

EMERGENCY PROTOCOL



ADVANCE PREPARATION FOR EMERGENCIES

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INTRODUCTION

During every interventional pain procedure, there is a possibility of encountering a medical emergency. Depending on the setting, the availability of certain levels of care may vary greatly; however, a minimum level of preparation and planning is required to maximize the likelihood of successfully navigating any emergency that may arise.

Most interventional spine and pain procedures can be safely performed in an office, surgery center, or hospital. Risk mitigation helps to prevent most interventional emergencies. Proper preparation and technique are the most effective risk mitigation strategies [1]. Regardless of the service site and the level of risk mitigation, the physician and staff must be familiar with their emergency policies and prepared to respond appropriately to any emergency. Patient stabilization and transfer to higher-level care, if necessary, help ensure optimal outcomes.

Proper patient monitoring during procedures is vital for early identification of medical emergencies [1]. Emergency protocols should

be implemented as soon as an emergency is recognized, ideally with identification and response to a deteriorating medical condition before the need for Basic Life Support (BLS)/ Advanced Cardiac Life Support (ACLS) protocols arises.

In an office-based or surgical center setting, transportation to a hospital should occur as soon as deemed necessary. Transfer protocols should be established, familiar to the essential staff, and readily available for review. To ensure uninterrupted medical care, staff members responsible for initiating the transfer protocol should be separate from those rendering aid.

EMERGENCY PROTOCOLS

Continuous patient monitoring and clinical awareness throughout the procedure are paramount. Vigilance and preparation are necessary. Any procedure, no matter how minimal, can result in a vasovagal response that may progress to cardiac arrest. Emergency protocols should address timely recognition, ready availability of appropriate medications and supplies, delineation of staff responsibilities, implementation of medical treatments/BLS/ACLS, and coordination of transportation to a higher level of care if needed.

These protocols should be reviewed and updated regularly to ensure they remain compliant with local governing directives. Team members should be familiar with the protocols, and periodic drills should be conducted to maintain that familiarity.

STAFF REQUIREMENTS

- In all settings, the physician must be familiar with BLS/ACLS protocols, and, at a minimum, the essential clinical support staff must be familiar with BLS/ACLS. Formal training should be kept current.
- Staff should be familiar with emergency protocols, including transfer protocols.
- Staff should also be familiar with the locations of emergency equipment and medications in their individual settings, as well as their proper use. A list of required equipment is included below.
- Periodic review of policies and protocols is recommended. The timing and documentation of these reviews may vary by institution. Pre-scheduled annual reviews and periodic simulated emergencies help ensure continuity and improve performance.

CRASH CART EQUIPMENT AND SUPPLIES CHECKLIST

Based on institutional protocols, the following items are relevant to BLS/ACLS and interventional pain emergencies. Best practices for stocking equipment and medication should be determined by reviewing organizational standards and consulting the emergency readiness team.

At a minimum, the following should be considered essential for providing medical support in an interventional pain setting:

- ☐ Stethoscope
- ☐ Automated external defibrillator (AED)
- ☐ Airway (at minimum, nasal)
- ☐ Bag-valve-mask (BVM) resuscitator
- ☐ Pulse oximeter
- ☐ Blood pressure cuff
- ☐ Epinephrine (Epi-pen)

Additional supplies useful in emergency situations where provider familiarity exists:

1. Airway Management
 - ☐ Oropharyngeal airways (multiple sizes)
 - ☐ Nasopharyngeal airways (multiple sizes)
 - ☐ BVM resuscitator (adult & pediatric, if applicable)
 - ☐ Oxygen tank with regulator
 - ☐ Non-rebreather masks and/or nasal cannulas
 - ☐ Laryngoscope with blades (Macintosh and Miller sizes)
 - ☐ Endotracheal tubes (ETT, multiple sizes)
 - ☐ ETT stylets
 - ☐ Laryngeal mask airways (LMAs)
 - ☐ Suction device (portable or wall-mounted)
 - ☐ Yankauer suction tips and tubing
 - ☐ CO₂ detector or colorimetric capnography (if available)

2. Circulation / Cardiac Arrest

- ☐ AED or manual defibrillator
- ☐ Defibrillator pads (adult and pediatric)
- ☐ Electrocardiogram (ECG) leads or portable ECG device (if available)
- ☐ Blood pressure cuffs (multiple sizes)
- ☐ Pulse oximeter
- ☐ Stethoscope

3. Emergency Medications

All medications should be stored in labeled, sealed compartments.

Expiration dates should be checked regularly.

ACLS drugs:

- ☐ Epinephrine 1:10,000 (IV)
- ☐ Amiodarone (or Lidocaine)
- ☐ Atropine
- ☐ Adenosine
- ☐ Sodium bicarbonate
- ☐ Calcium gluconate or chloride
- ☐ Dextrose 50% (D50)
- ☐ Magnesium sulfate

Anaphylaxis and sedation reversal:

- ☐ Epinephrine 1:1,000 (IM)
- ☐ Diphenhydramine (IV/IM)
- ☐ Methylprednisolone (IV)
- ☐ Albuterol inhaler or neb solution
- ☐ Naloxone (Narcan) IV/IM/IN
- ☐ Flumazenil (for benzodiazepine reversal)

4. Intravenous (IV) Supplies

- ☐ IV catheters (various gauges)
- ☐ IV start kits
- ☐ Normal saline (0.9% NaCl) or Lactated Ringer's (500 mL / 1L bags)
- ☐ IV tubing and extension sets
- ☐ Tourniquets, alcohol pads, tape

5. Miscellaneous Supplies

- ☐ Syringes (1 mL, 3 mL, 10 mL)
- ☐ Needles (various gauges and lengths)
- ☐ Alcohol and povidone-iodine wipes
- ☐ Glucometer with test strips
- ☐ Lancets
- ☐ Sterile and non-sterile gloves
- ☐ Cardiopulmonary Resuscitation (CPR) board or backboard
- ☐ Sharps container
- ☐ Biohazard waste bag
- ☐ Clipboard with code documentation forms

Maintenance Tips

- A staff member should be assigned to check the cart periodically for:
 - Expired medications and supplies
 - Equipment functionality
 - Restocking supplies
- Drawers should be labeled by function (e.g., Airway, IV Access, Meds)
- Emergency protocols and emergency medical services/Code Blue numbers should be posted.

KEY CONSIDERATIONS/TAKEAWAYS

- Advance preparation for emergencies requires:
 - Appropriate patient monitoring
 - Compliance with governmental and institutional regulations
 - Procedure team familiarity with: emergency identification, BLS/ACLS, supplies used during emergencies, and appropriate transfer protocols
 - Availability of supplies required for emergency management

REFERENCES

1. Vu T, Doan LV, Gonzalez Cota A, DeFrancesch F, Waring PH, McCormick ZL, McKenna MJ. Procedural Sedation. In: Maus TP, Cohen I, McCormick ZL, Schneider BJ, Smith CC, Stojanovic MP, Waring PH (Eds). Technical Manual and Atlas of Interventional Pain and Spine Procedures, Volume 1: Fundamentals. International Pain and Spine Intervention Society; 2024:77-80.

DISCLAIMER

While these Emergency Protocols are intended to identify elements critical to the management of emergencies during interventional pain procedures, they are not intended to be inclusive of all proper emergency management protocols or exclusive of other methods of care reasonably utilized to obtain the same results. Nothing contained in these documents is intended to be used as a substitute for the care and knowledge of the individual clinician. They are guidelines based on evidence-informed expert consensus. IPSIS makes no representation and assumes no responsibility for the accuracy of the information contained or available through this website, and such information is subject to change without notice. Given the individual patient's clinical circumstances and preferences, the clinician's independent medical judgment should always determine patient care and treatment. Practitioners are advised to consider management options in the context of their training, background, and institutional capabilities when selecting recommended treatment options. IPSIS is not responsible, nor does it assume any legal liability or responsibility for the accuracy, completeness, clinical efficacy, or value of any such information or apparatus, product, or process described or referenced through this website or the information contained therein.