

DATE/TIME	<b>Penicillin G Desensitization Protocol</b>
	<b>DO NOT USE: U, u, IU, MS, MSO<sub>4</sub>, 1.0 (trailing zero), .5, QD, QOD, MgSO<sub>4</sub></b> <b>INSTEAD USE: Unit, Morphine, 1, 0.5 (leading zero), Daily, Every other day, Magnesium</b>
	<b>1. Initiation of Protocol Requirements:</b> <input checked="" type="checkbox"/> Admit patient to ICU: _____ <input checked="" type="checkbox"/> Patient <b>MUST</b> be full code for the desensitization procedure and thru the next full dose is administered. If patient is DNR/DNI, the primary team should discuss with the patient or legal guardian whether they are willing to reverse the status to FULL CODE for the duration of the procedure. <input type="checkbox"/> Consult UM Allergist <input type="checkbox"/> If patient is taking a beta blocker, HOLD beta blocker for 24 hours before protocol is administered.
	<b>2. Monitoring Requirements:</b> <input checked="" type="checkbox"/> Monitor and chart vital signs and oxygen saturation prior to the first dose and prior to each dose escalation (5min during dose and 10minutes after each dose = every 15 minutes). <input checked="" type="checkbox"/> Assess breath sounds prior to first dose, prior to each dose escalation, and upon complaints of respiratory symptoms including dyspnea or chest tightness. <input checked="" type="checkbox"/> Notify ICU fellow/attending or allergist at: _____ and hold subsequent doses until further orders if any of the following signs or symptoms occur: <ol style="list-style-type: none"> <li>Oral: pruritus of lips, tongue, and palate, oral "tingling", edema of lips and tongue, metallic taste in the mouth.</li> <li>Skin: localized or generalized itching, flushing, hives, swelling (angioedema), morbilliform rash.</li> <li>GI: abdominal cramps or pain (colic), nausea, vomiting, diarrhea, loss of bowel control</li> <li>Respiratory: nasal congestion or sneezing, rhinorrhea, tightness in the throat, hoarseness, "barky" cough, difficulty swallowing, dyspnea, chest tightness, wheezing, stridor, drop in oxygen saturation, cyanosis, respiratory distress.</li> <li>Cardiovascular: tachycardia (increase &gt;15 beats/min), dysrhythmia, mild hypotension, bradycardia, profound hypotension, cardiac arrest.</li> <li>Neurological: change in activity level, anxiety, "light headedness", feeling "impending doom", loss of consciousness</li> </ol> <input checked="" type="checkbox"/> If allergic reaction occurs call physician at phone number listed above and administer the following agents in the listed sequence: <ol style="list-style-type: none"> <li>Give 0.3mg (0.3mL) of 1:1000 epinephrine IM x1. May repeat Q5Min x2 as needed for allergic reaction.</li> <li>After epinephrine, Give 0.9% NaCl 1000mL IV bolus x 1 as needed for systemic reaction.</li> <li>After 0.9% NaCl, give Methylprednisolone 125mg IV x 1 dose PRN for systemic reaction.</li> <li>After Methylprednisolone, administer diphenhydramine 50mg IV X 1 PRN systemic reaction.</li> <li>After diphenhydramine, administer ranitidine 150mg IV x1 PRN systemic reaction.</li> </ol>
	<b>3. Drug Desensitization Procedures:</b> <input checked="" type="checkbox"/> Start with bag labeled solution #1. <input checked="" type="checkbox"/> Give each dose over 5 minutes. Then, allow a 10 minute monitoring period for signs/symptoms of allergic reaction before giving the next dose. If tolerating, modify infusion rate and volume to be infused (VTBI) on the pump in an escalating manner per protocol. <input checked="" type="checkbox"/> Document each dose as "given" on table on page #2 <input checked="" type="checkbox"/> Monitor for 30 minutes after the final dose. If no reaction occurs, start the scheduled penicillin dose as follows 4 hours from the last desensitization dose as ordered by the treating physician: Penicillin G: _____ units IV Q _____ H <input checked="" type="checkbox"/> If penicillin is held for more than 24 hours, notify allergist prior to re-administration of the drug.
	<b>4. Pharmacy Compounding Instructions:</b> <ol style="list-style-type: none"> <li>Use a 20,000,000 unit vial. Reconstitute with 75mL for a final approximate concentration of 250,000 units/mL.</li> <li>Compound Solution #4:           <ol style="list-style-type: none"> <li>Use a 50mL bag of D5W. Remove 20mL from bag. Discard 20mL.</li> <li>Add 20mL from the reconstituted vial. Label as SOLUTION #4. Final approximate concentration is 100,000 units/mL.</li> </ol> </li> <li>Compound Solution #3:           <ol style="list-style-type: none"> <li>Use a 50mL bag of D5W and remove 2mL from bag. Discard 2mL.</li> <li>Add 2mL from the reconstituted vial. Label as SOLUTION #3. Final approximate concentration is 10,000 units/mL.</li> </ol> </li> <li>Compound Solution #2:           <ol style="list-style-type: none"> <li>Use a 50mL bag of D5W. Remove 5mL from bag. Discard 5mL.</li> <li>Remove 5mL from <b>Solution #3 (not vial)</b> and add to the bag of D5W.</li> <li>Label as SOLUTION #2. Final approximate concentration is 1,000 units/mL.</li> </ol> </li> <li>Compound Solution #1:           <ol style="list-style-type: none"> <li>Use a 50mL bag of D5W. Remove 5mL from bag. Discard 5mL.</li> <li>Remove 5mL from <b>Solution #2 (not vial)</b> and add to the bag of D5W.</li> <li>Label as SOLUTION #1. Final approximate concentration is 100 units/mL.</li> </ol> </li> </ol>
	<b>Physician Name and Signature:</b> _____ <b>Date:</b> _____ <b>Physician contact phone number:</b> _____



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Miami, FL 33136

Patient Identification Sticker

# Penicillin G Desensitization Protocol

Dose #	Protocol Time	Actual Time Given	Rate (mL/hr)	VTBI (mL)	Infusion time (min)	Dose (units)	Cumulative Dose (units)	Next Dose Due at (time)
<b>Start with Solution Bag #1 (approx. 100 units/mL - 5,000units/50mL)</b>								
1	0:00		6	0.1	1	10	10	
2	0:15		12	0.2	1	20	30	
3	0:30		24	0.4	1	40	70	
4	0:45		48	0.8	1	80	150	
5	1:00		12	1	5	100	250	
6	1:15		24	2	5	200	450	
7	1:30		48	4	5	400	850	
Total bag infused: 8.5mL					Total bag to waste: 41.5mL			
<b>Change to Solution Bag #2 (approx. 1,000 units/mL - 45,000units/45mL)</b>								
8	1:45		12	1	5	1,000	1,850	
9	2:00		24	2	5	2,000	3,850	
10	2:15		48	4	5	4,000	7,850	
11	2:30		96	8	5	8,000	15,850	
12	2:45		192	16	5	16,000	31,850	
Total bag infused: 31mL					Total bag to waste: 14mL			
<b>Change to Solution Bag #3 (approx. 10,000 units/mL - 450,000units/45mL)</b>								
13	3:00		36	3	5	30,000	61,850	
14	3:15		72	6	5	60,000	121,850	
15	3:30		144	12	5	120,000	241,850	
Total bag infused: 21mL					Total bag to waste: 24mL			
<b>Change to Solution Bag #4 (approx. 100,000 units/mL - 5,000,000units/50mL)</b>								
16	3:45		30	2.5	5	250,000	491,850	
17	4:00		60	5	5	500,000	991,850	
18	4:15		120	10	5	1,000,000	1,991,850	
19	4:30		120	10	5	1,000,000	2,991,850	
20	4:45		120	10	5	1,000,000	3,991,850	
Total bag infused: 37.5mL					Total bag to waste: 12.5mL			
<b>Total Time to Desensitize: 4 hours and 45 minutes</b> <b>Total Cumulative Dose: 4,000,000 units</b>								

## References:

1. Solensky R. Drug desensitization. Immunology and Allergy Clinics of North America. 24 (2004) 425-443.
2. Castells M. Desensitization for drug allergy. Curr Opin Allergy Clin Immunol 6:476-481, 2006.



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Revised  
4/2012

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