

## MDR TB CARE PLAN

Baseline	Initiation of Treatment	Month 1	Month 2	Month 3	Month 4	Month 6	Month 9	Month 12	Month 18	Month 24
CXR-PA/Lat, Compare to old films	Consider CT & alternate views			Consider CXR		CXR		CXR Consider CT	CXR	CXR Consider CT
TST/Report case										
Request/review old records	Physician assessment	Physician assessment q 1-2 wks	Physician assessment q 1-2 wks	Physician assessment q month						
Create drug-o-gram	Update drug-o-gram	Update drug-o-gram								
Review prior lab: CBC, BUN, Cr, LFT's, 24 hr Cr Cl*, Ca#, Mg#, HB, HCV, glucose		CBC, BUN, Creat, LFT's, K, Ca, Mg at least q month								
HIV screen with pre/post counseling		If positive CD4, viral load	If positive evaluate for treatment							
Baseline TSH				TSH q 3 months if on PAS and/or Ethionamide. If elevated Levothyroxine Rx						
Review prior sputum results. Repeat sputum	Sputum q a.m. x3 days smear & culture	Sputum q a.m. x3 days smear & culture	Sputum q month culture							
Review susceptibility, request extended susceptibility test <sup>†</sup>			Repeat susceptibility if sputum positive	Repeat q month if culture positive						
Infection control isolation	Continue until culture negative x3									
	Aminoglycoside and/or Capreomycin IV (IM) 5 day/wk	Peak/trough drug level	Peak/trough drug level		Peak/trough drug level	Δ to 3x/wk after 4-6 months if culture negative	D/C after culture neg x6-12 month			
	4-6 oral drugs	Peak drug levels 2 hrs post dose (PAS 6 hr)		Peak drug levels 2 hrs post dose (PAS 6 hr)				Peak drug levels 2 hrs post dose (PAS 6 hr)		
	DOT initiated/patient educated	Educate as needed								
	Pyridoxine 100mg	As long as ethionamide, linezolid, or cycloserine given								
Baseline weight & height	Calculate BMI	Weigh weekly	Weigh monthly							
	Nutritional assessment	Nutritional supplement as needed (no milk products, aluminum, CA, Mg containing antacids, iron or MVI's within 2 hours of fluoroquinolone)								
	Audiogram/vestibular screen. Continue monthly as long as aminoglycoside/capreomycin given									
	Vision screen. Continue as long as ethambutol, rifabutin, linezolid, clofazamine given									
Assess & Address	Substance abuse/psychosocial factors influencing compliance									
	Education needs/completion of Assess & Address contact evaluation with health department									

\*Repeat clearance if decreased & adjust medications (aminoglycosides, capreomycin, ethambutol, PZA, levofloxacin, cycloserine)

† For patients at high risk for MDR-TB request rapid molecular assay for drug resistance [consultation required]

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# Monitoring for Toxicities

Patient Name: SAMPLE PATIENT Treatment Start Date: May 5, 2015 Treatment Regimen: EMB, Moxifloxacin, Amikacin, Linezolid, PAS

Tool 2: MDR-TB Monitoring Checklist\*

Activity	Baseline	Month of Treatment																	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Date	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
<b>CLINICAL MONITORING</b>																			
Sputum smear and culture <sup>1</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CXR <sup>2</sup>	<input checked="" type="checkbox"/>			<input type="checkbox"/>			<input type="checkbox"/>			<input type="checkbox"/>			<input type="checkbox"/>			<input type="checkbox"/>			<input type="checkbox"/>
Weight <sup>3</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Symptom review <sup>4</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DSI <sup>5</sup>	<input checked="" type="checkbox"/>																		
<b>LAB MONITORING FOR TOXICITY / CO-MORBIDITIES</b>																			
CBC <sup>6</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Creatinine <sup>7</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LFT <sup>8</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
K+, Ca, Mg <sup>9</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drug level <sup>10</sup>																			
TSH <sup>11</sup>	<input type="checkbox"/>			<input type="checkbox"/>			<input type="checkbox"/>			<input type="checkbox"/>			<input type="checkbox"/>			<input type="checkbox"/>			<input type="checkbox"/>
HIV <sup>12</sup>	<input checked="" type="checkbox"/>																		
Pregnancy	<input type="checkbox"/>																		
<b>MONITORING PROCEDURES</b>																			
Audiogram <sup>13</sup>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>										
Vestibular exam <sup>14</sup>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>										
Vision exam <sup>15</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Peripheral neuropathy <sup>16</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Arthralgias <sup>17</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Depression <sup>18</sup>																			
EKG <sup>19</sup>																			
<b>*Important: Monitoring recommendations may change if treatment regimen or patient status changes. A box indicates monitoring activity is recommended. Check box when activity is completed.</b>																			
<ol style="list-style-type: none"> <li>1 Collect three AFB smear and culture specimens every 2 weeks until smear conversion, and then 2-3 specimens monthly until cultures have converted to negative. Once cultures have converted, obtain at least 1 specimen monthly throughout therapy.</li> <li>2 Obtain baseline CXR and monitor q 3 months during the first year and q 6 months in the second year of treatment.</li> <li>3 Monitor weight monthly and adjust medications as needed.</li> <li>4 Monitor for symptoms monthly.</li> <li>5 Obtain first- and second-line DSI results at baseline. Repeat if patient on RPE and remains culture positive prior to MDR-TB Rx, and again if patient fails to convert cultures after 3 months on treatment.</li> <li>6 Obtain creatinine at baseline and monthly while patient is on injectable agent.</li> <li>7 LFTs at baseline and then monthly while patient is on PZA, ethionamide or PAS.</li> <li>8 K+, Ca, and Mg++ at baseline and monthly while patient is on an injectable agent.</li> <li>9 Therapeutic drug levels (TDM) should be obtained for patients receiving cycloserine after 2 weeks on therapy and if signs of toxicity develop. TDM may be obtained for other drugs as clinically indicated.</li> </ol>										<ol style="list-style-type: none"> <li>11 Monitor TSH at baseline and every 3 months while patient is on ethionamide or PAS, and more frequently if symptoms or abnormalities.</li> <li>12 Obtain baseline HIV.</li> <li>13 Perform audiogram at baseline and monthly while patient is on an injectable agent.</li> <li>14 Perform vestibular exam at baseline and monthly while patient is on an injectable agent.</li> <li>15 Perform visual acuity plus color discrimination exams at baseline and monthly while patient is on ethambutol or linezolid.</li> <li>16 Monitor for peripheral neuropathy at baseline and monthly while patient is on linezolid and as clinically indicated for patients on fluoroquinolones.</li> <li>17 Monitor for arthralgias at baseline and monthly while patient is on PZA or fluoroquinolones.</li> <li>18 Monitor for depression, agitation, or mental status change at baseline and monthly while patient on cycloserine.</li> <li>19 Obtain EKG at baseline and at least 2, 12, and 24 weeks for patients on bedaquiline and at baseline and after treatment start for patients on fluoroquinolones as clinically indicated.</li> </ol>									

Adapted from a checklist developed by the California Department of Public Health (Health TB Control Branch, MDR-TB Section)

# Drug-O-Gram

<b>SUMMARY DATE:</b>	<b>NAME:</b>	<b>DOB:</b>	<b>HEALTH DEPARTMENT:</b>	<b>TREATING PHYSICIAN:</b>	<b>FILE NO:</b>
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## TREATMENT REGIMEN

## BACTERIOLOGY

Date	WL	INH	RIF	PCA	EMB	AK	OM	MPX	LPX	ETA	CS	PAS	LZO			Date	spec	cm/cult	Comments

## SUSCEPTIBILITY RESULTS

Date	Spec	Lab	INH	RIF	PCA	EMB	SM	AK	OM	MPX	LPX	ETA	CS	PAS	LZO	RFB	SDO			Reported

Treatment Reg: ● = DDT; ▲ = CAT

Adapted from Los Angeles County TB Control Program Drug-O-Gram