

# **BOP - CLINICIAN NOTES**

**April 2003**



# **Table of Contents**

**April 2003**

**HYPERTENSION**

**LIPID DISORDERS**

**ASTHMA**

**DIABETES**

**TUBERCULOSIS**

**VIRAL HEPATITIS**

**HIV INFECTION**

**DETOXIFICATION**

**DEPRESSION**

**GERD/PEPTIC ULCER DISEASE**

**STDs and ECTOPARASITES**

Please note that the *Clinician Notes* are extracted from the more comprehensive *Clinical Practice Guidelines*. The focus of the *Clinician Notes* is more narrowly drawn. For this reason, not all appendices may be found in this document, but rather, only key clinical appendices (which have retained the original numbering from the *Clinical Practice Guidelines*). To view all appendices, as

well as more inclusive textual material on a particular subject matter, please refer to the appropriate *Clinical Practice Guideline*. For best results, please open this document in WordPerfect to print.

---

# HYPERTENSION

---

## Risk Stratifications for Treating Hypertension with Lifestyle Modifications and Drug Therapy

Blood Pressure Stages (mm Hg)	Risk Group A (no risk factors, no TOD/CCD)**	Risk Group B (at least 1 risk factor, no DM no TOD/CCD)	Risk Group C (TOD/CCD and/or diabetes)
High-normal (130-139/85-89)	Lifestyle Modification	Lifestyle Modification	Drug therapy
Stage 1 (140-159/90-99)	Lifestyle Modification (Up to 12 months)	Lifestyle Modification (Up to 6 months)	Drug therapy
Stage 2 and 3 ( $\geq 160/\geq 100$ )	Drug therapy	Drug therapy	Drug therapy

\* Lifestyle modification should be adjunctive therapy for all inmates recommended for pharmacologic therapy.

\*\*TOD/CCD indicates target organ disease/clinical cardiovascular disease, including heart disease, stroke or transient ischemic attack, nephropathy, peripheral arterial disease, and retinopathy.

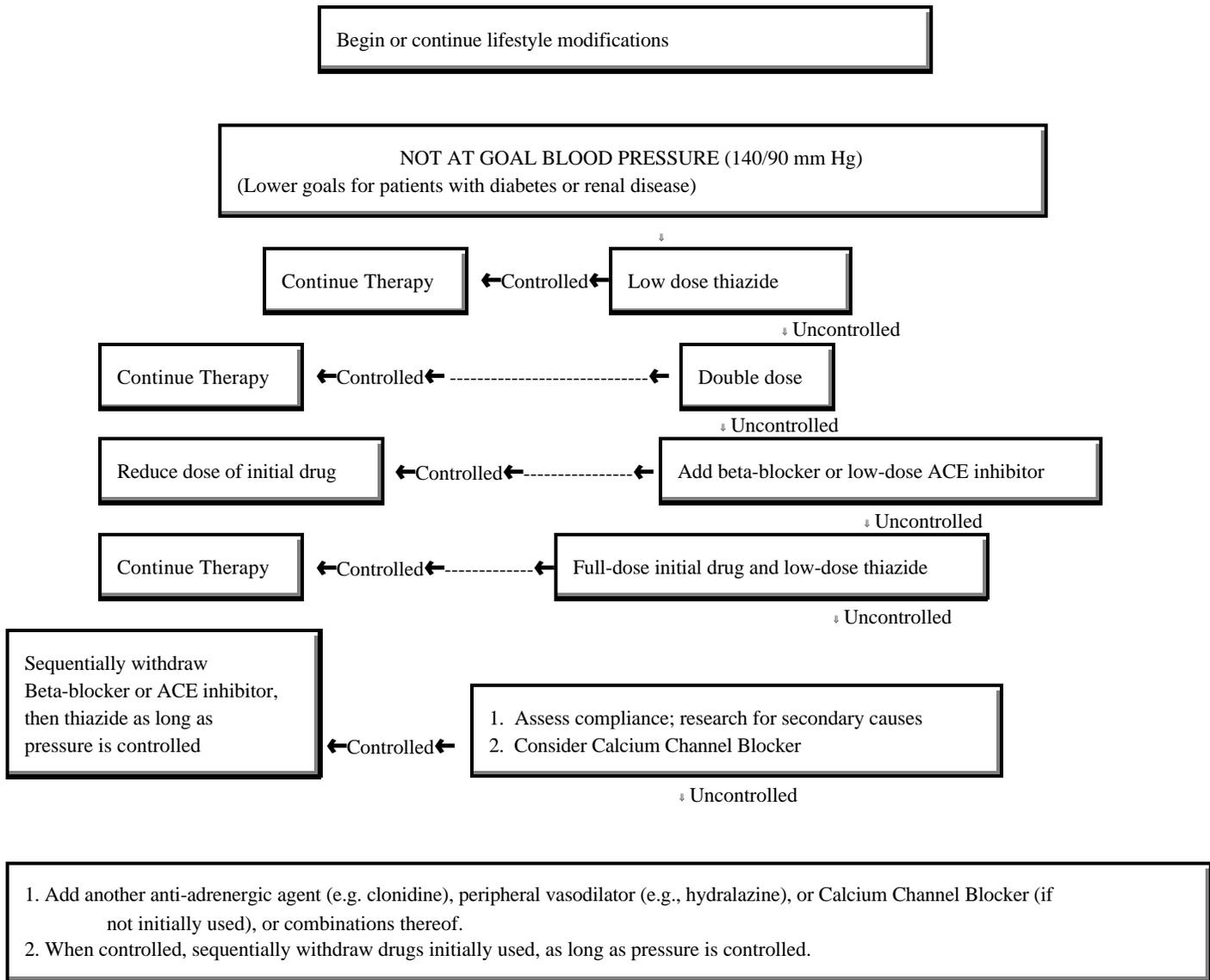
Source: Adapted from the Sixth Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure, *Archives of Internal Medicine*, Vol. 157, November, 1997.



## Drug Treatment Considerations for Hypertension

INMATE CHARACTERISTICS	PREFERRED DRUGS	NOT PREFERRED (May Have Adverse Effects)
<b>Demographic characteristics</b> Age over 65	Thiazide diuretic, Ca-channel blocker, ACE inhibitor	Alpha 2-receptor agonist
African-American	Thiazide diuretic	Beta-blocker, ACE inhibitor
Caucasian	Beta Blocker, ACE Inhibitor	
<b>Concomitant diseases</b> Coronary heart disease	Beta Blocker, calcium-channel blocker	Direct vasodilator
Post-myocardial infarction	Beta Blocker ACE inhibitor/with systol. dysfunc.	
Congestive heart failure	ACE inhibitor, direct vasodilator, thiazide diuretic	B-blocker, Ca-channel blocker
Supraventricular tachyarrhythmias	Verapamil, Beta Blocker	
Bradycardia, sick sinus		B- blocker, diltiazem, verapamil
Cerebrovascular disease		Alpha2-receptor agonist
Dyslipidemia	Alpha-blocker	Diuretics (high dose), B-blocker (non-ISA)
Migraine	Beta-blocker	
History of depression		Alpha 2-receptor agonist, reserpine, Beta-blocker
Peripheral vascular disease	ACE inhibitor, Ca-channel Blocker, Alpha blocker	B-blocker
Renal insufficiency	Loop diuretic, minoxidil, ACE inhibitor	Thiazide diuretic, Potassium-sparing agent
Collagen disease	ACE inhibitor, Ca-channel blocker	Methyldopa, hydralazine
Diabetes mellitus	ACE inhibitor, Alpha 2-receptor agonist, Alpha-blocker	Thiazide diuretic, Beta-blocker
Gout		Diuretic
Asthma		B-blocker
Osteoporosis	Diuretic	

## Treatment Strategies for Hypertension



(Adapted and modified from JNC VI)

NOTE: In the absence of contraindications, or the presence of a co-morbid condition such as angina, all newly-diagnosed hypertensive inmates should be started on a low dose thiazide, such as 12.5 - 25 mg of hydrochlorothiazide. Calcium antagonists have no clear advantage over thiazides in uncomplicated hypertension. Inmate without co-morbid conditions or contraindications to thiazides should be converted from calcium antagonists such as amlodipine to a thiazide, following the above algorithm to assess response.

## Causes of Treatment Failure in Hypertension

### 1. Nonadherence to Therapy:

- a. Inmate concerned about confidentiality
- b. Inadequate inmate education
- c. Lack of involvement of the inmate in the treatment plan
- d. Adverse effects of medication
- e. Organic brain syndrome

### 2. Pseudoresistance:

- a. "White-coat hypertension" or clinic elevations
- b. Pseudohypertension in older inmates
- c. Incorrect cuff size (use of regular cuff on large arm)

### 3. Drug related causes:

- a. Doses too low
- b. Wrong type of drug
- c. Inappropriate combinations
- d. Drug interactions and actions including NSAID's, oral contraceptives, sympathomimetics, antidepressants, adrenal steroids, nasal decongestants, licorice (as may be found in chewing tobacco), cocaine, cyclosporine, tacrolimus, erythropoietin

### 4. Associated Conditions:

- a. Smoking
- b. Increasing obesity
- c. Excessive alcohol use
- d. Sleep apnea

### 5. Volume Overload:

- a. Excessive salt intake
- b. Progressive renal damage (nephrosclerosis)
- c. Inadequate diuretic therapy
- d. Fluid retention from reduction of blood pressure

### 6. Secondary Hypertension:

- a. Renal insufficiency
- b. Renovascular hypertension
- c. Pheochromocytoma
- d. Primary aldosteronism

---

# **LIPID DISORDERS**

---

Appendix 1

**FRAMINGHAM (ESTIMATE FOR**

Age, y	Points
20-34	-9
35-39	-4
40-44	0
45-49	3
50-54	6
55-59	8
60-64	10
65-69	11
70-74	12
75-79	13

**FRAMINGHAM FOR MEN WITH 10-YEAR CHD**

	Points				
	Age 20-39 y	Age 40-49 y	Age 50-59 y	Age 60-69 y	Age 70-79 y
Nonsmoker	0	0	0	0	0
Smoker	8	5	3	1	1

**SCORE RISK**

HDL, mg/dL	Points
≥60	-1
50-59	0
40-49	1
<40	2

Total Cholesterol, mg/dL	Points				
	Age 20-39 y	Age 40-49 y	Age 50-59 y	Age 60-69 y	Age 70-79 y
<160	0	0	0	0	0
160-199	4	3	2	1	0
200-239	7	5	3	1	0
240-279	9	6	4	2	1
≥280	11	8	5	3	1

Systolic BP, mm Hg	If Untreated	If Treated
<120	0	0
120-129	0	1
130-139	1	2
140-159	1	2
>160	2	3

Point Total	10-Year Risk, %
<0	<1
0	1
1	1
2	1
3	1
4	1
5	2
6	2
7	3
8	4
9	5
10	6
11	8
12	10
13	12
14	16
15	20
16	25
≥17	≥30

**FRAMINGHAM SCORE FOR WOMEN  
(ESTIMATING 10-YEAR RISK FOR CHD)**

Age, y	Points
20-34	-7
35-39	-3
40-44	0
45-49	3
50-54	6
55-59	8
60-64	10
65-69	12
70-74	14
75-79	16

	Points				
	Age 20-39 y	Age 40-49 y	Age 50-59 y	Age 60-69 y	Age 70-79 y
Nonsmoker	0	0	0	0	0
Smoker	9	7	4	2	1

HDL, mg/dL	Points
≥60	-1
50-59	0
40-49	1
<40	2

Total Cholesterol, mg/dL	Points				
	Age 20-39 y	Age 40-49 y	Age 50-59 y	Age 60-69 y	Age 70-79 y
<160	0	0	0	0	0
160-199	4	3	2	1	1
200-239	8	6	4	2	1
240-279	11	8	5	3	2
≥280	13	10	7	4	2

Point Total	10-Year Risk, %
<9	<1
9	1
10	1
11	1
12	1
13	2
14	2
15	3
16	4
17	5
18	6
19	8
20	11
21	14
22	17
23	22
24	27
≥25	≥30

Systolic BP, mm Hg	If Untreated	If Treated
<120	0	0
120-129	1	3
130-139	2	4
140-159	3	5
≥160	4	6

### LDL CHOLESTEROL GOALS AND CUT POINTS FOR TREATMENT\*

Risk Category	LDL Goal (mg/dL)	LDL Level for Therapeutic Changes (mg/dL)	Lifestyle	LDL Level at Which to Consider Drug Therapy (mg/dL)
<b>High Risk</b> CHD or CHD risk equivalents (10-year risk >20%)	<100	≥100		≥130 (100-129: drug optional)**
<b>Moderate Risk (a)</b> 2+ Risk factors (10-year risk 10- 20%)	<130	≥130		≥130
<b>Moderate Risk (b)</b> 2+ Risk factors (10-year risk < 10%)	<130	≥130		≥160
<b>Low Risk</b> 0-1 Risk factor	<160	≥160		≥190 (160-189: drug optional)

\*Adapted from NCEP (ATP III), National Institutes of Health, 2001

\*\*Some experts recommend use of LDL-lowering drugs in this category if an LDL cholesterol level of < 100 mg/dL cannot be attained by therapeutic lifestyle changes. Other experts prefer medications that primarily modify triglycerides and HDL cholesterol such as nicotinic acid and fibrate. Deferring drug treatment is also acceptable on a case by case basis.

## PATIENT GUIDE TO SELECTING A FAT/CHOLESTEROL CONTROLLED DIET

	<b>Choose</b>	<b>Go Easy On</b>	<b>Decrease</b>
<b>Meat, Poultry and Fish</b> (up to 6 oz per day)	<ul style="list-style-type: none"> <li>- Lean cuts of meat with fat trimmed</li> <li>- Baked unbreaded poultry without skin</li> <li>- Baked, unbreaded fish</li> <li>- Canned chicken, tuna, or sardines (water packed or rinsed)</li> <li>- Dried beans and peas as a meat substitute</li> </ul>		<ul style="list-style-type: none"> <li>- Fried meat</li> <li>- Breaded meat</li> <li>- Organ meats, like liver</li> <li>- Sausage</li> <li>- Bacon</li> <li>- Lunch meats</li> <li>- Hot dogs</li> <li>- Fatty cuts of meat brisket, ribs</li> </ul>
<b>Eggs</b> (no more than 4 egg yolks per week)	<ul style="list-style-type: none"> <li>- Egg whites</li> <li>- Cholesterol-free egg substitutes</li> </ul>		<ul style="list-style-type: none"> <li>- Egg yolks</li> </ul>
<b>Dairy Products</b> (at least 2 servings per day)	<ul style="list-style-type: none"> <li>- Skim milk, 1% milk, low fat buttermilk, or nonfat powdered milk</li> <li>- Low-fat yogurt (plain and frozen)</li> <li>- Low-fat cottage cheese</li> </ul>	<ul style="list-style-type: none"> <li>- 2% milk</li> <li>- Yogurt</li> <li>- Part-skim cheeses like mozzarella, or string cheese</li> </ul>	<ul style="list-style-type: none"> <li>- Whole milk cream, half-and-half, most nondairy creamers and products, real or nondairy whipped cream</li> <li>- Cream cheese</li> <li>- Sour cream</li> <li>- High-fat cheeses like Swiss, Cheddar, American</li> </ul>
<b>Fats and Oils</b> (up to 6 teaspoonfuls per day)	<ul style="list-style-type: none"> <li>- Low fat dressings</li> </ul>	<ul style="list-style-type: none"> <li>- Unsaturated vegetable oils: olive, peanut, canola, safflower, soybean</li> <li>- Margarine</li> <li>- Nuts/seeds</li> <li>- Peanut butter</li> <li>- Olives</li> <li>- Avocados</li> <li>- Mayonnaise - salad dressings</li> </ul>	<ul style="list-style-type: none"> <li>- Butter, lard, bacon fat</li> <li>- Coconut oil</li> <li>- Palm oil</li> <li>- Palm kernel oil</li> <li>- Bacon</li> <li>- Hydrogenated fat or oil</li> </ul>

	<b>Choose</b>	<b>Go Easy On</b>	<b>Decrease</b>
<b>Fruits and Vegetables</b> (2-4 servings of fruit and 3-5 servings of vegetables per day)	- Fresh, frozen, canned, or dried fruits and vegetables		- Vegetables prepared in butter, cream, or sauce - Fried vegetables
<b>Breads, Pasta, Cereals, Rice, Dried Beans, and Peas</b> (6 to 11 servings per day)	- Breads, like white, whole wheat, rye, pita, pumpernickel - Bagels, English muffins, sandwich buns, rice cakes - Low-fat crackers, like matzo, bread sticks, rye krisp, saltines, zwieback - Rice, pasta, dried beans and peas prepared without fat	- Pancakes - Waffles - Biscuits - Cornbread	- Croissants, butter rolls, sweet rolls, Danish pastry, doughnuts - Cheese or butter crackers - Granola-type cereals - Pasta and rice prepared with cream, butter, or cheese sauce
<b>Sweets and Snacks</b> (avoid too many sweets)	- Fat-free desserts, like sherbet, Italian ice, frozen yogurt, popsicles - Fat-free cakes, like angel food cake - Fat-free candy, like jelly beans and hard candy - Very low-fat snacks, like popcorn, pretzels - Non-fat beverages, like carbonated drinks, juices, tea, coffee	- Low-fat frozen desserts, like ice milk - Low-fat cookies, like fig bars, ginger snaps, animal crackers, graham crackers	- High-fat frozen desserts, like ice cream - High-fat cakes - pound cake and frosted cakes - Pastries and cookies - Most candy, like chocolate bars and candies that contain chocolate - Potato chips, corn chips, and other snack chips - Buttered popcorn - High-fat beverages like milkshakes and egg nog

### **Label Ingredients**

To avoid too much fat or saturated fat, read the ingredient labels and go easy on products that list any fat or oil first, or that list many fat and oil ingredients. (Ingredients are listed in order of how much is in the product. For example, if lard or coconut oil is listed as one of the first three ingredients, that food product has a very high fat content).

## WEIGHT CONTROL INFORMATION FOR INMATES

- Cutting down on calorie intake (or eating less food) is the first step to losing weight. One pound of body fat is equal to 3,500 calories. A person must reduce calorie intake 500 calories per day to lose one pound in a week.
- Write down what you eat each day. This record will help you identify the amount of calories you are eating and potential “problem foods.”
- Note your pattern of eating and the time of day you are likely to overeat. Try and maintain a regular eating pattern. Avoid skipping meals.
- Ask the server to give you small portions. Leave off the gravy and high fat sauces.
- Avoid sweetened beverages such as lemonade, koolade, punch, and soft drinks. Fruit juices, although they contain vitamins, should be limited also. Diet drinks are an alternative choice.
- Limit the number of desserts on your tray. Cakes, pies, ice cream, and cookies are concentrated sources of calories. If you don’t put them on your tray, you won’t eat them. Consider sugar substitutes to sweeten food.
- Remove the breading/skin from fried meats. Most of the fat is found in the skin or absorbed in the outer breaded layer of fried foods. Avoid fried foods such as onion rings and fried potatoes.
- Try foods without adding butter, margarine, cream, or sugar.
- Don’t add creamy salad dressings to your salad (1 tablespoon of mayonnaise type salad dressing = 100 calories).
- Drink water with meals and between meals. Drink your tea or coffee black.
- Eat slowly. Eat your salad first.
- Learn to stop eating before you are “full” or “stuffed.” The slight hunger you feel will disappear about one-half hour after mealtime.
- Minimize idle time through recreational and work activities. Establish a regular schedule for exercise as much as possible so it becomes routine.
- Restrict your commissary items. What you don’t buy, you can’t eat. Avoid buying concentrated sweets, high fat crackers, cookies, and snack items.
- **NOTE:** If you eat just 100 extra calories a day, you will gain 10 pounds in the course of a year. If you eat just 100 fewer calories a day, you will lose 10 pounds in the course of a year. Small changes in

your daily eating habits make a big difference!

## DRUG TREATMENT OPTIONS FOR LIPID DISORDERS

	Medication	Dosage	Labs	Toxicities	Comments
<b>HMG CoA - Reductase Inhibitors (“Statins”)</b>	lovastatin (Mevacor™)	20-80 mg/day	ALT/AST (base-line & q6w x 2, repeat p dose ↑ & q6m)	rhabdomyolysis hepatotoxicity	- contraindicated in active liver disease, pregnancy, unexplained elevated LFT's - ↑ risk rhabdomyolysis when administered w/ fibrates or niacin - lower dose if creatinine clearance ≤ 30 L/min
	simvastatin (Zocor™)	5-80 mg/day	ALT/AST (base-line and q6m)	rhabdomyolysis hepatotoxicity	- ↑ risk rhabdomyolysis when administered w/ fibrates or niacin - lower dose if renal insufficiency is severe
	fluvastatin (Lescol™)	20-80 mg/day	ALT/AST (base-line & @ 12 weeks, repeat p dose ↑, & q6m)	rhabdomyolysis hepatotoxicity pancreatitis hypersensitivity	- ↑ risk rhabdomyolysis when administered w/ fibrates or niacin - no adjustment for renal insufficiency
	pravastatin (Pravachol™)	10-40 mg/day	ALT/AST (base-line and dose ↑, & q6m)	rhabdomyolysis hepatotoxicity	- ↑ risk rhabdomyolysis when administered w/ fibrates or niacin - lower dose if creatinine clearance is ≤ 60 L/min
	atorvastatin (Lipitor™)	10-80 mg/day	ALT/AST (base-line & @ 12 weeks, repeat p dose ↑, & q6m)	rhabdomyolysis hepatotoxicity	- ↑ risk rhabdomyolysis when administered w/ fibrates or niacin - no adjustment for renal insufficiency
	<p>Only one “Statin” at a time should be used, and titrated to the target LDL, side effects, or maximum dose before switching statins.</p> <p><u>Statin Drug Interactions:</u> cyclosporine, itraconazole, ketoconazole, gemfibrozil, niacin, erythromycin, clarithromycin, verapamil, diltiazem, nefazodone, fluvoxamine, and protease inhibitors (except pravastatin).</p>				

	Medication	Dosage	Labs	Toxicities	Comments
<b>Bile Acid Sequestrants</b>	cholestyramine (LoCholest™, Questran™, Prevalite™)	8-24 gm/day	LDL cholesterol and TG levels	fecal impaction	<ul style="list-style-type: none"> <li>- dosed once to six times daily</li> <li>- take before meals</li> <li>- do not consume dry powder</li> <li>- may cause constipation</li> <li>- may prevent absorption of folic acid and fat soluble vitamins (A-D-E-K)</li> </ul>
	colestipol (Colestid™)	10-30 gm/day	LDL cholesterol and TG levels	fecal impaction GI bleed	<ul style="list-style-type: none"> <li>- dosed once or twice daily</li> <li>- do not consume dry powder</li> <li>- do not crush, cut, or chew</li> <li>- may cause constipation</li> <li>- may prevent absorption of folic acid and fat soluble vitamins (A-D-E-K)</li> </ul>
	colesevelam (Welchol™)	2.5-4.375 gm/day	LDL cholesterol and TG levels	none reported	<ul style="list-style-type: none"> <li>- take with water and meals</li> <li>- dosed once or twice daily</li> <li>- monotherapy or combination with HMG-CoARIs</li> <li>- may cause constipation</li> <li>- may prevent absorption of folic acid and fat soluble vitamins (A-D-E-K)</li> </ul>
<b>Niacin</b>	niacin	1.5-6 gm/day	ALT/AST (baseline, q6-12w x 1 year, then q6m)  Uric acid/fasting glucose - baseline, at 6 wks/annually	arrhythmias hepatotoxicity peptic ulcer fulminant hepatic necrosis	<ul style="list-style-type: none"> <li>- contraindicated in active peptic ulcer, alcoholism, unexplained ↑ LFT's, severe liver dysfunction</li> <li>- use with caution w/ hx of PUD, DM, gout, ↓ renal fx</li> <li>- ASA ½ hour before administration to ↓ flushing</li> <li>take with meals</li> </ul>

	<b>Medication</b>	<b>Dosage</b>	<b>Labs</b>	<b>Toxicities</b>	<b>Comments</b>
<b>Fibric Acids</b>	clofibrate (Atromid-S™)	2000 mg/day	monitor: - serum lipids - CBC - LFT's	anemia leukopenia hepatotoxicity cholelithiasis pancreatitis	- possible myalgia, myositis, myopathy, and rhabdomyolysis (w or w/o ↑ CPK) - ↑ risk rhabdomyolysis when administered w/ HMG CoARIs  - contraindicated in significant hepatic or renal dysfunction, primary biliary cirrhosis, pregnancy, lactation  - uncertain risk of malignancy  -reserve for inmates refractory to other tx strategies
	gemfibrozil (Lopid™)	1200 mg/day	monitor: - serum lipids - CBC - LFT's - blood glucose	myositis myopathy thrombocytopenia rhabdomyolysis hepatotoxicity pancreatitis cholelithiasis hypersensitivity cholestatic jaundice	- ↑ risk rhabdomyolysis when administered w/ HMG CoARIs  contraindicated in hepatic or severe renal dysfunction, primary biliary cirrhosis, preexisting gallbladder disease  - take ½ hour before morning & evening meals
	fenofibrate (Tricor™)	200 mg/day	monitor: - serum lipids - CBC	pancreatitis cholelithiasis rhabdomyolysis hepatotoxicity hypersensitivity myopathy toxic epidermal necrolysis	- ↑ risk rhabdomyolysis when administered w/ HMG CoARIs  - contraindicated in hepatic or severe renal dysfunction, primary biliary cirrhosis, unexplained persistent liver function abnormality; preexisting gallbladder disease  - take with meals

### COMPARISON OF HMG-CoA INHIBITORS (STATINS)

<b>Drug</b>	<b>Equiv. Dose</b>	<b>Effect on Lipids</b> (% change from baseline)	<b>Drug Interactions</b>																									
Atorvastatin <i>Lipitor</i>	10 mg	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;"><u>LDL</u></th> <th style="text-align: center;"><u>TC</u></th> <th style="text-align: center;"><u>TG</u></th> <th style="text-align: center;"><u>HDL</u></th> </tr> </thead> <tbody> <tr> <td>10 mg</td> <td style="text-align: center;">-34-39</td> <td style="text-align: center;">-27-29</td> <td style="text-align: center;">-13-19</td> <td style="text-align: center;">+4-6</td> </tr> <tr> <td>20 mg</td> <td style="text-align: center;">-41-46</td> <td style="text-align: center;">-32-35</td> <td style="text-align: center;">-20-26</td> <td style="text-align: center;">+5-9</td> </tr> <tr> <td>40 mg</td> <td style="text-align: center;">-48-51</td> <td style="text-align: center;">-37-39</td> <td style="text-align: center;">-29-32</td> <td style="text-align: center;">+5-6</td> </tr> <tr> <td>80 mg</td> <td style="text-align: center;">-54-60</td> <td style="text-align: center;">-42-45</td> <td style="text-align: center;">-25-37</td> <td style="text-align: center;">+5</td> </tr> </tbody> </table>		<u>LDL</u>	<u>TC</u>	<u>TG</u>	<u>HDL</u>	10 mg	-34-39	-27-29	-13-19	+4-6	20 mg	-41-46	-32-35	-20-26	+5-9	40 mg	-48-51	-37-39	-29-32	+5-6	80 mg	-54-60	-42-45	-25-37	+5	- interacts with drugs metabolized by CYP3A4 enzyme system*
	<u>LDL</u>	<u>TC</u>	<u>TG</u>	<u>HDL</u>																								
10 mg	-34-39	-27-29	-13-19	+4-6																								
20 mg	-41-46	-32-35	-20-26	+5-9																								
40 mg	-48-51	-37-39	-29-32	+5-6																								
80 mg	-54-60	-42-45	-25-37	+5																								
Fluvastatin <i>Lescol</i>	40 mg	<table style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td>20 mg</td> <td style="text-align: center;">-17-22</td> <td style="text-align: center;">-13</td> <td style="text-align: center;">-5</td> <td style="text-align: center;">+1</td> </tr> <tr> <td>40 mg</td> <td style="text-align: center;">-23-27</td> <td style="text-align: center;">-18-22</td> <td style="text-align: center;">-10-20</td> <td style="text-align: center;">+4-8</td> </tr> <tr> <td>80 mg</td> <td style="text-align: center;">-33-36</td> <td style="text-align: center;">-27</td> <td style="text-align: center;">-15-25</td> <td style="text-align: center;">+4-8</td> </tr> </tbody> </table>	20 mg	-17-22	-13	-5	+1	40 mg	-23-27	-18-22	-10-20	+4-8	80 mg	-33-36	-27	-15-25	+4-8	- metabolized by CYP2C9 - can increase cyclosporine and phenytoin levels										
20 mg	-17-22	-13	-5	+1																								
40 mg	-23-27	-18-22	-10-20	+4-8																								
80 mg	-33-36	-27	-15-25	+4-8																								
Lovastatin <i>Mevacor</i>	20 mg	<table style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td>20 mg</td> <td style="text-align: center;">-25-29</td> <td style="text-align: center;">-18-22</td> <td style="text-align: center;">-12-13</td> <td style="text-align: center;">+6-8</td> </tr> <tr> <td>40 mg</td> <td style="text-align: center;">-31-34</td> <td style="text-align: center;">-23-27</td> <td style="text-align: center;">-2-10</td> <td style="text-align: center;">+5</td> </tr> <tr> <td>80 mg</td> <td style="text-align: center;">-41-48</td> <td style="text-align: center;">-32-36</td> <td style="text-align: center;">-13-15</td> <td style="text-align: center;">+4-8</td> </tr> </tbody> </table>	20 mg	-25-29	-18-22	-12-13	+6-8	40 mg	-31-34	-23-27	-2-10	+5	80 mg	-41-48	-32-36	-13-15	+4-8	- interacts with drugs metabolized by CYP3A4 enzyme system*										
20 mg	-25-29	-18-22	-12-13	+6-8																								
40 mg	-31-34	-23-27	-2-10	+5																								
80 mg	-41-48	-32-36	-13-15	+4-8																								
Pravastatin <i>Pravachol</i>	20 mg	<table style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td>10 mg</td> <td style="text-align: center;">-19-22</td> <td style="text-align: center;">-13-16</td> <td style="text-align: center;">-3-15</td> <td style="text-align: center;">+7-10</td> </tr> <tr> <td>20 mg</td> <td style="text-align: center;">-24-32</td> <td style="text-align: center;">-18-24</td> <td style="text-align: center;">-11-15</td> <td style="text-align: center;">+2-3</td> </tr> <tr> <td>40 mg</td> <td style="text-align: center;">-33-34</td> <td style="text-align: center;">-24-27</td> <td style="text-align: center;">-10-24</td> <td style="text-align: center;">+6-12</td> </tr> </tbody> </table>	10 mg	-19-22	-13-16	-3-15	+7-10	20 mg	-24-32	-18-24	-11-15	+2-3	40 mg	-33-34	-24-27	-10-24	+6-12	- not metabolized by cytochrome P450, less likely to have drug interactions										
10 mg	-19-22	-13-16	-3-15	+7-10																								
20 mg	-24-32	-18-24	-11-15	+2-3																								
40 mg	-33-34	-24-27	-10-24	+6-12																								
Simvastatin <i>Zocor</i>	10 mg	<table style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td>10 mg</td> <td style="text-align: center;">-28-30</td> <td style="text-align: center;">-21-23</td> <td style="text-align: center;">-12-15</td> <td style="text-align: center;">+7-12</td> </tr> <tr> <td>20 mg</td> <td style="text-align: center;">-35-38</td> <td style="text-align: center;">-26-28</td> <td style="text-align: center;">-15-17</td> <td style="text-align: center;">+5-8</td> </tr> <tr> <td>40 mg</td> <td style="text-align: center;">-40-41</td> <td style="text-align: center;">-30-31</td> <td style="text-align: center;">-15-18</td> <td style="text-align: center;">+9-10</td> </tr> <tr> <td>80 mg</td> <td style="text-align: center;">-47-48</td> <td style="text-align: center;">-36</td> <td style="text-align: center;">-24</td> <td style="text-align: center;">+8</td> </tr> </tbody> </table>	10 mg	-28-30	-21-23	-12-15	+7-12	20 mg	-35-38	-26-28	-15-17	+5-8	40 mg	-40-41	-30-31	-15-18	+9-10	80 mg	-47-48	-36	-24	+8	- metabolized by CYP3A4 enzyme system*					
10 mg	-28-30	-21-23	-12-15	+7-12																								
20 mg	-35-38	-26-28	-15-17	+5-8																								
40 mg	-40-41	-30-31	-15-18	+9-10																								
80 mg	-47-48	-36	-24	+8																								

\*Erythromycin, clarithromycin, azole antifungals, verapamil, diltiazem, nefazodone, fluvoxamine, cyclosporine, protease inhibitors. (Adapted from *Pharmacist's Letter*, January 2002, *Pharmacotherapy* 2000;20(7):819-822, *Circulation* 2000;101:207-213)

---

# **ASTHMA**

---

## Classification of Asthma Severity

Step	Symptoms	Nighttime Symptoms	Pulmonary Function
Step # 1 Mild Intermittent	<ul style="list-style-type: none"> <li>*Symptoms &lt; 2 times a week</li> <li>*Asymptomatic &amp; normal PEF between exacerbations</li> <li>*Exacerbations brief (from a few hours to a few days); intensity may vary</li> </ul>	< 2 times a month	<ul style="list-style-type: none"> <li>*FEV1 or PEF &gt; 80% of predicted</li> <li>*PEF variability &lt; 20 %</li> </ul>
Step # 2 Mild Persistent	<ul style="list-style-type: none"> <li>*Symptoms 2 times a week but &lt; 1 time a day</li> <li>*Exacerbations may affect activity</li> </ul>	> 2 times a month	<ul style="list-style-type: none"> <li>*FEV1 or PEF &gt; 80% of predicted</li> <li>*PEF variability &lt; 20%</li> </ul>
Step # 3 Moderate Persistent	<ul style="list-style-type: none"> <li>*Daily symptoms</li> <li>*Daily use of inhaled short-acting beta<sub>2</sub>-agonist</li> <li>*Exacerbations affect activity</li> <li>*Exacerbations &gt; 2 times a week; may last days</li> </ul>	> 1 time a week	<ul style="list-style-type: none"> <li>*FEV1 or PEF &gt; 50% and &lt; 80% predicted</li> <li>*PEF variability &gt; 30%</li> </ul>
Step # 4 Severe Persistent	<ul style="list-style-type: none"> <li>*Continual symptoms</li> <li>*Limited physical activity</li> <li>*Frequent exacerbations</li> </ul>	Frequent	<ul style="list-style-type: none"> <li>*FEV1 or PEF &lt; 50% of predicted</li> <li>*PEF variability &gt; 30 %</li> </ul>

**PEF variability** =  $\frac{\text{Morning peak flow} - \text{Afternoon peak flow}}{\text{Afternoon peak flow}} \times 100$  or  $\frac{\text{Pre-bronchodilator PEF} - \text{Post-bronchodilator PEF}}{\text{Post-bronchodilator PEF}} \times 100$

## Asthma Medication Dosage Guidelines

### Quick-Relief Medications

#### 1. Short-acting inhaled beta<sub>2</sub>-agonists

**Albuterol MDI**, 90 mcg/puff, 200 puffs per canister  
2 puffs 5 minutes prior to exercise  
2 puffs t.i.d.-q.i.d. PRN  
-May double dose for mild exacerbations

**Albuterol Nebulizer** 5 mg/ml (0.5%)  
1.25-5 mg (0.25-1 cc) in 3 cc of saline every 4 to 8 hours  
-May double dose for mild exacerbations  
-May mix with cromolyn or ipratropium nebulizer solutions.

**Caution:** In the presence of hyperthyroidism, diabetes, cardiovascular disorders, and hypertension, beta<sub>2</sub>-agonists may decrease serum K<sup>+</sup> level. Decreased effect by concomitant use of beta blocker medications. Increased effect and duration with concomitant use of ipratropium.

#### 2. Anticholinergic Agents

**Ipratropium MDI**, 18 mcg/puff, 200 puffs per canister  
2-3 puffs every 6 hours

**Ipratropium Nebulizer** 0.25 mg/ml (0.025%)  
0.25-0.5 mg every six hours

#### 3. Systemic Corticosteroids

**Prednisone**, 1, 2.5, 5, 10, 20, and 25 mg tabs  
-Short course "burst" 40 -60 mg/day in single or divided doses for 3 -10 days. A burst should be continued until the inmate achieves 80% of personal best PEF, or until symptoms resolve. Tapering of dose following improvement will not prevent relapse, so the drug may simply be discontinued to minimize the total number of days of exogenous steroid.

## Asthma Medication Dosage Guidelines

### Long-Term Control Medications

#### 1. Systemic Corticosteroids

**Prednisone**, 1, 2.5, 5, 10, 20, and 25 mg tablets or 5 mg/cc solution.

7.5 - 60 mg daily in single or divided doses as needed for control.

-For long-term treatment of severe persistent asthma, administer single dose in A.M. either daily or on alternate days (alternate day therapy may produce less adrenal suppression). Short courses or "bursts" may be indicated if condition deteriorates off steroids, or for establishing control when initiating therapy.

#### 2. Mast Cell Stabilizers

**Cromolyn MDI**, 1 mg/puff  
2-4 puffs tid-qid

**Nedocromil MDI**, 1.75 mg/puff  
2-4 puffs bid-qid

#### 3. Long-Acting Beta<sub>2</sub>-Agonists

**Salmeterol MDI**, 21 mcg/puff  
2 puffs q 12 hours

#### 4. Methylxanthines

**Theophylline** sustained release tabs  
200-300 mg bid-tid

-Titrate to serum level between 5-15 mcg/dL. Levels above 15 mcg/dL rarely result in clinical improvement, but do increase risk of toxicity.

5. Leukotriene modifiers

**-Should not be used for the treatment of acute asthma. These medications need to be taken daily, even during periods of worsening asthma.**

**Zafirlukast** 20 mg tablets

1 tablet BID, one hour before or two hours after meals.

**-Use with extreme caution if alcoholic liver cirrhosis is present. Caution with concomitant use of erythromycin, theophylline. Increases effects of aspirin and warfarin.**

**Zileuton** 300 and 600 mg tablets

600mg QID, with or without food

**-Use with extreme caution in the presence of liver disease** and never initiate therapy if liver transaminases are greater than three times normal; monitor liver transaminases at baseline before initiating treatment and periodically thereafter.

**Montelukast** 10 mg tablets

10 mg/day

**-Rarely may present a clinical picture of systemic eosinophilia and possibly vasculitis similar to Churg-Strauss syndrome.**

## Dosage Guidelines for Inhaled Anti-Inflammatory Agents

Agent	Low dose	Medium dose	High dose
Corticosteroids Beclomethasone (Beclovent, 42 and 84 mcg per puff; Vanceril, 84 mcg per puff)	2 puffs BID to 3 puffs QID at 42 mcg per puff;  1 puff BID to 2 puffs TID at 84 mcg per puff	3 to 5 puffs QID at 42 mcg per puff;  2 to 3 puffs TID at 84 mcg per puff	6 to 8 puffs QID at 42 mcg per puff;  3 puffs QID at 84 mcg per puff (exceeds PDR maximum recommended dosage of 840 mcg per day)
Triamcinolone acetoneide (Azmacort): 100 mcg per puff	2 puffs BID to 3 puffs TID (Some patients may do well with BID dosing)	3 puffs TID to 4 puffs QID	5 or more puffs QID (exceeds PDR maximum recommended dosage of 1200 mcg per day)
Flunisolide (Aerobid): 250 mcg per puff	1 to 2 puffs BID	2 to 4 puffs BID	5 puffs BID (exceeds PDR recommended dosage of 2 mg per day)
Fluticasone (Flovent): 44 mcg, 110 mcg and 220 mcg per puff	2 to 6 puffs BID at 44 mcg per puff; or 2 puffs BID at 110 mcg per puff	2 to 6 puffs BID at 110 mcg per puff	7 to 8 puffs BID at 110 mcg per puff; or 4 puffs BID at 220 mcg per puff
Budesonide (Pulmicort): 200 mcg per puff	1 or 2 puffs BID	2 or 3 puffs BID	4 puffs BID
Mast Cell Stabilizers Cromolyn sodium MDI (Intal): 800 mg per puff	2 puffs TID	3 to 4 puffs TID, or 3 puffs QID	4 puffs QID
Nedocromil (Tilade): 1.75 mg per puff	2 puffs BID to TID	3 to 4 puffs TID	4 puffs QID

### Classifying the Severity of Asthma Exacerbations

SYMPTOMS	Mild	Moderate	Severe	Respiratory Arrest Imminent
Breathlessness	*While walking *Can lie down	*Walking *Prefers Sitting	*While at rest *Sits upright	
Talks in:	*Sentences	*Phrases	*Words	
Alertness	*May be agitated	*Usually agitated	*Usually Agitated	*Drowsy or confused
SIGNS	Mild	Moderate	Severe	Respiratory Arrest Imminent
Respiratory Rate	Increased	Increased	Often > 30 min	
Use of accessory muscles, suprasternal retraction	*Usually not	*Commonly	*Usually	*Paradoxical thoraco-abdominal movement
Wheeze	*Moderate, often only end expiratory	*Loud throughout exhalation	*Usually loud; throughout inhalation and exhalation	*Absence of wheeze
Pulse/minute	* < 100	*100-120	* > 120	Bradycardia
Pulsus Paradoxus	*Absent < 10 mmHg	*May be present 10-25 mmHg	*Often present > 25 mmHg	Absence suggest respiratory muscle fatigue
FUNCTIONAL ASSESSMENT	Mild	Moderate	Severe	Respiratory Arrest Imminent
PEF predicted or % of personal best	* > 80%	*Approx. 50-80 %, or response lasts < 2 hours	* < 50 % predicted or personal best	*Note: performing peak flow during severe attacks may provoke laryngospasm

PaO2 (on air)	*Normal	* > 60 mmHg	* < 60 mmHg *possible cyanosis	
and/or PCO2	* < 42 mmHg	* < 42 mmHg	* > 42 mmHg *possible respiratory failure	
SaO2(on air) at sea level	* > 95%	* 91-95%	* < 91%	

---

# DIABETES

---



**TREATMENT GOALS FOR NONPREGNANT INMATES WITH DIABETES\***

	<b>Normal</b>	<b>Goal</b>	<b>Intervention</b>
<b>Plasma values</b>			
Average preprandial glucose (mg/dl)	<110	90-130	<90/>150
Average bedtime glucose (mg/dl)	<120	110-150	<110/>180
<b>Whole blood values</b>			
Average preprandial glucose (mg/dl)	<100	80-120	<80/>140
Average bedtime glucose (mg/dl)	<110	110-140	<100/>160
<b>A1C(%)</b>	<6	<7	>8

\*Adapted from American Diabetes Association guidelines, 2002

## Oral Agents for the Treatment of Type 2 Diabetes

Agent	Initial Dose & Treatment	Maximum Dose	Initial Elderly Dose	Side Effects	Drug Interaction
<b>Second Generation Sulfonylureas</b> Glyburide (DiaBeta, Micronase)	2.5 - 5 mg/day; increase dose by 2.5- 5 mg no more often than every 7 days	20 mg	1.25-2.5 mg	hypoglycemia and weight gain	alcohol; coumarin; zole antifungals; asparaginase; corticosteroids; thiazide diuretics; lithium; beta blockers; cimetidine; ranitidine; cyclosporine; quinolones; MAO inhibitors; chloramphenicol; octreotide; pentamidine
Glyburide, microcrystalline (Glynase)	1.5 -3 mg/day; increase by $\leq$ 1.5 mg weekly if needed	12 mg	1.25 mg	hypoglycemia and weight gain	same as above
Glipizide, short-acting (Glucotrol)	5 mg/day, 30 min before breakfast; increase dose by 2.5 - 5 mg a week as needed	40 mg give bid when dose reaches 15 mg	2.5 - 5 mg	hypoglycemia and weight gain	same as above
Glipizide, extended release (Glucotrol XL)	5 mg/day at breakfast; increase dose by 2.5 - 5 mg at 3 month intervals based on HbA1C	20 mg	2.5 mg	hypoglycemia and weight gain	same as above
Glimepiride (Amaryl)	1-2 mg daily with breakfast or first main meal; increase at 1-2 mg increments every 1-2 weeks as needed	8 mg once daily	0.5 - 1 mg	hypoglycemia and weight gain	same as above
<b>Biguanides</b> Metformin (Glucophage) <b>**Contraindications to metformin therapy</b> : elevated creatinine (>1.4mg/dL in women or >1.5mg/dL in men), or a creatinine clearance < 60mL/min in the elderly; history of renal insufficiency, hepatic dysfunction, or serious cardiovascular or pulmonary compromise	500 mg with a meal; on the basis of patient's tolerance to metformin and glycemic response, increase dosage by 500 mg/day at weekly intervals, adding a dose to another meal; tid dosing not required for efficacy but may decrease GI complaint; doses >1000 mg/day with meals will likely be needed for therapeutic effect as monotherapy; doses >2000 mg/day have little added benefit.	2550 mg/day (850 mg tid); OR  2500 mg/day (500 mg tab)	500 mg	nausea and diarrhea that usually subside over 1 week may limit rate of dose increase; hypoglycemia only if metformin is given with sulfonylurea or insulin	alcohol - cimetidine - amiloride - digoxin - morphine - procainamide - quinidine - ranitidine - triamterene -trimethoprim - vancomycin - furosemide - calcium channel blocking agents especially nifedipine  <b>*withhold 48 hours prior to and following surgery or IV contrast x-ray studies.</b>
<b>Alpha-Glucosidase Inhibitors</b> Acarbose (Precose)	25 mg tid with first bite of meals; lower dose may be needed if gastrointestinal distress is noted. Increase dose to 50 mg tid with meals after 4-8 weeks	100 mg tid with meals or 50 mg tid with meals (In patients $\leq$ 60 kg)	25 mg	diarrhea (33%) abdominal pain (12%) flatulence (77%) * serum transaminase elevations may occur at doses >50mg tid.	absorbents, intestinal agents such as activated charcoal digestive, enzyme preparations containing carbohydrate - splitting enzymes such as amylase or pancreatin
<b>Thiazolidinediones</b> Rosiglitazone (Avandia)	4 mg qd or 2 mg bid; increase to 8 mg qd or 4 mg bid in 12 weeks as needed	8 mg/day	2 mg	edema; fluid retention may cause or exacerbate CHF.	erythromycin- calcium channel blocker- corticosteroids -cyclosporine - hmg coa reductase inhibitors - triazolam - trimetrexate - ketoconazole - itraconazole
Pioglitazone (Actos)	15 or 30 mg qd; increase to 45 mg qd monotherapy or 30 mg qd as combo therapy	45 mg/day monotherapy; 30 mg/day combo therapy	15 mg	edema * decreases oral contraceptive efficacy	same as above
<b>Meglitinides</b> Repaglinide (Prandin)	0.5 mg with each meal if HbA1C <8%, 1 - 2 mg with each meal if HbA1C $\geq$ 8%; Increase by 1 mg weekly as needed	4 mg with meals (max 16 mg total per day )	0.5 mg	hypoglycemia and weight gain	<b>*contraindicated in moderate-severe hepatic dysfunction</b> beta- adrenergic blocking agents; drugs metabolized by the cytochrome p450 system; erythromycin; ketoconazole; miconazole; sulfonamides; MAO inhibitors; NSAIDS; anticoagulants (warfarin derivatives)
Nateglinide (Starlix)	60 mg, 1 to 30 min before each meal if HbA1C < 8%; 120 mg if > 8%	180 mg tid	60 mg	hypoglycemia and weight gain	same as above



<b>Type 2 Diabetes Mellitus - Combination Drug Therapy Options</b>
<b>Sulfonylurea + Biguanide</b>
<b>Sulfonylurea + Insulin</b>
<b>Biguanide + Insulin</b>
<b>Sulfonylurea + Alpha-glucosidase inhibitor</b>
<b>Sulfonylurea + Biguanide + Insulin*</b>
<b>Biguanides + Alpha-glucosidase inhibitor*</b>
<b>Thiazolidinedione + Insulin</b>
<b>Biguanide + Meglitinide</b>
<b>Rosiglitazone or Pioglitazone + Sulfonylurea</b>
<b>Alpha-glucosidase inhibitor + Insulin*</b>
<b>Sulfonylurea + Biguanide + Thiazolidinedione*</b>

\* Denotes less frequently used therapy/less studied therapy

## **THE CARVILLE DIABETIC FOOT SCREEN**

This appendix was adapted directly from the LEAP program at the Hansen's Disease Center, Carville, Louisiana. A BOP-designed progress note for documenting these examinations is found in **Appendix 6**, a Word Perfect version of the Form 600 with the outline of the examination overprinted. This form may be printed and inserted in chronological order in section 1 of the Inmate Medical Record.

### **Section I**

In the first section of the Foot Screen, the five questions can be answered in the Yes or No blank with an R, L, or B to indicate a positive or negative finding in the right, left, or both feet.

#### **1. Has there been a change in the foot since the last evaluation?**

On a first visit, enter N/A unless the inmate has noticed a change in strength or sensation within the past year. If that is the case, then check Yes. The purpose of this question is to determine from the inmate if he/she has perceived a change in the strength or sensation of their feet. Any change is significant in a foot screen.

For example, an improvement in the inmate's perception of sensation could be a sign that the inmate is having a reversal of some of the neuropathic changes. Alternatively, if the inmate perceives a change for the worse, this could be a sign of worsening of the neuropathy.

#### **2. Is there a foot ulcer now, or history of foot ulcer?**

The purpose of this question is to determine if the inmate has now, or has ever had an ulcer on the foot. A positive history of a foot ulcer places the inmate permanently in Risk Category 3. Once an inmate has ulcerated, he or she is always at an increased risk of developing another foot ulcer. The inmate is also at risk of developing a progressive deformity of the foot and ultimately amputation of the lower extremity.

#### **3. Does the foot have an abnormal shape?**

This is determined by inspecting the general shape of the inmate's foot. Conditions to consider include: foot drop, eversion or inversion deformity, partial or complete amputations of the foot or toes, clawed toes, bunions, and especially a "Charcot Foot."

A Charcot Foot is a foot which is moderately to severely deformed as a result of insensitivity and repeated injury. Fractures in an insensitive foot frequently fail to heal properly and can progress to the so-called boat shaped foot. These feet are at extreme risk of amputation and require immediate, expert care. A patient with a Charcot Foot is always in Category 3.

#### **4. Is there weakness in the ankle or foot?**

Unless the inmate has an open ulcer or infection of the foot, a rough estimate of strength can be made by asking the inmate to walk alternately on their heels and then on their toes.

#### **5. Are the nails thick, too long, or ingrown?**

If severe nail problems are present or if there is uncertainty about the vascular status of the toes, refer the inmate to an appropriate evaluator.

### **Section II**

In the next section of the foot screen, the examiner does a sensory exam of the foot using the 10 gram monofilament and records the findings on the form in the circles on the foot drawing.

There are ten places on each foot that are routinely tested. If the inmate can feel the filament, put a “+” in the appropriate circle. If they cannot feel it, put a “-”.

The sensory exam should be done in a quiet and relaxed setting, where the inmate can lie down. The inmate should not watch while the examiner applies the filament.

### **Section III**

Next, examine the foot and record the problems identified by drawing or labeling as appropriate on the Foot Screen form.

If there are callouses, pre-ulcerative lesions (a closed lesion, such as a blister or hematoma) or open ulcers, draw or describe them as accurately as possible.

Then, draw in and label areas that are significantly red, warm (warmer than the other parts of the foot or the opposite foot), dry or macerated (friable, moist, soft tissue).

### **Section IV**

This is the vascular assessment. Vascular studies are an important part of a foot evaluation in patients with diabetes and should at least include the palpation of pulses. More extensive evaluations such as doppler studies and angiography should be considered on a case by case basis.

### **Section V**

Footwear is discussed under the appropriate Risk Category below.

## **Section VI**

**Risk Categorization:** The accurate categorization of inmates into their respective Risk Category is a key element in the Foot Screen. The higher the Risk Category, the higher the risk an inmate has of recurrent foot ulceration, progressive deformity and ultimately, amputation of the foot.

**Category 0:** No loss of protective sensation.

This is a patient who has essentially no risk of developing foot complications as a result of their disease. This patient does not need special footwear.

**Category 1:** Loss of protective sensation, no deformity or history of plantar ulceration.

This patient has lost sensation to the point that they are defined as not having “protective sensation.” These patients cannot feel the 10 gram monofilament and therefore cannot trust their sensation to prevent injury. The patients in this and the following two categories should **never** walk barefoot. They do not have enough sensation to prevent injuring themselves (e.g. as a result of stepping on sharp objects).

Patients in this and the following two categories need to pay special attention to the fit and style of their shoes and should avoid pointed toed shoes or high heels. Category 1 patients do not need “custom” shoes. They usually do well in a jogging shoe or a well-fitting street shoe.

**Category 2:** Loss of protective sensation and deformity, no history of plantar ulceration.

This patient, in addition to the loss of protective sensation, also has additional abnormalities, but has not progressed to the point of ulceration (current or past). They may need extra depth shoes with custom molded insoles to accommodate deformity of their feet. These patients can frequently wear a jogging shoe with a soft insert.

**Category 3:** History of plantar ulcer.

This patient has loss of protective sensation and has progressed to the point of plantar ulceration (current or past). They will need extra depth shoes with soft molded inserts to accommodate any deformity of their feet. They may need custom-made shoes to manage their foot problems once their ulcer is healed.

## FILAMENT APPLICATION INSTRUCTIONS

The sensory testing device used with the Foot Screen is a nylon filament mounted on a holder that has been standardized to deliver a 10 gram force when properly applied. Hansen's disease researchers have shown that a patient who can feel the 10 gram filament in selected sites are not at increased risk to develop ulcers.

### 1. Sites to be tested:

Dorsal foot: center of the top of the foot

Plantar foot:

- (1) center of the heel pad
- (2) medial arch
- (3) "ball" of foot
- (4) over distal 3<sup>rd</sup> metatarsal head
- (5) over distal 5<sup>th</sup> metatarsal head
- (6) over proximal 5<sup>th</sup> metatarsal

2. Apply the filament perpendicular to the skin's surface.

3. The approach, skin contact and departure of the filament should be approximately 1 ½ seconds duration.

4. Apply sufficient force to cause the filament to bend.

5. Do not allow the filament to slide across the skin or make repetitive contact at the test site.

6. Randomize the selection of test sites and time between successive tests to reduce the potential for patient guessing.

7. Ask the patient to respond "yes" when the filament is felt and record the responses.

8. Apply the filament along the perimeter of and NOT on an ulcer site, callus, scar or necrotic tissue.



))))))))))3  
))))))))))  
\* Weight bearing shoe size/width: (Brannock Device)  
))))))))))3))))))))))  
))))))))))  
\*ASSESSMENT: Check appropriate risk category  
))))))))))3))))))))))  
))))))))))  
\* Category 0 (No sensory loss - Follow-up in 1 year)  
))))))))))3))))))))))  
))))))))))  
\* Category 1 (Sensory Loss - Follow-up in 6 months)  
))))))))))2))))))))))0))))))))))0))))))))))  
))))))))))

PATIENT'S IDENTIFICATION (Use this space for Mechanical Imprint) \* RECORDS \*  
\*MAINTAINED \*  
\* AT: \*

/))))))))2))))))))0))))))))  
\*PATIENT'S NAME (Last, First, Middle Initial) \*SEX  
\*  
/))))))))0))))))))3))))))))  
\*RELATIONSHIP TO SPONSOR \*STATUS \*RANK/GRADE  
\*  
/))))))))2))))))))0))))))))2))))))))  
\*SPONSOR'S NAME \*ORGANIZATION  
\*  
/))))))))0))))))))2))))))))0))))))))  
\*DEPART./SERVICE \*SSN/IDENTIFICATION NO. \*DATE OF BIRTH  
\* \* \*

.))))))))2))))))))2))))))))  
CHRONOLOGICAL RECORD OR MEDICAL CARE  
STANDARD FORM 600 (Rev. 5-84)  
Prescribed by GSA and ICMR  
FIRMR (41 CFR) 201-45.505

(This form may be replicated via WP)





<b>Recommendations for Diabetic Chronic Care Clinic Monitoring</b>				
<b>Patient Evaluation / Routine Exam - SOAP Format</b>				
<b>S:</b> < Observations and patient complaints >				
<b>O:</b> Vital signs : blood pressure, pulse, respiration rate, temperature, weight, height HEENT: (include fundoscopic exam and neck evaluation) Lungs/Heart: Abdomen: Extremities/ Peripheral pulses / Neuropathy / Visual Foot Examination Labs, X-Rays, Other Studies				
<b>A:</b> Assessment, Analysis of data , Diagnosis				
<b>P:</b> Therapeutic regimen Diagnostic studies Education - adherence to all self care aspects, exercise evaluation, follow-up of referrals, smoking cessation				
<b>Procedure, Test, Examination</b>	<b>Baseline Visit</b>	<b>Quarterly Visit</b>	<b>Semiannual Visit</b>	<b>Annual Visit</b>
Routine physical exam	x	x		
Fasting blood sugar (record results of self-monitoring where applicable)	x	x		
Fasting complete metabolic panel (electrolytes, creatinine, total cholesterol)	x			x
Fasting Lipid profile *more often if managing a lipid disorder, less often if low risk	x			x
HBA1C	x	(x) if treatment changes, or clinically indicated	x	
Urinalysis (dipstick)	x			x
Urine microalbumin	x if standard dipstick urinalysis is negative for protein			x if standard dipstick urinalysis is negative for protein
Ophthalmologic exam (preferably dilated )	x			x
Fundoscopic exam (performed by primary provider)	x	x		
Foot Exam: visual monofilament	x x	x		x x
EKG	x			

Fasting or random glucose ( finger stick) monitoring - methods and times must be determined on a case-by-case basis depending on the medical needs of the inmate and severity of the condition.

## Keys to Diabetes Control

---

---

Years ago, the diabetic diet was strict and boring. Today, you do not need special foods; in fact, the foods that are good for you are good for everyone. Diabetes cannot be cured, but it can be controlled so that you can lead a normal life and when your diabetes is in good control, complications may be prevented or delayed. There are three keys to controlling diabetes: **1) Diet - weight control or maintenance; 2) Exercise; and 3) Medication - pills or insulin.** All three are equally important. Your food intake and activity needs to balance with your medication for good blood glucose control. By making the proper food choices, exercising, and taking prescribed medication throughout the day, you will be able to maintain a healthy weight and blood glucose control.

### Steps to Control Blood Glucose

- **Eat a wide variety of foods every day: Increase high fiber foods such as: grains, beans, vegetables, and fruits to fill you up.**
- **Limit concentrated sweets such as: sugar, honey, jelly, syrup, cakes, cookies, candy, ice cream, pies, pastries, regular soda or kool-ade. Concentrated sugars do not cause diabetes, and do not need to be totally avoided. However, they are concentrated calories - the more calories you eat, the higher your blood glucose.**
- **Limit fats such as: butter, margarine, cheese, fried foods, cream soups, gravy, salad dressings, mayonnaise, and breakfast meats (bacon, sausage, etc.).**
- **Control portion sizes: Too much of even the right foods can also cause high blood glucose. If you want to lose weight, cut down on portion sizes.**
- **Never skip meals: Eat all three meals and include snacks as needed. Eat at about the same time every day.**
- **Exercise: Increase your activity level (as permitted by your doctor). This will decrease your blood glucose level.**
- **Monitor your weight: Weigh yourself only once a week to determine if your diet is effective. If you are overweight, a weight**

loss of 1-2 pounds per week is a good goal.

- **Medication:** If you take pills or insulin for your diabetes, always take your medication as your doctor has recommended.

## **INMATE FACT SHEET (Diabetes)**

### **1. What is diabetes?**

Diabetes is a chronic disease for which there is no cure. It can be controlled by a combination of diet, exercise, and medical care. Diabetes means having too much sugar (glucose) in the blood. In people who have diabetes, sugar builds up in the blood instead of going into the cells.

### **2. What are the symptoms of diabetes?**

Most people with diabetes do not notice any symptoms. However, some symptoms of diabetes are:

- Frequent urination
- Increased thirst and increased hunger
- Unexplained weight loss
- Weakness, fatigue, drowsiness
- Wounds and cuts that heal slowly
- Blurred vision or changes in vision

### **3. What puts you at risk for diabetes?**

- You are age 45 and older
- You are a member of a high-risk ethnic group (African American, Hispanic/Latino, American Indian, Asian American, Pacific Islander)
- You are overweight
- You have high blood pressure (at or above 140/90)
- You have a family history of diabetes
- You have a history of diabetes during pregnancy
- You weighed more than 9 pounds at birth

### **4. What are the complications of diabetes?**

- Eye damage - poor vision, retina damage, cataracts, glaucoma, blindness
- Kidney damage - progressive failure may require hemodialysis or organ transplantation
- Heart problems - damaged blood vessels leading to heart attacks and strokes
- Nerve damage - problems with nerve sensations and moving muscles, loss of reflexes
- Decreased ability to fight infections
- Sores and ulcers of the legs and feet

### **5. How is diabetes controlled?**

Diabetes is controlled by a combination of diet, exercise, and medication. Treatment goals are to keep blood sugar near normal, control blood pressure, lower cholesterol and fat levels, and lose weight or maintain a healthy weight. Research shows that keeping blood sugar as near to normal as possible means fewer complications of the disease. Strict control of blood sugar helps to prevent kidney failure, amputations, blindness, heart attacks, and stroke.

**6. What are the symptoms of hypoglycemia (low blood sugar)?**

- Shakiness
  - Sweating and clammy feeling
  - Extreme fatigue
  - Hunger
- 
- Irritation or confusion
  - Rapid heart rate
  - Blurred vision

---

# TUBERCULOSIS

---

Federal Bureau of Prisons Treatment Regimens for Latent Tuberculosis Infection (LTBI)

Treatment of LTBI (Comments)	Treatment Regimens	Dosages		Administration	Side Effects
		DAILY DOSE (MAXIMUM)	TWICE WEEKLY DOSE (MAXIMUM)		
<p>LTBI treatment should not be initiated until active TB disease has been eliminated as a potential diagnosis.</p> <p>Also, refer to clinical guidelines on “<i>Indications for LTBI treatment</i>” and “<i>Special considerations related to HIV co-infection, pregnancy, old TB.</i>”</p> <p>Consultation with a TB expert is recommended when treating contacts of persons with MDR-TB. An alternative regimen is indicated.</p>	<p><b>#1: INH</b>, 6 to 9 months</p> <p>(9 mo is preferred regimen)</p>	<p><b>#1: INH 5 mg/kg</b> (300 mg/day)</p> <p>Daily dose x 180 doses (within 6 mo) to 270 doses (within 9 mo)</p> <p>Note: give pyridoxine (vitamin B<sub>6</sub>) 50 mg/day concurrently with INH.</p>	<p><b>#1: INH 15 mg/kg</b> (900 mg/dose)</p> <p>Twice weekly x 52 doses (6 mo) or 78 doses (9 mo)</p> <p>Note: administer twice weekly, at least two days between doses.</p>	<p>#1: Offer 6 mo if 9 mo Tx not feasible. If 6 mo not feasible, consider alternative regimen.</p> <p>Always give 9 mo regimen for HIV+</p> <p>B<sub>6</sub> 50 mg/day to prevent INH-associated peripheral neuropathy.</p>	<p>-anorexia -nausea, vomiting -dark urine -icterus, rash -paresthesias of hands and/or feet -fatigue or weakness lasting &gt; 3 days -abdominal pain -easy bruising or bleeding -arthralgias.</p>
	<p><b>#2: RIF/PZA</b>, 2 months</p> <p><b>Many drug interactions with RIF: review drug regimen carefully</b></p>	<p><b>#2: † RIF 10 mg/kg (600 mg/day) and PZA 15 - 30 mg/kg (2g/day)</b></p> <p>Daily dose X 60 doses within 2- 3 mos.</p> <p>† RFB may be substituted for RIF when given with certain PIs+ NNRTIs (consult pharmacist for drug dosages)</p>	<p><b>#2: RIF 10 mg/kg (600 mg) and PZA 50-70 mg/kg (4 g/day)</b></p> <p>Consider this regimen only for <u>select</u> inmates if alternative regimens are not feasible. Note: RIF twice weekly dosage the same as daily dosage.</p> <p>Regimen should consist of at least 16-24 doses within 2-3 mo</p>	<p>#2: Consider RIF+ PZA if:</p> <p>-INH is not tolerated.</p> <p>-A close contact of an active TB case with INH-resistance and RIF-sensitivity.</p> <p>-HIV+ on ART: RIF given <u>without</u> concurrent protease inhibitors (PI) or non-nucleoside reverse transcriptase inhibitors (NNRTIs)/See RFB note</p>	<p>RIF/ RFB colors body fluids orange: stains contact lenses.</p> <p>Risk of leukopenia and low platelets with RFB.</p> <p>PZA is not recommended if chronic gout exists.</p>
	<p><b>#3: RIF</b> 4 months</p>	<p><b>#3: RIF 10 mg/kg (600 mg/day)</b></p> <p>Daily dose X 120 doses within 4 - 6 months.</p>	<p><b>#3: RIF ALONE TWICE WEEKLY IS NOT RECOMMENDED</b></p>	<p>#3: Indicated primarily if inmate is intolerant to INH and/or PZA.</p>	<p>Same as #2</p>

INH-isoniazid; RIF-rifampin; PZA-pyrazinamide; RFB-rifabutin; ART-antiretroviral therapy. Adjust dosages as weight changes. Doses must be given by directly observed therapy (DOT).

## FEDERAL BUREAU OF PRISONS TUBERCULOSIS TREATMENT GUIDELINES

Diagnostic Category	Length of Regimen	Initial Phase INH/RIF/PZA/EMB (or SM) for 8 weeks (daily for 2 weeks, then biweekly for 6 weeks)		CONTINUATION PHASE INH/RIF for 16 weeks (2 OPTIONS)		MONITORING PARAMETERS
<b>Adults - TB</b>  Culture positive - pulmonary or extrapulmonary	6 months minimum	<b>DAILY DOSE (MAXIMUM DOSE)</b> Daily dose x 14 doses  INH 5 mg/kg (300 mg/day)  RIF 10 mg/kg (600 mg/day)  PZA 15-30 mg/kg (2g/day)  EMB 15-25 mg/kg  or  SM 15 mg/kg ≤ 60 yr. (1.0 g/day)  SM 10 mg/kg if > 60 yr. Old (750 mg - 1 g)  Note: EMB should be started at 15 mg/kg to reduce the risk of ocular toxicity. The use of 25 mg/kg should be reserved for patients requiring retreatment, or treatment of drug resistant TB.	<b>TWICE WEEKLY DOSE (MAXIMUM DOSE)</b> Twice weekly x 6 weeks.  INH 15 mg/kg (900 mg/dose)  RIF 10 mg/kg (600 mg/dose)  PZA 50-70 mg/kg (4g/dose)  EMB 50 mg/kg/dose  or  SM 25-30 mg/kg ≤ 60 yr. (1.5 g/dose)  SM 750 mg - 1 gram if > 60 yrs)  Note: Pyridoxine - 50 mg/day should be given concurrently with INH to prevent INH-associated peripheral neuropathy.  Drugs prescribed twice weekly should be administered 2 or 3 days apart.	<b>DAILY DOSE (MAXIMUM DOSE)</b>  INH 5 mg/kg (300 mg/day)  RIF 10 mg/kg (600 mg/day)          Note: AFTER 8 WEEKS OF 4 DRUG THERAPY NEVER SWITCH TO 2 DRUGS UNTIL SUSCEPTIBILITY TO INH AND RIF IS DEMONSTRATED.	<b>TWICE WEEKLY DOSE (MAXIMUM DOSE)</b>  INH 15 mg/kg (900 mg/dose)  RIF 10 mg/kg (600 mg/dose)          Note: Drugs prescribed twice weekly should be administered 2 or 3 days apart.	Baseline: Chest x-ray, morning sputums for AFB X 3, CBC, platelet count, creatinine, uric acid, bilirubin, hepatic enzymes, visual acuity/red-green color perception(EMB), and audiogram(SM).  Do susceptibility drug testing with first sputum cultures and as needed.  Ongoing: Monthly evaluation by a physician for symptoms and targeted exam  ALT/AST monthly if elevated at baseline Creatinine/audiogram monthly on SM  Visual acuity/red-green color vision monthly, eye doctor evaluation every 3 months while on EMB  Certain high-risk groups, may have increased propensity for INH-induced hepatitis and require monthly liver enzymes. Presence of hepatitis does not preclude treatment for TB--patient must be monitored closely. Other labs at discretion of physician.  Obtain 3 consecutive daily sputums for smear and culture every month until conversion. Repeat drug susceptibility testing if patient fails to respond clinically or remains culture positive after 2 months. Chest x-ray, sputum smear and culture at end of treatment for future comparisons.
	Longer treatment may be required for TB meningitis or bone/joint TB	<b>INITIAL PHASE</b> INH/RIF/PZA/EMB (or SM) for 8 weeks	<b>CONTINUATION PHASE</b> INH/RIF for 8 weeks	Same as above		
<b>Adults - Pulmonary with negative smear and culture. Patient is symptomatic.</b>	4 months minimum	<b>INITIAL PHASE</b> INH/RIF/PZA/EMB (or SM) for 8 weeks		<b>CONTINUATION PHASE</b> INH/RIF for 8 weeks		Same as above  Chest x-ray at 3 months. Failure of x-ray to respond to treatment within 3 months suggestive of previous (not current) TB or another disease.
	6 months if HIV infected.	Same as above	Same as above	Doses same as above. Continue EMB and PZA if drug resistance likely.	Doses same as above. Continue EMB and PZA if drug resistance likely.	

INH-isoniazid, RIF-rifampin, PZA-pyrazinamide, EMB-ethambutol, SM-streptomycin. Adjust dosages as weight changes. Medicines must be given by directly observed therapy (DOT).

**FEDERAL BUREAU OF PRISONS TUBERCULOSIS TREATMENT GUIDELINES - SPECIAL CONSIDERATIONS**

DIAGNOSTIC CATEGORY	REGIMEN	MEDICATIONS	MONITORING PARAMETERS
Pregnancy	9 months minimum. Treatment should begin as soon as TB is suspected.	<p>Treat with appropriate doses of INH/RIF/EMB. Do not use PZA unless dealing with drug-resistant disease with no alternatives. Inadequate tetratenogenicity data for PZA</p> <p>Give Pyridoxine (B6) 50 mg/day concurrently.</p> <p>SM has documented harmful effects on the fetus and should not be used.</p> <p>Discontinue EMB once INH/RIF sensitivity results are documented.</p> <p>Consult with physician expert for appropriate treatment regimen</p>	<p>Baseline: Chest x-ray, morning sputums for AFB X 3, CBC, platelet count, serum creatinine, uric acid, liver enzymes, visual acuity, and red-green color vision.</p> <p>Ongoing: Monthly symptom review and exam by clinician. Assess visual acuity/red-green color perception monthly and eye doctor evaluation every 3 months while on EMB. With hepatic disease, renal disease or gout obtain monthly liver function tests, creatinine, or uric acid respectively. Certain high-risk groups for isoniazid-induced hepatitis require monthly liver enzymes. Presence of hepatitis does not preclude treatment for TB. Patient must be monitored closely. Other laboratory studies at the discretion of the physician.</p> <p>Obtain 3 consecutive daily sputums every month until conversion. Do susceptibility drug testing with first cultures and as needed. Repeat drug susceptibilities if patient fails to respond clinically or remains culture positive after 2 months.</p> <p>Chest x-ray, sputum smear and culture at end of treatment and more frequently as indicated. If pregnant woman is HIV positive or has drug resistant TB, consult infectious disease consultant.</p>
HIV Infection	Standard 6 month regimen, unless patient on certain antiretroviral drugs - then consult CDC guidelines and TB expert for treatment recommendations	Treatment may need to be prolonged due to adverse drug reactions or poor drug absorption. RIF contraindicated with protease inhibitors and nonnucleoside reverse transcriptase inhibitors. RFB can be substituted for RIF with certain antiretroviral drugs (consult pharmacist)	Adverse reactions more common. Monitoring same as for adult standard. If rifabutin prescribed, monitor for uveitis, arthralgia, and leukopenia. If there is no culture conversion at the end of 2 months, reevaluate patient and repeat drug susceptibility tests. Treatment should be prolonged with any evidence of suboptimal response with therapy.
INH Resistance/ Intolerance	6 months of 4-drug standard regimen effective. After INH resistance/intolerance identified, discontinue INH. Tx with RIF/PZA/EMB for duration of therapy given twice weekly.	Same as adult standard excluding INH from regimen.	Same as adult standard. Monitor cultures and drug sensitivities closely.

<p><b>INH/Rifampin resistance (MDR-TB)</b></p>	<p>Continue treatment until bacteriologic sputum conversion followed by 12-24 months of at least 3 drug treatment.</p>	<p>Give at least three new drugs to which the organism is susceptible.</p> <p>Consult with tuberculosis expert to ensure effective medical management.</p>	<p>Same as adult and children standards with monthly and drug sensitivities until conversion.</p>
--	--	--	---

INH-isoniazid, RIF-rifampin, PZA-pyrazinamide, EMB-ethambutol, SM-streptomycin, RFB-rifabutin. Adjust dosages as weight changes/ Administer all drugs by DOT.

---

## VIRAL HEPATITIS

---



## **INMATE FACT SHEET (Hepatitis B and Hepatitis C Viral Infections)**

### **Am I at risk of being infected with hepatitis B virus (HBV) or hepatitis C virus (HCV)?**

- You may be at risk for HBV or HCV infection if you have ever injected drugs or had sex with an infected partner. HBV is more easily transmitted through sex and from a mother to her child compared to HCV. Persons receiving blood transfusions prior to 1992 may be at risk for HCV infection. Talk to a health care provider about the risks of infection that affect you personally.

### **How can I prevent getting HCV or HBV while I am in prison?**

- Do not have sex with other inmates, shoot drugs, or get a tattoo or body piercing.
- Do not share toothbrushes, razors, nail clipping devices, or other personal items that might have blood on them with other inmates.

### **Are these infections dangerous to my health?**

- Most persons infected with HBV or HCV do not develop serious health problems, however a small, but significant number of patients develop serious liver disease. Talk to a health care provider about your personal risks for developing liver disease.

### **Why should I be tested for HBV or HCV infection?**

- You should be tested if you are at risk so doctors can monitor your infection and assess your need for treatment now or in the future. You should also be tested so that you can better prevent others from getting infected including your infant if you are pregnant.

### **How do I get tested for HBV or HCV?**

- A simple blood test can determine if you are infected.

### **How can I prevent giving HBV or HCV to others if I am already infected?**

- First, remember that you can spread these infections even if you feel fine.
  
- Do not shoot drugs or have sex with other inmates.

- Do not share personal items that might have your blood on them, such as toothbrushes, dental appliances, nail-clipping equipment or razors.
- Cover your cuts and skin sores to keep your blood from contacting other persons.
- If you are being released, talk to a health care provider about specific ways you can reduce the risk of spreading HBV or HCV to others.

## INTERPRETATION OF HEPATITIS B VIRUS SEROLOGIC MARKERS\*

Serologic Markers				Interpretation
HBsAg	Total anti-HBc	IgM anti-HBc	Anti-HBs	
-	-	-	-	Susceptible, never infected
+	-	-	-	Acute infection, early incubation **
+	+	+	-	Acute infection <sup>§</sup>
-	+	+	-	Acute resolving infection <sup>§</sup>
-	+	-	+	Past infection, recovered and immune
+	+	-	-	Chronic infection
-	+	-	-	Multiple interpretations <sup>¶</sup>
-	-	-	+ ≥10 mIU/mL	Immune from vaccination

\*Adapted from CDC guidelines, Recommendations for preventing transmission of bloodborne pathogen infections among chronic hemodialysis patients, *MMWR* 2001;50(RR-5):1-43.

\*\* **NOTE:** Transient HBsAg positivity (lasting < 21 days) might be detected in some patients during vaccination

<sup>§</sup> IgM usually wanes after 6 months post-infection, but may persist for up to 2 years.

<sup>¶</sup> Remote infection (anti-HBs may be absent since it wanes with time and may disappear with remote history of infection), a false positive test (i.e., susceptible), resolving acute infection, or “low-level” chronic infection.

**HBsAg** is hepatitis B surface antigen.

**Total anti-HBc** is total antibody to hepatitis B core antigen.

**IgM anti-HBc** is the immunoglobulin M antibody to hepatitis B core antigen.

**Anti-HBs** is antibody to hepatitis B surface antigen.

## **EVALUATION STRATEGY TREATMENT OF CHRONIC HEPATITIS B**

### **Diagnose chronic hepatitis B**

**HBsAg+ 6 - 12 months**

↓

**HBeAg+/HBV DNA+; OR  
HBeAg-/HBV DNA+**

↓

### **Baseline evaluation**

**Counseling/history and physical examination/assess alcohol use and substance abuse**

**Refer to drug education and treatment programs as appropriate**

**If decompensated cirrhosis is present → consider lamivudine**

**If decompensated cirrhosis is not present → monitor ALT**

↓

### **ALT monitoring**

**If ALT is normal → monitor ALT every 3-6 months**

**If ALT is elevated above upper limit of normal → confirm ALT elevation over 3-6 months**

**IF ALT elevation is confirmed and HBV DNA is  $> 10^5$  cps/mL refer for liver biopsy**

↓

### **Liver biopsy**

**Normal biopsy/minimal inflammation → monitor HBe/HBsAg/repeat biopsy**

**Evidence of liver necroinflammation  $\geq 4$  → consider drug therapy**

↓

### **Antiviral Drug therapy**

**Drug therapy should be patient-specific → Consider:**

**degree of liver disease/HBe status/co-morbid conditions/prior treatment history**

**NOTE: The long-term benefits of antiviral therapy for chronic hepatitis B are uncertain. The decision to recommend treatment for chronic hepatitis B should be based on the severity of liver disease, the likelihood of response, co-morbid conditions, and the potential for adverse reactions. The specific treatment regimen should be determined on a case-by-case basis (see text).**

## ANTIVIRAL MEDICATIONS FOR CHRONIC HEPATITIS B

Medication	Dosage	Baseline tests	Monitoring**	Toxicities	Comments
<b>Interferon alfa</b> (2a or 2b)  (Roferon-A) (Intron-A)	5 million units SC daily; OR 10 million units SC 3x/week - for 16-24 weeks  HBeAg-negative patients require longer duration, e.g. ≥ 12 months	anti-HIV, anti-HCV anti-HDV  HBeAg, HBV DNA ALT/AST, liver function CBC (with diff and plts) chemistry panel creatinine/BUN thyroid function studies mental health assessment	clinician evaluations every week X 1 month then monthly  CBC (with diff and plts) ALT/liver function creatinine/BUN, TSH  psychology/psychiatry monitoring as necessary	fever fatigue myalgia psychiatric (rage, confusion, depression) bone marrow suppression thyroid dysfunction renal failure	contraindicated with decompensated cirrhosis  drug interaction: concomitant use of interferon alfa-2b significantly increases theophylline levels
<b>Lamivudine</b> (Epivir-HBV®)	100 mg orally, daily for 1 year or more  drug resistance may develop	same as above except thyroid studies and mental health assessment only necessary if clinically indicated	clinician evaluations every week X 1 month then monthly  ALT/liver function creatinine/BUN	lactic acidosis hepatomegaly/steatosis pancreatitis	some improvement possible with decompensated cirrhosis  higher dose as part of HAART* regimen in HIV- coinfecting patients
<b>Adefovir dipivoxil</b> (Hepsera®)	10 mg orally, daily  optimal duration is uncertain; tx for at least 48 weeks; hepatitis may worsen when drug tx is stopped	same as above except thyroid studies and mental health assessment only necessary if clinically indicated	clinician evaluations every week X 1 month, then monthly  ALT/liver function creatinine/BUN	renal failure - seen with higher doses  lactic acidosis hepatomegaly/steatosis HIV resistance	a HAART* regimen is recommended for persons with HBV/HIV co- infections treated with adefovir  medication well tolerated and drug resistance does not develop

\*HAART is highly active antiretroviral therapy.

\*\*See monitoring parameters in Guidelines text.

## VIRAL HEPATITIS VACCINE DOSES AND SCHEDULES

### Hepatitis A and B Vaccines for Adults

Virus/Vaccine Type	Dose (mL)	Volume Doses	No. of (months)	Schedule
<b>Hepatitis A</b>				
Havrix †	1,440 EL.U. * ^	1.0	2	0 and between 6 - 12
VAQTA \$	50 U ^	1.0	2	0 and between 6 - 12
<b>Hepatitis B</b>				
Recombivax-HB \$	10 mcg ^	1.0	3	0, 1, and 6
Engerix-B †	20 mcg ^	1.0	3	0, 1, and 6
<b>Hepatitis A and B combination</b>				
Twinrix †	20 mcg (B ) ^ 720 EL.U. (A)	1.0	3	0, 1, and 6

**Source:** Adapted from CDC guidelines, *MMWR* 2003;52(No. RR-1)

### Hepatitis B Vaccines for Hemodialysis-dependent Adults

Virus/Vaccine Type	Dose (mL)	Volume Doses	No. of (months)	Schedule
<b>Hepatitis B</b>				
Recombivax-HB \$	40 mcg ^	1.0	3	0, 1, and 6
Engerix-B †	40 mcg ^	2.0 ††	4	0, 1, 2, and 6

**Source:** Adapted from CDC guidelines, *MMWR* 2001;50( No. RR.- 5)

† Manufactured by GlaxoSmithKline Biologicals

\$ Manufactured by Merck & Co., Inc.

\* Enzyme linked immunosorbent assay (ELISA) units.

†† Two 1.0 mL doses administered at one site in a 4-dose schedule at 0, 1, 2, and 6 months.

^ Recommended route/site for administration is the deltoid by intramuscular injection.

### Management of Hepatitis B Virus Exposures\*

Vaccination Status/Antibody Status	Treatment Based on Source's HBsAg Status		
	HBsAg positive	HBsAg negative	Unknown Status
Unvaccinated	HBIG** X 1; Initiate HB vaccine series	Initiate HB vaccine series	Initiate HB vaccine series
Vaccinated - known responder Adequate anti-HBs is $\geq 10$ mIU/ml	No treatment	No treatment	No treatment
Vaccinated - known nonresponder	HBIG X 1 and revaccination series, OR HBIG X 2 ***	No treatment	Treat as if source were HBsAg-positive
Vaccinated - unknown response status	Test exposed person for anti-HBs: If adequate - no tx  If inadequate - HBIG X 1 PLUS vaccine booster	No treatment	Test exposed person for anti-HBs: If adequate - no tx  If inadequate - give vaccine booster/recheck titer in 1 - 2 months

\* Exposure is percutaneous (laceration, needlestick, bite) or permucosal (ocular or mucous-membrane) contact with blood.

\*\* HBIG dose is 0.06 mL/kg administered IM at different site than vaccine, preferably < 24 hours after exposure, but no greater than 7 days post-exposure.

\*\*\* Give 1 dose of HBIG and reinitiate vaccine series for nonresponders who have not completed second 3-dose vaccine series;

Give HBIG X 2 for nonresponders who have failed second vaccine series

Adapted from CDC guidelines, 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* 2001;50(RR-11):1-52.

## CONTRAINDICATIONS FOR INTERFERON/ RIBAVIRIN THERAPY\*

### INTERFERON

(standard and pegylated)

#### Absolute Contraindications:

- Decompensated cirrhosis
- Hypersensitivity to interferon
- Solid organ transplantation
- Active suicidal ideation or other neuropsychiatric condition that is poorly controlled
- Ongoing alcohol or illicit drug usage - refer for evaluation

#### Relative Contraindications:

- Age > 60 years
- Bone marrow dysfunction - neutropenia/thrombocytopenia
- Hepatitis B co-infection
- HIV infection with acquired immunodeficiency syndrome (AIDS)
- Diabetes that is poorly controlled
- Renal insufficiency; creatinine clearance < 50 ml/min
- History of recent alcohol abuse or illicit drug usage - refer for evaluation

### RIBAVIRIN

#### Absolute Contraindications

- Pregnancy - due to risk of fetal malformations and fetal death; pregnancy test required
- NOTE: women of childbearing potential AND men must use two forms of effective contraception during treatment and during the six-months post-treatment**
- Hemoglobinopathies, hemolytic anemias or other severe anemias
- Ischemic cardiovascular disease or cerebrovascular disease
- Renal insufficiency - creatinine clearance < 50 ml/min

\*Refer to drug manufacturers' warnings in addition to highlighted contraindications

## **EVALUATION STRATEGY FOR TREATMENT OF CHRONIC HEPATITIS C**

### **Screen for HCV infection**

**EIA+ or CIA+ for high risk inmates**

**EIA+ or CIA+ supplemented by RIBA+ for low risk inmates**

**OR**

**EIA+ or CIA+ with high signal-to-cutoff ratio - no RIBA required**

**EIA+ or CIA+ with low signal-to-cutoff ratio - confirm with supplemental RIBA+**

↓

### **Conduct baseline evaluation**

**Medical history/assess alcohol use/substance abuse/counseling on risk reduction**

**Refer to drug education/drug treatment programs as appropriate**

**Physical examination/basic lab studies including liver enzymes/function studies**

**Evaluate other potential causes of liver disease as appropriate**

**Evidence of decompensated cirrhosis - manage without antiviral therapy**

↓

### **Review contraindications to antiviral treatment**

**Assess contraindications to interferon and ribavirin prior to liver biopsy**

**Mental health assessment**

↓

### **Assess ALT measurements**

**If ALT is two times normal or greater - confirm elevation and refer for liver biopsy**

**If ALT is persistently normal or < 2 times normal - biopsy selectively - (see text)**

**If evidence of compensated cirrhosis - consider liver biopsy or treat empirically**

↓

### **Confirm chronic HCV infection prior to liver biopsy**

**Detect HCV RNA by qualitative NAT assay with threshold of < 50 IU/mL**

↓

### **Stage liver disease and assess indications for treatment**

**Liver biopsy to assess degree of fibrosis and inflammation (see text)**

**If liver biopsy is normal or shows minimal fibrosis - monitor/rebiopsy in 1-5 years**

**If liver biopsy shows portal or bridging fibrosis and moderate inflammation and necrosis -  
consider antiviral therapy**

↓

**Determine HCV genotype and test for HCV RNA prior to treatment**

**Determine HCV genotype**

**If genotype 1 - obtain quantitative HCV RNA assay**

**If genotype 2 or 3 - obtain qualitative HCV RNA assay**

↓

**Review and complete relevant studies and evaluations prior to treatment**

**Physician evaluation and review of liver enzymes, bilirubin, albumin, prothrombin time**

**Serum chemistries/CBC/platelet count/thyroid function studies**

**Ferritin/ANA/other liver diagnostic studies as appropriate**

**Pregnancy test for all females**

**Cardiac risk assessment**

**Mental health assessment**

↓

**Initiate antiviral drug therapy**

**(HCV Genotype 2 or 3)**

**Treat with pegylated interferon/ribavirin combination therapy for 24 weeks and;  
check qualitative HCV RNA at completion of treatment.**

**(HCV Genotype 1)**

**Treat with pegylated interferon/ribavirin therapy and;  
check HCV RNA quantitative assay after 12 weeks.**

**If viral levels have not decreased by 2 logs ( $10^2$ ) at 12 weeks - discontinue therapy;  
otherwise continue therapy for 48 weeks.**

**Check HCV RNA assay at completion of treatment**

**(All Genotypes - if ribavirin contraindicated)**

**Treat with pegylated interferon for 48 weeks**

**Monitor like genotype 1 patients on combination therapy**

↓

**Monitor post-treatment**

**Repeat ALT every 2 months for 6 months after completion of effective therapy**

**Measure HCV RNA 6 months after completion of effective therapy**

**Referral to drug education/tx program if appropriate and not previously completed**

## Antiviral Medications for Chronic Hepatitis C - Interferon Preparations

Medication	Dosage	Baseline tests	Monitoring	Toxicities	Comments
<b>Interferon alfa (2a or 2b)</b>  (Roferon-A®) (Intron-A®)	3 million units SC 3x/week	history and physical ALT, AST, bilirubin, albumin, alkaline phosphatase PT/INR  CBC (with diff and plts) chemistry panel creatinine/BUN thyroid function studies ferritin/ANA	clinician evaluations (every week X 1 month, then monthly)  ALT at weeks 1, 2, 4, and 8-12 weeks thereafter  CBC (with diff and plts), at weeks 1, 2, 4, and 4-8 weeks thereafter  TSH every 3 months	fever fatigue myalgia  neuropsychiatric (rage, confusion, depression, suicide)	pegylated interferon in combination with ribavirin is the recommended treatment regimen for chronic hepatitis C for most patients
<b>Pegylated Interferon alfa-2b</b>  (PEG-Intron®)	1.5 mcg/kg SC q week with ribavirin  1.0 mcg/kg SC q week when used as monotherapy	anti-HIV HBsAg  liver biopsy HCV genotype HCV RNA NAT	renal and liver function studies periodically; and whenever clinically warranted	bone marrow suppression thyroid dysfunction renal failure	peginterferon alfa-2b (PEG-Intron®) is available only via the PEG-Intron Access Assurance Program
<b>Pegylated Interferon alfa-2a</b>  (PEGASYS®)	180 mcg SC q week	psychologic/psychiatric evaluation	screen for depression psych/psych evaluations as clinically needed		Patients with compensated cirrhosis and HIV co-infection may have more severe adverse effects: monitor hematologic parameters closely

## Antiviral Medications for Chronic Hepatitis C - Ribavirin Preparations

Medication	Dosage	Baseline Tests	Monitoring	Toxicities	Comments
<b>Ribavirin</b> with interferon 200mg caps (REBETOL®)	≤ 75 kg: 400 mg PO q AM 600 mg PO q PM  >75 kg: 600mg PO BID	CBC with diff and platelets; see baseline tests for interferon since ribavirin always given in combination with interferon preparation	ongoing monitoring of hemoglobin and hematocrit for evidence of hemolytic anemia, which often occurs between 1 and 4 weeks after initiating therapy.	hemolysis - expect 5% - 10% decrease in hematocrit  NOTE: patients with cirrhosis may have more severe anemia	ribavirin capsules should be taken with food  <b>ribavirin should be administered on pill line to ensure compliance and increase efficacy</b>
<b>Ribavirin<sup>1,2</sup></b> (/pegylated interferon)	<b>REBETOL®</b> genotype 2 or 3: 400 mg PO BID  genotype 1: same dosages as used when combined with nonpegylated IFN  <b>COPEGUS®</b> genotype 1 or 4: <75 kg = 400 mg PO qAM 600 mg PO qPM >75kg = 600 mg PO BID  genotype 2 or 3: 400 mg PO BID	<b>pregnancy test for all female inmates</b>	<b>NOTE: women of childbearing potential AND men must use two forms of birth control during treatment AND during the 6 months after antiviral therapy is completed.</b>  consider monthly pregnancy tests for female inmates at risk of pregnancy, e.g., community access	NOTE: anemia may precipitate angina, dyspnea, fatigue  <b>teratogenic</b> - counsel women AND men regarding the risk of birth defects and the necessity of birth control before, during, and after treatment is completed.  counseling is particularly important for inmates awaiting release.	the optimal dose of ribavirin depends on HCV genotype, i.e., higher doses are required for genotype 1  ribavirin should not be used in patients with a creatinine clearance of <50 ml/min

<sup>1</sup>COPEGUS® and REBETOL®, are formulated as tablets and capsules respectively; and are considered to be bioequivalent by the FDA.

<sup>2</sup>In clinical studies pegylated interferon alfa-2a was administered with COPEGUS ® and pegylated interferon alfa-2b was administered with REBETOL®.

## DOSAGE ADJUSTMENTS FOR VIRAL HEPATITIS MEDICATIONS

<b>Medication</b>	<b>Parameter</b>	<b>Adjustment</b>
<b>Lamivudine</b>	creatinine clearance (mL/min) $\geq$ 50	100 mg/day
	30-49	100 mg first dose, then 50 mg/day
	15-29	100 mg first dose, then 25 mg/day
	5-14	35 mg first dose, then 15 mg/day
	<5	35 mg first dose, then 10 mg/day
<b>Interferons</b>	WBC < 1500 neutrophil ct < 750 platelet ct < 80,000	reduce dose by 50%
<b>Ribavirin</b>	hemoglobin < 10g/dl	reduce dose to 200 mg AM, 400 mg q HS
<b>Ribavirin and Interferons</b>	hemoglobin < 8.5 g/dL WBC < 1000 neutrophil ct < 500 platelet ct < 50,000	discontinue
<b>Special patients: For inmates with history of cardiac disease (CHF, previous history of MI, angina, or known coronary artery disease by angiography)</b>		
<b>Ribavirin</b>	2 g/dL drop in hemoglobin during any four week period of treatment.	reduce dose to 200 mg AM, 400 mg q HS
<b>Interferon</b>		reduce dose by 50%
<b>Ribavirin and Interferons</b>	hemoglobin < 12 g/dL after 4 weeks at reduced dose above	discontinue

---

# **HIV INFECTION**

---

## Appendix 1 - Medical Evaluations for Inmates with HIV Infection by Immunologic Status

### Baseline Evaluation:

(1) history/PE including: fundoscopic exam/PAP smear for women; (2) dental exam; (3) CBC/platelets; (4) CD4+ T-cell count, absolute and %; (5) HIV RNA (viral load); (6) electrolytes/creatinine/LFTs; (7) RPR/FTA (review tx history); (8) PPD/symptom review and chest x-ray; (9) toxoplasma IgG; (10) viral hepatitis serologies; (11) pneumococcal vaccine; (12) hepatitis A and B vaccines if at-risk; (13) lipid profile prior to antiretroviral therapy.

### Periodic Evaluation:

(1) CBC/platelet count, LFTs/creatinine/electrolytes - q 3-4 months on anti-retroviral tx; (2) periodic RPR as clinically indicated; (3) Pap smear - at 6 months x 1 then annually (refer to gynecologist as indicated for colposcopy ); (4) influenza vaccination annually; (5) other laboratory tests as indicated.

CD4+ T-cells/mm <sup>3</sup>	CD4+ T-cells assessment	Viral load	Clinician exam	Special Evaluations/Treatments
> 350	q 3-6 months	q 6 months off tx q 3-4 mon. on tx	q 3 months	Observe most inmates off therapy Consider antiretroviral tx if viral load is elevated Carefully weigh adherence issues and patient motivation prior to treating
200-350	q 3-6 months	q 3-4 months	q 3 months	Consider antiretroviral therapy for most patients
100-199	q 3-6 months	q 3-4 months	q 2 months	Initiate antiretroviral therapy regardless of plasma HIV RNA levels Initiate PCP prophylaxis
50-99	q 3-6 months	q 3-4 months	monthly	Initiate antiretroviral therapy regardless of plasma HIV RNA levels Initiate toxoplasmosis prophylaxis/maintain PCP prophylaxis Baseline fundoscopic exam by eye doctor to screen for CMV
0-49	q 6 months	q 3-4 months	monthly	Initiate antiretroviral therapy regardless of plasma HIV RNA levels Maintain PCP/toxoplasmosis prophylaxis Initiate MAC prophylaxis Fundoscopic exam q 6 months by eye doctor to screen for CMV



## Appendix 2 - 1993 Revised CDC Classification System for HIV Infection

CD4+ T-cells/ mm <sup>3</sup>	CD4+ (%)	A Asymptomatic	B Symptomatic Disease	C AIDS Indicator Conditions
≥ 500	≥ 29%	A1	B1	C1
200-499	14-28	A2	B2	C2
< 200	< 14	A3	B3	C3
		<p>* acute (primary) HIV infection</p> <p>*PGL (persistent generalized lymphadenopathy)</p>	<p>Symptomatic conditions that are attributed to HIV infection; or the conditions have a clinical course complicated by HIV.</p> <p>Conditions include but are not limited to the following:</p> <ul style="list-style-type: none"> <li>* bacillary angiomatosis</li> <li>* oral candidiasis</li> <li>* vulvovaginal candidiasis: persistent (&gt; 1 month or poorly responsive to tx)</li> <li>* cervical dysplasia (moderate-severe or CIS)</li> <li>* ITP</li> <li>* oral hairy leukoplakia</li> <li>* listeriosis</li> <li>* herpes zoster (involving more than 1 dermatome or 2 separate episodes)</li> </ul>	<ul style="list-style-type: none"> <li>* candidiasis: esophageal</li> <li>* coccidiomycosis: extrapulmonary</li> <li>* cryptococcoses: extrapulmonary</li> <li>* cervical cancer, invasive</li> <li>* cryptosporidiosis: chronic (&gt; 1 month)</li> <li>* cytomegalovirus retinitis (or CMV in organs other than liver/spleen/nodes)</li> <li>* HIV encephalopathy</li> <li>* herpes simplex: esophagitis, genital/oral ulcers &gt; 1 month</li> <li>* histoplasmosis: extrapulmonary/disseminated</li> <li>* isosporiasis: chronic diarrhea (&gt; 1 month)</li> <li>* Kaposi's sarcoma</li> <li>* lymphoma: Burkitt's, immunoblastic, brain primary</li> <li>* MAC or <i>M. Kansasi</i>: extrapulmonary/disseminated</li> <li>* <i>M. tuberculosis</i>: pulmonary or extrapulmonary</li> <li>* other mycobacterium: extrapulmonary/disseminated</li> <li>* <i>Pneumocystis carinii</i> pneumonia (PCP)</li> <li>* pneumonia (recurrent: 2 or more episodes within 12 months)</li> <li>* progressive multifocal leukoencephalopathy (PML)</li> <li>* salmonella septicemia (&gt; 1 occurrence)</li> <li>* toxoplasmosis (CNS)</li> <li>* wasting syndrome secondary to HIV infection</li> </ul>

- Category B conditions take precedence over those in Category A; and Category C conditions take precedence over those in Category B.
- For classification purposes, the lowest accurate CD4+ T-lymphocyte count or percentage (not necessarily the most recent) should be utilized.
- **Categories A3, B3, and C1, C2, and C3 are reported as AIDS cases.**

### Appendix 3 - Prophylaxis for HIV-Related Opportunistic Infections

Pathogen	Drug	Dosage	Toxicities	Comments
<p><b><i>Pneumocystis carinii</i></b></p> <p>Indications:</p> <p>(1) CD4+ T-cells &lt; 200 /mm<sup>3</sup> or &lt; 14%</p> <p>(2) prior PCP</p> <p>(3) oral candidiasis</p>	<p>TMP-SMX (Bactrim, Septra)</p> <p>Dapsone</p> <p>Pentamidine</p>	<p>1 SS/day <b>(1st choice)</b></p> <p>1 DS/day</p> <p>1 DS 3x/week</p> <p>100 mg/day; or 50 mg BID</p> <p>300 mg q month aerosolized (administer by Respigard II nebulizer)</p>	<p>rash/fever/nausea leukopenia/hepatitis</p> <p>hemolysis methemoglobinemia</p> <p>bronchospasm/cough (responds to bronchodilator tx)</p>	<p>prevents toxo and bacterial infections use 1 DS/day if toxo IgG+</p> <p>screen for G-6-PD deficiency</p> <p>obtain screening chest x-ray for TB</p> <p>can stop primary and secondary PCP prophy if CD4+ T-cells &gt; 200/mm<sup>3</sup> for 3 months</p>
<p><b><i>Toxoplasmosis</i></b></p> <p>Indication:</p> <p>Toxo IgG+ and CD4+ T-cells: &lt; 100 cells/mm<sup>3</sup></p>	<p>TMP-SMX (Bactrim, Septra)</p> <p>Dapsone + Pyrimethamine + Leucovorin</p>	<p>1 DS/day <b>(1st choice)</b></p> <p>1 SS/day</p> <p>50 mg/day 50 mg/week 25 mg/week</p>	<p>rash/fever/nausea leukopenia/hepatitis</p> <p>hemolysis/anemia</p>	<p>repeat toxo IgG if previously negative when CD4+ T-cells &lt; 100/mm<sup>3</sup></p> <p>monitor for anemia/leukopenia with either regimen - CBC q 3-4 months</p> <p>can stop primary toxo prophylaxis if CD4+ count is &gt; 200/mm<sup>3</sup> for 3 months; can stop secondary prophylaxis if CD4+ T-cell count is &gt; 200/mm<sup>3</sup> for 6 months</p>
<p><b><i>Mycobacterium avium</i> *</b></p> <p>Indication:</p> <p>CD4+ &lt; 50 cells/mm<sup>3</sup></p> <p>*R/O disseminated MAC infection with blood culture before giving prophylaxis</p>	<p>Azithromycin</p> <p>Clarithromycin</p> <p>Rifabutin</p>	<p>1200 mg/week <b>(1st choice)</b></p> <p>500 mg BID</p> <p>300 mg/day</p>	<p>nausea/vomiting</p> <p>nausea/vomiting</p> <p>uveitis, arthralgias hepatitis</p>	<p>can stop primary prophylaxis if CD4+ count is &gt; 100/mm<sup>3</sup> for 3 months; can stop secondary prophylaxis if CD4+ count is &gt; 100/mm<sup>3</sup> for 6 months.</p> <p>uveitis when given with fluconazole creates rifampin resistance review drug interactions</p>



### Appendix 4 - Treatment Indications for Antiretroviral Therapy for HIV Infection

Immune Status	Treatment Options	Comments
<p>Asymptomatic High CD4+ T-cell count</p> <p>CD4+ T-cells &gt; 350/mm<sup>3</sup></p>	<p>Observe most patients</p> <p>Initiate treatment on case by case basis for inmates with HIV RNA &gt; 55,000 by (RT-PCR) or 30,000 by (bDNA)</p>	<p>Monitor HIV RNA, CD4+ T-cell count, and clinical presentation for disease progression. Inmates with CD4+ T-cells between 350-500/mm<sup>3</sup> or significant elevations in HIV RNA, e.g. &gt; 55,000 c/mL (RT-PCR) , should be monitored closely.</p>
<p>Asymptomatic Depressed CD4+ T-cell count</p> <p>CD4+ T-cells 200-350/mm<sup>3</sup></p>	<p>Antiretroviral therapy per DHHS guidelines for most patients; some experts recommend deferring drug therapy with careful monitoring for patients with low HIV RNA, e.g. &lt; 20,000 cps/mL</p> <p>(Confirm depressed CD4+ T-cell count with second test before treating)</p>	<p>HAART should be initiated in accordance with current DHHS guidelines. The goal of treatment is to reduce plasma HIV RNA to undetectable levels (50 cps/mL) within 16-20 weeks of initiating antiretroviral treatment. Effective treatment is predicted by a one log (10 fold) decline in HIV RNA levels within 8 weeks of initiating treatment. Inmates who fail to attain undetectable plasma HIV RNA after 6 months of therapy should be reevaluated. The HIV RNA level nadir strongly predicts the durability of antiviral suppression.</p> <p>&gt; 95% adherence to the antiretroviral regimen is necessary to have an 80% chance of achieving viral suppression 6 months after initiating therapy. Only 30% of treated patients achieve viral suppression when adherence to therapy falls to 70-80%. Adherence improves with inmate education, simplifying pill burden/treatment regimen, and effectively treating drug side effects.</p>
<p>AIDS or severe symptoms</p> <p>Asymptomatic with CD4+ T-cell count &lt; 200/mm<sup>3</sup></p> <p>HIV RNA = any value</p>	<p>Antiretroviral therapy per DHHS guidelines</p>	<p>If the inmate has been on antiretroviral therapy in the past or requires a change in antiretroviral medications; consult with a physician with expertise in managing antiretroviral therapy.</p>



### Appendix 5 - Antiretroviral Therapy - NucleoSIDE Reverse Transcriptase Inhibitors (NRTIs)

Antiretroviral Tx	Dosage	Baseline Labs	Monitoring Labs	Toxicities	Comments
<b>Zidovudine</b> (ZDV) (azidothymidine) (AZT) Retrovir  100 mg caps. 300 mg tabs.	200 mg TID or 300 mg BID  Combivir 1 BID Trizivir 1 BID	CBC/diff	CBC/diff 2,6, and 12 weeks after starting tx.  every 3-4 months if stable	*granulocytopenia *anemia neutropenia myalgia *lactic acidosis *hepatomegaly *myopathy headache insomnia	marrow toxicity with gancyclovir hematologic toxicities with $\alpha$ - interferon reduce dose for moderate toxicities good CNS penetration  with 3TC as Combivir with 3TC and abacavir as Trizivir Do not use with stavudine (antagonizes)
<b>Lamivudine</b> (3TC) Epivir  150 mg caps.	150 mg BID	none	none	*lactic acidosis *hepatomegaly	with AZT as Combivir with AZT and abacavir as Trizivir do not administer with zalcitabine sulfamethoxazole/trimethoprim $\uparrow$ lamivudine AUC 44% best tolerated NRTI
<b>Stavudine</b> (d4T) Zerit  15, 20, 30, 40 mg caps.	> 60kg: 40 mg BID < 60kg: 30 mg BID	CBC/diff	CBC/diff	neuropathy (dose related) *lactic acidosis *hepatomegaly *pancreatitis	reduce dose for renal disease based on creatinine clearance NRTI with highest probability of lactic acidosis Do not use with zidovudine (antagonizes)

<b>Didanosine</b> (ddI) Videx Videx EC  25, 50, 100, 150, 200 buffered tabs. 400 mg EC caps. also powder form.	> 60kg:200 mg BID < 60kg:125 mg BID; OR, 250-400 mg daily, but BID preferred  <b>take on empty</b>	CBC/diff amylase liver function	CBC/diff amylase/liver function tests with GI symptoms	diarrhea nausea *pancreatitis neuropathy *lactic acidosis *hepatomegaly	do not prescribe with history of pancreatitis or hx of alcohol abuse adjust dose in renal/hepatic disease multiple drug interactions using buffered ddI: e.g., IDV and RTV Videx EC does not have buffer.  do not give with ddC (overlapping toxicities)
<b>Abacavir</b> Ziagen  300 mg tabs.	300 mg BID	none	none	*hypersensitivity reaction (fever, rash, GI symptoms) *lactic acidosis *hepatomegaly	DO NOT restart abacavir following a hypersensitivity reaction alcohol ↑ abacavir AUC combined with 3TC and AZT as Trizivir

### Antiretroviral Therapy - NucleoTIDE Analog Reverse Transcriptase Inhibitors (NARTIs)

<b>Tenofovir</b> (PMPA) Viread	300 mg once daily	transaminases creatinine/clearance if abnormal	transaminases CPK	*lactic acidosis *hepatomegaly nausea/vomiting diarrhea flatulence	2 hours before or 1 hour after ddI take with meals do not administer if Ccr < 60ml/min
--------------------------------------	-------------------	--	----------------------	--	---

- Review updated antiretroviral drug information/interactions from DHHS guidelines; dosage adjustments frequently required depending on drug regimen
- Nucleotides are phosphorylated nucleosides with similar mechanisms of action.
- \* Indicates Black Box Warning

## Appendix 6 - Antiretroviral Therapy - Non-nucleoside Reverse Transcriptase Inhibitors (NNRTIs)

Antiretroviral Tx	Dosage	Baseline Labs	Monitoring Labs	Toxicities	Comments
<b>Nevirapine</b>  Viramune  200 mg tabs.	200 mg tabs one daily for 14 days, then if tolerated advance to 200 mg BID	CBC liver transaminases	transaminases periodically	rash *Stevens-Johnson *hepatotoxicity	rash reduced by gradual dose escalation when drug is stopped; restart at 200 mg daily for 14 day lead-in period rash is worse than other NNRTI's  methadone dose may need increased
<b>Delavirdine</b>  Rescriptor  100, 200 mg tabs.	400 mg TID   no dose escalation required	CBC liver transaminases	CBC  transaminases periodically (more often with saquinavir)	rash  neutropenia with nelfinavir	multiple drug interactions: review all drugs serious toxicities with cisapride, terfenadine, astemizole; absorption decreased with antacids; administer separately from ddI. increases serum concentration of PI's potential for rapid resistance
<b>Efavirenz</b>  Sustiva  50, 100, 200, 600 mg caps.	600 mg daily, HS   no dose escalation required	CBC liver transaminases	CBC transaminases periodically cholesterol	dizziness psychiatric symptoms hallucinations vivid dreams nightmares rash - mild fetal anomalies	extremely potent antiviral effect not recommended for pregnant women do not administer concurrently with cisapride, midazolam, triazolam, or ergot derivatives avoid high fat meals methadone dose may need increased

- **Non-nucleoside analogues should never be prescribed in combination with one another.**

- Review updated antiretroviral drug information/interactions from DHHS guidelines; dosage adjustments frequently required depending on drug regimen

\* Indicates Black Box Warning

## Appendix 7 - Antiretroviral Therapy - Protease Inhibitors (PIs)

Antiretroviral Tx	Dosage	Baseline Labs	Monitoring Labs	Toxicities also see footnotes	Comments
<b>Nelfinavir</b> Viracept  250 mg tabs.	750 mg TID; OR 1250 BID	transaminases glucose fasting lipid profile	transaminases glucose every 3-4 months  lipids as needed	diarrhea	take with light snack or with meals do not coadminister with terfenadine, astemizole, cisapride, rifampin, triazolam or midazolam best tolerated PI diarrhea usually resolves with continued use
<b>Indinavir</b> Crixivan  200, 333, 400 mg caps.	800 mg q 8 h	transaminases renal function glucose fasting lipid profile	transaminases renal function glucose every 3-4 months  lipids as needed	kidney stones nausea vomiting dry skin alopecia	take 1 hr before or 2 hrs after meal can take with skim milk, juice, coffee, tea or low fat, low calorie, and low protein meal separate dosing with ddI by 1 hour drink at least 1.5 liters of water per day sensitive to moisture, dispense/store in original container or no more than 1 wk supply in Rx vial do not concurrently give with terfenadine, astemizole, cisapride, triazolam, or midazolam asymptomatic increase in bilirubin
<b>Ritonavir</b> Norvir  100 mg caps.  600 mg/7.5 mL sol.	600 mg BID  Initiate lower dose then escalate to reduce GI effects	transaminases glucose fasting lipid profile CPK uric acid	transaminases renal function glucose every 3-4 months  CPK uric acid lipids as needed	nausea vomiting abdominal pain taste perversion parenthesis lipid disorders	take with food multiple drug interactions do not coadminister with amiodarone, bepridil, bupropion, cisapride, clozapine, encainide, flecainide, meperidine, piroxicam, propafenone, propoxyphene, quinidine, rifabutin, alprazolam, clorazepate, diazepam, estazolam, flurazepam, midazolam, triazolam, zolpidem (these are absolute contraindications) PI most correlated with lipid abnormalities combined with lopinavir as Kaletra

<p><b>Saquinavir</b> Fortovase (soft-gel) 200 mg caps</p> <p>Invirase (hard-gel) 200 mg caps</p>	<p>Fortovase 1200 mg TID; 400 mg BID with ritonavir 400 mg BID</p> <p>Invirase no longer recommended as a sole PI in any regimen given 400 mg BID</p>	<p>transaminases glucose fasting lipid profile</p>	<p>transaminases glucose every 3-4 months</p> <p>lipids as needed</p>	<p>diarrhea nausea abdominal discomfort dyspepsia</p>	<p>Take within 2 hours after a meal Use capsules within 3 months after removed from refrigeration</p> <p>Avoid coadministration with cisapride, triazolam, midazolam and ergot derivatives</p> <p>Do not use saquinavir HGC (Hard Gel Capsule) (Invirase®) except with ritonavir</p>
<p><b>Amprenavir</b> Agenerase</p> <p>50, 150 mg caps.</p>	<p>&gt; 50 kg: 1200 mg BID</p> <p>&lt; 50 kg: 20 mg/kg BID max: 2400 mg daily</p> <p>NOTE: oral solution - different dosaging</p>	<p>transaminases glucose fasting lipid profile</p>	<p>transaminases glucose every 3-4 months</p>	<p>Stevens-Johnson rash nausea diarrhea perioral paresthesias</p>	<p>avoid high fat meals avoid vitamin E supplementation</p> <p>do not coadminister with astemizole, bepridil, cisapride, dihydroergotamine, ergotamine, midazolam, triazolam, rifampin severe drug interactions possible cross-sensitivity with sulfonamides</p> <p>take 1 hour before or after antacids or ddi many patients can continue or restart amprenavir</p>
<p><b>Lopinavir</b> Kaletra (contains ritonavir)</p>	<p>400/100 mg bid</p> <p>(533/133 mg bid considered with efavirenz or nevirapine)</p>	<p>transaminases glucose cholesterol triglycerides</p>	<p>transaminases glucose cholesterol triglycerides</p>	<p>pancreatitis diarrhea (mild) asthenia nausea headaches</p>	<p>available only with ritonavir take with food use within 2 months after taken from refrigerator do not give with flecainide, propafenone, dihydroergotamine, ergonovine, ergotamine, methylerfonovine, pimoziide, midazolam, triazolam many other drug interactions take ddi 1 hour before or 2 hours after Kaletra</p>

- Dose escalation for ritonavir: 300 mg BID (day 1-2); 400 mg BID (day 3-5); 500 mg BID (day 6-13); then 600 mg BID
- Protease inhibitors may have serious interactions with certain drugs metabolized by the liver, e.g. astemizole, cisapride; review drug interactions carefully.
- All protease inhibitors may cause hyperglycemia, diabetic ketoacidosis, lipid abnormalities, and fat redistribution.
- Review updated antiretroviral drug information/interactions from DHHS guidelines; dosage adjustments frequently required depending on drug regimen

## Appendix 8 - HIV Post-exposure Prophylaxis (PEP) Guidelines\*

TYPE OF INJURY	Exposure Type (severity)	HIV INFECTION STATUS OF SOURCE (class/viral load)**				COUNSEL  Based on any one X:  (no. of PEP drugs)	TREATMENT REGIMEN  (Base treatment on resistance patterns, and if needed, obtain consult)
		<i>low</i>	<i>high</i>	<i>unknown status or source</i>	<i>HIV(-)</i> NoPEP		
<b>Needle stick (i.e. puncture, or percutaneous)</b>	<b>Deep or more severe</b>	X	X	X		<b>Recommend (3)</b>  <b>Generally NO PEP, however, consider (2)</b>	<ul style="list-style-type: none"> <li>▶ <b><u>EXPANDED</u>: BASIC 2 drug regimen plus 1 of the following (NFV or EFV or IDV or ABC)</b></li> <li>▶ <b><u>BASIC 2</u> - drug regimen: (ZDV + 3TC); or (3TC + d4T); or (ddI + d4T)</b></li> </ul>
<b>Needle stick OR Mucous membrane (splash, spray) OR Open, compromised skin, i.e. dermatitis, chapped, abrasion, open wound, bites)</b>	<b>Superficial/ less severe OR large volume of a blood splash</b>	X	X	X		<b>Recommend (3)</b>  <b>Recommend (2)</b>  <b>Generally NO PEP, however, consider (2)</b>	<ul style="list-style-type: none"> <li>▶ <b>BASIC 2 + 1 EXPANDED (above)</b></li> <li>▶ <b>BASIC 2-drug regimen (above)</b></li> <li>▶ <b>BASIC 2-drug regimen (above)</b></li> </ul>
<b>Mucous membrane (splash, spray) OR Open, compromised skin exposures*** defined above, bites.</b>	<b>Small volume or few drops</b>	X	X	X		<b>Recommend (2)</b>  <b>Consider (2)</b>  <b>Generally NO PEP, however, consider (2)</b>	<ul style="list-style-type: none"> <li>▶ <b>BASIC 2-drug regimen (above)</b></li> <li>▶ <b>BASIC 2-drug regimen (above)</b></li> <li>▶ <b>BASIC 2-drug regimen (above)</b></li> </ul>

\* Review CDC guidelines: MMWR, Vol. 50 (RR-11) June 29, 2001 for complete guidance

\*\* If the source has known HIV infection, PEP is recommended or considered based on type of injury and infection status of the source (low viral load is < 1,500 c/mL or asymptomatic HIV infection and high viral load is > 1,500 c/mL or AIDS); if infection status of source is unknown PEP is usually not indicated, but can be considered; If the source is HIV seronegative PEP is not warranted.

\*\*\* For skin exposures, follow-up is indicated if there is open, compromised non-intact skin (defined above) resulting in bloodborne/other potentially infectious material (OPIM) exposure to either person. Otherwise, no PEP is warranted. OPIM includes: semen, vaginal secretions; and CSF, synovial, pleural, peritoneal, pericardial, and amniotic fluids.

## Appendix 8 - HIV Post-exposure Prophylaxis (PEP) - Definitions

### INJURY TYPE

- (1) Needle stick, puncture or percutaneous injury, i.e. contaminated needle or sharp instrument that penetrates or cuts the skin.
- (2) Mucous membrane is a splash or spray of blood or OPIM into the eyes, nose, ear, mouth; or that inoculates into compromised, open skin.
- (3) Open, compromised skin exposures without barrier protection that has resulted in direct exposure to blood/OPIM, should be clinically evaluated. For human bites, include the possibility that both the person bitten and the person who inflicted the bite were exposed to bloodborne pathogens/OPIM. Transmission of HBV or HIV infection has only rarely been reported by this route.

### EXPOSURE TYPE (SEVERITY FACTOR)

- (1) More severe or deep: large-bore hollow needle, deep puncture, visible blood on device, or needle used in patient's artery or vein.
- (2) Superficial or less severe: solid needle or superficial scratch injury.
- (3) Large volume is a major blood volume
- (4) Small volume is a few drops.

### HIV INFECTION STATUS OF SOURCE

- (1) Low viral load or HIV-Positive CLASS I: asymptomatic or viral load is < 1,500 RNA cps/mL.
- (2) High viral load or HIV-Positive CLASS II: asymptomatic HIV infection, AIDS, acute seroconversion, or viral load is > 1,000 RNA cps/mL.
- (3) Source of unknown HIV status: i.e. deceased, or person refuses testing, or no samples available; consider clinical assessment & risk behaviors.
- or Unknown source: i.e. exposure from inappropriately disposed blood; from a sharp container; consider the infection among the patient setting.

### COUNSEL

- (1) Recommend: means the exposure represents an increased risk of transmission could take place and the use of PEP is recommended.
- (2) Consider: means PEP is optional: an individualized "decision" is made between the exposed person and provider. If PEP is initiated and the source is later determined to be HIV-negative, PEP should be discontinued.
- (3) Generally none: means no PEP is warranted; however in settings where exposure to HIV-infected persons is likely, PEP should be considered.
- (4) None indicated: No PEP is warranted when the source is HIV negative (-).

**TREATMENT:** PEP tx is 4 weeks (at least 28 days) of 2 or 3 oral drugs: (1) Basic 2-drug PEP = ZDV + 3TC ; or 3TC + d4T; or ddI + d4T, or base tx on resistance patterns. If resistance, obtain ID consult. (2) 3-drug PEP = Basic 2-drug combination + (NFV, or IDV or EFV or ABC) , or base tx on resistance patterns. Drug toxicity monitoring: CBC and renal and hepatic function tests at baseline and 2 weeks after starting PEP.

**MEDICATIONS/DOSING:** Zidovudine (ZDV) = 600 mg per day in two or three divided doses, Lamivudine (3TC) = 150 mg BID; Stavudine (d4T) = > 60 kg: 40 mg BID, or < 60 kg: 30 mg BID; Didanosine (ddI) = > 60 kg: 200 mg BID, or < 60 kg: 125 mg BID, or 300 - 400 mg daily on empty stomach; Indinavir (IDV) = 800 mg every 8 hours on empty stomach; Efavirenz (EFV) = 600 mg daily at bedtime; Abacavir (ABC) = 300 mg BID; Nelfinavir (NFV) = 750 mg TID with food, or 1250 mg twice daily.

## Appendix 10 - Resources: Prevention and Treatment of HIV Infection

### Centers for Disease Control and Prevention

#### National Prevention Information Network

P.O. Box 6003, Rockville, MD 20849-6003

Telephone 1-800-458-5231

Internet address: <http://www.cdcnpin.org>

PEP-Line, DHHS/CDC, managing work exposures with post-exposure prophylaxis.

Internet address: <http://www.epi-center.uscf.edu/warmline>

Post-exposure prophylaxis hotline/24 hours per day/7 days per week - **1-888-448-4911**

#### National Center for HIV, STD, and TB Prevention

##### Division of HIV/AIDS Prevention

Information on prevention, surveillance, research, and training.

Internet address: <http://www.cdc.gov/hiv/dhap.htm>

### Department of Health and Human Services/U.S. Public Health Service

The HIV/AIDS Treatment Information Service (ATIS)

AIDS Treatment Information Service: **1-800-448-0440**

Interagency website: <http://www.hivatis.org>

National AIDS Hotline (English): 1-800-342-2437

National AIDS Hotline (Spanish): 1-800-344-7432

### Drug Treatment Directory

National Institutes of Health Center of Pharmacology

Internet address: <http://www.cc.nih.gov/phar>

### Health Resources and Services Administration (HRSA)

5600 Fishers Lane, Rm-746; Rockville, MD; 20857

Telephone: (301) 443-6652

AIDS Drug Assistance Program (ADAP); *Getting HIV/AIDS Care, State ADAP Contacts.*

Internet address: <http://hab.hrsa.gov/getting.html>

HRSA/AIDS ETC National HIV Telephone Consultation Service (Warmline),

**1- 800 -933-3413**, 7:30 AM - 5:00 PM PST (Mon.-Fri.)

### HIV/AIDS Information Center; Journal of the American Medical Association

Internet address: <http://www.ama-assn.org/special/hiv/hivhome.htm>

**HIV and Hepatitis. com**

P.O. Box 14288

San Francisco, CA 94114

An on-line publication providing educational information about the treatment for HIV/AIDS, chronic hepatitis B and C, and co-infection with HIV/hepatitis C and HIV/hepatitis B. The information is not intended to serve as a substitute for professional medical advice from a trained licensed physician.

Internet address: <http://www.hivandhepatitis.com>

**International AIDS Society**

Treatment guidelines for HIV infection

Antiretroviral drug resistance testing guidelines

Internet address: [www.jama.ama-assn.org](http://www.jama.ama-assn.org)

**Pocket Guide to HIV/AIDS Treatment**

Developed by Johns Hopkins University

Sponsored by HRSA/ AIDS Education Treatment Center's National Resource Center

Internet address: <http://www.aids-ed.org>

**The Clinician's Educational Resource**

An educational provider/professional healthcare resource; managed by World Health CME, with interactive services provided by InterActions Healthcare Communications.

Internet address: <http://www.HIVLine.com>

**Substance Abuse and Mental Health Services Administration**

Room 12-105 Parklawn Building; 5600 Fishers Lane; Rockville, MD 20857

Internet address: <http://www.samhsa.gov>

**U.S. Food and Drug Administration; Office of Special Health Needs**

HFI-40; Rockville, MD; 20857

Telephone: 1-888-463-6332 (1-888-INFO-FDA)

Internet address: <http://www.fda.gov/oash/aids/hiv.html>

---

# **DETOXIFICATION**

---

## Symptoms and Signs of Drug Abuse

Drug	Acute Intoxication and Overdose	Withdrawal Syndrome
<b>Hallucinogens</b> LSD <sup>①</sup> ; psilocybin; mescaline; PCP <sup>②</sup> ; STP <sup>③</sup> ; MDMA <sup>④</sup> ; Bromo-DMA <sup>⑤</sup>	Pupils dilated (normal or small with PCP); BP elevated, heart rate increased, tendon reflexes hyperactive; temperature elevated; face flushed; euphoria, anxiety or panic; paranoid thought disorder; sensorium often clear; affect inappropriate; time/visual distortions; visual hallucinations; depersonalization; with PCP: drooling, blank stare, mutism, amnesia, analgesia, nystagmus (sometimes vertical), ataxia, muscle rigidity, impulsive/often violent behavior	None
<b>CNS Stimulants</b> amphetamines; cocaine; methylphenidate; phenmetrazine; phenylpropanolamine; most anti-obesity drugs	Pupils dilated and reactive; respiration shallow; BP elevated; heart rate increased; tendon reflexes hyperactive; temperature elevated; cardiac arrhythmias; dry mouth; sweating; tremors; sensorium hyperacute or confused; paranoid ideation; hallucinations; impulsivity; hyperactivity; stereotypy; convulsions; coma	Muscular aches; abdominal pain; chills, tremors; voracious hunger; anxiety; prolonged sleep; lack of energy; profound psychological depression, sometimes suicidal; exhaustion
<b>Cannabis Group</b> marijuana; hashish; THC <sup>⑥</sup> ; hash oil	Pupils unchanged; conjunctiva injected; BP decreased on standing; heart rate increased; increased appetite; euphoria, anxiety; sensorium often clear; dreamy, fantasy state; time-space distortions; hallucinations rare	Nonspecific symptoms including anorexia, nausea, insomnia, restlessness, irritability, anxiety
<b>Opioids</b> heroin; morphine; codeine; meperidine; methadone; hydromorphone; opium; pentazocine; propoxyphene	Pupils constricted (may be dilated with meperidine or extreme hypoxia); respiration depressed; BP decreased, sometimes shock; temperature decreased; reflexes diminished to absent; stupor or coma; pulmonary edema; constipation; convulsions with propoxyphene or meperidine	Pupils dilated; pulse rapid; gooseflesh; abdominal cramps; muscle jerks; "flu" syndrome; vomiting, diarrhea; tremulousness; yawning; anxiety
<b>CNS Sedatives</b> barbiturates; benzodiazepines; glutethimide; meprobamate; methaqualone	Pupils in mid position and fixed (but dilated with glutethimide or in severe poisoning); BP decreased, sometimes shock; respiration depressed; tendon reflexes depressed; drowsiness or coma; nystagmus; confusion; ataxia, slurred speech; delirium; convulsions or hyper-irritability with methaqualone overdosage; serious poisoning rare with benzodiazepines alone	Tremulousness; insomnia; sweating; fever; clonic blink reflex; anxiety; cardiovascular collapse; agitation; delirium; hallucinations; disorientation; convulsions; shock

Anticholinergics atropine; belladonna; henbane; scopolamine; trihexyphenidyl; benztropine mesylate; procyclidine; propantheline bromide	Pupils dilated and fixed; heart rate increased; temperature elevated; decreased bowel sounds; drowsiness or coma; flushed, dry skin and mucous membranes, sensorium clouded; amnesia; disorientation, visual hallucinations; body image alterations; confusion	Gastrointestinal and musculoskeletal symptoms
---	--	---

---

\*Mixed intoxications produce complex combinations of signs and symptoms

- |   |  |
|---|--|
| ① LSD (d-lysergic acid diethylamide)      | ④ MDMA (3,4 methylenedioxyamphetamine)         |
| ② PCP (phencyclidine)                     | ⑤ Bromo-DMA (4-Bromo-2,5-dimethoxyamphetamine) |
| ③ STP (2,5-dimethoxy-4-methylamphetamine) |  |

## Benzodiazepine Dose Equivalents

Dose equivalencies are only estimates. Many individual factors affect the metabolism of benzodiazepines. For example, the presence of liver disease can decrease the metabolism and increase the accumulation of the benzodiazepine. The presence of active metabolites will also increase the half-life of the medication. Dosages may need to be adjusted based on clinical findings. Half-lives are also estimates as these vary widely from individual to individual. Generally the older the person, the slower the metabolism. For example, the half-life of flurazepam in an elderly individual may be as long as 200 hours.

<b>Generic Name (Trade Name)</b>	<b>Equivalent Dose (mg)</b>	<b>Half-life (Hours)</b>
Alprazolam ( <i>Xanax</i> )	0.5	6-15
Chlordiazepoxide ( <i>Librium</i> )	25	24-48
Clonazepam ( <i>Klonopin</i> )	1-2	30-40
Clorazepate ( <i>Tranxene</i> )	7.5-15	30+
Diazepam ( <i>Valium</i> )	10	20-50
Estazolam ( <i>ProSom</i> )	1	10-24
Flurazepam ( <i>Dalmane</i> )	15-30	50-200
Lorazepam ( <i>Ativan</i> )	1	10-20
Oxazepam ( <i>Serax</i> )	15-30	5-10
Temazepam ( <i>Restoril</i> )	15-30	3-20
Triazolam ( <i>Halcion</i> )	0.25	1-5
Zolpidem ( <i>Ambien</i> )	10-20	2-5

Adapted from multiple sources including: Kasser, C., et al., and The Physicians' Desk Reference, 2000

## Barbiturate Dose Equivalents

Dose equivalencies are estimates and dosages should be adjusted according to clinical response. Barbiturates have a narrow therapeutic window such that toxicity can develop quickly above doses needed to manage withdrawal symptoms. Long term use produces tolerance to the sedative and euphoric effects without concurrent development of tolerance to respiratory depression. Careful attention to vital signs, particularly respiratory status is imperative during withdrawal and detoxification. Phenobarbital is the drug of choice for detoxification from barbiturates and barbiturate-like medications. One exception may be meprobamate. Meprobamate itself can be used to detoxify inmates dependent on meprobamate.

Generic Name ( <i>Trade Name</i> )	Equivalent Dose in mgs.
Amobarbital ( <i>Amytal</i> , others)	100
Butabarbital (Many combinations)	100
Butalbital ( <i>Fiorinal</i> , others)	100
Pentobarbital ( <i>Nembutal</i> , others)	100
Phenobarbital ( <i>Donnatal</i> , others)	30
Secobarbital ( <i>Seconal</i> , others)	100
<b>Barbiturate-like Drugs</b>	
Chloral Hydrate (Many)	250-350
Ethchlorvynol ( <i>Placidyl</i> )	200-500
Glutethimide ( <i>Doriden</i> , others)	250
Meprobamate* ( <i>Miltown</i> , others)	400
Methaqualone ( <i>Quaalude</i> , others)	300

---

\*See notation above regarding detoxification from meprobamate.

Adapted from multiple sources including Kasser, C., et al., and the Physician Desk Reference, 2000.

---

# **DEPRESSION**

---

## DSM-IV Criteria for Major Depressive Episode

**Five** (or more) of the following nine symptoms have been present during the same 2-week period and represent a change from previous functioning; **at least one of the symptoms is either**

**(1) depressed mood or (2) loss of interest or pleasure** (Note: Do not include symptoms that are clearly due to a general medical condition, or mood-incongruent delusions or hallucinations).

- **Depressed mood** most of the day, nearly every day, as indicated by either subjective report (e.g. feels sad or empty) or observation made by others (e.g. appears tearful)
- **Anhedonia:** Markedly diminished interest or pleasure in all, or almost all, activities most of the day nearly every day (as indicated by either subjective account or observation made by others)
- **Weight change:** weight loss or gain when not dieting or attempting to gain weight (e.g., a change of more than 5% body weight in a month), or decrease or increase in appetite nearly every day
- **Insomnia** or hypersomnia nearly every day
- **Psychomotor changes:** agitation or retardation nearly every day (observable by others, not merely subjective feelings of restlessness or being slowed down)
- **Fatigue or loss of energy** nearly every day
- **Feelings of worthlessness or excessive or inappropriate guilt** (which may be delusional) nearly every day (not merely self-reproach or guilt about being sick)
- **Poor concentration:** Diminished ability to think or concentrate, or indecisiveness, nearly every day (either by subjective account or as observed by others)
- **Suicidal thoughts:** Recurrent thoughts of death (not just fear of dying), recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide

### **Also:**

- The symptoms do not meet criteria for a mixed episode.
- The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.
- The symptoms are not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition (e.g., hypothyroidism).
- The symptoms are not better accounted for by bereavement, i.e., after the loss of a loved one; the symptoms persist for

longer than 2 months or are characterized by marked functional impairment, morbid preoccupation with worthlessness, suicidal ideation, psychotic symptoms, or psychomotor retardation.

### **DSM-IV Criteria for Major Depressive Disorder, Single Episode**

- A. Presence of a single major depressive episode.
- B. The major depressive episode is not better accounted for by schizoaffective disorder and is not superimposed on schizophrenia, schizophreniform disorder, delusional disorder, or psychotic disorder not otherwise specified.
- C. There has never been a manic episode, a mixed episode, or a hypomanic episode. Note: This exclusion does not apply if all of the manic-like, mixed-like, or hypomanic-like episodes are substance or treatment-induced or are due to the direct physiological effects of a general medical condition.

### **DSM-IV Criteria for Major Depressive Disorder, Recurrent**

- A. Presence of two or more major depressive episodes.
- B. The major depressive episode is not better accounted for by schizoaffective disorder and is not superimposed on schizophrenia, schizophreniform disorder, delusional disorder, or psychotic disorder not otherwise specified.
- C. There has never been a manic episode, a mixed episode, or a hypomanic episode. Note: This exclusion does not apply if all of the manic-like, mixed-like, or hypomanic-like episodes are substance or treatment-induced or are due to the direct physiological effects of a general medical condition.

## **Risk Assessment for Patients with Depression**

**The risk assessment should be documented at each inmate visit for inmates diagnosed with major depressive disorder. Note:** some patients are more likely to act on suicidal thoughts during the early phase of recovery than during the acute phase of the disease.

The following factors should be considered and/or reviewed in all inmates with depression until symptoms are in full remission, (The presence of these factors may indicate an increased risk of suicide or violence towards others).

- Past history of acts of harm towards self or others
- Presence of thoughts of harm towards self or others
- Presence of plan to harm self or others
  - Lethality of plan
  - Presence of means to carry out plan
  - Presence of intent to carry out plan
- Family history of suicide or violence
- Presence of psychotic symptoms
- History of substance abuse
- Lack of support systems
- Recent severe stressor or loss
- Presence of comorbid personality disorder or anxiety disorder

**Pharmacologic/Toxic Agents Which Can Cause or  
Exacerbate Depressive Symptoms**

Cardiovascular	alpha-methyldopa, reserpine, propranolol, clonidine, guanethidine, thiazide diuretics, digoxin/digitoxin
Hormones	oral contraceptives, ACTH, glucocorticoids, anabolic steroids
Anti-Inflammatories and Anti-Infectives	NSAIDs, sulfonamides
Anti-Cancer Agents	cycloserine, vincristine, vinblastine, others
Anti-Emetics	droperidol, metoclopramide, prochlorperazine, perphenazine
Psychiatric medications	benzodiazepines, sedatives/hypnotics, antipsychotics, anticholinergics
Others	narcotics, cimetidine, ranitidine, baclofen, other muscle relaxants, ethambutol, disulfiram
Illicit substances	all can cause or exacerbate depression during any phase of use, i.e. intoxication, chronic use, withdrawal
Toxins	heavy metals, alcohol, thallium, anticholinesterase insecticides

**Medical Conditions Associated with Depression**  
**(May cause or can present as depression)**

Endocrine	Hypo- or Hyperthyroidism Hyperparathyroidism Hypopituitarism Adrenal disease: Cushing's or Addison's disease Diabetes
Infectious Diseases	Pneumonia Hepatitis Infectious mononucleosis HIV infection Toxoplasmosis Tertiary syphilis
Connective Tissue Disorders	Lupus Rheumatoid arthritis Mixed connective tissue disease
Nutritional disorders	Excessive intake of B-6 B-12 or folate deficiency Thiamine deficiency Pellagra (niacin deficiency)
Neurologic disorders	Stroke Multiple sclerosis Parkinson's disease Dementia Head injury Subdural hematoma (chronic) Seizure disorder CNS tumors Sleep disorders
Malignancies	Any, but especially abdominal or gastrointestinal Paraneoplastic syndrome Carcinomatosis Hematologic
Cardiac disease	Ischemic heart disease Congestive heart failure
Miscellaneous	Anemia Asthma/COPD/emphysema Chronic pain syndromes Smoking cessation Any chronic illness



## Antidepressant Medications: Indications and Dosaging

Class	Name	Indications*	Start Dose (mg) daily unless noted otherwise	Usual Dose** (mg) daily, unless noted otherwise
TCA	Amitriptyline Doxepin Imipramine Desipramine	D, A	25-50	100-300***
TCA	Nortriptyline	D, A	10-25	50-200***
SSRI	Citalopram	D, A	20	20-60
SSRI	Fluoxetine	D, d, A, OCD, E	10-20	20-60
SSRI	Sertraline	D, d, A, OCD	25-50	75-200
SSRI	Paroxetine	D, d, A, OCD	20	20-60
SDRI	Bupropion	D, D in Bipolar pts, ADD, ADHD, Sm	75 BID, or 150 daily in time release	100 TID, or 150 BID in time release
NaSSA	Mirtazapine	D, S, A	7.5-15	7.5-45
SSNI	Venlafaxine	D, d, A, OCD	37.5-75 per day (BID dosing in non time release)	75-225 total daily dose (BID dosing in non time release)
Triazolopyridine	Trazodone	S(D? efficacy)	25-50	50-150 for S 150-300 for D
Phenylpiperazine	Nefazodone	D, A(?)	50-100 BID	200 BID

\*D=Depressive Disorders; d=Dysthymia; A=Anxiety disorders other than OCD; OCD=Obsessive Compulsive Disorder; S=Sleep Disturbance-insomnia; ADD=Attention Deficit Disorder; ADHD=Attention Deficit Hyperactivity Disorder; Sm=Smoking Cessation; E=Eating Disorder

\*\*Severely depressed inmates may need higher doses. See PDR for indications. Elderly inmates may need lower doses, both as starting dose and as therapeutic dose.

\*\*\*Blood levels vary as much as factor of 10 between individuals. Blood levels should be

checked during titration and once steady state is reached. Nortriptyline has definitive therapeutic window, above or below which it has decreased effectiveness.

**Side Effects of Antidepressant Medications**  
 (For complete list of side effects consult the PDR)

<b>Class of Drug</b>	<b>Examples</b>	<b>Side Effects</b>
Selective Serotonin Reuptake Inhibitors (SSRIs)	fluoxetine fluvoxamine paroxetine sertraline citalopram	headache, nausea, flatulence, somnolence, insomnia, agitation, anxiety, weight loss or anorexia, weight gain, tremor, sexual dysfunction, myoclonus, restless legs, bruxism, akathisia, increased dreaming/nightmares, bradycardia, galactorrhea, paresthesias, mania
Selective Dopamine-Reuptake Inhibitor (SDRI)	bupropion	increased risk of seizures: do not use in inmates with eating disorders or with seizure disorders; insomnia, anxiety, agitation, headache, tremor, myoclonus, tinnitus, palpitations
Selective Serotonin Norepinephrine Reuptake Inhibitor (SNRI)	venlafaxine	headache, agitation, anxiety, insomnia, somnolence, dry mouth, sweating, urinary retention, constipation, increased blood pressure-dose related; nausea, dizziness, tachycardia, orthostatic hypotension, sexual dysfunction, mania
Noradrenergic/Serotonergic Antidepressant (NaSSA)	mirtazapine	weight gain, sedation, dry mouth, constipation, increased sweating, blurred vision, urinary retention, dizziness, orthostatic hypotension, tachycardia, decreased WBC, increased LFT's, mania

Tricyclic Antidepressants (TCAs)	amitriptyline clomipramine doxepin imipramine trimipramine desipramine nortriptyline protriptyline	anticholinergic-dry mouth, constipation, urinary retention, blurred vision, dry eyes, sweating, confusion; antihistaminic-weight gain, somnolence, nightmares, confusion; other-cardiac arrhythmia, prolonged conduction time, orthostatic hypotension, seizures, tachycardia, tremor, sexual dysfunction, mania
Antidepressant Side Effects (Appendix 7, p. 2)		
Class of Drug	Examples	Side Effects
Tetracyclic Antidepressant	maprotiline	same as Tricyclics, and maprotiline has increased risk of <b>seizures</b>
MAOIs	phenelzine tranylcypromine	constipation, anorexia, weight gain, headache, anxiety, insomnia, somnolence, nausea, vomiting, dry mouth, urinary retention, sexual dysfunction, paresthesias, orthostatic hypotension, increased blood pressure, myoclonus, edema, electrolyte imbalance, mania
Triazolopyridine	trazodone	somnolence, dizziness, tachycardia, orthostatic hypotension, priapism, nausea, dry mouth, mania
Phenylpiperazine	nefazodone	dry mouth, nausea, constipation, somnolence, orthostatic hypotension, mania
Dibenzoxazepine	amoxapine	amoxapine can cause <b>tardive dyskinesia</b> , extrapyramidal side effects and all the same side effects as other typical antipsychotics as well as TCAs

## **Augmentation Strategies**

A thorough treatment reassessment should occur if the inmate does not show a significant response to treatment for depression after 6-8 weeks of acute phase therapy.

### **RE-ASSESSMENT: Review steps 1 through 9, prior to altering therapy**

1. Thorough review of presentation, symptoms, and diagnosis:  
Consider another cause for depressive symptoms.
2. Evaluate for complicating medical condition or illness not yet diagnosed, e.g. an autoimmune disorder, infectious process, B-12 deficiency, etc.
3. Review compliance with inmate and pharmacy (pill line attendance via MAR forms.) Nonadherence is the most likely cause of poor response to treatment.
4. Ensure adequate dose and trial period of medication.
5. Check blood levels in medications with known therapeutic levels or when compliance is in doubt.
6. Consider drug-drug interactions that may be lowering plasma level of antidepressant.
7. Consider active substance abuse.
8. Review with inmate possible presence of ongoing or new significant stressors that may be impacting the inmate's functioning.
9. Consider consultation for second opinion.

### **TREATMENT: If the above steps yield no specific answer, adjustment of the treatment regimen is reasonable; Consider the following options:**

1. Increase dose of current medication.
2. Switch to another medication (different SSRIs have different efficacy in individual inmates).
3. Add another antidepressant to medication, e.g. add low dose TCA to SSRI, but monitor blood level of TCA.
4. Add triiodothyronine, 25-50 micrograms per day. If no improvement after 3 weeks, discontinue.
5. Add lithium. Blood levels of 0.5-0.8 mEq/L of lithium are usually sufficient for treating depression not complicated by a bipolar disorder. If no response is evident by 6 weeks, discontinue.
6. Add, change type, or increase frequency or intensity of psychotherapy.
7. ECT

Wait 6-8 weeks (unless otherwise indicated) after treatment augmentation, while monitoring the inmate closely. If incomplete or no response: repeat assessment steps 1-9 and then reconsider

treatment options 1-7.

## Severe Drug-Drug Interactions With MAOIs\*

### Absolutely Contraindicated

Class of Drug	Example	Effect/Interaction
Anorexiants	fenfluramine defenfluramine	serotonin syndrome
Antidepressants (See Appendix 11 for Washout Periods)	clomipramine trazodone nefazodone venlafaxine fluoxetine paroxetine sertraline bupropion mirtazapine	serotonin syndrome
Herbs, supplements	L-tryptophan St. John's Wort	serotonin syndrome
Antimigraine	sumatriptan zolmitriptan	serotonin syndrome
Sympathomimetics	cocaine amphetamines ephedrine pseudoephedrine dopamine tyramine phenylpropanolamine methylphenidate	hypertensive crisis
Narcotics	meperidine dextromethorphan diphenoxylate tramadol	encephalopathy, death serotonin syndrome

\*Many other potential drug-drug interactions exist and have been reported with MAOIs. Check with your pharmacist prior to adding MAOIs to any medications or any medications to MAOIs. Over-the-counter medications, especially cold, hay fever and sinus medications can be dangerous and potentially life threatening. Caution inmates on these issues.

## **Foods to Avoid During Treatment with MAOIs\***

### **Very High Tyramine Content**

- ▶ All matured or aged cheeses (e.g. cheddar, brick, blue, Gruyere, Stilton, brie, Swiss, Camembert, Parmesan, mozzarella)
- ▶ Broad beans (fava)
- ▶ Orange pulp
- ▶ Meat extract, e.g. Marmite, Bovril
- ▶ Concentrated yeast extracts or yeast vitamin supplements
- ▶ Dried, salted, pickled or smoked fish
- ▶ Sauerkraut
- ▶ Aged sausage (e.g., salami, pepperoni)
- ▶ Tap beer, Chianti, other beer and wine
- ▶ Chicken or beef liver
- ▶ Packaged soup
- ▶ Summer sausage

### **Moderately High Tyramine Content or reactions have been reported with these foods (no more than 1-2 servings per day)**

- ▶ Soy sauce
- ▶ Sour cream, yogurt
- ▶ Meat tenderizers
- ▶ Caviar, snails
- ▶ Ripe bananas
- ▶ Caffeine
- ▶ Avocados
- ▶ Plums, raisins
- ▶ Chocolate
- ▶ Overripe fruit
- ▶ Chinese food
- ▶ Spinach
- ▶ Tomatoes

\*Adapted from Clinical Handbook of Psychotropic Drugs, See References

## Drug Washout Times Between Antidepressant Trials

Antidepressant Change	Minimum Washout Period
From SSRI to SSDI, SNRI, NaSSA	2-5 days (Recommended)*
From SSRI, SSDI, SNRI, NaSSA to SSRI	2-5 days (Recommended)*
From TCA to TCA	None
From SSRI, SSDI, SNRI, NaSSA to TCA	1-2 weeks depending on half-life of SSRI and its active metabolites (Recommended)*
From TCA to SSRI, SNRI, SNRI, NaSSA	5-7 days (Recommended)*
From drug with short half-life metabolites, e.g., paroxetine, fluvoxamine, venlafaxine, TCA to MAOI	2 weeks (Required)
From drug with long half-life metabolites, e.g., fluoxetine, to MAOI	5 weeks (Required)
From MAOI to non-MAOI	2 weeks (Required)
From MAOI to MAOI	2 weeks (Required)

\*An absolute washout of the previous medication is not necessary prior to instituting the new medication. The first medication may be tapered down as the new medication is gradually tapered upwards, while remaining cognizant of potential drug-drug interactions and half-lives of the medication and its active metabolites.

---

# **GERD/PEPTIC ULCER DISEASE**

---

## **TREATMENT OF GASTROESOPHAGEAL REFLUX DISEASE (GERD)**

### **DIAGNOSIS**

history/physical examination  
heartburn/acid indigestion  
chest discomfort/ R/O cardiac dx

↓

### **IDENTIFY HIGH RISK PATIENTS**

refer directly for upper endoscopy for dysphagia, history of Barrett's esophagus, GI bleeding  
otherwise pursue STEP therapy

↓

### **STEP 1 - LIFESTYLE CHANGES/ANTACID TX**

patient education/ smoking cessation/avoid caffeine  
small meals/reduce fat content/weight reduction as indicated  
no lying down after eating/no eating 2 hours before bedtime  
drug adjustments when appropriate  
antacid therapy

↓

### **STEP 2 - H<sub>2</sub> BLOCKER THERAPY**

H<sub>2</sub> antagonist drug trial for 8 weeks  
+/- prokinetic agent (long term treatment not recommended)

↓

### **STEP 3 - PROTON PUMP INHIBITOR DRUG THERAPY (LOW DOSE)**

PPI drug trial for 4 weeks (maximize one daily therapy)

↓

### **STEP 4 - PROTON PUMP INHIBITOR DRUG THERAPY (HIGH DOSE)**

first pursue further diagnostic tests to confirm diagnosis  
- ambulatory pH monitoring +/- upper endoscopy  
high dose PPI therapy if GERD confirmed

↓

### **STEP 5 - SURGICAL INTERVENTION**

Obtain subspecialty consultation for refractory cases  
Specialized surgical intervention may be indicated

## **TREATMENT OF DYSPEPSIA, PEPTIC ULCER DISEASE & *H. PYLORI***

### **DIAGNOSIS**

+ dyspepsia without heartburn or acid indigestion  
history/physical examination  
laboratory studies as necessary

↓

### **RISK STATUS ASSESSMENT - IDENTIFY HIGH RISK PATIENTS**

any alarm symptoms such as GI bleeding, unexplained anemia, unintentional weight loss  
age > 50 who fails to respond to brief trial of H<sub>2</sub> antagonist or prokinetic agent  
previous gastric surgery

↓

refer directly for upper endoscopy/stop NSAIDs /biopsy all gastric ulcers  
ulcer positive/ *H. pylori* + → tx with *H. pylori* regimen  
ulcer negative → tx as non-ulcer dyspepsia (*H. pylori* tx not recommended)  
ulcer positive/ *H. pylori* negative → targeted diagnostic workup

↓

### **PURSUE STEP THERAPY FOR LOW RISK PATIENTS**

(at every step - monitor closely for alarm symptoms/refer directly for upper endoscopy as indicated)

**STEP 1**- smoking cessation/dietary changes/drug adjustments (stop NSAIDs)/antacid trial

↓

**STEP 2**- 8 week trial of H<sub>2</sub> antagonist or prokinetic agent\*  
(choice dependent on symptom presentation and patient characteristics)

↓

**STEP 3**- test for *H. pylori* if ulcer symptoms present and treat if positive  
if *H. pylori* negative or no response to treatment

↓

**STEP 4**- pursue any or all of the following actions dependent on patient characteristics

- observe and monitor closely for alarm symptoms
- trial of PPI if dyspepsia is complicated by GERD symptoms
- further diagnostic study - upper endoscopy/biliary ultrasound/abdominal CAT scan
  - GI subspecialty consultation

\* Long term treatment with metoclopramide is not recommended due the abatement of drug efficacy over time and the potential for extrapyramidal side effects and tardive dyskinesia.

## Drug Treatment Options for GERD and *H. pylori*- associated Peptic Ulcer Disease

<b>Medications Used in the Treatment of GERD</b>		
<b>*Please refer to current BOP National Formulary*</b>		
DRUG	DOSAGE	COMMENTS
<b>ANTACIDS</b>		
Liquid or Tablet Antacid (magnesium, aluminum, or calcium carbonate)	1-2 tablets or 15-30 cc, one hour before meals, two hours after meals, and at HS (additional doses may be supplemented PRN)	Aluminum: constipation Magnesium: diarrhea
<b>H<sub>2</sub> RECEPTOR BLOCKERS (Low dose, over-the-counter)</b>		
Cimetidine	200 - 400 mg BID	Caution: Inhibits cytochrome P-450 system, many drug interactions; gynecomastia
Ranitidine	75 mg BID	Rare side effects
Famotidine	10 mg BID	Rare side effects
Nizatadine	75 mg BID	Rare side effects
<b>PROKINETIC AGENTS</b>		
Metoclopramide	10 mg TID - QID	Avoid long-term use due to potential for extrapyramidal effects (e.g. tardive dyskinesia)
<b>H<sub>2</sub> RECEPTOR BLOCKERS (High dose for GERD)</b>		
Ranitidine	150 mg BID to QID <u>or</u> 300 mg BID	
Famotidine	20 - 40 mg BID	
Nizatadine	150 mg BID	

**Medications Used in the Treatment of GERD**

**\*Please refer to current BOP National Formulary\***

**Continued, next page (Proton Pump Inhibitors)**

## Medications Used in the Treatment of GERD

\*Please refer to current BOP National Formulary\*

PROTON PUMP INHIBITORS		(Tend to be well-tolerated)
Lansoprazole	LOW DOSE: 15 - 30 mg once daily HIGH DOSE: 30 mg BID	
Omeprazole	LOW DOSE: 10 - 20 mg once daily HIGH DOSE: 20 mg BID	Headache is most common side effect.
Pantoprazole	40 mg once daily	Do not split, crush or chew tablets. Higher doses not indicated. (Current indication is for 8 week course for erosive esophagitis)
Esomeprazole	LOW DOSE: 20 mg once daily HIGH DOSE: 40 mg once daily	Contains only one isomer of which Omeprazole contains both d and l. May be emptied into applesauce but not crushed or chewed.
Rabeprazole	20 mg once daily	Do not split, crush or chew tablets.

## TREATMENT OF *HELICOBACTER PYLORI* INFECTION

### PREFERRED REGIMENS FOR TREATMENT OF *H. PYLORI* (14 day regimens)

1	Lansoprazole 30 mg BID	Clarithromycin 500 mg BID	Amoxicillin 1000 mg BID
2	Lansoprazole 30 mg BID	Clarithromycin 500 mg BID	Metronidazole 500 mg BID
3	Ranitidine-Bismuth Citrate (RBC) 400 mg BID	Clarithromycin 500 mg BID	Amoxicillin 1000 mg BID  <u>or</u> Metronidazole 500 mg BID  <u>or</u> Tetracycline 500 mg BID
4	Lansoprazole 30 mg <b>once daily</b>	Metronidazole 500 mg <b>TID</b>	Tetracycline 500 mg QID <b>and</b> Bismuth subsalicylate 525 mg QID
5	Ranitidine 150 mg BID or Famotidine 20 mg BID  <b>THEN</b> Continue the H <sub>2</sub> blocker for an additional two weeks after antibiotics	Metronidazole <b>250 mg QID</b>	Tetracycline 500 mg QID <b>and</b> Bismuth subsalicylate 525 mg QID

Regimens are all greater than 90% effective in eradicating *H. pylori*; specific regimen should be selected based on adherence issues, patient tolerance, prior treatment regimens, and cost.

---

**SEXUALLY TRANSMITTED DISEASES  
AND  
ECTOPARASITES**

---

## BOP STD Notes: Treatment Strategies\*

Infection	Treatment (directly observed)	Comments
<p><b>Gonorrhea -</b> <i>N. gonorrhoeae</i></p> <p>urethritis, cervicitis, pharyngitis, or rectal infection</p>	<p><b>Ciprofloxacin</b> 500 mg orally x 1; OR <b>Ceftriaxone</b> 125 mg IM x 1</p> <p>PLUS treatment for chlamydial infection (unless chlamydial infection ruled out) with: <b>Azithromycin</b> 1 gram orally x 1; OR <b>Doxycycline</b> 100 mg BID orally x 7 days</p>	<p>Culture symptomatic inmates at the time of diagnosis). Follow-up cultures to prove cure are not indicated unless symptoms persist. Tx regimens are the same for inmates with HIV co-infection. Pregnant women should be treated with a cephalosporin (GC) and erythromycin (chlamydia). <b>NOTE:</b> Quinolone-resistance increasingly detected in Asia/Hawaii/California/U.S. West Coast - ceftriaxone indicated for inmates from these areas. Tx of sex partners is indicated for most recent partner and others exposed 60 days prior to dx/symptom onset.</p>
<p><b>Syphilis -</b> <i>T. pallidum</i></p>	<p>Primary, secondary, or early latent (&lt; 1 yr) syphilis: <b>Benzathine penicillin</b> - 2.4 million units IM X 1</p> <p>Syphilis of unknown duration, late latent syphilis, tertiary: <b>Benzathine penicillin</b> - 7.2 million units total; (2.4 million units IM at 1 week intervals X 3)</p> <p>Neurosyphilis/syphilitic eye disease (e.g. uveitis): <b>Aqueous crystalline penicillin G</b> - 18-24 million units daily (3-4 million units IV every 4 hrs for 10-14 days)</p> <p>Pregnancy: <b>NOTE:</b> Penicillin is the only acceptable tx for syphilis at any stage during pregnancy; therefore desensitization is required for pregnant women who are allergic to penicillin.</p>	<p>Nonpregnant inmates with penicillin allergy can be treated with several different less proven antibiotic regimens. Ceftriaxone is an acceptable alternative for patients with neurosyphilis and PCN allergy, depending on PCN allergy risk. All inmates with syphilis should be tested for HIV. HIV co-infected inmates can be treated with standard syphilis regimens, but require closer monitoring of serologies and CSF (as indicated). Inmates with late latent syphilis or syphilis of unknown duration should have a CSF evaluation with the following: tx failure, HIV infection, signs of tertiary syphilis, unexplained neuro/eye disease. Sex partners of contagious cases should be evaluated for infection. All contacts exposed &lt; 90 days preceding the dx of primary, secondary, or early latent syphilis should be empirically treated. Inmates with syphilis of unknown duration with RPR titers <math>\geq 1:32</math> should be considered as having early syphilis for empiric tx of contacts. Contacts exposed &gt; 90 days preceding the dx of contagious syphilis should be treated based on clinical and epidemiologic considerations.</p>

\*Adapted from CDC Sexually Transmitted Diseases Treatment Guidelines 2002, *MMWR* 2002;51:(No. RR-6)

## BOP Notes: Treatment Strategies\*

Infection	Treatment	Comments
<p><b>Chlamydia -</b> <i>C. trachomatis</i></p> <p>genital infection</p>	<p><b>Azithromycin</b> 1 gm orally x 1; OR</p> <p><b>Doxycycline</b> 100 mg orally BID x 7 days;</p> <p>Alternative regimens include erythromycin or quinolone preparations in accordance with CDC guidelines</p>	<p>Confirm infection by culture or other assay for symptomatic inmates whenever feasible. Asymptomatic infection is common in men and women; screening of high risk inmates should be considered. Antibiotic therapy should be administered by direct observation. Testing for cure is not indicated following tx with azithromycin or doxycycline. Pregnant women should be treated with erythromycin base or amoxicillin, since doxycycline and quinolones are contraindicated. The most recent sex partner and any sex partners in contact with the index case during the 60 days preceding the onset of symptoms should be evaluated for chlamydial infection.</p>
<p><b>Herpes simplex virus</b> (HSV) - genital infection</p> <p>First episode</p> <p>Recurrent episodes</p> <p>Suppressive tx</p>	<p><b>Acyclovir</b> 400 mg TID orally for 7-10 days</p> <p><b>Acyclovir</b> 400 mg TID orally for 5 days</p> <p><b>Acyclovir</b> 400 mg BID orally x 1 year</p>	<p>Genital herpes is a recurrent, lifelong infection. Sexual transmission of HSV occurs in asymptomatic persons. Inmates with first-episode herpes should be treated with acyclovir, since tx may reduce symptoms. Tx does not eradicate herpes virus or affect the risk, severity, or frequency of recurrences. Topical acyclovir is ineffective. Tx of recurrent genital herpes must be initiated at the onset of symptoms. Suppressive tx should be considered on case by basis depending on the severity and frequency of recurrences. Continuation of suppressive tx should be reconsidered after 1 year of tx. Suppressive tx does not eliminate asymptomatic viral shedding. Inmates with HIV infection or immunocompromised conditions may require higher doses of oral acyclovir or intravenous therapy for herpes infections.</p>
<p><b>Vaginitis</b></p> <p>Trichomoniasis</p> <p>Bacterial vaginosis</p> <p>Candidiasis</p>	<p><b>Metronidazole</b> 2 gm orally x 1</p> <p><b>Metronidazole</b> - 500 mg orally BID x 7 days</p> <p><b>Clotrimazole</b> 500 mg vaginal tab x 1 OR; other topical agent</p>	<p>Bacterial vaginosis (BV) is associated with adverse pregnancy outcomes. All symptomatic pregnant women should be tested and treated as indicated. Asymptomatic women at high risk of premature delivery should be screened during the earliest part of the second trimester and treated if indicated with metronidazole 250 mg orally 3x/day for 7 days. Uncomplicated vulvovaginal candidiasis (VVC) usually responds to short course topical tx. Complicated VVC (e.g., recurrent or severe disease, non-albicans candidiasis, or presence of diabetes/immunocompromised condition) usually requires more intensive tx regimen.</p>
<p><b>Venereal Warts</b></p> <p>Human papilloma virus (HPV)</p>	<p><b>Podophyllin or trichloroacetic acid</b> - topically</p> <p><b>Cryotherapy</b></p> <p><b>Surgical excision</b></p>	<p>Primary tx goal is the removal of symptomatic warts. Tx of warts may reduce but not eliminate infectivity. Visible warts may resolve spontaneously. Choice of tx depends on wart location/severity and should be determined on case by case basis.</p>

\*Adapted from CDC Sexually Transmitted Diseases Treatment Guidelines 2002, *MMWR* 2002;51:(No. RR-6)

## BOP STD Notes: Diagnostic and Monitoring Parameters for Syphilis

Syphilis Stage	Monitoring	Comments
Primary/ Secondary	HIV (-) RPR q 6 months HIV (+) RPR q 3 months	If RPR rises fourfold or inmate remains symptomatic then evaluate CSF and retreat with benzathine PCN 2.4 million units IM weekly x 3 or for neurosyphilis if indicated. Failure of RPR to decline fourfold in 6 months after initial tx suggests possible tx failure: repeat HIV serology if HIV (-), consider CSF exam, and consider retreatment as above.
Latent	HIV (-) RPR - 6, 12, 24 m. HIV(+) RPR - 6, 12, 18, 24 m  CSF evaluation if HIV+ and late latent syphilis or syphilis of unknown duration	Inmates should be retreated and evaluated for neurosyphilis if: titers increase fourfold, a titer $\geq 1:32$ fails to decline fourfold within 12-24 months, or with signs/symptoms of syphilis. Have low threshold for re-evaluating CSF in HIV seropositive persons.
Tertiary (cardiovascular, gummatous)	Clinical evaluations regularly with RPR titers Screening CSF evaluation	Monitor clinical response to tx in consultation with an expert to assess effectiveness of treatment.
Neurosyphilis	RPR titers periodically; CSF cell count, glucose, protein, and VDRL every 6 months	Monitor clinical response to tx and CSF every 6 months until pleocytosis has normalized. Changes in CSF-VDRL and CSF protein are less reliable barometers of tx efficacy. If CSF cell counts remain elevated at 2 yrs: consider retreatment.

- ! A presumptive diagnosis of syphilis can be made by two types of serologic tests: (1) quantitative nontreponemal tests (e.g. Venereal Disease Research Laboratory (VDRL) or Rapid Plasmin Reagin (RPR)); and (2) confirmatory treponemal assays (e.g. fluorescent treponemal antibody absorbed (FTA-ABS) and *T. pallidum* particle agglutination (TP-PA)). **A confirmatory treponemal assay is essential**, because non-treponemal assays may be false-positive due to concurrent medical conditions, including previous injection drug use.
- ! Nontreponemal assays correlate with disease activity. A clinically significant difference between two tests requires at least a fourfold change in titer. The RPR or VDRL titer should become nonreactive with treatment, but some persons will remain “serofast” with a low titer despite adequate tx. Serologic titers may decline more slowly for persons with recurrent syphilis.
- ! Treponemal assays (e.g. FTA-ABS) usually remain positive for life, however 15%-25% of persons treated during primary syphilis may revert to a nonreactive status after 2-3 years.
- ! Serologic tests for syphilis in persons with HIV infection are often more variable, but are still helpful diagnostically and for evaluating treatment response.
- ! Neurosyphilis is diagnosed by clinical or laboratory findings. A positive CSF-VDRL (in the absence of significant blood contamination) is considered diagnostic of neurosyphilis, however, certain persons with neurosyphilis will have a negative CSF-VDRL. A negative CSF-FTA-ABS excludes nearly all cases of neurosyphilis. The CSF leukocyte count is usually elevated ( $> 5$  WBCs/mm<sup>3</sup>) in patients with neurosyphilis and is a helpful measure to assess treatment response.

## BOP Notes: Ectoparasitic Infections

**Introduction:** Ectoparasites are organisms that require external contact with the human host for nutriment and include but are not limited to lice and scabies.

Lice are insects. The three species of lice that commonly affect humans include: *Pediculus humanus capitus* (the head louse), *Pediculus humanus corporis* (the body louse) which may inhabit seams and lining of clothing and bed linens, and *Pthirus pubis*, (the crab louse) which lives on hairy portions of the body. Head and body lice are transmitted by sharing personal combs, clothing, and bed linens. Pubic lice are transmitted primarily through sexual contact. Lice are completely dependent upon human blood for survival. They cause a mild dermatitis through sucking blood and exposing the human host to louse saliva and excrement.

Scabies is caused by the mite, *Sarcoptes scabiei*, transmitted from person to person through close personal contact. Scabies mites burrow under the skin and deposit eggs. Sensitization to mite eggs and excreta takes several weeks and results in intense itching and excoriation of the skin from scratching. Scabies may be found all over the body but tend to live primarily in the finger-webs, underarms, waistline and other skin folds, and the feet. Scabies mites can only live for a short time outside the body.

**Diagnosis:** The diagnosis of ectoparasitic infections should be confirmed to prevent unnecessary treatment. Definitive diagnosis depends on the identification of the louse or mite.

Louse infestation may be diagnosed through a careful history, signs and symptoms, and the detection of lice and eggs (nits) with the naked eye on the examination of the patient. Head louse nits, typically 1 mm long, are deposited on hair shafts close to the scalp, whereas nits of body lice are primarily deposited on clothing.

The predominant diagnostic clue of scabies is intense itching. Symptoms may not occur until several weeks after infection. Scabies can be presumptively diagnosed through the use of the burrow ink test. Ink is applied over a suspected burrow site and allowed to dry. The surface ink is removed by wiping with alcohol. Residual ink, particularly tracking in a burrow, is highly suggestive of a scabies infestation. Skin scrapings by microscopic view for evidence of mites and eggs is the

definitive test for diagnosis, although mites may be difficult to detect since they are often scarce in number. Skin biopsy may be helpful with atypical cases.

**Infection Control Measures:** Once an ectoparasitic infestation is suspected or confirmed, infection control and treatment measures must be implemented, including, but not limited to the following:

- Inmates with suspected or diagnosed ectoparasitic infections should be housed in a single-cell room and be restricted from all work assignments and visitations until medical evaluations and treatments have been completed.

- Contact precautions are necessary (in addition to the use of standard precautions) for any hand or skin-to-skin contact that occurs while performing inmate care activities that require direct contact with the inmate or indirect contact with personal items of the inmate. Appropriate barrier protections (i.e., gloves, gown, shoe coverings, etc.) should be used.

- All clothing, sheets, towels or other launderable items of inmates with a confirmed diagnosis of an ectoparasitic infection must be hot-water washed and dried at a temperature of at least 140 degrees Fahrenheit, or the laundry should be bagged and sealed and left undisturbed for 5 days, then processed as uninfested laundry according to institutional procedures. Infested laundry should be disinfected **simultaneously** with the treatment of infected inmates.

- Personal items such as radios and toiletries of infected inmates and their mattresses and furniture should be wiped down with a routine environmental cleaning agent. **Fumigation of cells or dormitories is not indicated.**

- Inmates diagnosed with ectoparasitic infections should be managed with contact isolation precautions and should be considered communicable until 24 hours after the first application of an appropriate scabicide/insecticide treatment.

- Inmates with ectoparasitic infections should ordinarily not be transferred to other BOP institutions until symptoms have resolved.

**Treatment:** Other dermatologic conditions including open rashes of unknown etiology, should be excluded before treatments for ectoparasites are pursued. The inmate should

be educated regarding the self-administration of the treatment application to include how to apply, where to apply, length of time the treatment should remain on, precautions to take, and removal, according to manufacturer's package insert.

Treatment options include the following:

- **Scabies:** Recommended treatment is **5% Permethrin cream** applied from the neck down; and washed off after 8-14 hours. An alternative treatment is **ivermectin 200 micrograms/kg** orally, repeated in 2 weeks. Fingernails should be closely trimmed and an antipruritic medication should be prescribed to minimize excoriations from scratching.

- **Pubic and body lice:** Recommended treatment is **1% Permethrin cream**, applied and washed off after 10 minutes.

- **Head lice:** Recommended treatment is manual removal of nits with a special comb with lubrication and nonprescription strength pediculicide that contains permethrin or pyrethrins. Ophthalmic ointment to the eyelid margins should be applied twice a day for 10 days if the eyelashes are involved. Second-line treatment is 1% lindane shampoo applied for 4 minutes and rinsed thoroughly.

**NOTE:** Lindane shampoo and lotion are alternative, but less preferable treatments for scabies and lice due to potential adverse effects. Lindane is contraindicated in pregnant or lactating women, patients with uncontrolled seizures, and patients with dermatitis, psoriasis, or crusted scabies. Overabsorption may cause seizures. Lindane should be used with caution in immunocompromised persons, patients taking medications that lower the seizure threshold, and persons weighing less than 110 pounds. Treatment with lindane should not be repeated. Topical scabicide/insecticide treatments should not be used immediately following a bath/shower to minimize overabsorption and potential complications.

- After completion of the treatment application, the inmate must be allowed to shower and be provided clean clothing. Other items in the inmate's room should be simultaneously disinfected.

- Medical evaluation and follow-up should be provided one week after treatment to determine if additional treatment is indicated. If scabies has been diagnosed, the inmate should be educated that itching may continue for 2-4 weeks after treatment.

- Crusted scabies (i.e., Norwegian scabies) occurs more commonly in persons who are immunocompromised. These patients have a large burden of mites and can easily transmit mites to others through casual contact. Crusted scabies may not respond to first-line treatment and may require more aggressive treatment measures in consultation with a physician expert.

**Contact Management:** Once an ectoparasite infection is diagnosed, all at-risk inmate contacts of the infected inmate (to include cellmates, dormitory mates, and co-workers within at least one month preceding diagnosis of the infected case), should be evaluated by a clinician and managed in accordance with the following guidance:

- All contacts should be treated empirically with a standard treatment regimen, unless treatment is contraindicated.

- Inmate contacts who are diagnosed with ectoparasitic infections should be isolated from other inmates. A secondary contact investigation should be conducted.

- Asymptomatic contacts who are being treated empirically, do not require isolation. All inmates should be screened for symptoms and medically cleared for transfer before leaving the institution.

- A more expansive contact investigation is warranted for cases of crusted scabies (i.e., Norwegian scabies).

- Ivermectin oral therapy should be considered if topical treatment fails to control a scabies outbreak.

- All staff contacts should be referred for medical evaluation and treatment in accordance with BOP policy.

**Reporting:**

Two or more epidemiologically-linked ectoparasitic infections or any case of crusted scabies should be reported to the Central Office using BOP form (Bps-664, Infectious Disease Outbreak Record) and fax to (202) 307-6008.

**References:**

Centers for Disease Control and Prevention, Sexually Transmitted Diseases Treatment Guidelines-2002, *MMWR* 2002;

(No. RR-6):67-69.

**Websites** for FACT SHEETS on Parasitic Disease:

[www.cdc.gov/ncidod/dpd/parasites/scabies/factsht\\_scabies.  
htm](http://www.cdc.gov/ncidod/dpd/parasites/scabies/factsht_scabies.htm)

[www.cdc.gov/ncidod/dpd/parasites/lice/default.htm](http://www.cdc.gov/ncidod/dpd/parasites/lice/default.htm)

**Hotline: CDC National STD Hotline - 1-800-227-8922** (Provides general information on available CDC resources; not patient-specific treatment recommendations.)