



Air & Surface Transport Nurses Association Position Statement:

Critical Care Transport Nurse Safety in the Transport Environment

This Position Statement was developed as an educational tool based on the authors' opinions. It is not a product of a systematic review. Readers are encouraged to consider the information presented and reach their conclusions.

The critical care transport environment includes air (fixed-wing and helicopter), ground ambulance, and other specialty transport. Maximizing the safety of team members in the transport medical environment is a primary mission of the Air & Surface Transport Nurses Association (ASTNA). ASTNA's *Patient Transport: Principles and Practice (5th ed.)* states, "Safety should be the number one priority of all transport services. Safety is a pervasive attitude that all transport team members must support". Currently, healthcare organizations prioritize patient safety, and to achieve the best patient outcomes, organizations must foster a culture of safety for critical care transport team members.

ASTNA Position

ASTNA believes promoting critical care transport nurse safety includes the following guidelines:

Wellness

Transport providers are skilled at caring for patients and may need to remember to care for themselves. A healthy lifestyle can mitigate the stress of the transport nurse role. There are often several barriers to a good work/life balance:

- Staffing
- Scheduled hours/shift length
- Multiple jobs/family obligations/continuing education

Efforts to improve wellness focus on self-care, nutrition, sleep, exercise, and stress management. Additional accessibility to preventive care and an employee assistant program support transport nurse wellness.

ASTNA believes that supporting wellness will improve transport safety and health outcomes. Efforts to encourage and support a healthy work environment promote employee wellness. ******link Position Statement for ASTNA Care of the Caregiver?**

Safe Transport Environment

ASTNA, in collaboration with the International Association of Flight and Critical Care Paramedics (IAFCCP), supports following the Commission on Accreditation of Medical Transport Systems (CAMTS) requirements. CAMTS safety policies and procedures follow best practices in the air and ground transport environment. Safety culture varies by individual programs and organizations. Additionally, programs are advised to maintain best practices and must meet regulations at the local, state, and national levels, including:

- Federal Aviation Administration (FAA)
- National Transportation Safety Board (NTSB)
- Department of Health (DOH)
- Board of Nursing
- Department of Transportation (DOT)

ASTNA believes that based on the results of published research and the minimum rest requirements for pilots established by the FAA, ASTNA recommends and supports that improved performance, alertness, and decision-making would be promoted if:

- Structured scheduling ensures each critical care transport nurse is not prescheduled more than 24 hours in one shift and receives a minimum of 10 hours of uninterrupted rest between shifts. A written policy should be established acknowledging a transport nurse's responsibility to request relief from duty when feeling excessively fatigued or inadequately rested. The policy should include a process for identifying and activating backup personnel to relieve excessively fatigued team members and language specifying that the transport nurse will not experience any punitive actions based on calling a "timeout" period. Timeout periods, rest times, and flight times should be tracked and used for quality improvement as applicable to the program. This includes the utilization of a fatigue risk assessment tool.

ASTNA believes safety through interaction between critical care transport nurses and pilots- or drivers-in-command will be enhanced if:

1. Critical care transport nurses actively ensure a safe environment inside the aircraft or ground transport vehicle.
2. Critical care transport nurses work closely with the pilot(s) and driver(s) in developing procedures for beginning-of-shift briefings, pre-mission briefings, pre-mission checklists, pre-mission inspections, and post-mission debriefings as appropriate for a program's specific circumstances.
3. Critical care transport nurses receive training and routinely practice safety procedures during daily operations (e.g., sterile cockpit, watching for other aircraft/vehicles, identifying potential hazards, avoiding obstacles, and assessing anticipated landing zones).

4. All personnel, including fire and EMS personnel, involved in “hot” loading/unloading procedures receive initial and recurring training to ensure the safe performance of these procedures.

ASTNA believes the potential for injury in survivable incidents would be reduced if:

1. Critical care transport nurses in HEMS operations wear helmets specifically designed for helicopter operations. These helmets should meet or exceed US military specifications for aviation head protection gear and have full facial visors. Helmets should be fitted appropriately, and a facial visor should always be used.
2. Critical care transport nurses wear loose-fitting, long-sleeved uniforms constructed of flame—and heat-resistant materials. Uniforms should be fitted to provide at least ¼" between undergarments and the uniform, and undergarments should be made of all-natural fibers. Nomex gloves offer additional protection and should be worn whenever possible.
3. Critical care transport nurses in operations that conduct scene flights or missions wear high-top, all-natural leather boots with cotton or cotton-wool blend socks. If zippers are used in the boot design, a leather shield should be placed between the zipper and the inside of the boot.
4. Critical care transport nurses working in any transport environment know the decibel level in their environment and the potential hearing damage. Appropriate hearing protection should be worn. Annual hearing tests are recommended.

ASTNA believes consistent, widespread reporting of safety-related incidents and near-misses enhances critical care transport nurse safety. Safety reporting systems must include the following components:

1. An anonymous process of reporting or notifying others that the hazard exists.
2. A forum allowing for questions, feedback, and discussion.
3. Visible, written notification that information obtained through this reporting mechanism is not to be used for criticism, negative feedback, or punitive measures and
4. An SMS that allows personnel at all levels of an organization to identify, report, and act regarding unsafe or potentially unsafe situations.

ASTNA believes that the protection of the transport team in survivable crashes would be maximized if:

1. Air medical programs or operators install or configure all aircraft with this type of seating, which is available with crash-attenuating seats and single-point release shoulder harnesses that meet current FAR standards. As transport programs reconfigure and refurbish the interiors of existing aircraft, available data should be reviewed, and either vendors or manufacturers should make requests to install this equipment to meet FAR standards.
2. Crash-resistant fuel systems are installed in all helicopters in the air medical transport industry when possible.

3. Programs require vehicle interiors to be designed with a clear head-strike envelope for each occupant.
4. Ground programs choose the smallest ground critical care ambulance to accommodate the program mission, locate team member seating and equipment mounting positions in such a layout as to permit rendering of care from a seat-belted position, use automobile-grade padding on corners and edges, and ensure lap belts are positioned at the pelvic level.
5. All programs use technology as much as possible, including monitoring, performance, feedback, crash analysis technology, and other devices or systems that enhance team and occupant safety.
6. Transport vehicles are configured using the recommendations of all available resources, including but not limited to the FAA, NEMSPA, DOT, NFPA, CAAS, SAE, DHS, and other organizations that can offer input to improve vehicle safety and crashworthiness.

ASTNA believes critical care transport nurse safety would be enhanced if:

1. Transport programs attempt to develop contractual provisions that ensure the availability of backup vehicles and aircraft of the same type and model as the primary vehicles and aircraft.
2. Emphasis is placed on providing time for adequate familiarization with backup vehicles and aircraft. Safety and emergency procedures training should be provided, and allowances should be made for practicing those procedures and working with unfamiliar equipment. Written policies and procedures should be established to address provisions for ensuring the safety of transport team members in emergencies when backup vehicles and aircraft are a different type or model than the primary vehicles and aircraft.

ASTNA believes the personal safety of critical care transport nurses would be enhanced if:

1. Programs use a risk assessment tool to aid in assessing potential risks and planning each mission.
2. Programs establish a written policy acknowledging the responsibility of each team member to refuse or continue participation in any transport due to concern for personal, patient, and team safety.
3. Written policies include a mechanism for appropriate documentation of the concern and event and timely review by program administration and safety personnel. The outcome of this review should consist of an action plan for continued quality improvement monitoring and tracking.
4. Programs establish a policy that addresses the practice of helicopter shopping. In addition, air medical providers, dispatchers, and requesting agencies receive education regarding the potential hazards of this practice. +++++
5. Programs only participate in or condone practices of competing in any manner for missions turned down by other local teams for reasons of weather, landing zone availability, or other safety factors if direct communication between the two flight teams occurs. All pertinent safety-related information related to why a mission was declined (e.g., weather, potential hazards)

6. Critical care transport nurses are responsible for carefully assessing a patient's potential to become combative. This evaluation is ongoing and begins with the initial encounter.

ASTNA believes critical care transport nurse safety and positive outcomes in the event of an incident or survivable crash will be enhanced if:

1. Initial training is provided in emergency shutdown procedures, emergency egress, the location and use of the ELT, and aircraft/vehicle radios, with repeated training annually.
2. Initial and annually, hands-on survival training focusing on shelter building, fire starting, signaling, and the use of survival equipment/supplies carried by the program is provided.
3. Critical care transport nurses carry individual survival equipment and do not rely solely on the aircraft/vehicle survival kit in the event of an incident.
4. Continued review of safety policies for deficits and drills to test the safety policies is conducted regularly.

ASTNA believes safety would be enhanced if each ground transport medical transport program had:

1. Operational policies that address the following issues:
 - Wearing seat belts at all times.
 - They report crashes to the CONCERN Network and NHTSA's Fatality Analysis Reporting System.
 - Avoiding the use of lights and sirens (when possible);
 - Developing accident and incident plans drills; and
 - Developing loading training drills with specified roles.
2. A thorough orientation for drivers of ground transport vehicles operated by the program, including policies that limit driving time to no more than 10 hours every 24 hours and restrictions regarding work performed before reporting to duty as a driver for the program.
3. Mechanisms to ensure all medical equipment, gas tanks, supply packs, needle boxes, computers, and personal items, including bags and water bottles, are secured within the patient compartment.
4. Policies, training, and management of drivers and vehicles that promote safety.
5. Appropriate equipment is needed for bariatric patients, precisely adequate stretcher bases to support the patient and medical equipment, with hydraulic assists and loading ramps encouraged. Transporting bariatric patients will be undertaken with stretchers designed and tested to accommodate them (e.g., bariatric stretchers), and loading mechanisms or systems that can support their weight will be available.

6. Policies that address ambulance safety for ground transport of flight teams. Critical care transport nurses must reserve the right to address any safety issues encountered when being transported by a contracted ground team, including requesting another ambulance.
7. Policies that address weather-based risk assessment to determine the appropriateness of acceptance of ground transports in the event of inclement weather.

Healthy Work Environment

ASTNA recognizes that critical care transport nurses must play an active role in ensuring the safety of the transport team. A healthy work environment is designed to promote and sustain well-being. The culture supports and fosters excellence in transport safety and patient care wherever transport nurses practice.⁶³ Within a healthy work environment exists a multi-professional empowered team committed to continuous improvement of the team itself. A healthy work environment promotes a culture of safety, open communication, and the Just Culture concept among all team members.¹

ASTNA supports the principles of *Just Culture and Team STEPPS*. Healthcare environments should promote a Just Culture in the workplace, where errors are investigated to uncover the source of the error rather than assign blame, resulting in automatic punishment.⁶⁴ Just Culture recognizes that individuals should not be accountable for system failings over which they have no control.⁶⁵ Many individual errors may represent predictable interactions between human operators and the systems they work within. Although Just Culture *represents* a “no blame environment,” there is no tolerance for gross misconduct or conscious disregard of risks.⁶⁵ Team STEPPS produces highly effective teams that optimize information, people, and resources to achieve the best outcomes. It clarifies team roles and responsibilities, as well as increases team awareness. It helps to resolve conflict and eliminates roadblocks to quality and safety.⁶⁹ As the American Association of Critical Care Nurses echoes,⁶³ has six essential standards for establishing and sustaining a healthy work environment: skilled communication, true collaboration, effective decision-making, appropriate staffing, authentic leadership, and meaningful recognition. Work environments should support effective interpersonal relationships and education to develop and acquire the skills to prevent harm and perpetuate these unacceptable conditions.