

ADULT CARDIAC MEDICATION MONITORING GUIDELINES

Governing Policies*:

[Adult Cardiac Medication Monitoring Guidelines](#)
[\(UTMDACC Institutional Policy # CLN0500\)](#)

* Refer to the governing policy, listed above, for more complete guidance and instructions.

LEVELS OF CARE

The Adult Cardiac Medication Monitoring Guidelines are intended to increase awareness of potential adverse effects of medication administration. *In emergent situations medications that are ordered should be initiated while patients are actively being transferred to a higher level of care.*

The guidelines were developed based on the activity and side effect profile of each individual medication.

- *These guidelines apply to intravenous medications only.*

Cardiac Monitoring Levels:

- C1: Critical Care, Emergency Department, Operating Room
- C2: Monitored Intermediate Care
- C3: Acute Care Unit
 - Utilization of a portable cardiac monitor.

Vital Signs:

- Vital Signs 1 (VS1): Pre-administration of drug, then every 15 minutes x 4; every 30 minutes x 2; then every 1-2 hours
- Vital Signs 1a (VS1a): Pre-administration of drug, then every 15 minutes x 4; every 30 minutes x 2; every 1 hour x 10 hours, then every 4 hours
 - NOTE: If infusion rate changes, systolic blood pressure (SBP) goes below 100 mmHg, or heart rate (HR) goes above 110 bpm resume monitoring every 1-2 hours x 10 hours and then every 4 hours
- Vital Signs 2 (VS2): Every 2-4 hours
- Vital Signs 3 (VS3): Every 4-8 hours

Unless otherwise written by the practitioner in the medication orders, the definition of hemodynamically stable when mentioned is defined as a HR <120 bpm and >50 bpm and/or SBP <180 mmHg and >90 mmHg.

Minimum Cardiac Medication Monitoring Guidelines

Intravenous Agent	Level of Care	Vital Sign Monitoring Level	Special Precautions
Antimuscarinic Agents			
Atropine ≤ 0.5 mg	No cardiac monitoring necessary	See special precautions	Obtain blood pressure and heart rate prior to and ten minutes after atropine administration. If systolic blood pressure ≤90, heart rate ≥110 and/or heart rate ≤ 50, attach cardiac monitor and contact responsible physician.
Atropine > 0.5 mg	For symptomatic bradycardia: C1 or Patient in process of transfer to level C1	VS1	
Inotropes and Vasopressors			
Dobutamine <i>Doses less than or equal to 10 mcg/kg/min</i>	C2	VS1 May decrease to VS2 after 24 hours if hemodynamically stable	
Dobutamine <i>Doses greater than 10 mcg/kg/min</i>	C1	VS1	

Intravenous Agent	Level of Care	Vital Sign Monitoring Level	Special Precautions
Inotropes and Vasopressors			
Dopamine <i>Doses less than or equal to 5 mcg/kg/min</i>	No cardiac monitoring necessary	VS1 May reduce to level VS2 after 2 hours if hemodynamically stable	
Dopamine <i>Doses greater than 5 mcg/kg/min but not to exceed 10 mcg/kg/min</i>	C2	VS1	
Dopamine <i>Doses greater than 10 mcg/kg/min</i>	C1 or patient in process of transfer to C1	VS1	
Epinephrine (Adrenalin®)	C1	VS1	
Isoproterenol (Isuprel®)	C1	VS1	
Milrinone (Primacor®)	C2	VS1 May decrease to VS2 after 24 hours if hemodynamically stable	
Norepinephrine (Levophed®)	C1 or in process of transfer to C1	VS1	
Phenylephrine (Neosynephrine®)	C1 C2 for special precautions	VS1	High dose IL-2 monitored patients may receive up to 2 mcg/kg/min or a maximum of 180 mcg/min Post-op thoracic and cardiovascular patients with hypotension not responding to fluid boluses. Patient may receive up to 200 mcg/minute.
Vasopressin (Pitressin®)	C1	VS1	
Intravenous Agent	Level of Care	Vital Sign Monitoring	Special Precautions

		Level	
Thrombolytic Agents			
Alteplase (Activase®)	Myocardial infarction, pulmonary embolism or stroke: C2 or C3 with transfer to C1 For all other indications: C1	VS1	
Glycoprotein IIb/IIIa Inhibitors			
Eptifibatide (Integrilin®)	C2	VS1	
Beta-blockers			
Esmolol (Brevibloc®)	C2	VS1	
Labetalol (Trandate®, Normodyne®)	1. Continuous Infusion: C1 2. Intermittent Bolus: No cardiac monitoring required if heart rate greater than or equal to 70 bpm, dose is less than or equal to 20 mg, and frequency is less than or equal to Q 4 hours (less than 6 doses in 24 hours). Otherwise, C2 monitoring is required	Continuous infusion and intermittent bolus: VS1	
Metoprolol (Lopressor®)	No cardiac monitoring required for doses less than or equal to 10 mg IV Q 4 hrs Doses greater than 10 mg IV Q 4 hours require C2 monitoring	For all indications: VS1 May decrease to VS2 after 24 hours if hemodynamically stable	
Calcium Channel Blockers			
Diltiazem (Cardizem®)	C2	VS1a	
Nicardipine (Cardene®)	C2	VS1	
Verapamil (Calan®, Isoptin®)	C2	VS1	

Intravenous Agent	Level of Care	Vital Sign Monitoring Level	Special Precautions
Vasodilators			
Nitroglycerin (Nitrol®, Tridil®)	C2	VS1	
Nitroprusside	C1	VS1	
Dopamine agonist			
Fenoldopam (Corlopan®) less than or equal to 0.03 mcg/kg/min	No cardiac monitoring necessary	VS1	
Fenoldopam (Corlopan®) greater than 0.03 mcg/kg/min to less than or equal to 0.1 mcg/kg/min	C2	VS1 After 24 hours at VS1 if stable may decrease to VS2	
Fenoldopam (Corlopan®)	Hypertensive urgency/hypertensive crisis: C1	VS1	

Intravenous Agent	Level of Care	Vital Sign Monitoring Level	Special Precautions
Antiarrhythmics			
Adenosine (Adenocard®)	C3 An Authorized Provider must be available in the nursing unit during medication administration	VS1	
Amiodarone (Cordarone®)	C2	VS1a	
Digoxin (Lanoxin®)	For IV initiation using doses ≥ 0.5 mg in a 24-hour period: C2 For routine/continuation of previously initiated therapy in patients NOT experiencing rhythm changes: No cardiac monitoring is required	For IV initiation using doses ≥ 0.5 mg in a 24-hour period: VS1 For routine/continuation of previously initiated therapy in patients NOT experiencing rhythm changes: VS3	
Ibutilide (Corvert®)	C3 After ibutilide infusion, continuous electrocardiogram monitoring is advised for at least 4 hours, and until QTc interval returns to baseline. Monitoring for longer periods is suggested if arrhythmias are observed. An Authorized Provider must be available in the nursing unit during medication administration	VS1 After 4 hrs may reduce to level VS2 as long as patient is stable	
Lidocaine	C1	VS1	
Serums			
Digoxin Immune Fab (Digibind®)	C3 with transfer to C2	VS1	

ADDENDUM:

The following selected C2 and C3 medications are allowed for use in the Acute Palliative Care Unit without telemetry in patients designated Do Not Resuscitate.

Adenosine

Amiodarone

Digoxin

Diltiazem

Dobutamine (doses less than 10 mcg/kg/min)

Dopamine (doses less than 10 mcg/kg/min)

Fenoldopam (doses less than 0.1 mcg/kg/min)

Labetalol

Metoprolol

Milrinone

Nicardipine

Verapamil