Look for any signs of contrast reaction, no matter how mild they may seem.

Patients experiencing reactions will be monitored according to the severity of the reaction.
If there are a few hives only, the patient may be discharged from the department as soon as the hives begin to fade and the patient is medically stable.
If the reaction is more severe, follow the treatment guidelines below.

Severity of Reaction	Symptoms	Treatment
Mild	*Nausea, warmth (heat), pallor, flushing (these are normal physiological responses to contrast injection and do not require intervention or documentation)* Cough, headache, dizziness, vomiting, anxiety, altered taste, itching, shaking, sweats, rash (hives) chills	Signs and symptoms appear self-limited without evidence of progression (e.g. limited urticaria with mild pruritis, transient nausea, one episode of emesis). Requires observation (15 –20 minutes) to confirm resolution and/or lack of progression but usually no treatment. Patient reassurance is usually helpful.
Moderate (moderate degree of clinically evident focal and/or systemic signs/symptoms)	nasal stuffiness, swelling-eyes or face, tachycardia/ bradycardia, hypertension, bronchospasm (wheezing), dyspnea, laryngeal edema, pronounced cutaneuous reaction	The symptoms listed are considered as indication(s) for immediate monitoring and treatment. These situations require close, careful observation for possible progression to a life-threatening event.
Severe (Life-threatening with more severe signs/symptoms)	Laryngeal edema, profound hypotension, unresponsiveness, convulsions, clinically manifested arrhythmias, cardiopulmonary arrest	Requires immediate recognition, monitoring and treatment, almost always requires hospitalization ***Call x6111 for Code Blue**

Management of Acute Reactions

Urticaria	• Discontinue injection, if not completed • No treatment needed in most cases • Hi-receptor blocker: Diphenhydramine (Benadryl) PO/IM/IV 25-50 mg or	*If severe/widely disseminated:* Alpha-agonist (arteriolar and venous constriction): • **Epinephrine SC** (1:1,000) 0.1-0.3ml (if no cardiac contraindication)
Facial/Laryngeal Edema	• Alpha-agonist (arteriolar and venous constriction): **Epinephrine SC** (1:1,000) 0.1-0.2 ml or if hypotension evident, then give epinephrine (1:10,000) slowly IV 1.0 ml, repeat • **O_2** 6-10L/Min (via mask)	*If not responsive to therapy or for obvious laryngeal edema (acute),* seek appropriate assistance **(code blue)** Consider intubation
Bronchospasm	• **O_2**6-10ml/min via mask • Monitor: ECG; O_2 saturation (pulse oximeter); BP • Beta agonist inhalers: **Alupent, Brethaire, Albuterol** • **Epinephrine** SC (1:1,000) 0.1-0.2 ml, if hypotensive give (1:10,000) slowly IV 1.0 ml Repeat prn up to a max. 1.0 mg	*Alternatively:* 1. **Aminophylline:** 6.0mg/kg IV in D5W over 10-20 min (loading dose); then 0.4-1.0 mg/kg/hr, prn 2. Call for assistance (CODE) for severe bronchospasm or if 0_2 sats <88 persists
Hypotension with Tachycardia	• Legs up 60 degrees or more (preferred) or Trendelenberg position • Monitor: ECG, pulse ox, BP • **O_2** 6-10L/min (via mask) • Rapid administration of large volumes of isotonic **Ringer's Lactate or NS**	*If poorly responsive:* • **Epinephrine** (1:1,000) slowly IV , if hypotensive give (1:10,000) slowly IV 1.0 ml, repeat prn up to max. 1.0 mg *If still poorly responsive: Call Code Blue and/or transfer to Emergency Department for further care.*
Hypotension with Bradycardia-Vagal Reaction	• Monitor vital signs • Legs up 60 degrees or more (preferred) or Trendelenberg position • Secure airway; give **O_2** 6-10L/min(via mask) • Secure IV access; push fluid replacement with **Ringer's Lactate** or **NS** • Give **atrophine** 0.6–1 mg IV slowly if patient does not respond quickly to above. • Repeat **atrophine** up to a total dose of 0.04 mg/kg (2-3 mg) in adults.	*Call Code Blue and/or transfer to Emergency Department for further care.*

Hypertension, Severe	• Monitors in place, ECG, pulse ox., BP • Nitroglycerin 0.4mg tablet, sublingual (may repeat x3); topical 2% ointment,	*Call Code Blue and/or transfer to ED for further care.*

	apply one inch strip • Sodium nitroprusside arterial line: infusion pump necessary to titrate • Transfer to ICU or emergency department • For pheochromocytoma-phentolamine 5.0mg (1.0mg in children) IV	
Seizures/ Convulsions	• 02 6-10L/min via mask • Consider diazepam (Valium) 5.0 mg or midazolam (Versed) 2.5 mg IV • If longer effect needed, obtain consultation; consider phenytoin (Dilantin) infusion 15-18 mg/kg at 50mg/min • Careful monitoring of vital signs required • Consider CODE for intubation if needed	*Call Code Blue and/or transfer to ED for further care.*
Pulmonary Edema	• Elevate torso; rotating tourniquet (venous compression) • 02 6-10 L/min via mask • Diuretics-furosemide (Lasix) 20-40 mg IV slow, push • Consider Morphine (1-3 mg IV) • Corticosteroids optional	*Call Code Blue and/or transfer to ED for further care.*