

ASPR TRACIE Technical Assistance Request

Request Receipt Date (by ASPR TRACIE): 28 August 2025

Response Date: 4 September 2025; updated 4 November 2025

Type of TA Request: Standard

Request:

The requestor asked for resources related to lithium-ion batteries, specifically regarding the following:

- Safety guidance for prehospital and hospital workers providing care for high voltage (lithium-ion) battery accident victims to include suggestions for personal protective equipment (PPE) and decontamination.
- Safety guidance for patients who ingest lithium batteries.
- Treatment requirement/options for patients in healthcare organizations.
- Utilization and storage of lithium-ion batteries within hospitals/healthcare facilities and campuses.
- Proper disposal of lithium-ion batteries.
- Parking locations and charging stations for electric vehicles, and information on facility design.
- Information on what to do if there is a lithium-ion battery fire at the hospital/healthcare facility and campus.

Response:

ASPR TRACIE conducted an online search for relevant resources. Section I of this document provides resources related to healthcare facilities. Section II includes information geared towards first responders.

I. Resources for Healthcare Facilities

American College of Surgeons. (2017). [Statement on Lithium Batteries](#).

This statement, developed by the American College of Surgeons Committee on Trauma's Injury Prevention and Control Committee, aims to educate surgeons and other healthcare professionals about the risks and implications of lithium battery-related injuries.

Amos, Z. (2024). [Addressing 4 Safety Concerns of Lithium-Ion Batteries in Medical Devices](#). The Journal of mHealth.

This brief article explores the use of lithium-ion batteries in healthcare settings, highlighting associated safety concerns. The author offers practical recommendations to help facilities mitigate these risks effectively.

Carnegie Mellon University Environmental Health and Safety. (2018). [Lithium Ion Battery Safety – Guideline](#).

While these guidelines were designed for a university setting, they contain information that can be tailored to meet the needs of healthcare facilities. They include protocols for purchasing, charging, transporting, shipping, emergency response, disposal of lithium-ion batteries, and general safety practices.

Cleveland Clinic. (2023). [Lithium Toxicity](#).

This webpage provides comprehensive information on lithium toxicity, including its symptoms, causes, risk factors, diagnostic methods, and treatment options.

Dorko, C. (2025). [Medical Devices Powered by Lithium-ion Batteries: Safety Considerations](#). Berkley Life Sciences.

This article outlines important considerations for the use and storage of lithium-ion batteries in medical devices.

Mitchell, S. (2025). [Lithium-Ion Battery Safety in Healthcare: Fire Risk and Suppression in Dental and Medical Facilities](#). Health Care Evolution.

This article highlights the fire hazards associated with lithium-ion batteries in healthcare and dental environments, emphasizing the importance of incorporating fire suppression measures into facility safety plans.

New South Wales (NSW) Fire and Rescue (Australia). (2023). [Lithium Battery Fire in Hospital Ward - Campbelltown](#).

This brief article describes an incident at an Australian hospital in which several staff attempted to put out a fire started by a lithium-ion battery that overheated. Several staff were treated for smoke inhalation and were decontaminated. This article also includes a list of items for the public to consider as it pertains to the safe use of lithium-ion batteries.

NHS England. (2023). [NHS Estates Technical Bulletin \(NETB/2023/2\): Risks of Electrical Batteries for the NHS Estate](#).

This document offers technical guidance and standards for managing the risks associated with electrical batteries in hospital environments. It also provides considerations for electronic vehicle parking locations and charging stations.

Occupational Safety and Health Administration. (2019). [Preventing Fire and/or Explosion Injury from Small and Wearable Lithium Battery Powered Devices](#). U.S. Department of Labor.

This document is designed for workers who wear lithium-ion battery-powered devices and provides guidance on safe handling practices to prevent hazards.

Robins, D. (2025). [Safeguarding Healthcare Facilities: Managing the Fire Risks of Lithium-ion Batteries](#). The Journal of mHealth.

The author of this article explores the role of lithium-ion batteries in healthcare facilities and outlines key strategies to mitigate the risk of fires and explosions.

Ufine Battery. (2024). [What to Do if You Inhale Lithium Battery Fumes?](#)

This blog offers guidance for healthcare professionals on recognizing symptoms and managing patients exposed to fumes from lithium-ion battery fires. Links to articles related to proper disposal methods and explosion risks are also included.

Underwriters Laboratories' (UL) Research Institutes (2020). [Safe Disposal and Recycling of Batteries in Healthcare Settings](#).

This resource offers guidance on the safe handling, disposal, and recycling of batteries within healthcare settings.

II. Resources for First Responders

American Clean Power. (2023). [First Responders Guide to Lithium-Ion Battery Energy Storage System Incidents](#).

This guidance document equips first responders with essential information for managing incidents involving energy storage systems, specifically those utilizing lithium-ion batteries. It addresses key hazards such as fire, explosion, arc flash, electric shock, and toxic chemicals. Recommendations for appropriate PPE for firefighters are also included.

Lohmeyer, G. (2025). [Podcast – A Power Dilemma: The Benefits and Safety Challenges of Lithium-Ion Batteries](#). Domestic Preparedness.

In this podcast, Gordon Lohmeyer of the Texas A&M Engineering Extension Service (TEEX) explores a growing challenge in emergency response: the hazards posed by lithium-ion batteries. These high-energy storage systems power modern life but introduce serious risks for first responders and the communities they protect. Lohmeyer shares insights from TEEX's latest research aimed at enhancing safety and preparedness on the front lines nationwide. For more information, visit the TEEX webpage on Current Practices: Electric Vehicle and Energy Storage Systems: <https://teex.org/ev-ess-current-practices/>.

National Fire Protection Association. (n.d.) [Alternative Fuel Vehicle \(AFV\) Safety Training](#). (Accessed 11/4/2025.)

This website includes links to training sessions (some free and virtual) on vehicles that run on alternative fuel. Courses are designed for various industries, including emergency response and general community preparedness.

National Highway Traffic Safety Administration. (2024). [EMS Guidance for Responding to Crashes and Fires Involving Electric and Hybrid-Electric Vehicles Equipped with High-Voltage Batteries](#). EMS.gov.

This factsheet includes guidance for emergency medical services staff on responding to incidents involving electric or hybrid-electric vehicles. Links to related resources are included.

National Transportation Safety Board (NTSB). (2020). [Safety Risks to Emergency Responders from Lithium-Ion Battery Fires in Electric Vehicles](#).

The NTSB investigated three electric vehicle (EV) crashes that led to post-crash fires and one non-crash fire, highlighting the risks high-voltage lithium-ion batteries pose to emergency responders. They also conducted a review on national and international safety standards for EVs, with particular focus on manufacturer-issued emergency guidance aimed at protecting first and second responders during EV-related incidents.

The Joint Counterterrorism Assessment Team (JCAT). (2025). [First Responder's Toolbox: Hybrid and Electric Vehicle Emergency Planning and Postattack Response Considerations](#).

This document offers guidance for first responders on planning, safety protocols, and mitigation strategies when addressing terrorist incidents involving hybrid and electric vehicles with high-voltage (HV) battery risks. While the primary focus is on emergency response to HV battery-related hazards in vehicles, it's important to note that HV batteries are increasingly found in two-wheeled transportation modes such as electric bikes and scooters.

Underwriters Laboratories' (UL) Fire Safety Research Institute (2023). [Lithium-Ion Battery Symposium Resource Library Now Available](#).

The UL's Fire Safety Research Institute and the District of Columbia Fire and EMS Department co-hosted the Lithium-Ion Battery Symposium titled, "Challenges for the Fire Service" in March 2023. During the symposium, "experts in fire safety research and fire safety operations shared leading edge knowledge about lithium-ion battery technology, the associated hazards, and how to mitigate the risks associated with battery fire incidents." A [resource library](#) containing the presentations is included.

U.S. Fire Administration. (2024). [Risks and Response Strategies for Lithium-ion Battery Fires](#).

This brief article presents technical information on the risks, challenges, and response strategies firefighters face when dealing with lithium-ion battery fires.