ASPR TRACIE Technical Assistance Request

Request Receipt Date (by ASPR TRACIE): 1 July 2019
Response Date: 3 July 2019
Type of TA Request: Standard

Request:

The requestor asked ASPR TRACIE for any guidance, best practices, and lessons learned resources related to the community impacts that widespread and/or prolonged power outages would have on affected residents. This includes individuals receiving medical care, and particularly those who rely on power-assisted medical equipment.

The requestor noted that utility providers in California have received authority from the state Public Utilities Commission to turn off electricity to prevent wildfires when the risk is extremely high. Certain gas and electric companies are also widely publicizing the potential for "Public Safety Power Shutoffs" (PSPS) that could impact up to 5.4 million households.

Response:

The ASPR TRACIE Team reviewed existing ASPR TRACIE resources; namely the Access and Functional Needs, Dialysis Centers, Homecare and Hospice, and Utility Failures Topic Collections. We also conducted an online search for additional relevant materials.

The resources in this document provide guidance, best practices, and lessons learned specific to the impacts of power outages on residents who receive medical care and rely on power-assisted medical equipment.

A list of comprehensively developed Topic Collections can be found here: https://asprtracie.hhs.gov/technical-resources/topic-collection.

The ASPR TRACIE Team would also like to highlight the following resource, which may be particularly useful to this request: **HHS emPOWER Map 3.0.** More information about this ASPR-specific program, along with several related resources, are listed below.

I. Resources Specific to Power-Assisted Medical Equipment During Power Outages

ADA National Network. (2017). Emergency Power Planning for People Who Use Electricity and Battery-Dependent Assistive Technology and Medical Devices.

This emergency power planning checklist is for people who use electricity and battery dependent assistive technology and medical devices, including: breathing machines (respirators, ventilators); power wheelchairs and scooters; and oxygen, suction or home dialysis equipment.

Al-rousan, T., Rubenstein, L.M., Wallace, R.B. (2014). Preparedness for Natural Disasters Among Older US Adults: A Nationwide Survey. (Abstract only.) American Journal of Public Health. 104(3):506-511.

The authors conducted a study to determine natural disaster preparedness levels among older U.S. adults (aged 50 years or older) and assess factors that may adversely affect health and safety during such incidents. Results indicated that only 34.3% of participants that were interviewed reported that they participated in an educational program or read materials about disaster preparation. Approximately 15% also indicated that they use electrically powered medical devices that might be at risk in a power outage.

ASPR TRACIE. (2018). Durable Medical Equipment in Disasters.

This ASPR TRACIE fact sheet provides information on general durable medical equipment (DME) categories and focuses on electricity-dependent DME that may be affected by disasters and emergencies, including power failures. It also includes information to assist healthcare system preparedness stakeholders plan for medically vulnerable populations who rely on DME.

Beales, J.L, and Edes, T. (2009). Veteran's Affairs Home Based Primary Care. (Abstract only.) Clinics in Geriatric Medicine. 25(1):149-154.

This article addresses the Home Based Primary Care (HBPC) program developed by the U.S. Department of Veterans Affairs. HBPC is a home care program that is focused on individuals with complex and chronic disabling diseases. The goal of the program is to maximize the independence of these patients and reduce preventable emergency room visits or hospitalizations.

Bethel, J.W., Foreman, A.N., and Burke, S.C. (2011). Disaster Preparedness Among Medically Vulnerable Populations. (Abstract only.) American Journal of Preventative Medicine. 40(2):139-143.

The authors conducted a study to examine the association of general health status, disability status, and chronic disease status, respectively, with disaster preparedness, among Behavioral Risk Factor Surveillance System (BRFSS) survey respondents. BRFSS data, from 2006 through 2008, were obtained for six states that implemented the optional general preparedness module. Results indicated that vulnerable populations were generally less likely to have household preparedness items; however, they were more likely than their healthier counterparts to have an extra supply of medication.

Choose Energy. (2019). Electricity Emergency Preparedness for Senior Citizens and their Caretakers.

The guidance on this web page can help older adults and their caretakers plan for, respond to, and recover from power outages.

Complex Child Magazine. (2011). Surviving a Power Outage with Complex Medical Issues.

This article is geared towards parents and caretakers of children who require electricity for complex medical issues and offers tips for coping with power outages.

Klinger, C., Landeg, O., and Murray, V. (2014). Power Outages, Extreme Events and Health: A Systematic Review of the Literature from 2011-2012.

The authors identified 20 articles that examined the effects of power outages on health. Table 5 highlights the impacts by category (e.g., hospital, healthcare, community, and public health infrastructure).

Molinari, N.A., Chen, B., Krishna, N., et al. (2017). Who's at Risk When the Power Goes Out? The At-home Electricity-Dependent Population in the United States, 2012. Journal of Public Health Management & Practice. 23(2): 152–159.

The authors of this article conducted a study to estimate the number of employer-sponsored privately insured enrollees by geography, age group, and sex who were medically electricity-dependent and resided at home. Results indicated that as of 2012, among the 175 million persons covered by employer-sponsored private insurance, that estimated number was 366,619, with a national prevalence of 218.2 per 100,000 covered lives. Prevalence also varied significantly by age group and region, with highest prevalence in individuals 65 years of age or older and in the South and the West of the U.S.. Across all insurance types, approximately 685,000 electricity-dependent persons resided at home.

Portland General Electric. (n.d.). Put Together a Power Outage Plan. (Accessed 7/2/2019.)

This brochure provides a power outage preparedness checklist for individuals requiring electricity for the medical needs.

U.S. Department of Health and Human Services, Office of the Assistant Secretary for Preparedness and Response. (2016). HHS emPOWER Map 3.0.

The map features de-identified population data, down to the zip code level, for Medicare beneficiaries that rely upon certain life maintaining electricity-dependent medical and assistive equipment. It also features real-time National Oceanic and Atmospheric Administration severe weather tracking capabilities to help community partners identify areas that may be impacted by severe weather and thus at risk for prolonged power outages. Together, this data assists community partners, such as hospitals, EMS, emergency managers, electric companies, and civic organizations, to better anticipate, plan for, and rapidly assist electricity-dependent populations within their communities.

U.S. Department of Health and Human Services, Office of the Assistant Secretary for Preparedness and Response. (2019). HHS emPOWER Program Web-Based Training. (Free account required.)

This course is designed to help partners understand the HHS emPOWER Program and integrate its mapping and dataset tools into their emergency preparedness, response, recovery, and mitigation activities. The course includes program information and tool details, step-by-step instructions, practical applications, and real-world case studies to support partners in applying the HHS emPOWER Program tools.

U.S. Department of Health and Human Services, Office of the Assistant Secretary for Preparedness and Response. (2019). The Department of Health and Human Services emPOWER Program: emPOWERing Communities Through New Practical Applications, Training, Informational Resources, Toolkits, Maps, and Virtual Assistants.

The first speaker provided an overview of emPOWER and highlighted new data, tools, and resources. Subsequent speakers (from Los Angeles County and the Virginia Department of Health) shared their experiences using the tool.

U.S. Food and Drug Administration. (n.d.). Home Use Devices: How to Prepare for and Handle Power Outages for Medical Devices that Require Electricity. (Accessed 7/2/2019.)

This booklet can help those who use electrically-powered medical devices plan for and respond to power outages.

U.S. Food and Drug Administration. (n.d.). FDA Offers Tips about Medical Devices and Hurricane Disasters. (Accessed 7/2/2019.)

This website offers guidance on the general safety and operation of medical devices following hurricanes.

U.S. Food and Drug Administration. (2015). Medical Devices Requiring Refrigeration.

Tips for storing common medical devices and other products during and after a power outage are listed on this webpage.

Wyte-Lake, T., Claver, M., Johnson-Koenke, R., et al. (2019). Letter to the Editor. Role of Home-based Care Programs During Hurricanes Harvey, Irma, and Maria. Journal of the American Geriatrics Society. 00:1-2.

The authors examined the experiences of nine VA HBPC programs in their responses to the fall 2017 Atlantic hurricane season, to include Hurricanes Harvey, Irma, and Maria. From April to July 2018, the authors conducted 34 phone interviews with HBPC leadership and staff. Results indicated that a lack of individual household preparedness is most evident in medically vulnerable populations and among older adults.

Wyte-Lake, T., Claver, M., and Dobalian, A. (2016). Assessing Patients' Disaster Preparedness in Home-Based Primary Care. Gerontology. 62(3):263-74.

The authors conducted 32 semi-structured interviews of U.S. Department of Veterans Affairs HBPC program staff to explore "ways in which policy and procedures support routine assessment of disaster preparedness for patients as well as patient education

activities." They found that assessments were incomplete and not standardized across practitioners; not all practitioners understood how to assign risk for their patients; and health and functional limitations are the primary contributors to patients' lack of preparedness.

Wyte-Lake, T., Claver, M., Dalton, S., and Dobalian, A. (2015). Disaster Planning for Home Health Patients and Providers: A Literature Review of Best Practices. (Abstract only.) Home Health Care Management & Practice. 27(4).

The authors conducted a literature review that examined home healthcare disaster preparedness on three levels: organization, provider, and patient. The results highlighted gaps between best and promising tools and policies and adopted policies and differences in approaches to triage, evaluation, education, and classification between organizations.

Wyte-Lake, T., Claver, M., Der-Martirosian, C. and Davis, D. (2017). Developing a Home-Based Primary Care Disaster Preparedness Toolkit. Disaster Medicine and Public Health Preparedness. (Abstract only.) Disaster Medicine and Public Health Preparedness. 11(1): 56-63.

The authors surveyed program managers within the U.S. Department of Veterans Affairs HBPC program to assess "the utility of an evidence-based Disaster Preparedness Toolkit" to support patient disaster preparedness. They found that those who most frequently implemented disaster protocols found the toolkit most relevant to their work.

Wyte-Lake, T., Claver, M., Der-Martirosian, C., et al. (2018). Education of Elderly Patients About Emergency Preparedness by Health Care Practitioners. American Journal of Public Health. 108(S3):S207-S208.

This editorial describes the U.S. Department of Veterans Affairs HBPC Patient Assessment Tool for Disaster Planning, created to address identified gaps and inconsistencies in how home health patients are educated. The tool is a simple, comprehensive checklist of relevant patient characteristics for review by any practitioner on the care team and provides a list of preparedness education items that should be covered by the practitioner with the patient.

Wyte-Lake, T., Der-Martirosian, C., Claver, M., et al. (2018). Provider Delivery of Emergency Preparedness Education in Home-Based Primary Care. (Abstract only.) Disaster Medicine and Public Health Preparedness. 1-8.

The authors of this article conducted a survey, through evaluation of the HBPC Patient Assessment Tool, to identify the strengths and challenges in supporting the preparedness of patients served by home health programs. During a 3-week period, healthcare practitioners from 10 HBPC programs fielded the tool, and a total of 754 Patient Assessment Tools were returned. Results indicated that the educational item most likely to be addressed was how to activate 911 services (87%), and the item least likely to be covered was information on emergency shelter registration and emergency specialty transportation (44%).