1. Stabilization/Treatment:
   a. Airway/Breathing:
      i. Obtunded, not protecting airway? Hypoxic? Not ventilating? -> Intubate
   b. Circulation:
      i. Bradycardia -> atropine (1 mg IV), external pacers, inotropes/pressors
      ii. Hypotension -> fluid resuscitation, pressors (epi vs norepinephrine)
      iii. Wide QRS -> give sodium bicarbonate
         1. Bicarb dosing:
            a. IV push: start with 2-3 ampules (each amp 50 mL of 8.4% Bicarb)
            b. If no response, may redose with 2-3 more ampules in 5 min
            c. Once QRS begins to narrow, begin IV infusion: 150 mEq of Bicarb in 1 L of D5W at 250 mL/hr
         iv. Long QT -> give magnesium (2g IV over 1-2 minutes, redose as needed)
   c. Neuro Depression:
      i. Evaluate need for NGT -> naloxone (2 mg IV), glucose (1 amp D50 IV), thiamine (50-100 mg)
      ii. If not responding, provide O2, BVM, and intubate as needed
   d. Seizure:
      i. Fingerstick glucose -> if low, give 1 amp of D50 (25 g dextrose)
      ii. Benzodiazepines: midazolam 5 mg IV/IM or lorazepam 2 mg IV/IM, repeat as needed
      iii. Always check an EKG in poisoned patients who have a seizure
   e. Hyperthermic or agitated
      i. Treat with benzodiazepines
      ii. Ketamine if needed -> 1-2 mg/kg IV or 4-5 mg/kg IM
      iii. Obtain a core temp -> cool patient as needed with ice packs, IV fluids, evaporative cooling (cover in wet sheets and use fans), external cooling devices

2. Clinical Presentations and Associated Diagnoses
   a. Respiratory Depression/Arrest:
      i. Opioid overdose: 2 mg IV naloxone may not be enough for fentanyl/synthetic opioid overdoses
      ii. Consider giving high dose naloxone (4-8 mg) if suspect opioid toxidrome
   b. Circulatory -> Cardiotoxins
      i. Bradycardia:
1. Calcium channel blockers (CCB), beta blockers (BB), digoxin, opioids, clonidine, cholinergic poisoning

ii. Hypotension:
   1. Evaluate for CCB, BB, clonidine, nitroglycerin, TCAs, anticonvulsants, barbiturates, opioids on medication list
   2. Rule out other causes of hypotension (hypovolemia, cardiogenic, obstructive, etc.)

iii. Wide QRS: Na Channel blockers
   1. TCAs, antiarrhythmics, carbamazepine, lamotrigine, antimalarials, local anesthetics

da. Neuror Depression:
i. Toxicologic causes: sedative/hypnotics, opioids, ethanol, toxic alcohols, psychiatric medications, antiepileptic drugs
   ii. Check an anion gap: consider toxic alcohols if elevated anion gap in high risk populations (alcoholics, undomiciled), send ethylene glycol and methanol levels, consider treatment with fomepizole
   iii. Consider using ETCO2 or checking a VBG to assess adequacy of ventilatory function
   iv. Rule out other causes (infectious, ICH, etc.)

d. Seizure
   i. Final common pathway in many toxidromes (seizure, coma, death)
   ii. Specific causes to think about:
      1. Salicylates, tramadol
      2. Sympathomimetics, amphetamines
      3. Benzo/sedative/EtOH withdrawal
      4. TCAs, carbamazepine, citalopram, venlafaxine, bupropion
      5. Isoniazid
      6. Theophylline

e. Agitated Delirium:
i. Hyperthermic, agitated, ‘super-human’ strength
   ii. Final common pathway for males, often with psychiatric comorbidities + drugs (sympathomimetics) + EtOH

f. Cardiac Arrest: ACLS + Assess for appropriateness of intralipid fat emulsion as rescue therapy: 20% Intralipid as 1.5 mL/kg bolus then 0.25 mL/kg/min for 30 minutes

3. Absorption/Elimination Considerations
   a. Absorption
      i. Activated charcoal (AC): consider in patient who is protecting airway and expected to continue to protect airway (based on poisoning type, may not want to give AC if patient going to have seizures/worsening mental status)
ii. Time consideration: typically only useful within 1-2 hours of ingestion, consider using up to 12-18 hrs post ingestion if substance is controlled release/extended release
iii. Use OG tube to deliver AC in intubated patients
iv. Does not work with heavy metals (iron, lead), lithium, toxic alcohols
b. Elimination:
   i. Urine alkalization: traps weak acids -> aspirin, phenobarbital
   ii. Dialysis: TPALS
      1. Theophylline, phenobarbital, toxic alcohols (ethylene glycol and methanol), lithium, salicylates
4. Labs/Imaging
   a. Consider in everyone: EKG, glucose, electrolytes (check for anion gap), LFTs/lipase/coags, acetaminophen/salicylate levels, EtOH level
   b. As indicated: osmolality, toxic alcohol levels, carboxyhemoglobin, urine drug screen, specific drug levels, head CT, XR chest
5. Call poison control center (1-800-222-1222)

References: