-EXPOSURE

6. If the assailant is known to be HIV-positive, ***offer*** the client the first dose of HIV PEP Combivir® and Kaletra® immediately (with or without food). Explain that due to the speed at which HIV replicates in the body, starting the medication as soon as possible greatly increases its efficacy. A delay in initiating HIV PEP reduces the effectiveness in this high risk situation. An HIV expert should be contacted as soon as possible during working hours for a consultation in all cases involving an assailant who is known to be HIV-positive.

   If the client is at any risk of HIV acquisition, the RN and MD should ***consider offering*** the first dose of Combivir® and Kaletra® immediately (with or without food) due to the speed at which HIV replicates in the body. Delayed initiation of HIV PEP reduces its effectiveness at preventing HIV infection. Routine sexual assault procedures can take several hours, and may be too long to wait to start HIV PEP. Briefly discuss HIV risks and options for treatment with the client. It is within the RN's discretion whether to provide in-depth information about the risks of HIV and HIV PEP at this time, or to wait until after completion of the Sexual Assault Evidence Kit. Timing of this discussion will be dependent on the situation (e.g., anxiety of client about HIV, urgency of completing Kit).

   A single dose of Combivir® and/or Kaletra® will have no negative health consequences even where contraindicated. However, in cases in which there is significant concern about health contraindications of the HIV PEP regimen, consider providing only an initial dose of Combivir until a proper medical/health history, counselling and bloodwork can be completed**.**

If the client is in the first trimester of pregnancy and at increased risk, offer the first dose immediately, then consult with a physician and/or HIV expert before dispensing subsequent doses of HIV PEP medications.

7. Complete all other routine sexual assault procedures (including evidence collection) that the client consents to.

8. To support the client in understanding HIV risks and in decision-making regarding HIV PEP, counsel the client regarding risks of HIV transmission, reviewing the *HIV Risk Assessment* pamphlet.

FOR CLIENTS AT NO RISK OF HIV ACQUISITION

9. For clients assessed at no risk of HIV acquisition, reassure client that they are not at risk of HIV transmission. Indicate that HIV PEP is not recommended and that no follow-up for HIV is required. All other sexual assault-related follow-up is done as per the usual routine.

FOR CLIENTS AT-RISK OF HIV ACQUISITION

10. Discuss the client's degree of risk of having contracted HIV and explain the drug regimen, including duration of treatment, follow-up process, side effects and efficacy of the combination therapy used in HIV PEP. See *HIV Risk Assessment* pamphlet.

11. Take a health history (including history related to medications, kidney, liver, pancreatic and blood diseases) to identify contraindications to Combivir® or Kaletra® **(See Appendix 1D)**.

12. Determine if the client is pregnant. If she is pregnant, inform the MD immediately and consult the HIV expert as soon as possible during working hours (***but*** still offer HIV PEP to clients determined to be at increased risk). **See Note to RNs and MDs at end of this section**.

13. Determine if an HIV expert should be consulted **(see Appendix 1E)**.

FOR AT-RISK CLIENTS WHO DECLINE HIV PEP

14. Review HIV follow-up information and resource list in the *HIV Risk Assessment* pamphlet.

15. Recommend that the client have a baseline HIV test. Discuss reporting requirements of a positive test result if testing is done on-site. Access to HIV PEP is not contingent on agreeing to HIV testing.

    There are several options:
    I. HIV testing can be done at this first (initial) visit;
    II. HIV testing can be done anonymously off-site (if available in your area);
    III. Blood can be drawn for storage should a future HIV test be required (**see Appendix 1F**);
    IV. No HIV test done

    If the client consents to on-site testing, draw blood for immediate testing or for storage for 7 months for future testing (where storage is possible). Ontario Public Health Laboratories will expedite HIV test results if ***"STAT, HIV PEP"*** is written on the requisition.

16. Review with the client that s/he should have follow-up HIV testing at week 4-6, month 3 and 6 after the assault.

17. Baseline HIV test results should be provided in person to clients who consent to on-site testing during subsequent follow-up visits. Subsequently, these clients should be contacted to make an appointment for post HIV test counselling and HIV test result disclosure with the follow-up RN.

18. Inform the client that over the next few months that s/he will need to protect her/his sexual partner(s) and provide counselling on how to do this.

While waiting for the test results, the client should be counselled to take the following precautions to prevent potential transmissions to others:

- Use a latex condom with water based lubricant (or a dental dam for cunnilingus), or abstain from sex;
- Do not donate blood, plasma, organs, tissue or sperm; and,
- Do not share toothbrushes, razors, needles or other implements that may have blood/body fluids on them.

FOR AT-RISK CLIENTS WHO ACCEPT HIV PEP

19. Determine appropriate drug dosages for client.
    For paediatric clients < 12 years and < 50 kg in weight, consult a MD. The MD should determine the doses of the drugs using the *Paediatric HIV PEP Dosage Charts* (**see Appendix 1C**, pg. 11-14). The MD may consider consulting with a pharmacist and/or an HIV expert.

    For clients ≥ 12 years of age, give them the 5-day adult dose of the Starter Kit: Combivir®, 1 tablet orally twice a day for 5 days (10 tablets total; 9 tablets if first dose already given); Kaletra®, 2 tablets orally twice a day for 5 days (20 tablets total; 18 tablets if first dose already given)

20. Review the *HIV PEP Information* booklet sections summarizing the medications and the follow-up process in detail. Ensure that the client understands how to take the drugs, is aware of the possible side effects, and understands the process to follow if side effects are experienced.

21. Obtain blood for CBC, electrolytes, blood sugar, creatinine, AST, ALT, ALP, bilirubin, CK, amylase, and a STAT serum beta-HCG (for women).

22. Recommend that the client have a baseline HIV test. Discuss reporting requirements of a positive test result if testing is done on-site. Access to HIV PEP is not contingent on agreeing to HIV testing.

    There are several options:

    I. HIV testing can be done at this first (initial) visit;
    II. HIV testing can be done anonymously off-site (if available in your area);
    III. Blood can be drawn for storage should a future HIV test be required (**see Appendix 1F**);
    IV. No HIV test done.

    If the client consents to on-site testing, draw blood for immediate testing or for storage for 7 months for future testing (where storage is possible). Ontario Public Health Laboratories will expedite HIV test results if ***"STAT, HIV PEP"*** is written on the requisition.

23. Baseline HIV test results should be provided in person to clients who consent to on-site testing during subsequent follow-up visits. Subsequently, these clients should be contacted to make an appointment for post HIV test counselling and HIV test result disclosure with the follow-up RN.

24. Arrange for the first follow-up in 2-4 days and explain the follow-up procedures to the client (2nd follow-up in 1 week by phone, and 3rd, 4th, and 5th follow-up each subsequent week in person). **See Medical Guidelines – HIV PEP Follow-up (pg. 22-25).**

25. Review with the client that s/he should have follow-up HIV testing at 4-6 weeks, 3 and 6 months after the assault.

26. Other issues related to HIV PEP that the RN should inform clients of:
    - For the month that the client is taking the medications, she should use barrier precautions to avoid pregnancy and risk of HIV transmission until negative status confirmed.

- Breastfeeding should be discontinued when on antiretroviral drugs. If suspicion of HIV infection is high enough to start therapy, then breast-feeding should be discontinued. The risk of HIV transmission through breast milk is approximately 26%.
- Kaletra® interferes with the action of the birth control pill. If the client is on the birth control pill, advise her to use additional forms of protection to prevent pregnancy while taking Kaletra®, and up to 2 months after completing Kaletra®.
- Kaletra® does not interfere with the actions of short-course emergency contraceptives such as Levonorgestrel (Plan B®) and Ovral®.

Note to RNs and MDs - Pregnancy: Antiretroviral drugs are potentially teratogenetic in the first trimester of pregnancy and are therefore often avoided during this period. However, if a woman is at high risk of seroconversion after a sexual assault, the risk of transmission to the foetus is very high due to the high viral load during the acute seroconversion phase of the disease. Therefore, giving antiretroviral drugs in this scenario is more important than the risk of teratogenesis.

Additional Notes:

If Combivir and Kaletra® are contraindicated, alternate regimens for these individual clients will be covered with the Ministry of Health and Long-Term Care funding, pending drug access/availability within your institution.

Effectiveness of HIV PEP

HIV PEP has been shown to be effective in decreasing the risk of HIV transmission in situations such as occupational exposure and mother-to-child transmission.

- A case-control study of health-care workers who did or did not take zidovudine revealed a reduction of 81% (95% CI – 48%-94%) in the risk of HIV infection after percutaneous exposure to HIV-infected blood. [1]
- Many mother-to-child transmission studies with many different regimens have revealed a risk reduction of 50% - 67% in the rate of transmission from mother to child where the mother is known to be HIV-positive. [2,3,4,5]

The rationale for using HIV PEP following sexual assault is based on the above information; however, due to ethical concerns regarding study design and sample sizes and heterogeneity of exposures, research that definitively proves the effectiveness of HIV PEP following sexual assault cannot be conducted.

For that reason, many regulatory boards do not have recommendations on the use of HIV PEP in non-occupational exposure. However, there is an increasing consensus that non-occupational exposure must be taken into account when considering HIV PEP issues.[2]

[1] Cardo DM, Culver DH, Ciesielski CA, Srivastava PU, Marcus R, Abiteboul D, Heptonstall J, Ippolito G, Lot F, McKibben PS, Bell DM. 1997. A case-control study of HIV seroconversion in health care workers after percutaneous exposure. *New England Journal of Medicine.* 337(21): 1485-90.

[2] CDC. 2005. Antiretroviral Postexposure Prophylaxis After Sexual, Injection-Drug Use, or Other Non-occupational Exposure to HIV in the United States: Recommendations from the U.S. Department of Health and Human Services. *MMWR*. 54(RR-2): 1-20.

[3] European Project on Non-Occupational Post Exposure Prophylaxis. 2002. Management of non-occupational post exposure prophylaxis to HIV: Sexual, injection drug user or other exposures.

[4] Wade NA, Birkhead GS, Warren BL, Charbonneau TT. 1998. Abbreviated regimens of zidovudine prophylaxis and perinatal transmission of the human immunodeficiency virus. *NEJM.* 339: 1409–14.

[5] Sperling RS, Shapiro DE, Coombs RW, 1996. Maternal viral load, zidovudine treatment, and the risk of transmission of human immunodeficiency virus type 1 from mother to infant. NEJM 335: 1621–9.

APPENDIX 1A

RISK ASSESSMENT FOR HIV POST-EXPOSURE PROPHYLAXIS (HIV PEP)

Table 1: HIV Risk Assessment

1. Determine HIV PEP Eligibility

No Risk	▪ NO penetration (anal, vaginal or oral) ▪ NO contact with assailant body fluid (e.g., blood; ejaculate)	+	ANY Assailant	**DO NOT Offer** HIV PEP
At Risk	▪ ANAL penetration (*Suspected, partial, or completed*) ▪ VAGINAL penetration (*Suspected, partial, or completed*) ▪ ORAL penetration (*Suspected, partial, or completed*) ▪ Contact with assailant body fluid (e.g., blood; ejaculate) via mucous membrane, non-intact skin or bite ▪ Unknown exposure (e.g., drug-assisted)	+	ANY Assailant	**Offer HIV PEP** COMBIVIR® & KALETRA® (BID) Provide counselling and education

2. Weigh Client HIV Risks (case-by-case assessment)

Two sets of factors must be considered when assessing HIV risk: a) Exposure Risk Factors; b) Assailant Risk Factors

a) Exposure Risk Factors

* Anal penetration (*Suspected, partial, or completed*)
* Vaginal penetration (*Suspected, partial, or completed*)
* Anal, vaginal or oral injuries
* Blood in the anus, vagina or mouth
* Presence of sexually transmitted infections
* Presence of ulcerations (open sores) on the genitals
* Assault by multiple assailants
* Multiple receptive sites

IF any of these factors were present during the assault, **HIV risk is INCREASED**

* Oral penetration only (NO vaginal OR anal penetration)
* Contact with assailant body fluid only (e.g., blood; ejaculate) via mucous membrane, non-intact skin or bite
* No ejaculation
* Condom use

These factors may **DECREASE HIV risk** [I]

b) Assailant Risk Factors

* Assailant known to be HIV-positive
* Assailant known or suspected to have HIV risk factors

HIV Risk Factors:

* Has Hepatitis C
* Intravenous drug user
* Man who has sex with men
* From a country with an HIV prevalence rate greater than 5% (e.g., certain countries in Sub-Saharan Africa)
* Has numerous sexual partners
* Has a sexually transmitted infection
* Engages in prostitution or trades sex for money/drugs
* Has sex with known or suspected HIV-positive people
* Has prior convictions for sexual assault
* Has been in prison

IF any of these factors are known or suspected, **HIV risk is INCREASED**

[I] **NOTE**: These factors are often difficult to assess in cases of sexual assault, as victims/survivors may not know if the assailant ejaculated or whether condoms were used properly or at all. Therefore, caution should be used when considering them in the risk assessment. Unless no penetration occurs, **these factors only decrease the risk and do not make it zero.**

Although Table 1 assists the health care provider in determining whether to offer HIV PEP, the client may still be anxious and need more information about the risk of transmission to formulate a realistic sense of her/his individual risk. It is important for the client to understand their risk as it is ultimately her/his decision to take the prophylactic medication. It is the health care provider's responsibility to inform the client of the possible risk, options and recommendations to allow her/him to evaluate the risks and benefits of taking HIV PEP.

Per incident probabilities of transmission when the assailant is known to be HIV-positive may be helpful in assisting the client with her or his decision-making:

Table 2: Per incident probabilities of HIV Transmission, various exposure types

EXPOSURE TYPE	**RISK OF HIV TRANSMISSION** *(HIV-positive source)*
Non-Sexual Transmission	
Blood Product	1:1.1 (90%)
Needlesharing in IV drug use	1:149 (0.67%)
Needlestick injury	1:300 (0.3%)
Sexual Transmission (unprotected)	
Receptive* anal intercourse	1:200 (0.5%)
Insertive** anal intercourse	1:1,538 (0.065%)
Receptive* vaginal intercourse	1:1,000 (0.10%)
Insertive** vaginal intercourse	1:2,000 (0.05%)
Receptive* oral sex	1:10,000 (0.01%)*
Insertive** oral sex	1:20,000 (0.005%)*

* Receptive: being penetrated by a penis
** Insertive: penetrating someone with your penis
NOTE: Oral/vaginal contact is a negligible risk unless blood is present

Source: *Centres for Disease Control, January 2005*

APPENDIX 1B

RISK ASSESSMENT FOR HIV POST-EXPOSURE PROPHYLAXIS (CONT'D) – HIV PREVALENCE

To assist health care providers with counselling on HIV transmission and HIV PEP, the prevalence of HIV in Ontario regions and internationally are presented in the following tables:

Table 3: Number and prevalence of HIV positive residents 18 years and older in Ontario by region and sex, 2006

	MALES			FEMALES		
Region	**HIV Number**	**Population**	**HIV Prevalence**	**HIV Number**	**Population**	**HIV Prevalence**
Northern	430	402,425	0.107%	190	407,834	0.047%
Ottawa	2,200	407,879	0.539%	570	421,709	0.135%
Eastern	460	405,709	0.113%	110	413,155	0.027%
Toronto	13,500	1,273,971	1.060%	1,780	1,339,508	0.133%
Central East	1,420	1,691,460	0.084%	310	1,712,104	0.018%
Central West	1,530	1,168,692	0.131%	320	1,192,830	0.027%
Southwest	1,130	777,450	0.145%	300	792,621	0.038%
Total Ontario	**20,670**	**6,127,586**	**0.337%**	**3,580**	**6,279,761**	**0.057%**

Source: *Robert Remis, Ontario HIV Epidemiologic Monitoring Unit, Department of Public Health Sciences, University of Toronto, 2006; 2004 population estimates provided by Health Data and Decision Support Unit (HDDSU), Knowledge Management Branch, Ontario MOHLTC*

Table 4: Countries with High HIV Prevalence (Infection Rate Greater than 5%)

Botswana	Kenya	Swaziland
Cameroon	Lesotho	Tanzania
Central Africa Republic	Malawi	Uganda
Congo	Mozambique	Zambia
Cote d'Ivoire	Namibia	Zimbabwe
Gabon	South Africa	

Source: *HIV and AIDS Estimates for 2005 and 2003 (pp.501-540) from the 2006 Report on the Global Aids Epidemic, Joint United Nations Programme on HIV/AIDS (UNAIDS)*

Note: For some clients a more in-depth discussion of global HIV rates may be warranted. Several countries in the Caribbean, Latin America and other parts of Africa have rates of HIV that, while below the 5% cut-off used in this program, are still high enough to be classified as 'HIV-endemic'. If your client identifies that their assailant was from one of the countries found in Table 5, they may also be at increased risk of HIV transmission. Professional judgement should be used to determine when a more detailed discussion of global HIV prevalence should be undertaken.

Table 5 presents a complete list of all 'HIV-endemic countries', defined as countries with:

- HIV prevalence greater than or equal to 1.0%;
- Adult prevalence (ages 15 - 49) of HIV;
- 50% or more of HIV cases attributable to heterosexual transmission;
- Less than or equal to 2:1 Male to female ratio of HIV infection; and
- HIV prevalence greater than or equal to 2% among women receiving prenatal care.

Table 5: HIV Endemic Country List

Caribbean:		
Anguilla	Dominican Republic	Netherland Antilles
Antigua and Barbuda	Grenada	Saint Lucia
Bahamas	Guadeloupe	St. Kitts and Nevis
Barbados	Haiti	St. Vincent and the Grenadines
Bermuda	Jamaica	Trinidad and Tobago
British Virgin Islands	Martinique	Turks and Caicos
Cayman Islands	Montserrat	U.S.Virgin Islands
Dominica		

South America:		
French Guiana		

Africa:		
Angola	Ghana	Nigeria
Benin	Guinea-Bissau	Rwanda
Botswana	Guinea	Senegal
Burkina Faso	Ivory Coast	Sierra Leone
Burundi	Kenya	Somalia
Cameroon	Lesotho	Sudan
Cape Verde	Liberia	Swaziland
Central African Republic	Madagascar	Tanzania
Chad	Malawi	Togo
Congo	Mali	Uganda
Equatorial Guinea	Mozambique	Zaire
Ethiopia	Namibia	Zambia
Gabon	Niger	Zimbabwe
Gambia		

Source: *HIV in Canada Among Persons from Countries where HIV is Endemic, Centre for Infectious Disease Prevention and Control, 2005.*

APPENDIX 1C

HIV POST EXPOSURE PROPHYLAXIS (HIV PEP) GUIDELINES FOR CHILD/ADOLESCENT SEXUAL ASSAULT VICTIMS/SURVIVORS

These guidelines address the provision of antiretroviral medications to prevent HIV infection in paediatric sexual assault victims/survivors. They are meant to guide discussions of HIV risk with all children/adolescents (and their families where appropriate) who have experienced sexual assault and the offering of HIV PEP to those children/adolescents considered at risk of HIV infection.

It is recommended that for children under the age of 12 and in complex adolescent cases, an HIV expert be consulted (**see Appendix 1E**).

PRACTICE COMPONENTS (PAEDIATRIC CONSIDERATIONS)

The practice guideline for HIV PEP with paediatric clients is identical to that for adult clients, with the following additional considerations:

HIV Risk Assessment

Risk of HIV transmission is to be discussed by SATC staff with all clients (and/or their family members, as appropriate) (**See Appendix 1A & B**). Review the *HIV Risk Assessment p*amphlet with family members as appropriate.

Offering HIV PEP

As long as the child or adolescent is competent and understands all information provided, they are able to give informed consent and parental consent is NOT required.

If the client is < 12 years of age and < 50 kg in weight, consult a MD. The MD should determine the doses of the drugs using the *Paediatric HIV PEP Dosage Charts (pg. 11-14)*. The MD may consider consulting with a pharmacist and/or an HIV expert.

If the client is ≥ 12 years of age and ≥ 50 kg, give her/him the 5-day adult dose of the STARTER KIT:

Combivir® 1 tablet orally BID for 5 days (10 tablets total; 9 tablets if first dose already given);
Kaletra® 2 tablets orally BID for 5 days (20 tablets total; 18 tablets if first dose already given)

Follow-up

Follow up in SATC. For follow-up schedule, see **Medical Guidelines – HIV PEP Follow-up** (pg. 22-25). Joint follow up by SATC and HIV expert is recommended for any children under 12 years of age receiving HIV PEP.

Important – Please Note:

- Kaletra® liquid contains 42.4% alcohol (v/v) – significant alcohol-related toxicity if accidental ingestion by young child
- Rash is most common adverse effect in paediatric patients treated with Kaletra®

* We acknowledge and thank the Kingston General Hospital Sexual Assault/Domestic Violence Program and The Hospital for Sick Children's Suspected Child Abuse & Neglect Program for making this information available to the Ontario Network of Sexual Assault/Domestic Violence Treatment Centres.

PAEDIATRIC HIV PEP DOSAGE CHARTS

Table 5a: Zidovudine Dosage, Paediatric Patient 3 Months – 12 Years Old, Any Weight

BSA* (m^2)	Dose in mg (180 mg/m^2 BID)	Volume per Dose in mL (10 mg/mL) BID
0.25	45	4.5 mL BID
0.28	50	5.0 mL BID
0.31	55	5.5 mL BID
0.33	60	6.0 mL BID
0.36	65	6.5 mL BID
0.39	70	7.0 mL BID
0.42	75	7.5 mL BID
0.44	80	8.0 mL BID
0.47	85	8.5 mL BID
0.50	90	9.0 mL BID
0.53	95	9.5 mL BID
0.56	100	10.0 mL BID
0.61	110	11.0 mL BID
0.67	120	12.0 mL BID
0.72	130	13.0 mL BID
0.78	140	14.0 mL BID
0.83	150	15.0 mL BID
0.89	160	16.0 mL BID
0.94	170	17.0 mL BID
1.00	180	18.0 mL BID
1.06	190	19.0 mL BID
1.11	200	20.0 mL BID
1.17	210	21.0 mL BID
1.22	220	22.0 mL BID
1.28	230	23.0 mL BID
1.33	240	24.0 mL BID
1.39	250	25.0 mL BID
1.44	260	26.0 mL BID
1.50	270	27.0 mL BID
1.56	280	28.0 mL BID
1.61	290	29.0 mL BID
Greater than or equal to 1.65	300	30.0 mL BID

Table 5b: Zidovudine Dosage, Paediatric Patient >12 Years of Age, Any Weight

BSA* (m^2)	Dose in mg	Volume per Dose in mL (10 mg/mL)
Any	300	30

***BSA Calculation:** BSA (m^2) = ([Height(cm) x Weight(kg)]/ 3600)^{½}

Table 6a: Lamivudine Dosage, Paediatric Patient 3 Months – 12 Years Old, Any Weight

Weight (kg)	Dose in mg (4 mg/kg BID)	Volume per Dose in mL (10 mg/mL) BID
5.0	20	2.0 mL BID
6.3	25	2.5 mL BID
7.5	30	3.0 mL BID
8.8	35	3.5 mL BID
10.0	40	4.0 mL BID
11.3	45	4.5 mL BID
12.5	50	5.0 mL BID
13.8	55	5.5 mL BID
15.0	60	6.0 mL BID
16.3	65	6.5 mL BID
17.5	70	7.0 mL BID
18.8	75	7.5 mL BID
20.0	80	8.0 mL BID
21.3	85	8.5 mL BID
22.5	90	9.0 mL BID
23.8	95	9.5 mL BID
25.0	100	10.0 mL BID
27.5	110	11.0 mL BID
30.0	120	12.0 mL BID
32.5	130	13.0 mL BID
35.0	140	14.0 mL BID
Equal to or greater than 37.5	150	15.0 mL BID

Table 6b: Lamivudine Dosage, Paediatric Patient Older than 12 Years of Age, Weight Less than 50 kg

Weight (kg)	Dose in mg (2 mg/kg BID) NOTE DOSE	Volume per Dose in mL (10 mg/mL) BID
17.5	35	3.5 mL BID
20	40	4.0 mL BID
22.5	45	4.5 mL BID
25	50	5.0 mL BID
27.5	55	5.5 mL BID
30	60	6.0 mL BID
32.5	65	6.5 mL BID
35	70	7.0 mL BID
37.5	75	7.5 mL BID
40	80	8.0 mL BID
42.5	85	8.5 mL BID
45	90	9.0 mL BID
47.5	95	9.5 mL BID

Table 6c: Lamivudine Dosage, Paediatric Patient Older than 12 Years of Age, Weight Equal or Greater than 50 kg

Weight (kg)	Dose in mg	Volume per Dose in mL (10 mg/mL) BID
Equal or Greater than 50 kg	150	15 mL BID

Table 7a: Lopinavir/Ritonavir Dosage, Paediatric Patient Any Age (Body Surface Area (BSA) Less than or Equal to 1.5 m^2)

BSA*	Dose in Lopinavir mg / Ritonavir mg	Volume per Dose in mL BID (Lopinavir 80 / Ritonavir 20 mg/mL)
(m^2)	(230 mg/57.5 mg per m^2 BID)	
0.28	64 mg / 16 mg	0.80 mL BID
0.35	80 mg / 20 mg	1.0 mL BID
0.42	96 mg / 24 mg	1.2 mL BID
0.49	112 mg / 28 mg	1.4 mL BID
0.56	128 mg / 32 mg	1.6 mL BID
0.63	144 mg / 36 mg	1.8 mL BID
0.70	160 mg / 40 mg	2.0 mL BID
0.77	176 mg / 44 mg	2.2 mL BID
0.83	192 mg / 48 mg	2.4 mL BID
0.90	208 mg / 52 mg	2.6 mL BID
0.97	224 mg / 56 mg	2.8 mL BID
1.04	240 mg / 60 mg	3.0 mL BID
1.11	256 mg / 64 mg	3.2 mL BID
1.18	272 mg / 68 mg	3.4 mL BID
1.25	288 mg / 72 mg	3.6 mL BID
1.32	304 mg / 76 mg	3.8 mL BID
1.39	320 mg / 80 mg	4.0 mL BID
1.46	336 mg / 84 mg	4.2 mL BID
1.50	344 mg / 86 mg	4.3 mL BID

Table 7b: Lopinavir/Ritonavir Dosage, Paediatric Patient Older than 12 years of Age, Body Surface Area (BSA) Greater than 1.5 m^2

BSA* (m^2)	Dose in Lopinavir mg/Ritonavir mg	Volume per Dose in mL BID (Lopinavir 80 / Ritonavir 20 mg/mL)
Greater than 1.5	400 mg / 100 mg	5 mL BID

***BSA Calculation:** BSA (m^2) = ([Height(cm) x Weight(kg)]/ 3600)^{½}

Please note: *Antiretrovirals are available in the following formulations:*

	Zidovudine (Retrovir®)	Lamivudine (3TC®)	Lopinavir/Ritonavir (Kaletra®)
Pills	300/150 mg tablet (Combivir®)		200/50 mg tablet (Kaletra®)
	AZT - 300 mg	3TC - 150 mg	
Oral Liquid	10 mg/mL	10 mg/mL	80/20 mg/mL
	(240 mL bottle)	(240 mL bottle)	(160 mL bottle)

APPENDIX 1D

CONTRAINDICATIONS AND PRECAUTIONS TO HIV PEP

Before starting your client on HIV PEP, you must be aware of the following:

HEALTH CONTRAINDICATIONS TO HIV PEP:

1) **COMBIVIR® IS CONTRAINDICATED** in clients who have:
   - Abnormally low absolute neutrophil count (< 0.75 x 10^9/L)
   - Abnormally low hemoglobin levels (< 75 g/L)

2) **COMBIVIR® SHOULD BE USED WITH CAUTION** in clients who have:
   - Current evidence of bone marrow insufficiency or severe anaemia (i.e., absolute neutrophil count < 1.0 x 10^9/L and/or a hemoglobin of < 90 g/L)
   - History of pancreatitis or risk factors for pancreatitis (especially for children) such as alcoholism, gall stones, gall bladder conditions, bile duct conditions, pancreas injury, pancreatic disease and mumps
   - Kidney problems. Since both lamivudine and zidovudine require dosage modification in the setting of impaired renal function (creatinine clearance of < 50 ml/min), 3TC and zidovudine should be administered as separate products. Product monographs can be consulted for the appropriate dose adjustment.

3) **KALETRA® SHOULD BE USED WITH CAUTION** in clients with:
   - Acute or advanced liver failure
   - Stable chronic liver disease
   - Patients with hemophilia

A history of hepatitis does not automatically rule out the use of HIV PEP. However, in the event of acute symptomatic illness or severely elevated liver enzymes (> 5X upper limit of normal), HIV PEP use may be contraindicated, or dosage adjustments may be necessary. The RN should consult a MD and the MD may want to consult an HIV expert.

DRUG PRECAUTIONS AND CONTRAINDICATIONS TO HIV PEP:

NOTE: This list contains all of the drugs that are contraindicated / used with caution as per the Canadian Combivir® and Kaletra® Product Monographs as of September 2006.

1) **COMBIVIR®: DRUGS WHICH SHOULD BE USED CAUTIOUSLY:**

The following drugs should be used with caution when your client is taking Combivir® due to drug interactions. Each contraindicated drug is listed by drug class followed by a list of all drugs within that class that may interact with Combivir®. Not all drugs within each drug class are contraindicated – only drugs listed are contraindicated when the client is taking Combivir®.

A. Drugs which may have additive bone marrow suppressive effects with zidovudine:

Antivirals	Ganciclovir (Cytovene®)
Antibiotics	Trimethoprim-sulfamethoxazole (Septra), Dapsone
Antifungals	Amphotericin B
Biological Response Modifiers	Interferon alpha (Roferon®-A, Intron® A, Rebetron®)

B. Drugs which may antagonize the antiretroviral effects of Combivir®:

Antiretrovirals	Zalcitabine (Hivid®), Stavudine (Zerit)

C. Drugs which may inhibit the metabolism of zidovudine and increase the risk of side effects, including bone marrow suppression:

Anticonvulsant	Phenytoin (Dilantin); Valproic Acid (Depakene, Epival)
Antifungal	Fluconazole (Diflucan)
Antiprotozoal	Atovaquone (Mepron)
Narcotic Analgesics	Methadone
Uricosuric	Probenecid (Benuryl)

2) **KALETRA® CONTRAINDICATED DRUGS**

Kaletra® interacts with many different drugs by affecting the liver cytochrome P450 drug metabolising enzymes. The following drugs are **CONTRAINDICATED** when the client is taking Kaletra® due to drug interactions.

Each contraindicated drug is listed by drug class followed by a list of all drugs within that class that may interact with Kaletra®. Not all drugs within each drug class are contraindicated – only drugs listed are contraindicated when the client is taking Kaletra®.

Analgesic	Fentanyl (Duragesic®) (interacts with ritonavir increasing fentanyl concentrations)
Antiarrhythmics	Flecainide (Tambocor®); Propafenone (Rythmol®) (potential for serious of life-threatening arrhythmias)
Antibiotics	Rifampin (Rifadin®, Rofact®); (risk loss of efficacy of lopinavir/ritonavir due to accelerated metabolism by rifampin)
Antihistamines	Astemizole (Hismanol®); Terfenadine (Seldane®)* (potential for serious of life-threatening arrhythmias)
Benzodiazapines	Midazolam (Versad®); Triazolam (Halcion®) (potential for prolonged sedation and/or respiratory depression)
Ergot Derivatives	Dihydroergotamine (Migranal®); Cafergot; Cafergot PB; Ergodryl; Gravergol; Ergonovine; Ergotamine; Methylergonovine, Methylergotamine (Methergine®); Ergoloid mesylates (Hydergine®); Bellergal Spacetabs® (potential for ergot toxicity, including peripheral vasospasm and ischemia of the extremities and other tissues)
GI Mortality Agents	Cisapride (Propulsid)®* (potential for serious or life-threatening arrhythmias)
Herbal Products	St. John's Wort (Hypericum perforatum) (risk loss of efficacy of lopinavir/ritonavir due to accelerated metabolism by St. John's wort)
Neuroleptics	Pimozide (Orap®) (potential for prolonged sedation and/or respiratory depression)
Statins	Lovastatin (Mevacor®); Simvastatin (Zocor®) (potential for myopathy and rhabdomyolysis)

**Product no longer available in Canada, only available in United States.*

3) **KALETRA®: POTENTIALLY SIGNIFICANT DRUG INTERACTIONS**

NOTE: Since Kaletra is a substrate and potent CYP3A4 inhibitor, caution should be used when co-administering Kaletra and CYP3A4 enzyme inducers, inhibitors, or substrates with narrow therapeutic indices. If in doubt, please consult with an HIV expert or Pharmacist.

A) Drugs which may result in loss of lopinavir efficacy

Anticonvulsants	Carbamazepine (Tegretol®); Phenobarbitol; Phenytoin (Dilantin®)
Corticosteroids	Dexamethasone (Decadron®)

B) Drugs whose metabolism may be inhibited by lopinavir and result in potentially serious adverse effects:

Antiarrhythmics	Amiodarone (Cordarone®); Bepridil ; Flecainide ; Lidocaine (Xylocaine®); Propafenone; Quinidine
Anticoagulants	Warfarin (Coumadin®)
Antibiotics	Clarithromycin (Biaxin®); Erythromycin ; Rifabutin (Mycobutin®)
Antifungals	Ketoconazole (Nizoral®); Itraconazole (Sporanox®), Voriconazole
Antipsychotic	Thioridazine
Calcium Channel Blockers	Felodipine (Plendil/Renedil®); Nifedipine (Adalat®); Nicardipine (Cardene®)
Cardiotonic Glycoside	Digoxin
Immunosuppressants	Cyclosporine (Neoral®, Sandimmune®); Rapamycin; Tacrolimus (Prograf®)
Inhaled Steroids	Fluticasone (Flonase®, Advair®)
Statins	Atorvastatin (Lipitor®) or Rosuvastatin (Crestor®) greater than 10 mg daily
PDE5 Inhibitors	Sildenafil (e.g., Viagra®), Tadalafil (e.g., Cialis®) or Vardenafil (e.g., Levitra®)
Recreational Drugs	MDMA (ecstasy)

C) Drugs whose effects may be reduced by lopinavir:

Antiparasitic	Atovaquone (Mepron®)
Narcotic Analgesic	Methadone
Oral or Patch Contraceptive	Ethinyl Estradiol; Norethindrone

D) Drugs which can induce disulfiram reaction (sensitivity to even small amounts of alcohol, which results in a highly unpleasant reaction) if taken with lopinavir/ritonavir liquid:

Antibiotic	metronidazole

E) Drugs whose effects may be increased by Kaletra®:

Antidepressants	Celexa®, Effexor®, Paxil®; Trazodone

Antipsychotic Zyprexa®

If it is suspected that the client is emotionally unstable and/or at risk of overdosing, it is recommended to use Combivir® alone or not to use HIV PEP at all.

If the client is on any of these medications, **consult with the designated MD**. If the RN has any concerns about interactions with any other drug, contact a MD or Pharmacist before, or at, the client's follow-up visit.

Non-essential medications, alternate therapy and vitamins, and recreational drug use should be discontinued during the HIV PEP regimen (e.g., herbal mood enhancers/sleep aids such as 5-hydroxy-L-triptophan (5HTP or Tryptophan).

Kaletra® can decrease the effectiveness of long-term use birth control pills, so a barrier form of contraceptive (e.g., condom) should be used.

PREGNANCY & HIV PEP:
The use of Combivir® and Kaletra® during pregnancy has not been extensively studied.

There are some important issues related to HIV and antiretrovirals if a woman is pregnant. Antiretroviral drugs are potentially teratogenic in the **first trimester** of pregnancy and are, therefore, often avoided during this period.

However, if a woman is at high risk of seroconversion after a sexual assault, the risk of transmission to the foetus is very high due to the high viral load during the acute seroconversion phase of the disease. Therefore, giving antiretroviral drugs in this scenario is more important than the risk of teratogenesis.

STILL OFFER HIV PEP TO PREGNANT CLIENTS AT INCREASED HIV RISK.

After the first trimester, there are no risks of teratogenesis. However, if the client is at any stage of pregnancy, the RN is advised to consult an MD, who may wish to consult an HIV expert.

BREASTFEEDING & HIV PEP:
Inform your client that breastfeeding should be discontinued when on antiretroviral drugs.

When to **STOP** HIV PEP during Follow-up:

The HIV PEP drugs should be **DISCONTINUED** in clients who have:

- A hemoglobin < 80 g/L.
- An absolute neutrophil count < 0.5 x 10^9/L.
- A Platelet count < 20,000 cells/µL.
- AST, ALT, ALP or bilirubin > 5 X ULN.

The HIV PEP drugs should be **DISCONTINUED OR MODIFIED** in clients who:

- Experience Grade 4 adverse events (see *HIV PEP Side Effect Documentation* chart, Appendix 2A)

If the above laboratory abnormalities or adverse events occur, the follow-up RN should consult a MD and the MD may want to consult an HIV expert.

Follow-up blood counts (CBC), renal (electrolytes and creatinine) and hepatic function tests (AST, ALT, ALP, bilirubin), muscle tests (CK), blood sugar and amylase **must be done at 3rd Follow-up Visit (2 weeks after Initial Visit)** to assess the HIV PEP drug toxicity. The HIV PEP medications

may need to be stopped or dose adjusted. In the case of abnormal laboratory results, the follow-up RN should consult the MD and the MD may want to consult an HIV expert.

APPENDIX 1E

REFERRAL TO PHYSICIAN AND/OR HIV EXPERT

The RN must consult with the designated MD when one or more of the following conditions exist.

The MD should consider consulting an HIV expert when one or more of the following conditions exist. If the RN has a direct relationship with the HIV expert, the RN can refer directly to her/him.

Consultation with HIV expert strongly recommended

- The client has been assaulted by an assailant known to be HIV-positive and will require consideration for additional or alternative prophylactic anti-HIV medication (≤ 72 hrs).
  - → RN and MD should immediately provide Combivir® and Kaletra® when the victim/survivor is initially seen
  - → Local HIV expert must be consulted as soon as possible during working hours to make arrangements for a consultative visit (i.e., same or next day).*
- The client was assaulted by a known HIV-positive assailant and penetration occurred but the time since the assault was greater than 72 hours.**
- The client has health contraindications to HIV PEP including bone marrow suppression or severe anaemia, acute or advanced liver failure, or acute pancreatitis, or is taking a contraindicated medication.
- The client's baseline HIV test returns positive.

Consultation with HIV expert recommended

- The client presents with an existing severe medical problem (e.g., kidney disease, cancer)
- The client is pregnant. There is an unknown degree of risk of teratogenesis in the first trimester from the HIV PEP medications.***
- The client is a child under the age of 12 years who has been sexually assaulted or abused, has been assessed at-risk of HIV acquisition and HIV PEP is being considered.
- The client is currently taking HIV PEP, is having adherence difficulty as a result of side effects but wants to continue the regimen.

Consultation with HIV expert should be considered

- The client's bloodwork at baseline or the 3rd Follow-up Visit (2 weeks after baseline/Initial Visit) are abnormal. The HIV PEP therapy may need to be discontinued or changed.
- The client develops severe (Grade 3-4, See Appendix 2A) HIV PEP-related side effects or new symptoms while taking the HIV PEP medication. The HIV PEP therapy may need to be discontinued or changed.
- The RN's discretion for any additional concerns.

* In such a case, the HIV expert may consider continuing the anti-HIV therapy for longer than the 28 days due to the high risk of seroconversion.

** Anti-HIV therapy may be started in this scenario not as HIV PEP but as early treatment for acute HIV infection.

*** Antiretroviral drugs are potentially teratogenetic in the first trimester of pregnancy and are therefore often avoided during this period. However, if a woman is at high risk of seroconversion after a sexual assault, the risk of transmission to the foetus is very high due to the high viral load during the acute seroconversion phase of the disease. Therefore, giving antiretroviral drugs in this scenario is more important than the risk of teratogenesis.

APPENDIX 1F

OBTAINING HIV BLOOD STORAGE SAMPLE

To provide a guide to health care providers obtaining a client's blood sample to be frozen for seven months for potential future HIV testing. The following steps are recommended:

1. Explain the purpose of the HIV blood sample for hold to the client. A client blood sample can be obtained and frozen for up to seven months, allowing time for the client to obtain HIV antibody testing at 4-6 weeks and three- and six-months post-sexual assault. Reassure the client that the HIV blood sample is held in a secure and private location and that it will only be used as a baseline reference if she/he tests positive for the HIV virus at the 4-6 week, three- or six-month test and then wishes to know her/his HIV status at the time of the assault.

2. Discuss HIV seroconversion time with the client. Conversion to a positive test usually takes about three months from the time of exposure, although the virus has been detected as early as four weeks. It is rare for seroconversion to occur past 6 months.

3. Obtain and document consent for the storage of client blood sample at the Initial Visit for a potential future HIV test.

4. Obtain client HIV blood sample for hold and send to appropriate secure and private storage facility to be frozen.

5. Explain to client the importance of HIV testing at 4-6 weeks, three- and six months post-assault.

6. Inform client that they must contact SATC staff within seven months of their Initial Visit for the HIV blood for hold to be tested, and if they do not contact SATC staff within this timeframe, the blood sample will be destroyed.

7. Document the date HIV blood sample for hold will be destroyed in the client's chart: seven months after Initial Visit to SATC.

8. Review condom use and other safe sex practices with client. Encourage use of condom until client HIV test at week 4-6, three- and six-months are known by client to be negative.

Note: Storage of blood for later HIV testing is for at-risk clients who declined HIV PEP. For those clients who accepted HIV PEP, client HIV testing is recommended at the Initial Visit or at the 1st Follow-up Visit (2-4 after the Initial Visit) to ensure that the client is not already HIV-positive (which would alter treatment).

APPENDIX 1G

RAPID HIV TESTING OF ALLEGED PERPETRATOR

Discuss possibility of rapid HIV testing with the police, where possible. Testing of the alleged perpetrator may affect whether prophylaxis is initiated or continued. Typically, the prophylaxis should be started, but may be discontinued if the assailant tests negative for HIV.

The following factors should be considered with each case:

Is the alleged assailant:

- Known to police, victim/survivor and/or their family members?
- Available for testing (in custody or out on bail)?
- Willing to consent to having bloodwork done?

If the alleged assailant does not consent to testing, an application can be made by the victim under Bill 105 for mandatory testing (within 1 week of sexual assault).

Bill 105 makes provision for the taking of blood samples from a *source* person when victims of crime, emergency service workers, and good Samaritans have been exposed to the source person's bodily fluids. The blood samples are to be tested for Hepatitis B, Hepatitis C and HIV.
Bill 105 does not change the usual care management an individual would receive; assess the injury and risk exposure and manage accordingly.

The *applicant* (exposed individual) must consent to: examination; and, counselling regarding prophylaxis or treatment, and baseline testing for HIV, Hepatitis B and Hepatitis C.

The MD who first sees the applicant, will be asked to fill out a *Physician Report*. The billing code for this service is K031. Forms may be obtained on the Web site:
http://www.health.gov.on.ca/english/public/forms/form_menus/hppa_fm.html

The form names and numbers are:

HPPA Form 1 – Physician Report - #4229-64,
Form 2 – Applicant Report - #4235-64,
Form 3 – Respondent Report - #4236-64.

For more information: 1-888-664-2273.

It is the applicant's responsibility to submit the completed Physician Report to the Medical Officer of Health of the appropriate health unit.

More information may be obtained from your local medical officer of health and on the Web site:
www.health.gov.on.ca/english/providers/legislation/bill_105/105_phys.html

Application Process Q&A: www.health.gov.on.ca/english/providers/legislation/bill_105/105_qa.pdf

Source: Ontario Ministry of Health and Long-Term Care, March 2007
http://www.health.gov.on.ca/english/providers/legislation/bill_105/105_phys.html#1

ONTARIO SATC MEDICAL GUIDELINES FOR ADMINISTRATION OF FOLLOW-UP DOSES OF HIV POST-EXPOSURE PROPHYLAXIS

Prepared April 2003 (revised April 2007)

SUBJECT:
Medical Guidelines for Registered Nurses (RNs) Working with Medical Doctors (MDs) for Administration of Follow-Up Doses for HIV Post-Exposure Prophylaxis.

PURPOSE:
To provide guidance to Registered Nurses (RNs) working with Medical Doctors (MDs) on administering the follow-up doses of HIV post-exposure prophylaxis (HIV PEP) to sexual assault victims/survivors who started the 5-day starter kit and want to continue the 28-day regimen.

Under these guidelines, the follow-up RNs will carry out the sexual assault-related management, counselling, laboratory testing, HIV testing and follow-up. An MD will write the prescription, or assist in the development of medical directives for the HIV PEP drugs which will be available through the SATC's pharmacy. The MD consulted should be willing to participate in the follow-up process.

USE:
To be administered to any sexual assault victim/survivor who starts the 5-day HIV PEP starter kit and who provides consent to complete the HIV PEP regimen.

During the first visit to the SATC, the RN administered a 5-day HIV PEP starter kit to the client. Five follow-up visits must occur during the 28-day course of HIV PEP. Three of these visits will require dispensing additional Combivir® and Kaletra® to complete the HIV PEP course.

CONTRAINDICATIONS / DRUG INTERACTIONS:
Complete details regarding contraindications, drug interactions and precautions to HIV PEP are outlined in **Appendix 1D***.

Side Effects:
The follow-up RN must obtain a history of client side effects. If the client is experiencing severe side effects (Grade 3-4, See Appendix 2A), the RN is to consult an MD and the MD may want to consult an HIV expert.

The HIV PEP drugs should be **DISCONTINUED OR MODIFIED** in clients who:

- Experience Grade 4 adverse events (see *HIV PEP Side Effect Documentation* chart, Appendix 2A)

Abnormal Bloodwork results:
The follow-up RN should review the bloodwork done at baseline and the 3rd Follow-up Visit (2 weeks after the Initial Visit). The HIV PEP drugs should be **DISCONTINUED** in clients who have:

- A hemoglobin < 90 g/L
- An absolute neutrophil count < 0.5 x 10^9/L.
- A Platelet count < 20,000 cells/μL
- AST, ALT, ALP or bilirubin > 5 X ULN

If the above laboratory abnormalities or adverse events occur, the follow-up RN should consult a MD and the MD may want to consult an HIV expert.

Follow-up blood counts (CBC), renal (electrolytes and creatinine) and hepatic function tests (AST, ALT, ALP, bilirubin), muscle tests (CK), blood sugar and amylase must be done at the 3rd Follow-up Visit (2 weeks after the Initial Visit) to assess HIV PEP drug toxicity. The HIV PEP medications may need to stopped or the dose adjusted. In the case of abnormal laboratory results, the follow-up RN should consult the MD and the MD may want to consult an HIV expert.

Non-essential medications and alternate therapy including vitamins should be discontinued during HIV PEP. Recreational drug use should also be discontinued for the length of the HIV PEP regimen.

Birth Control, Pregnancy and Breastfeeding:
Kaletra® can decrease the effectiveness of long-term use birth control pills, so a barrier form of contraceptive (e.g., condom) should be used.

The use of Combivir® and Kaletra® during pregnancy has not been extensively studied. Antiretroviral drugs are often avoided in the first trimester due to general concerns of teratogenesis. However if the assailant is known to be HIV-positive or has HIV risk factors, the risk of HIV transmission outweighs the risk of teratogenesis, and HIV PEP should be continued regardless of the client's pregnancy status. If the client is pregnant, the RN is advised to consult the SATC's designated MD and the MD should consult an HIV expert.

Breastfeeding should be discontinued when on antiretroviral drugs. If suspicion of HIV infection is high enough to start therapy, then breast-feeding should be discontinued. Clients who choose not to take HIV PEP should be informed that the rate of HIV transmission in breast milk is approximately 1 in 4 in order for them to make informed choices about breastfeeding (based on meta-analysis data from Van de Perre, P. Postnatal transmission of human immunodeficiency virus type 1: the breastfeeding dilemma. *American Journal of Obstetrics and Gynecology*. 1995; 173: 483-487.).

DOSAGE:

Combivir®	1 tablet twice a day X 23 days over 3 follow-up visits (to complete the 28-day course)
Kaletra®	2 tablets twice a day X 23 days over 3 follow-up visits (to complete the 28-day course)

* If the RN has any concerns regarding drug interactions, contact a MD or Pharmacist before or at the client's follow-up visit.

MEDICAL GUIDELINE PRACTICE COMPONENTS:

At each follow-up visit, the RN will review with the client:

- ♣ The risk of HIV transmission
- ♣ Side effects experienced
- ♣ How the client can best take HIV PEP medication (twice a day with food)
- ♣ The importance of not missing a dose

The RN will endeavour to answer any HIV PEP related questions posed by the client.

1ST FOLLOW-UP VISIT (2-4 DAYS AFTER INITIAL VISIT TO SATC):
If the client has decided to continue taking HIV PEP, provide her/him with a further 10 day supply of HIV PEP therapy:

Combivir® 1 tablet orally twice a day for 10 days (20 tablets)
Kaletra® 2 tablets orally twice a day for 10 days (40 tablets)

An HIV test should be recommended to clients (either on- or off-site) if one was not already performed. If a client blood sample was taken and stored at the Initial Visit, the client should be asked if they would like this sample tested for HIV. Pre-test counselling must be done at this time. Client consent should be obtained by the RN prior to obtaining a client blood sample for HIV testing. This process should be documented in the client chart.

Ontario Public Health Laboratories will expedite HIV test results if ***"STAT, HIV PEP"*** is written on the requisition.

The RN should evaluate the client's Initial Visit blood test results and if abnormal, the designated MD should be consulted.

HIV PEP drugs should be **DISCONTINUED** and the designated MD consulted if any of these lab results are present:

- A hemoglobin < 90 g/L
- An absolute neutrophil count < 0.5 x 10^9/L.
- A Platelet count < 20,000 cells/μL
- AST, ALT, ALP or bilirubin > 5 X ULN

HIV PEP drugs should be **DISCONTINUED OR MODIFIED** in clients who experience Grade 4 adverse events (see *HIV PEP Side Effect Documentation* chart, Appendix 2A)

2ND FOLLOW-UP VISIT (1 WEEK AFTER INITIAL VISIT):
The RN should review the side effects of HIV PEP medications with the client, how she/he can best take HIV PEP medications (twice a day with or without food) and review the importance of not missing a dose. This visit can be done in-person or by phone.

The designated MD should be consulted if the client is experiencing severe (Grade 3-4, See Appendix 2A) HIV PEP-related side effects.

HIV PEP drugs should be **DISCONTINUED OR MODIFIED** in clients who experience Grade 4 adverse events (see *HIV PEP Side Effect Documentation* chart, Appendix 2A)

3RD FOLLOW-UP VISIT (2 WEEKS AFTER INITIAL VISIT):
If the client has decided to continue to take HIV PEP, the RN will provide the client with a further 7 day supply of HIV PEP therapy:

Combivir® 1 tablet orally twice a day for 7 days (14 tablets)
Kaletra® 2 tablets orally twice a day for 7 days (28 tablets)

Client blood tests to assess HIV PEP drug toxicity should be done at the 3rd Follow-up Visit (2 weeks after the Initial Visit) and should include a CBC, electrolytes, blood sugar, creatinine, AST, ALT, ALP, bilirubin, amylase and CK.

HIV PEP drugs should be **DISCONTINUED OR MODIFIED** in clients who experience Grade 4 adverse events (see *HIV PEP Side Effect Documentation* chart, Appendix 2A)

4TH FOLLOW-UP VISIT (3 WEEKS AFTER INITIAL VISIT):
If the client has decided to continue to take HIV PEP, the RN will provide the client a further 6 day supply of HIV PEP therapy:

Combivir® 1 tablet orally twice a day for 6 days (12 tablets)
Kaletra® 2 tablets orally twice a day for 6 days (24 tablets)

The RN will evaluate the client laboratory test results from the 3rd Follow-up Visit (2 weeks after the Initial Visit). If abnormal, the designated MD should be consulted.

HIV PEP drugs should be **DISCONTINUED** and the designated MD consulted if any of these laboratory results are present:

- A hemoglobin < 90 g/L
- An absolute neutrophil count < 0.5 x 10^9/L.
- A Platelet count < 20,000 cells/μL
- AST, ALT, ALP or bilirubin > 5 X ULN

HIV PEP drugs should be **DISCONTINUED OR MODIFIED** in clients who experience Grade 4 adverse events - (see *HIV PEP Side Effect Documentation* chart, Appendix 2A)

FINAL/5TH FOLLOW-UP VISIT (4 WEEKS AFTER INITIAL VISIT):
The RN must inform the client that she or he should have follow-up HIV testing at week 4-6, and 3 and 6 months after the Initial Visit. The client can have this HIV testing done at her/his family MD or at an anonymous HIV test centre.

Note: Post HIV-test counselling should be provided to client regardless of whether the client had HIV testing done on-site or at an off-site anonymous clinic. Where this counselling will fit in the follow-up schedule will depend on the individual circumstances of the client and the context of their HIV testing.

APPENDIX 2A
HIV PEP SIDE EFFECT DOCUMENTATION

HIV PEP Follow-up Visit (1st, 2nd, 3rd, 4th, 5th): _____ Date: _____

☐ Check if NO side effects experienced since LAST visit Pt Name: _____

Complete 1 copy of this form at EACH follow-up visit for ALL clients taking HIV PEP.
Check the applicable grade for each side effect experienced since the client's LAST visit.

	GRADE 1	GRADE 2	GRADE 3	GRADE 4 *
RESPIRATORY				
Cough	☐ Transient – no Rx	☐ Treatment associated cough, local non-narcotic Rx	☐ Treatment associated cough, narcotic Rx required	☐ Uncontrolled
Shortness of breath	☐ Mild, does not interfere with routine activities	☐ Moderate, interferes with routine activities, requires intermittent Rx	☐ Moderately debilitating, requiring nasal oxygen	☐ Severe, requiring ventilator assistance
GASTROINTESTINAL				
Nausea	☐ Transient, mild discomfort, reasonable food/fluid intake maintained	☐ Moderate discomfort, significantly decreased food/ fluid intake < 3 days, some limit of activity	☐ Severe discomfort, no significant or minimal food/fluid intake > 3 days, activities limited	☐ Minimal fluid intake or hospitalization required
Vomiting	☐ Transient emesis, 2-3 per day or lasting < 1 week	☐ Moderate emesis, 4-5 per day or lasting 1 week	☐ Vomiting all food/fluids in 24 hours, orthostatic hypotension or IV fluid/Rx required	☐ Hypotensive shock, hospitalization, IV fluid therapy
Constipation	☐ Mild	☐ Moderate, Rx required	☐ Severe, Rx required, vomiting	☐ Distension with vomiting
Diarrhea	☐ Mild or transient, 3-4 loose stools per day or mild diarrhea < 1 week	☐ Moderate or persistent, 5-7 loose stools per day or diarrhea > 1 week	☐ Bloody diarrhea or > 7 loose stools per day, orthostatic hypotension or IV Rx required	☐ Hypotensive shock or hospitalization required
NEURO / NEUROMUSCULAR				
Mood	☐ Mild anxiety or depression	☐ Moderate anxiety or depression, therapy required	☐ Severe anxiety, depression, or manic, needs assistance	☐ Acute psychosis, incapacitated, hospitalization required
Muscle weakness	☐ Subjective/reported weakness, no objective symptoms/ signs	☐ Mild objective weakness, no decrease in function	☐ Objective weakness, function limited	☐ Paralysis
Painful neuropathy (pain, numbness, or tingling in fingers, toes, hands and/or feet)	☐ Mild discomfort, no therapy required	☐ Moderate discomfort, persisting for > 72 hours, analgesic required	☐ Severe discomfort, marked antalgic gait, narcotic analgesic required with symptomatic improvement	☐ Incapacitating and intolerable discomfort, gait not improved or unable to walk despite narcotic analgesics
OTHER PARAMETERS				
Fever (oral w/out infection >12hrs)	☐ 37.7 – 38.5 C or 100.0 – 101.5 F	☐ 38.6 – 39.5 C or 101.6 – 102.9 F	☐ 39.6 – 40.5 C or 103 – 105 F	☐ > 40.5 C or > 105 F
Headache	☐ Mild, no Rx therapy required	☐ Transient, moderate, non-narcotic Rx required	☐ Severe, responds to initial narcotic therapy	☐ Intractable, requires repeated narcotic therapy
Fatigue	☐ < 25% decrease in regular daily activities	☐ 25-50% decrease in regular activities	☐ > 50% decrease in regular activities, unable to work	☐ Unable to care for self
Allergic reaction	☐ Pruritus without rash	☐ Localized urticaria angioedema	☐ Generalized urticaria angioedema	☐ Anaphylaxis
Rash (mucocutaneous)	☐ Erythema, pruritus	☐ Diffuse maculopapular rash, dry desquamation	☐ Vesiculation, moist desquamation ulceration	☐ Exfoliative dermatitis, suspected mucous membrane involvement, Stevens Johnson or erythema multiforme, nercrosis requiring surgery
Other, specify:				

* HIV PEP should be DISCONTINUED or CHANGED in clients who experience Grade 4 side effects. Consult with HIV Expert.

Source: National Institute of Allergy and Infectious Diseases/National Institutes of Health (NIAID/NIH) Toxicity Grading

APPENDIX 2B
FLOW CHART OF SATC VISITS

	Initial Visit	1st F/U Visit (*Day 2 – 5*)	2nd F/U Visit (*Week 1*[5])	3rd F/U Visit (Week 2)	4th F/U Visit (Week 3)	5th/Final F/U Visit (Week 4)
ALL VICTIMS/SURVIVORS						
Counsel on HIV risk	√					
Give *HIV Risk Assessment* pamphlet	√					
VICTIMS/SURVIVORS AT RISK NOT TAKING HIV PEP						
Counsel on HIV PEP	√					
Recommend HIV testing[1]	√					
VICTIMS/SURVIVORS WHO TAKE HIV PEP						
Counsel on HIV PEP	√	√	√	√	√	
Give *HIV PEP Information* booklet	√					
Pregnancy test[2]	√					
Bloodwork[3]	√			√		
Recommend HIV testing[4]	√					√
Give HIV PEP medications	√	√		√	√	
Review presence of side effects & Complete HIV PEP Side Effect Documentation (Appendix 2A)		√	√	√	√	

[1]Baseline HIIV testing is recommended (on-site at first visit, at the office of their regular physician, or at an anonymous testing centre) or blood can be taken to be stored at the first visit and follow-up testing should be done at week 4-6, month 3 and month 6 after the assault
[2] STAT serum Beta-HCG must be done at first visit
[3] Bloodwork includes CBC, electrolytes, Cr, AST, ALT, ALP, bilirubin, amylase, blood sugar and CK
[4] Baseline HIIV testing is recommended (on-site at first visit, at the office of their regular physician, or at an anonymous testing centre) or blood can be taken to be stored at the first visit and follow-up testing should be done at week 4-6, 3 and 6 months after the assault
[5] 2nd Follow-up Visit (Week 1) can be done as a phone call or an in-person visit