MANAGEMENT AND TREATMENT OF UCT STAFF AND STUDENTS ACCIDENTALLY EXPOSED TO BLOOD OR BODY FLUIDS

1. DEFINITIONS

1.1 Accidental Exposure *includes:*

1.1.1 Needle-stick injuries.

1.1.2 Injury with other sharp object, e.g. scalpel blade, lancet, suture needle, broken glass.

1.1.3 Splash of blood or body fluids onto mucous membrane of eyes, mouth or nose.

1.1.4 Exposure of non-intact skin to blood or body fluids.

1.2 Potentially infectious fluids: include blood, CSF, semen, vaginal secretions, synovial/pleural/pericardial/peritoneal/amniotic fluids, but ***not*** vomitus, faeces, urine, saliva, sweat, tears ***unless*** blood stained.

1.3 Source Person: A person whose potentially infectious fluids have come into contact with a staff member or student. If the source person is unknown, the term "source person unknown" shall be used.

1.4 Accident Area: The site where the exposure occurred.

1.5 Immediate Care Area: The area where the emergency management of the injured staff member or student is carried out.

2. RESPONSIBILITY OF THE EXPOSED PERSON

Immediate Action:

2.1 - Encourage bleeding, if the skin was damaged by the injury.
- Wash the skin with soap and water.
- If a mucus membrane splash, e.g. eye, then irrigate with tap water for 5 minutes.

2.2 Inform the most senior person in the area who will arrange for a blood sample to be taken from the source patient (1 tube of clotted blood) and sent for testing – or bring the blood sample to GSH OHC. If blood cannot be sent by the person that the injury was reported to, then the blood should be taken by the recipient of the injury to the immediate care area (see 2.3).

2.3 Report to the Immediate Care Area for the initial dose of post-exposure prophylaxis (PEP) if indicated.

2.4 The exposed student/s must report the incident to the UCT Faculty of Health Sciences Student Support Office. If a UCT staff member, report the incident to the UCT Occupational Health Nurse.

Some of the Immediate Care Areas are:

- GSH: Staff Health Clinic, J Floor OPD (07H00-16H00)
- Trauma Unit C14, New GSH Hospital (Weekends and after hours)
- Somerset Hospital: Casualty
- Victoria Hospital: Occupational Health Nurse Practitioner or Casualty
- GF Jooste Hospital: Infectious Diseases Clinic or Casualty
- Mowbray Maternity Hospital: Occupational Health Nurse Practitioner or GSH
- RXH: Occupational Health Nurse Practitioner or GSH

- Community Health Centres: Doctor or Sister in charge
- MOU's: Doctor or sister in charge
- Shawco Clinics: Doctor in charge

2.5 If the incident occurred anywhere after hours, after adhering to 2.3 above, it is mandatory that all staff who has sustained a risk exposure should report to GSH Staff Health clinic the next working day.

3. RESPONSIBILITY OF THE DOCTOR IN THE GSH STAFF HEALTH CLINIC

3.1 Ensure completion of all information on the Percutaneous Inoculation (PI) Form

3.2 Counsel staff member or student

3.3 Obtain blood for the relevant virology tests (see Clinical Guidelines in Addendum to Policy).

3.4 Ensure an appropriate supply of PEP if indicated, and provide information about possible adverse drug effects (see Clinical Guidelines in Addendum to Policy).

3.5 Inform the exposed person of the source patient's results as soon as possible.

3.6 Provide follow-up dates for HIV serology in the event of an HIV positive exposure.

3.7 Ensure adequate psychological follow-up, if required.

4. RESPONSIBILITIES OF THE PERSON / DOCTOR IN CHARGE OF THE EXPOSED UCT STAFF MEMBER. (e.g. Line Manager or in his/her absence, the delegated Deputy)

Immediate Action:

4.1 Arrange to send exposed staff member to the treatment area as soon as possible, with blood specimen from the source person, in a clotted tube.

4.2 Inform the UCT Occupational Health Nurse (OHN) about the incident telephonically during office hours on 021 650 3873/2021. (All exposure incidents must be investigated by the UCT OHN in the first instance and not by the Safety Health and Environment (SHE) representatives, owing to the confidentiality required in these potentially sensitive incidents.)

5. RESPONSIBILITIES OF THE UCT OCCUPATIONAL HEALTH NURSE

5.1. Conduct the incident investigation.

5.2. Report incidents and statistics at SHE meetings, in a confidential manner.

5.3. Inform the Head of Department (HOD) of the outcome for each involved exposed person. This shall be done in writing using the Dept. of Labour, WCL. 306 Annexure A document. The HOD must sign this document and return it to the UCT OHN, who will forward the forms to the Compensation Commissioner.

6. RELEVANT PHONE NUMBERS

• GF Jooste Hospital Infectious Diseases Clinic	021 690 1134/1140
• Groote Schuur Hospital Staff Health Clinic	021 404 5490 / 5081
• GSH Trauma Unit	021 404 4112 / 4473
• Mowbray Maternity Hospital Occupational Health Nurse Practitioner	021 659 5586
• New Somerset Hospital Occupational Health Nurse Practitioner	021 402 6485 / 6410
• Red Cross Hospital(RXH) Occupational Health Nurse Practitioner	021 658 5410 / 5605
• UCT Occupational Health Nurse Practitioner	021 650 3873/2021
• UCT Student Wellness Centre	021 650 1020
• UCT Safety, Health and Environment Manager	021 650 3552
• UCT Faculty of Health Sciences Student Support Office	021 406 6749
• Victoria Hospital Occupational Health Nurse Practitioner	021 799 1141

	THE UNIVERSITY OF CAPE TOWN POST EXPOSURE PROPHYLAXIS POLICY & ADDENDUM	1SSUE NO: 05 Revision No: 05 Third Draft: March 2012 DOC. NO: UCTPEP005
Updated by: **Needle Stick Injury Working Group**	**Approved by: Mr. John Critien – Exec. Dir. Property & Services UCT.** **Sign:**	**Approved by Medical Superintendent Groote Schuur Hospital.** **Sign:**

STANDARD OPERATING PROCEDURE FLOW CHART:

Management and Treatment of UCT Staff and Students Accidentally Exposed to Blood or Body fluids.

Accidental Exposure: UCT Staff / Student

- Needle-stick injuries.
- Injury with other sharp object, e.g. scalpel blade, lancet, suture needle, broken glass.
- Splash of blood or body fluids onto mucous membrane of eyes, mouth or nose.
- Exposure of non-intact skin to blood or body fluids.

↓

Immediate Action:

- Encourage Bleeding, if the skin is damaged by the injury.
- Wash the site with soap & water.
- Irrigate the mucus membrane with clean running water for 5 minutes e.g. rinse your eye.

↓

Duty of Exposed Person:

- Immediately inform your Supervisor or a Senior Person in charge.
- Supervisor / In charge person to obtain 1 tube clotted blood sample from the source person & send for blood tests.(HIV, Hep B surface antigen, Hep C),
- Report to the Immediate Care Area for prophylactic treatment.
- Students must report the incident to the UCT Faculty of Health Sciences Student Support Office 021 406 6749

↓

Immediate Care Areas:

- Community Health Centres: Doctor or Sister in charge
- GF Jooste Hospital: Infectious Diseases Clinic or Casualty 021 690 1134/1140
- GSH: Staff Health Clinic, J Floor OPD (07H00-16H00): 021-4045490/5081
- GSH: Trauma Unit C14, New GSH Hospital (Weekends and After hours) 021 404 4112 / 4473
- Mowbray Maternity Hospital: Occupational Health Nurse Practitioner or GSH: 021 659 5586
- MOU's: Doctor or Sister in charge
- RXH: Occupational Health Nurse Practitioner or GSH: 021 658 5410 / 5605
- Shawco Clinics: Doctor in charge
- Somerset Hospital: Casualty: 021 402 6485 / 6410
- Victoria Hospital: Occupational Health Nurse

→

During Working Hours:
07h00 – 16h00
Proceed directly to GSH Staff Health Clinic.

021-4045490/5081

↓

After Hours:

Report to GSH Staff Health Clinic the next working day.

021-4045490/5081

	THE UNIVERSITY OF CAPE TOWN POST EXPOSURE PROPHYLAXIS POLICY & ADDENDUM	1SSUE NO: 05 Revision No: 05 Third Draft: March 2012 DOC. NO: UCTPEP005
Updated by: **Needle Stick Injury Working Group**	**Approved by: Mr. John Critien – Exec. Dir. Property & Services UCT.** **Sign:**	**Approved by Medical Superintendent Groote Schuur Hospital.** **Sign:**

CLINICAL GUIDELINES POST NEEDLE STICK INJURY
SEROLOGICAL TESTS TO CONSIDER

Test	Source	Exposed				
	Baseline	Baseline	2 weeks	6 weeks	3 months	6 months
HIV	x	x		x	x	x
HBV	x(sAg)	x(sAb)				X(sAb)
HCV	x (Ab)	x (Ab)		x(PCR)		X(Ab)

Management of Exposures to Hepatitis B Virus

- Any blood or body fluid exposure to an unvaccinated person should lead to the initiation of the hepatitis B vaccine series (eg. Engerix-B® 20 mcg IM at 0, 1, and 6 months)
- When Hepatitis B Immune Globulin (HBIG) is indicated, it should be administered as soon as possible after the exposure (preferably within 24 hours, but is recommended up to 1 week following an occupational exposure)
- Hepatitis B vaccine can be administered simultaneously with HBIG but at a separate site
- Test for anti-HBs 1-2 months after last dose of vaccine.

VACCINATION/AB RESPONSE OF WORKER	TREATMENT		
	Source HBsAg (+)	Source HBsAg (-)	Source unknown or not available for testing
Unvaccinated	HBIG (0.06 mL/kg IM) x 1 and vaccinate	Vaccinate	Vaccinate
Vaccinated-responder[1]	No PEP	No PEP	No PEP
Vaccinated-nonresponder	HBIG (0.06 mL/kg IM) x 1 and revaccinate or HBIG (0.06 mL/kg IM) x 2 (at time of exposure and 1 month after exposure)	No PEP	If known high risk treat as HBsAg (+)
Vaccinated-Ab response unknown	Test exposed person for anti-HBs 1. If adequate, no PEP necessary 2. If inadequate, administer HBIG x 1 and vaccine booster	No Treatment	Test exposed person for anti-HBs 1. If adequate, no PEP necessary 2. If inadequate, give vaccine booster and recheck titer in 1-2 months

Hepatitis C Virus serology testing if source is **positive**:

- Anti-HCV and ALT activity at 4-6 months or HCV RNA by PCR at 4-6 weeks for earlier detection
- Confirm anti-HCV results reported positive by enzyme immunoassay with supplemental test [e.g. recombinant immunoblast assay (RIBA) or HCV RNA by PCR]

Post-Exposure Management for Hepatitis C Virus

- No regimen proven beneficial for PEP
- Early identification of chronic disease and referral for management
- Immediately refer HCW to hepatitis C specialist for management

	THE UNIVERSITY OF CAPE TOWN POST EXPOSURE PROPHYLAXIS POLICY & ADDENDUM	1SSUE NO: 05 Revision No: 05 Third Draft: March 2012 DOC. NO: UCTPEP005
Updated by: **Needle Stick Injury Working Group**	**Approved by: Mr. John Critien – Exec. Dir. Property & Services UCT.** **Sign:**	**Approved by Medical Superintendent Groote Schuur Hospital.** **Sign:**

OCCUPATIONAL POST EXPOSURE PROPHYLAXIS

AIM: START WITHIN 24 HOURS AND COMPLETE 28 DAYS

Type of Exposure	STATUS OF THE SOURCE		
	HIV POSITIVE	UNKNOWN	HIV NEGATIVE
Percutaneous exposure to blood or potentially infectious fluids*	Triple Therapy**		No PEP
Mucocutaneous splash or contact of an open wound with blood or potentially infectious fluids*	Dual Therapy		No PEP
Any exposure with non-infectious fluids	No PEP		No PEP

*Blood or tissue fluid from a body cavity i.e. pleural, pericardial, synovial ascitic or cerebrospinal fluid, wound secretions, amniotic fluid, breast milk.
**If the client is unable to tolerate triple therapy, the default is always to continue dual therapy completing 28 days

Recommended Triple therapy:

- Tenofovir§ 300 mg once daily (R155.60 for 30 day supply)
- Lamivudine 300mg once daily (R29.26 for 30 day supply)
- Aluvia 2 tablets BD (R244.17 for 30 day supply)

Recommended Dual therapy:

- Tenofovir§ 300 mg once daily (R156 for 30 day supply)
- Lamivudine 300mg once daily (R30 for 30 day supply)

Alternatives:

- For tenofovir: Stavudine 30mg bd (R13.40)
  or zidovudine 300mg bd (R62.93).
- For alluvia: Boosted atazanavir 300mg od (R250.92)
  or efavirenz 600mg od (R40.11)

Tablesof Common or serious Side Effects, by drug class

(for agents listed in this guideline)

Nucleoside Reverse Transcriptase Inhibitors

NRTIs are associated with lactic acidosis, hepatic steatosis, and body fat redistribution (lipodystrophy).

Drug	Adverse Events	Comments
Lamivudine	• Headache, dry mouth	• Adverse effects occur infrequently. • Active against hepatitis B virus. In patients with HIV and hepatitis B coinfection, hepatitis may flare upon discontinuation of lamivudine. • Adjust dosage for renal insufficiency or failure.
Tenofovir	• Flatulence, nausea, diarrhea, abdominal discomfort • Asthenia • Acute renal insufficiency, Fanconi syndrome • Chronic renal insufficiency	• Active against hepatitis B but not FDA approved for treatment of hepatitis B. In patients with HIV and hepatitis B coinfection, hepatitis may flare upon discontinuation of tenofovir. • Gastrointestinal symptoms may be worse in lactose-intolerant patients; tenofovir is formulated with lactose. • Adjust dosage for renal insufficiency or failure.
Zidovudine	• Anemia, neutropenia • Fatigue, malaise, headache • Nausea, vomiting • Myalgia, myopathy • Hyperpigmentation of skin and nails	• Twice-daily dosing preferred over thrice-daily dosing. • Fatigue, nausea, headache, and myalgia usually resolve 2-4 weeks after initiation. • Adjust dosage for renal insufficiency or failure.
avudine	• Peripheral neuropathy • Pancreatitis • Dyslipidemia • Diarrhea	• Of the NRTIs, stavudine appears to convey the greatest risk of lipodystrophy and other mitochondrial toxicity. • Increased risk of lactic acidosis and hepatic steatosis when combined with didanosine; this combination should be avoided when possible, especially during pregnancy. • Increased risk of peripheral neuropathy when combined with didanosine. • Consider dosage adjustment for peripheral neuropathy. • Adjust dosage for renal insufficiency or failure.

Nonnucleoside Reverse Transcriptase Inhibitors

NNRTIs are associated with rash, and may cause Stevens-Johnson syndrome and toxic epidermal necrolysis.
All NNRTIs may have significant interactions with other drugs; dosage adjustment of interacting agents may be required.

Drug	Adverse Events	Comments
Efavirenz	• Abnormal dreams, drowsiness, dizziness, confusion • Mood changes • Elevations in liver function tests • Hyperlipidemia	• CNS symptoms are common; severity usually decreases within 2-4 weeks. • Teratogenic in animal studies; contraindicated during the first trimester of pregnancy and for use by women who may become pregnant.
Nevirapine	• Elevations in liver function tests, hepatitis, liver failure	• Initial dose of 200 mg per day for first 14 days, then 200 mg twice daily (immediate-release formulation) or 400 mg once daily (extended-release formulation), decreases frequency of rash. • Most rash develops within first 6 weeks of therapy; rash is most common in women. • Hepatotoxicity may be life threatening. It is more common at higher CD4 cell counts, in women, and in patients with hepatitis B or C. Nevirapine should not be initiated for women with CD4 counts of >250 cells/µL or men with CD4 counts of >400 cells/µL, unless the benefit clearly outweighs the risk. Monitor liver tests closely for the first 16 weeks of treatment.

Protease Inhibitors

All PIs are associated with metabolic abnormalities including dyslipidemia, hyperglycemia, insulin resistance, and lipodystrophy. (Atazanavir is less likely to cause dyslipidemia.)
PIs may increase the risk of bleeding in hemophiliacs.
PIs may have significant interactions with other drugs; dosage adjustment of interacting agents may be required.

Drug	Adverse Events	Comments
Indinavir	• Nephrolithiasis, flank pain • Hyperbilirubinemia • Elevations in liver function tests • Alopecia, dry skin, ingrown nails • Insomnia • Taste perversion	• To reduce risk of nephrolithiasis, patients should drink at least 1.5 liters of fluid daily. • When used as sole PI, should be taken on an empty stomach, 1 hour before or 2 hours after a meal, and should be taken every 8 hours (not 3 times per day).
Lopinavir/ ritonavir	• Diarrhea, nausea, vomiting • Dyslipidemia • Elevations in liver function tests • Taste perversion	• Available in tablets or oral solution. Tablets do not require refrigeration. • Oral solution contains 42% alcohol. • Avoid combining oral solution with metronidazole or disulfiram. Alcohol in the oral solution may cause disulfiram-like reaction.

Atazanavir	• Hyperbilirubinemia, jaundice • Elevations in liver function tests • PR interval prolongation	• Proton pump inhibitors interfere with atazanavir absorption and are contraindicated for use by patients receiving atazanavir. • Other antacid medications and H2 blockers also interfere with absorption of atazanavir and should be used with caution by patients receiving atazanavir. • Indirect hyperbilirubinemia; does not require discontinuation of atazanavir. • May have less effect than other PIs on lipid levels.

Associated Costs:

1. **Cost of blood tests:**

HIV Elisa/P24 Antigen (HIV combo)	R 49.28
Hep BsAg	R105.89
Hep BsAb	R105.89
Hep C Ab	R105.89

2. **Other potential costs:**

- HIV + exposure : HIV combo at 6 wks, 3 mths, 6 mths = R147.84
- Hep C + exposure : Hep C Ab at 6 wks, 3 mths, 6 mths = R317.67Hep BsAg + exposure : may need Hep B
- Immunoglobulin stat, depending on health care worker Hep B immune status = R1004. Very expensive!

Appendix: Anti retroviral agents, by Class

(Brand names may change, and not all are available in South Africa)

Nucleoside/Nucleotide Reverse Transcriptase Inhibitors (NRTIs):

Abbreviation	Generic name	Brand name	Food restrictions and notes
3TC	lamivudine	Epivir	Take with or without food
TDF	tenofovir	Viread	Take with or without food
d4T	stavudine[2]	Zerit	Take with or without food
AZT or ZDV	zidovudine[1]	Retrovir	Take with or without food
ABC	abacavir	Ziagen	Take with or without food
ddI	didanosine[3]	Videx EC	Take on an empty stomach 30 mins before, or 2 hours after, a meal
FTC	emtricitabine	Emtriva	Take with or without food

Combined NRTIs:

Combination	Brand name	Food restrictions and notes
AZT + 3TC	Combivir	Take with or without food
d4T + 3TC	-	Take with or without food
ABC + 3TC	Kivexa	Take with or without food
ABC + AZT + 3TC	Trizivir[4]	Take with or without food
TDF + FTC	Truvada	Take with or without food

Non-Nucleoside Reverse Transcriptase Inhibitors (NNRTIs):

Abbreviation	Generic name	Brand name	Food restrictions and notes
EFV	efavirenz	Stocrin	Take on an empty stomach
DLV	delavirdine[5]	Rescriptor	Take with or without food
ETR	etravirine[6]	Intelence	Take following a meal
NVP	nevirapine	Viramune	Take with or without food
	rilpivirine[7]	Edurant	Take with food

Protease Inhibitors (PIs):

Abbreviation	Generic name	Brand name	Food restrictions and notes
LPV/RTV	lopinavir + ritonavir	Aluvia	Some formulations should be taken with food
IDV	indinavir	Crixivan	Take on an empty stomach 1 hour before, or 2 hours after, a meal. Avoid taking within an hour of taking didanosine (ddI or Videx)
APV	amprenavir	Agenerase	Take with or without food; avoid high-fat meals
FOS-APV	fosamprenavir	Telzir	Take with or without food
ATV	atazanavir[8]	Reyataz	Take with food
DRV	darunavir	Prezista	Take with food
NFV	nelfinavir	Viracept	Take with food
RTV	ritonavir	Norvir	Take with food if possible
SQV	saquinavir	Invirase (hard gel capsule)[10]	Take within two hours of food
TPV	tipranavir[11]	Aptivus	Take with or without food

Fusion or Entry Inhibitors:

Abbreviation	Generic name	Brand Name	Food restrictions and notes
T-20	enfuvirtide[12]	Fuzeon	Must be prepared from a powder and injected into thigh, arm or abdomen
MVC	maraviroc[13]	Celsentri	Take with or without food

Integrase Inhibitors:

Abbreviation	Generic name	Brand Name	Food restrictions and notes
RAL	raltegravir[14]	Isentress	Take with or without food

Multi-class combinations:

Combination	Brand name	Food restrictions and notes
EFV + TDF + FTC	Atripla	Take on an empty stomach
d4T + 3TC + NVP	-	Take with or without food
AZT + 3TC+ NVP	-	Take with or without food

1. The patent for AZT has expired and generic versions are available in the US.
2. Stavudine is no longer recommended for initial therapy in the UK. The US Department of Health and Human Services also no longer recommend stavudine as a 'preferred' or 'alternative' component in initial treatment. The European Medicines Agency recommend that it should only be used when there are "no appropriate alternatives" and only for "as short a time as possible".
3. The patent for ddI has expired and generic versions are available in the US. The manufacturer has discontinued a tablet version.
4. The British HIV Association (BHIVA) recommends that Trizivir "should only be considered as a starting regimen in very occasional circumstances, for example informed patient choice based on likely poor adherence if alternative options are used, or concomitant medication needed such as for TB". Trizivir is listed as a 'possible' treatment option in the US, but it is not the 'preferred' treatment option.
5. Delavirdine is licensed in the US but not in the UK.
6. Etravirine is approved in the US and the UK for treatment-experienced patients only.
7. Rilpivirine is licensed in the US but not the UK.
8. Atazanavir is not licensed as a starting regimen in the UK. In the US, ritonavir-boosted atazanavir has been approved as a 'preferred' initial treatment, while unboosted atazanavir is an 'alternative' for initial treatment.
9. Due to reported adverse health events such as serious heart, kidney or breathing problems in premature babies taking Kaletra, the FDA issued the following warning in March 2011: "The use of Kaletra oral solution should be avoided in premature babies until 14 days after their due date, or in full-term babies younger than 14 days of age unless a healthcare professional believes that the benefit of using Kaletra oral solution to treat HIV infection immediately after birth outweighs the potential risks". For more information: 'Kaletra (lopinavir/ritonavir): Label change - serious health problems in premature babies'.
10. Roche Pharmaceuticals have discontinued the sale and distribution of Fortovase brand saquinavir soft gel capsules in the US.
11. Tipranavir is not licensed as a starting regimen in the UK. The US Department of Health and Human Services do not recommend tipranavir for initial treatment.
12. Enfuvirtide is not licensed as a starting regimen in the UK. The US Department of Health and Human Services do not recommend enfuvirtide for initial treatment.
13. Maraviroc is not licensed as a starting regimen in the UK.
14. Raltegravir is not licensed as a starting regimen in the UK.

* Because of patent laws, generic forms given tentative approval are available in certain developing countries only.