For Back Up Use

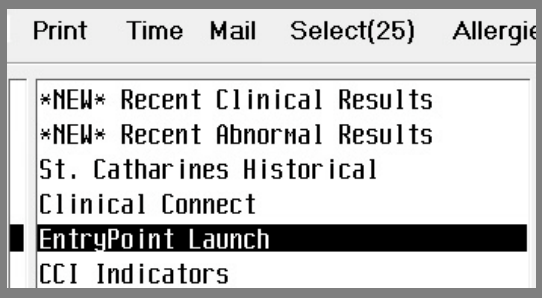
This copy of the Orderset is for Information & BackUp purposes only.

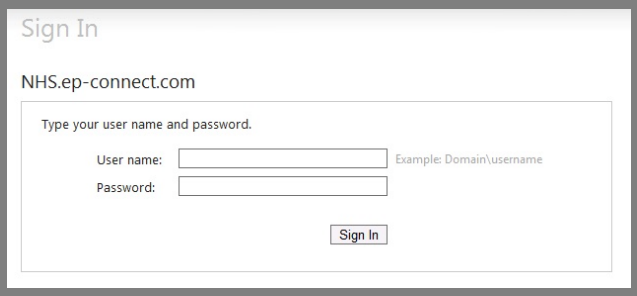
It is intended for use during downtimes.

For daily use, please access the version on EntryPoint

The associated Appendices are also available in Source Net's Order Set Library

To launch EntryPoint, go to PCI (Patient Care Inquiry) in Meditech. Look for "EntryPoint Launch" and follow the instructions.





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PATIENT INFORMATION

Height _____ cm Weight _____ kg

Allergies _____

Blood Borne Exposure Order Set

	M	K	O

Orders Processed Date (dd/mm/yyyy) _____
Time (hhmm) _____
By _____
Status _____
Processing Reviewed by _____
Status _____
Faxed by _____

Immediate Care to Exposure Site

☒ Wash wounds and skin with soap and water and allow to bleed freely
☒ Flush mucous membranes with saline or water

Consent for Blood Testing for Recipient and Source

☒ Obtain informed consent from recipient for HIV and Hepatitis testing
☒ Obtain informed consent from source (if known) for HIV and Hepatitis testing

Occupational Exposures (Niagara Health Employee only):

☒ Fax completed Informed Consent for HIV and Hepatitis Testing form for both recipient and source (if known) to Occupational Health and Safety (OHS)
☒ Fax completed Needlestick Injury Source Patient Questionnaire to OHS if source known

Lab Investigations

Recipient - Post Exposure Bloodwork

☒ Hep B Surface Antigen ☒ Hep B Surface Antibody ☒ Hepatitis C ☒ HIV ☒ ALT
☒ Hep B Core Antibody (Total)

☐ **Recipient - HIV Post Exposure Prophylaxis Bloodwork** (Select if prophylaxis is required)
☐ CBC ☐ AST ☐ ALT ☐ Creatinine
☐ Quantitative Beta HCG (for females of childbearing age)

Post Exposure Management

☐ **Hepatitis B**
☐ Perform Risk Assessment (Refer to Appendix 1)
☐ Hepatitis B Immune Globulin _____mL (0.06 mL/kg) IM x 1
☐ Hepatitis B Vaccine (Engerix-B 20 mcg/mL or Recombivax HB 10 mcg/mL) 1 mL IM x 1

☐ Telephone Order _____ Ordering Practitioner, Designation _____ Signature _____ Date/Time (dd/mm/yyyy hhmm)

If Telephone Order _____ Ordering Physician _____ Date (dd/mm/yyyy) _____ Time (hhmm) ☐ Read Back

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Chart Copy – Do Not Destroy

PatientOrderSets

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PATIENT INFORMATION

Height _____ cm Weight _____ kg

Allergies _____

	Blood Borne Exposure Order Set	M	K	O
Orders Processed Date (dd/mm/yyyy) _____ Time (hhmm) _____ By _____ Status _____ Processing Reviewed by	**Post Exposure Management Continued…**			
	☐ **HIV Post-Exposure**			
	☐ Perform Risk Assessment and counsel			
	☐ Consult Infectious Disease Physician on call if post exposure prophylaxis is to be considered and follow up required			
	☐ **HIV Post Exposure Prophylaxis**			
	☐ emtricitabine/tenofovir 200 mg/300 mg 1 tablet PO daily			
	AND ☐ raltegravir 400 mg PO BID			
	☐ Retrieve and dispense starting 5 day supply of PEP medications from automated dispensing Cabinet in ED			
	☐ For patients with renal failure and/or pregnant – consult Infectious Disease Specialist before proceeding with PEP			
	☐ Give first dose immediately			
	☐ Provide recipient drug information and follow up and monitoring information sheet			
	☐ **Tetanus (if indicated)**			
	☐ Tetanus and Diphtheria Toxoids Absorbed 0.5 mL IM x 1			
Status _____ Faxed by	**Discharge Planning**			
	☐ Follow up with Occupational Health (if occupational exposure)			
	☐ Follow up Family Physician			
	☐ Follow up Infectious Disease Clinic (all patients MUST be discussed with ID physician on call before referral made)			
	☒ Provide patient education sheets (Appendix 2 and 3 if applicable)			
	☒ Provide follow up Vaccine and Bloodwork form to patient (Appendix 4)			
	☒ If PEP starter kit dispensed, inform patient to follow-up with Family Physician, Occupational Health or Infectious Disease to obtain remainder 23 day course of PEP			

☐ Telephone Order _____ Ordering Practitioner, Designation _____ Signature _____ Date/Time (dd/mm/yyyy hhmm)

If Telephone Order _____ Ordering Physician _____ Date (dd/mm/yyyy) _____ Time (hhmm) ☐ Read Back

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Appendix 1 – Recommended Post-Exposure Prophylaxis for Exposure to Hepatitis B Virus

Vaccination and Antibody Response: Status of Exposed HCW[1]	Treatment		
	Source HBsAg[2] Positive	Source HBsAg[2] Negative	Source Unknown or Not Available for Testing
Unvaccinated or partially vaccinated	HBIG[3] x 1 and initiate / complete HB vaccine series[1]	Initiate / complete HB vaccine[4]	Initiate HB vaccine[4] if source unknown. If source unavailable but suspected high risk[9] treat as if source is HBsAg positive (i.e. give HBIG if HCW is susceptible)
Previously vaccinated known responder[5]	No treatment	No treatment	No treatment
Known true non-responder[6]	HBIG[3] x 1 and initiate revaccination or provide a second HBIG[2] one month later	No treatment	If suspected high risk[9] source, treat as if source were HBsAg[2] positive (i.e. give HBIG if HCW is susceptible)
Fully vaccinated but antibody response unknown	Test exposed HCW for anti-HBsAB[8] If adequate[5], no treatment If inadequate[6], administer HBIG x 1 and vaccine dose (recheck booster titre in 4-6 months after HBIG to avoid detecting remnant antibodies from HBIG)	No treatment	Test exposed HCW for anti-HBsAB[8] If adequate, no treatment is necessary. If inadequate, administer vaccine and recheck booster titre in 1-2 months. If source is suspected of being high risk, give HBIG as well.

[1]Previously infected with HBV are immune to re-infection and do not require post-exposure prophylaxis.
[2]Hepatitis B surface antigen which indicates active infection with Hepatitis B virus
[3]Hepatitis B immune globulin; dose is 0.06 mL/kg intramuscularly
[4]Hepatitis B vaccine
[5]A responder is a person with adequate levels of serum antibody to HBsAg (eg. anti-HBsAB > 10 mIU/mL)
[6]A true non-responder is a person with inadequate response to two (2) complete series of vaccination (eg. serum, anti-HBsAB < 10 mIU/mL)
[7]The option of giving one dose of HBIG and reinitiating the vaccine series is preferred for susceptible HCWs who have not completed a second 3-dose vaccine series. For persons who previously completed a second vaccine series but failed to respond, two doses of HBIG are preferred one month apart
[8]Antibody of HBs antigen which indicates immunity
[9]Risk factors within the last 3 months include:

- High-risk sexual behaviour (men who have sex with men, sexual partner who is an Intravenous Drug User (IDU), multiple sexual partners).
- Sexually transmitted disease; sexual or blood contact with a known case of HBV
- Intravenous Drug User (IDU) or tattoo/body piercing

Adapted from: Updated U.S. Public Health Service Guidelines for the Management of Occupational Exposures to HBV, HCV, and HIV and Recommendations for Post-Exposure Prophylaxis, MMWR, June 29, 2001 / 50(RR11); 1-42

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Appendix 2 – General Information on Exposure To Blood-Borne Pathogens

What is the risk of infection after an occupational exposure?

Hepatitis B Virus (HBV)

People who have received Hepatitis B vaccine and developed immunity to the virus are at virtually no risk for infection. For a susceptible person, the risk from a single needlestick exposure to HBV- infected blood ranges from 6-30% and depends on the Hepatitis B e-antigen (HBeAg) status of the source individual. Hepatitis B surface antigen (HBsAg) positive individuals who are also HBeAg positive have more virus in their blood and are more likely to transmit HBV than those who are HBeAg negative. While there is a risk for HBV infection from body fluid exposures to mucous membranes or to non-intact skin, there is no known risk for HBV infection from exposure to intact skin.

Hepatitis C Virus (HCV)

The average risk for infection after a needlestick exposure to HCV-infected blood is approximately 1.8%. The risk following a blood exposure to the eye, nose or mouth is unknown, but is believed to be very small; however, HCV infection from blood splash to the eye has been reported. There also has been a report of HCV transmission that may have resulted from exposure to non-intact skin, but no known risk from exposure to intact skin.

HIV

The average risk for infection after a needlestick exposure to HIV-infected blood is 0.3% (3 in 1,000). The risk after body fluid exposure to the eye, nose or mouth from known HIV-infected blood is estimated to be on average 0.1% (1 in 1,000). The risk after exposure of non-intact skin to HIV-infected blood is estimated to be less than 0.1%. There have been no documented cases of HIV transmission due to an exposure involving a small amount of blood on intact skin (a few drops of blood on skin for a short period of time).

Is a vaccine or treatment available to prevent infections with blood-borne pathogens?

HBV

As mentioned above, Hepatitis B vaccine has been available since 1982 to prevent HBV infections. All HCWs who have a reasonable chance of exposure to blood or bodily fluids should receive Hepatitis B vaccine.

Vaccination ideally should occur during the healthcare worker's training period. Workers should be tested 1-2 months after the vaccine series is complete to make sure that vaccination has provided immunity to HBV infection. Vaccinated people who have documented immunity following vaccination are not at risk of developing Hepatitis B after an exposure. However, if vaccine has not been received or the vaccine series has not been completed, Hepatitis B immune globulin (HBIG) alone or in combination with vaccine is up to 95% effective in preventing HBV infection after an exposure. The decision to begin treatment is based on several factors such as:

- Whether the source individual is positive for Hepatitis B surface antigen
- Whether you have been vaccinated
- Whether the vaccine provided you immunity

Appendix 2 – General Information on Exposure To Blood-Borne Pathogens

HCV

There is no vaccine for Hepatitis C and no treatment after an exposure that will prevent infection (neither immune globulin nor antiviral therapy is recommended after exposure). For these reasons, following recommended infection control practices to prevent percutaneous injuries is imperative. However, effective treatment is now available for newly acquired infections. An infectious diseases specialist or liver specialist would need to be consulted in the event that an exposure leads to infection with Hepatitis C.

HIV

There is no vaccine for HIV. However, results from a small number of studies suggest that the use of antiretroviral drugs after occupational exposure may reduce the chance of HIV transmission. Post-exposure prophylaxis (PEP) is recommended for certain occupational and non-occupational exposures that pose a risk of transmission. However, for those exposures without risk of HIV infection, PEP is not recommended. The risks and side effects will be discussed before starting PEP for HIV; however if PEP is recommended it should ideally be started within 2 hours of exposure, and preferably within 30 minutes.

What precautions should be taken during the follow-up period?

HBV

If you are exposed to HBV and receive post exposure treatment, it is unlikely that you will become infected and pass the infection on to others. No precautions are recommended unless your risk of developing infection is high (i.e. from delayed post exposure treatment). If this is the case, close contacts should receive Hepatitis B vaccine. Avoid sharing potentially contaminated utensils such as nail clippers, razors, and toothbrushes, and practice safe sex until your HBV infection status is clarified.

HCV

Although the risk of becoming infected and passing this infection on to others after an exposure to HCV is low, precautions similar to those for HBV exposure should ideally be practiced until your HCV infection status is clarified.

HIV

During the follow-up period, especially the first 6-12 weeks when most infected persons are expected to show signs of infection, you should follow recommendations for preventing transmission of HIV. These include not donating blood, semen, or organs and not having sexual intercourse. If you choose to have sexual intercourse, using a condom consistently and correctly may reduce the risk of HIV transmission. Avoid sharing potentially contaminated utensils such as nail clippers, razors, and toothbrushes. In addition, women should consider not breast-feeding infants during the follow-up period to prevent the possibility of exposing their infant to HIV that may be in their breast milk.

Appendix 3 – Follow-Up, Monitoring and Managing PEP Side Effects

If PEP is used, you should be monitored for drug toxicity by testing at the time of your initial evaluation and again 1-2 weeks after starting PEP. The scope of testing will be based on your personal medical conditions and also the any toxicity side effects of drugs included in your PEP regimen. Minimally, lab monitoring for toxicity will include a complete blood count and both kidney and liver function tests before initiating PEP and again in 2 weeks. You will also be tested for HIV antibody periodically for 4 months after the exposure (e.g., at 6 weeks, and 4 months).

If you choose to take PEP, you should be aware of the importance of completing the medication regimen as prescribed. You have been given a five-day supply of PEP and have already taken the first dose. Follow the dosing schedule carefully in order to keep blood levels of the medications as high as possible and at a steady level. If you miss a dose, take it as soon as you remember and then continue with the normal schedule.

However, don't take two doses together; if it is less than 4 hours until the next scheduled dose, don't take the tablets that you missed.

The HIV medicines used for PEP may cause side effects. The side effects can be treated and aren't life-threatening. If you are taking PEP, talk to your health care provider if you have any side effect that bothers you or that does not go away. The most common ones are: nausea, fatigue, diarrhea, vomiting, and headache. See specific recommendations for managing side effects below.

HIV PEP medications can interact adversely with other medications including prescription meds, over-the- counter meds, naturopathic or natural products, and also street drugs. Avoid the use of any new medications or drugs while taking HIV PEP unless approved by your pharmacist or physician.

General recommendations for Managing Side Effects

Nausea and Vomiting

Take your drugs with meals to help reduce these problems. Eating slowly can help. Nausea is often worse on an empty stomach, so try to eat small meals every few hours. Drink lots of fluids between meals. If you need to rest, try to keep your head propped up higher than your feet. Avoid physical activity immediately after eating. If necessary, take an anti-nausea tablet (e.g., Gravol®) 30-60 minutes before eating.

What if I vomit after taking the medications?

If you vomit within 30 minutes of taking HIV PEP, OR if you can see the tablets in your vomit: Repeat the dose If you vomit more than 30 minutes after taking HIV PEP: Continue your regular dosing schedule.

Diarrhea

If you have more bowel movements than usual, or if your stools are loose and watery, you lose a lot of water. Try to eat breads and cereals, peeled fruit and vegetables. Drink 8-10 cups of fluid every day. This works best if you drink between meals. Try to avoid foods or liquids that contain caffeine, alcohol or lots of fat.

Try to Eat/Drink:

- Lower-fibre foods or foods rich in pectin, such as: refined cereals; white bread; buns or bagels; plain white rice or pasta.

Appendix 3 – Follow-Up, Monitoring and Managing PEP Side Effects

- Lower-fat foods such as: meat with the fat trimmed, skinless chicken breasts, any broiled, baked, roasted, BBQ'd, steamed or microwaved foods with little added fat; eggs; lower-fat cheeses; fish canned in water;

- Foods and drinks that have lots of sodium or potassium (such as broth, sports drinks, bananas and melons). 8-10 cups of liquid per day – better between meals rather than with meals.

Try to Avoid:

- Foods that stimulate the bowels, such as: coffee (including decaffeinated), strong tea, soft drinks; chocolate and cocoa; alcohol; prunes; some herbal products; foods with large amounts of sugar.

- High-fibre foods such as: bran and bran cereals; whole grain breads; beans, lentils; corn, peas, berries and grapes; popcorn, nuts, seeds, dried fruits (like raisins and prunes); vegetables and fruits with seeds.

- High-fat foods such as bacon, pepperoni, cold cuts, and fried/ deep-fried foods.

- Dairy products can make diarrhea worse. Avoid milk products for a while. When diarrhea settles, try small amounts of Lactaid or Lacteeze milk.

General Recommendations Following Exposure to HIV

When a person becomes infected with HIV, they sometimes have flu-like symptoms. Symptoms included fever, muscle aches, lymph node swelling and possibly a rash. If you are experiencing any of these symptoms, contact your Health Care Provider or Occupational Health Nurse. You should seek medical evaluation for any acute illness that occurs during the follow up period.

During the follow-up period, especially the first 6-12 weeks when most infected persons are expected to show signs of infection, you should follow recommendations for preventing transmission of HIV to others. These include not donating blood, semen, or organs and not having sexual intercourse. If you choose to have sexual intercourse, using a condom consistently and correctly will reduce the risk of HIV transmission. Avoid sharing potentially contaminated utensils such as nail clippers, razors, and toothbrushes. In addition, women should not breast-feed infants during the follow-up period to prevent the possibility of exposing their infant to HIV that may be in their breast milk.

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Appendix 4 – Follow-Up Vaccine and Bloodwork Required

Post Incident Vaccines	Immunization Date / Vaccine Given / Signature
☐ Tetanus / Diphtheria Vaccine	_____
☐ Tetanus / Diphtheria / Pertussis Vaccine	_____
☐ Hepatitis B Vaccine Booster	_____
☐ Hepatitis B Immune Globulin	_____
☐ Hepatitis B Vaccine Series:	
☐ #1 (Baseline)	_____
☐ #2 (1 month)	_____
☐ #3 (6 months)	_____

Post Incident Bloodwork:

Time Since Exposure	ALT	HIV	Hepatitis C Antibody	Hep B screen (surface antigen, surface antibody, total core antibody)*
6 weeks post		X		
3 months post	X		X	
4 months post		X		
6 months post	X	X**	X	

* Follow up bloodwork for Hepatitis B:
If source is HBsAg positive, a recipient who is susceptible to HBV should be tested for hepatitis B surface antigen, surface antibody and total core antibody and liver enzymes (alanine aminotransferase or ALT) as soon as possible after exposure (as a baseline) and at 6 months after exposure. If recipient receives hepatitis B vaccine, they should be tested 4 weeks after completing the vaccine series to determine the antibody response to the vaccine. Note that 4-6 months must elapse before testing of HBIG has also been administered to avoid detecting remnant antibodies from HBIG.

**Fourth generation HIV Ag/Ab combination immunoassays allow for earlier detection of HIV infection. If used, then HIV follow-up testing can be concluded at 4 months. Suggest testing in this case at baseline, 6 weeks and 4 months post-exposure. If fourth generation assay not used then test at baseline, 6 weeks, 3-4 months and 6 months.