

Technical Assistance for Healthcare System Preparedness – Who Needs Help? And with What?

December 2020

Background

Healthcare system preparedness has evolved significantly over the years to accommodate the diverse needs of communities, to be flexible and compliant with various government and private sector requirements, and to effectively respond to various emergency and disaster scenarios. In 2013, [Knebel and Philips](#) highlighted the need to create a national strategy for healthcare system preparedness. They noted that the focus of preparedness on surging during an incident needed to evolve to a systems thinking approach, which included: “identifying the broad range of stakeholders and establishing networks among them; managing and transferring information among the stakeholders; analyzing system dynamics; harnessing the problem-solving capabilities of multiple stakeholders; and managing the system through participative approaches.”

The mission of U.S. Department of Health and Human Services, [Office of the Assistant Secretary for Preparedness and Response](#) (ASPR) is to save lives and protect Americans from 21st century health security threats. ASPR leads the nation’s medical and public health preparedness for, response to, and recovery from disasters and public health emergencies. To accomplish this mission, ASPR collaborates with hospitals, healthcare coalitions, community members and groups, state, local, tribal, and territorial governments, the private sector, and other partners across the country to improve the country’s readiness and response capabilities. Thus, healthcare system preparedness is critical to its mission.

Starting in 2010, several ASPR and federal reports and activities clearly identified the need for technical assistance (TA) to strengthen and support healthcare system preparedness. First, ASPR developed a clearinghouse (i.e., “community of interest” website) for states and other entities to better share information, promising practices, and ideas around healthcare preparedness in response to a [2010 Government Accountability Office recommendation](#). Second, in 2013, ASPR and the Centers for Disease Control and Prevention (CDC) jointly engaged their 62 recipients and additional stakeholders to determine how to make

improvements within their respective cooperative agreement programs. ASPR and CDC awardees and stakeholders identified several needs including:

- The provision of enhanced, practical, and timely TA;
- A way to identify multiple channels for sharing and receiving information between various tiers and entities (including peer-to-peer discussion boards);
- A mechanism for highlighting best and most promising practices for stakeholders to emulate; and
- A way to provide state and local entities access to engage and leverage a broad array of subject-matter experts (SMEs).

Third, in 2016, ASPR’s National Healthcare Preparedness Program (NHPP) published the [Health Care Preparedness and Response Capabilities](#) that required a mechanism to supplement TA provided by regional ASPR personnel to healthcare coalitions. Finally, and in the same year, the Centers for Medicare & Medicaid Services developed an [Emergency Preparedness Rule](#) (CMS EP Rule) to establish national requirements, which would affect over 76,000 providers in the U.S., and therefore sought to partner with ASPR to provide resources and best practices to help facilities meet the new rule’s requirements.

The healthcare system preparedness needs identified since 2010, and the call to action on expanding healthcare system preparedness, culminated in ASPR designing and launching an innovative program in 2015 comprised of three domains to advance and enhance healthcare system preparedness and response across the nation: 1) Technical Resources (TR); 2) Assistance Center (AC); and 3) Information Exchange (IE). [ASPR TRACIE](#) is a comprehensive, one-stop, national knowledge center for healthcare system preparedness that provides TA and facilitates the efficient sharing and receipt of information. In the dynamic environment of a disaster, ASPR TRACIE leverages existing and develops new resources to better integrate support to our stakeholders and serve as a force multiplier by improving information sharing and minimizing duplication of effort. ASPR TRACIE continues to be a key federal assistance source for healthcare system preparedness, providing us a unique perspective of the needs of the U.S. healthcare system.

Quick Links

- [2017-2022 Health Care Preparedness and Response Capabilities](#)
- [Emergency Preparedness Requirements for Medicare and Medicaid Participating Providers and Suppliers](#)

Operationalizing a Concept

In 2014, ASPR awarded a contract to develop and manage the ASPR TRACIE program. The development of ASPR TRACIE was collaborative and involved multiple HHS Operating Divisions and

other federal government departments/agencies; local, state, tribal, and regional government agencies; national associations; nonprofit organizations; and private sector partners (Table 1 reflects a sample list of these organizations). Outreach was initially conducted through these organizations to obtain ideas, comments, and recommendations on the future development of ASPR TRACIE and its services and resources. With this support and input, the ASPR TRACIE program was able to develop and launch a website with resources geared toward healthcare system preparedness; the Assistance Center began receiving requests for information via phone calls, emails, and online forms from stakeholders; and the peer-to-peer discussion boards available through the IE were promoted. Today, feedback is continuously collected from partners and stakeholders via conferences, meetings, and webinars.

ASPR TRACIE’s infrastructure (e.g., content management system, policies and protocols, and standard operating procedures) is continuously adapted and refined as its work has grown and expanded, by incorporating key lessons learned and suggestions and comments from stakeholders and partners.

Table 1. Sample List of ASPR TRACIE Stakeholders and Partners

Federal Government	Other Stakeholders
U.S. Department of Health and Human Services <ul style="list-style-type: none"> • Administration for Children and Families • ASPR • CDC • CMS • Indian Health Services • National Institutes of Health/National Library of Medicine • U.S. Food and Drug Administration • U.S. Public Health Service 	Health and Medical <ul style="list-style-type: none"> • ASPR National Healthcare Preparedness Program (NHPP) recipients • Emergency medical services organizations • Healthcare coalitions • Healthcare entities • Medical Reserve Corps • Professional organizations/associations • State, local, regional, territory, tribal government agencies • Subject matter experts (SMEs)
U.S. Department of Agriculture	Academia
U.S. Department of Defense	Association of State and Territorial Health Officials
U.S. Department of Homeland Security <ul style="list-style-type: none"> • Countering Weapons of Mass Destruction Office • Federal Emergency Management Agency 	Emergency management agencies and associations
U.S. Department of Housing and Urban Development	National Association of County and City Health Officials
U.S. Department of Justice	Organizations that Serve People with Access and functional needs
U.S. Department of Transportation/National Highway Traffic Safety Administration	The Joint Commission
U.S. Small Business Administration	The American Red Cross
U.S. Veterans Health Administration	

Understanding the Healthcare System Preparedness Landscape

As TA may take many different forms, the ASPR TRACIE team had to first understand what key TA characteristics were important to its stakeholders and how it could meet those needs and then continuously evolve as expectations, needs, and threats change. One of the first tasks was to identify healthcare system preparedness and response topic areas and relevant resources of interest to stakeholders. ASPR TRACIE worked with partners, stakeholders, and SMEs to identify 57 topic areas of high interest and need. These topics served as the foundation for [Topic Collections](#) (TCs) which are comprehensively developed to highlight select health and medical preparedness resources such as plans, tools, and templates identified by ASPR TRACIE staff. The TCs include peer-reviewed and other public and privately developed materials (e.g., fact sheets, technical briefs, articles, toolkits, webinars, and plans) and scholarly journal literature. A unique feature of the TCs is that all resources identified for inclusion are vetted by members of the ASPR TRACIE SME Cadre. These TC topic areas also formed the basis for other organizational elements within ASPR TRACIE such as categorizing SME expertise areas, the TA Summary page, and topics within the IE. Some of the TC titles and content have changed over the last few years to reflect emerging topics and for clarity and ease of use by stakeholders. For example, the “SARS/MERS” TC was updated in early 2020 to “Coronaviruses (e.g., SARS, MERS, and COVID-19)” to include COVID-19 resources, and the “Explosives and Mass Shooting” TC was renamed to “Active Shooter and Explosives.”

While evidence-based approaches to healthcare system disaster preparedness and response are the ideal, the ASPR TRACIE team recognizes that best practices identified by experienced and vetted healthcare emergency management professionals and clinicians serving in the field are needed to fill the gaps in practice when science and formal policy have not yet caught up with real world challenges. To help fill this gap between practice, science, and policy, ASPR TRACIE’s components allow users to communicate directly to inquire about and share promising practices and experiences. These connections help to bridge the gap between practice and science and policy in that the user does not have to wait until policy is written or the science is conducted and a sufficient evidence base developed.

Quick Links

- [ASPR TRACIE Topic Collections](#)
- [ASPR TRACIE Developed-Resources](#)

Promoting a Forum to Address Critical Issues

The ASPR TRACIE website is open to the public and all content is accessible in the Resource Library, TCs, and Assistance Center (AC) sections. Since 2015, there have been over 1 million visits to the ASPR TRACIE website.

[ASPR TRACIE's Resource Library](#) is a one-stop knowledge center where resources can be easily accessed and downloaded. The Resource Library is a compilation of resources from numerous contributors, including federal agencies. A tiered approach and specific inclusion criteria (e.g., a focus on current disaster medical, healthcare system preparedness, and public health preparedness materials) are used to identify and review resources for inclusion in the Resource Library.

Based on stakeholder feedback and to continue organizing the large volume of resources in a user-friendly way, the ASPR TRACIE website was updated in 2019 and includes topic-specific resource pages. These pages allow users to access resources on critical issues such as the CMS EP Rule, drug shortages and scarce resources, healthcare coalitions, hurricanes, and mass violence. This website update was particularly useful during the COVID-19 pandemic, as the team had to quickly and efficiently share time-sensitive resources while also hosting numerous resources for the federal COVID-19 Healthcare Resilience Task Force and create new pages based on evolving gaps and needs of its stakeholders. ASPR TRACIE was able to create the Novel Coronavirus Resource Page and multiple sub-pages with topic areas that mirrored the Task Force's workgroups. To demonstrate the success and interest in the website and its content, the monthly average for visitors in 2020 was 311% higher than the monthly average for visitors from 2015-2019. Additionally, April 2020 experienced the most visitors in a month since ASPR TRACIE launched with over 112,000 visitors, which was a 620% increase over the overall monthly average.

Another key feature of ASPR TRACIE is that it serves as a forum where critical issues involving healthcare system preparedness can be quickly discussed and shared by stakeholders. We maintain timely communication with our listserv partially comprised of partner organizations that reach over 1.5 million healthcare professionals.

Finally, [ASPR TRACIE's Information Exchange](#) provides a unique forum for peer-to-peer discussions and near real-time information sharing. With over 9,700 members, the IE promotes multidisciplinary discussions, collaboration, and information sharing on a wide range of healthcare system preparedness topics. Membership in the IE rose 122% since 2019. The monthly average of new IE members was 125 per month from 2015-2019 and increased to 238 per month in 2020 alone. IE members can solicit critical ideas, feedback, and experiences and collect knowledge and experiences on new and unique situations from each other to help inform planning and response actions.

Providing Technical Assistance

ASPR TRACIE uses the [following definition](#) of TA to guide its activities: "nonfinancial assistance meant to impart information, skills, and expertise from one person or entity to others."

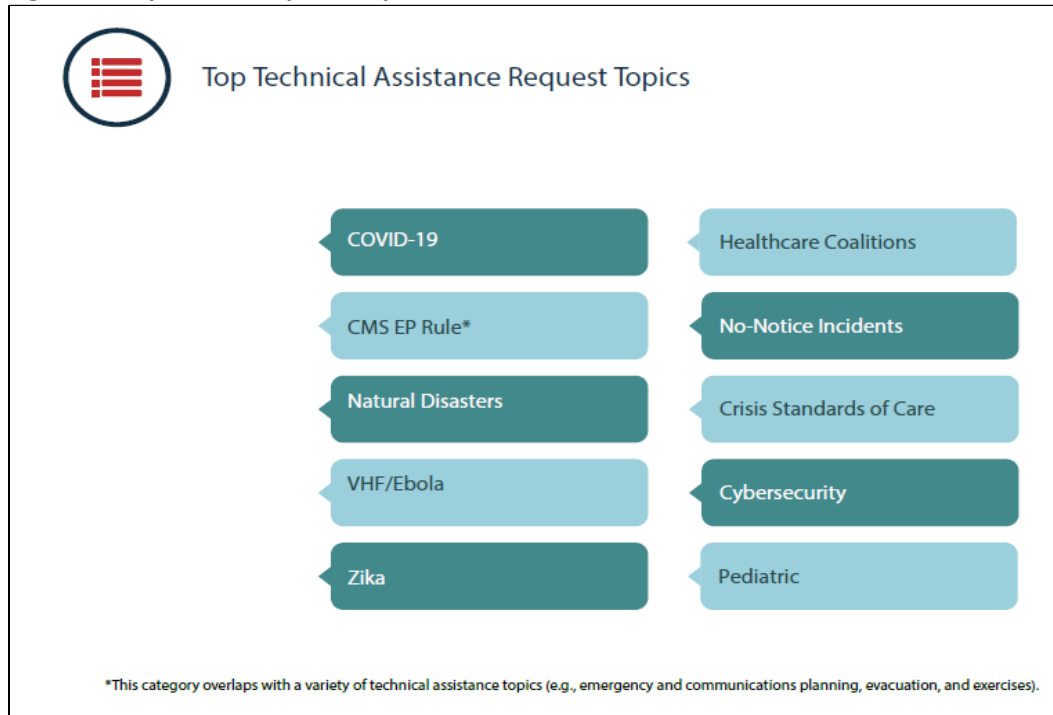
Typically, TA is delivered to individuals, organizations, or systems to assess gaps, barriers, and/or needs and identify solutions; develop a strategic plan for long-term change; or create innovative approaches to emerging, complex issues.”

While ASPR TRACIE provides TA traditionally through written products, toolkits, phone calls, emails, and webinars, they also customize TA and other services in a focused, personalized way that best meets the needs of the requestor. By understanding that there is an “art and science” to providing TA that cannot always be measured quantitatively, ASPR TRACIE is able to meet the demands of an ever-growing and dynamic group of stakeholders involved in healthcare system preparedness and response activities.

The [Assistance Center](#) can be accessed by phone, online form, and email and is open Monday through Friday between 9:00 a.m.-5:00 p.m. Eastern Time, excluding federal holidays. The AC is managed by the ASPR TRACIE team, who have experience in and knowledge of healthcare and public health preparedness and response. Since 2015, the ASPR TRACIE AC has received over 8,200 TA requests from users in all levels of government and various healthcare agencies. Of these, over 18% of requestors were from healthcare entities, 44% were federal employees, 24% served state/local/regional entities, 14% were from private entities (e.g., associations) and “other” (e.g., academia). Requests for TA increased by 138% in 2020 compared to our monthly average from previous years. Approximately 75% of TA requests in 2020 were related to COVID-19.

Each TA request received through the AC is closely reviewed and an individual work plan is developed to provide the most useful and robust response. The ASPR TRACIE team works with partners and the SME Cadre, as appropriate, to assist with answering TA requests. On average, standard TA requests are completed between the same business day to five business days after receipt, while more complex requests may take up to two weeks or longer if original content (e.g., tools, templates) is developed. The ASPR TRACIE team categorizes TA requests into hundreds of topic areas, but to better assist our stakeholders and partners, select written TA responses are provided on the ASPR TRACIE website and categorized into 50 primary categories. Figure 1 illustrates the top 10 categories of TA requests completed since 2015.

Figure 1. Top 10 TA Request Topics, 2015–Present

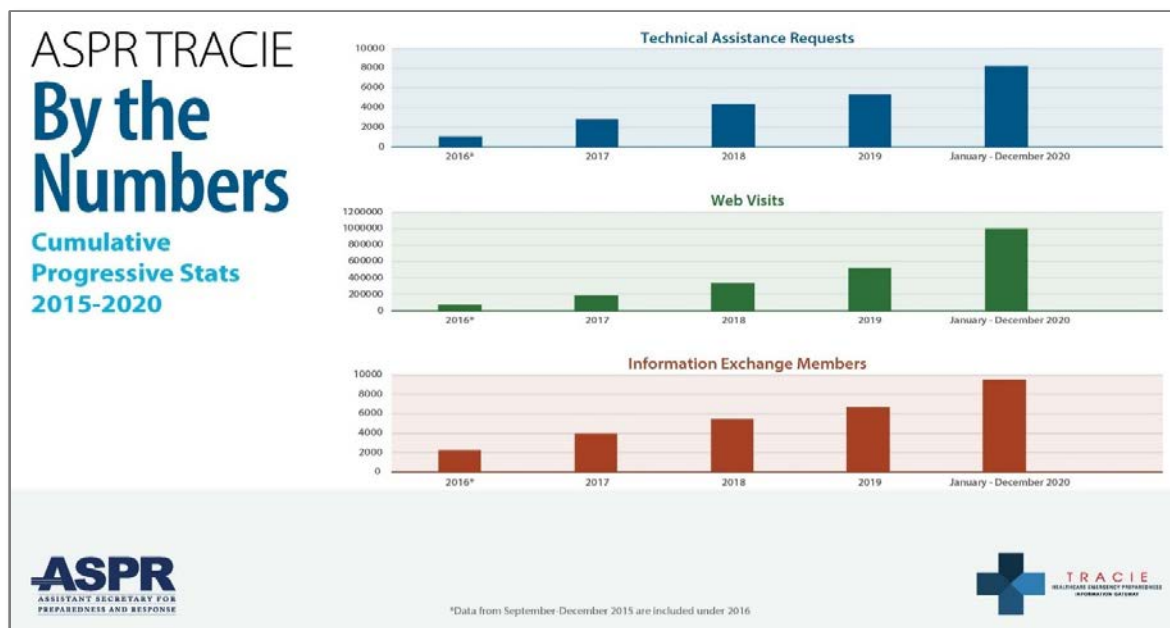


ASPR TRACIE has recognized a connection between the types of TA requested and the timing of the event or incident (e.g., anticipated events, shortly after an incident occurs). This trend was observed before and after major hurricanes, after no-notice incidents, for many months following the release of the CMS EP Rule, during highly infectious disease outbreaks, and most recently, the COVID-19 response.

If the request is outside of ASPR TRACIE’s scope or resource availability, the requestor is notified and connected to the proper entity, as appropriate. ASPR TRACIE does not provide formal policy recommendations and refers all grant-related questions to the appropriate ASPR or federal government personnel. Previously provided TA that is posted on the website are periodically updated to ensure hyperlinks are functional and information is still relevant.

Figure 2 shows the growth of ASPR TRACIE in each of its three domains over the last five years.

Figure 2. ASPR TRACIE Cumulative Progressive Stats, 2015-2020



Leveraging Subject Matter Experts

The SME Cadre is key to achieving ASPR TRACIE’s goals and includes diverse, knowledgeable, and vetted SMEs who identify and review information and resources and help shape and develop new resources when topic gaps are identified. This SME Cadre, composed of more than 1,000 members, is unique as it is comprised of voluntary professionals in the fields of healthcare, disaster medicine, public health, and public safety with a proven reputation for improving and advancing their field of expertise. Professionals in the SME Cadre have direct, current knowledge of their discipline and a range of expertise such as planning, training, facilitation, exercises, grant writing, and operations management. The SME Cadre supplements the ASPR TRACIE team by providing input and direct assistance from a user perspective as needed. The team utilizes the SME Cadre on a wide array of topic areas and for emerging threats. The SME Cadre has proven to be invaluable during the COVID-19 response by providing situational awareness and expertise, input on TA responses and newly developed resources, and contributing to webinars as hosts, presenters, and participants.

Filling Gaps in Healthcare System Preparedness

To continuously grow and adapt to meet stakeholders’ evolving needs, the ASPR TRACIE team regularly assesses TA requests, IE discussions, knowledge gaps identified during conferences, webinars, or meetings, and keyword searches of the Resource Library to determine areas for

future work. These assessment methods enable the team to consider the best format to develop new, original resources (e.g., tip sheets, tools, and templates) that are user friendly and which topics should be considered next. Use of these different formats helps to meet its diverse stakeholders' needs and different modes of learning.

Flexibility and adaptability allow the team to respond quickly and pivot team activities and time to prioritize urgent requests. For example, during the COVID-19 response in spring 2020, ASPR TRACIE was quickly able to respond to an influx of TA requests; provide direct assistance to the COVID-19 Healthcare Resilience Task Force by creating new online resource collections, hosting webinars, and reviewing hundreds of resources to include the most up-to-date information on our website; and create new tip sheets and other resources specific to COVID-19 preparedness, response, and recovery.

Since 2015, ASPR TRACIE, in coordination with ASPR leadership and the SME Cadre, has [developed over 350 original resources](#) to fill the gaps and information needs identified by stakeholders. In addition to TCs, additional resources include:

- *Behind the Response: Experiences from the Field*: Interview-based articles that highlight a real-world response and lessons learned/observed by a healthcare entity. For example, the ASPR TRACIE team interviewed a hospital emergency preparedness coordinator shortly after an emergency incident affected their hospital's water supply, and an emergency medicine physician and hospital system emergency preparedness program manager in Minnesota during the civil unrest after George Floyd's death in 2020.
- *Resources at Your Fingertips*: Resource providing consolidated information on a complex or emerging issue (e.g., hurricane, CMS EP Rule, Zika). ASPR TRACIE staff and SME Cadre members compile, synthesize, and annotate hyperlinks to critical information.
- *The Exchange*: The ASPR TRACIE newsletter, produced 2–3 times a year, focuses on one topic (e.g., cybersecurity, behavioral health, wildfires, chemical incidents, COVID-19). Includes articles written by guest authors, interviews conducted with SMEs, or articles written by ASPR TRACIE staff based on interviews and information submitted by numerous sources.
- *Tip Sheets and Fact Sheets*: Most common resource developed and focuses on a timely issue of concern to stakeholders (e.g., COVID-19, earthquakes and cascading events, supply chain issues). Consolidates information from various sources, commonly in the form of a question and answer document.
- *Tools and Templates*: ASPR TRACIE-developed resources in response to an identified gap by ASPR TRACIE staff or TA inquiry (e.g., EMS infectious disease playbook, healthcare

coalition planning templates, hospital pharmacy stockpile calculator). End products include Microsoft Excel tools, plan templates, playbooks, or checklists.

- *Webinars and Videos:* Pre-recorded or live webinars that include traditional presentations, multi-presenter panel discussions, or other mechanisms for audio visual display of information. Over the last five years, over 60 national webinars and recorded presentations were conducted on a range of topic areas including: highly pathogenic infectious diseases, COVID-19, cybersecurity, pediatric issues, medication shortages, mass shootings, mass gathering considerations, and radiological incidents.

Value of Healthcare Preparedness Technical Assistance

A 2020 internal study of the ASPR TRACIE program (conducted by an independent health economist consultant) built upon a similar 2019 study that found no existing methodologies for evaluating the return on investment (ROI) of healthcare preparedness TA. The study's author developed a value framework for healthcare preparedness TA and applied it to assess the ROI of ASPR TRACIE. The case study's ROI results indicated that the ASPR TRACIE program overall generated value in excess of its investment by its third year and had a per annum ROI of 9.3% in the TR domain between 2015-2020, with a projected 10.5% per annum through FY2026. The AC had a 16.7% per annum ROI between 2015-2020, with a projected 8.8% annum through FY2026.

The author estimated that for standard TA requests, it would take the requestor more than eight times longer to do the work than it would take the ASPR TRACIE team due to the team's expertise and access to materials, information, and SME Cadre. For complex TA requests, the author estimated that the value of the response was approximately 39% more than the cost incurred by the ASPR TRACIE team to fulfill the request. This difference considers the costs of unpaid SME review and the assumption that it would take the requestor at least twice as many hours to do the work.

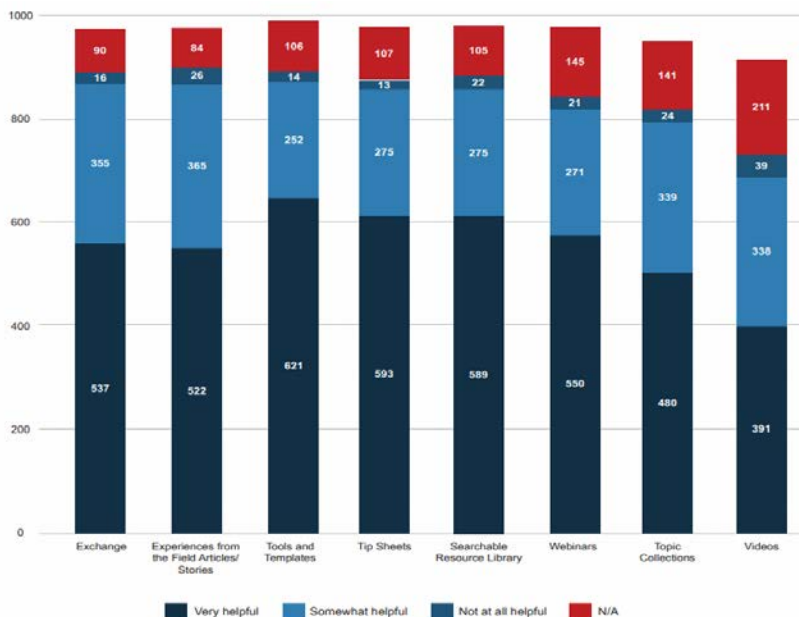
The author concluded that "these ROIs demonstrate that the TRACIE program provided timely and cost-effective technical assistance leading up to and during the COVID-19 pandemic and that it is well positioned to expand the reach of its Technical Resources and provide technical assistance through its Assistance Center in the future. It is clear the TRACIE program is learning. This helps it to increase its value. With each resource it develops, it is better prepared to support the needs of healthcare organizations and can more easily provide organization-specific assistance through its Assistance Center."

Continuous Quality Improvement

The ASPR TRACIE program strives for continuous quality improvement and to maintain a high level of customer service satisfaction. The program uses a variety of mechanisms to assess customer satisfaction. Customer service evaluations help measure the utility of TA responses, and ASPR TRACIE has maintained a 99% overall customer satisfaction rating and 99.5% satisfaction rating for timeliness of responses.

During interactions with stakeholders, ASPR TRACIE staff ask about their resource needs and knowledge gaps and how ASPR TRACIE can help. In June 2020, the ASPR TRACIE team held a semi-structured, informal focus group with select SME Cadre members to capture lessons learned and identify best or promising practices in healthcare system preparedness, response, and recovery from COVID-19 to better understand what the most useful strategies, tactics, and resources are for jurisdictions that are in the middle of responding to COVID-19 and those in the process of ramping up their capabilities to respond to a future surge. In Fall 2020, ASPR TRACIE released a customer needs survey to select ASPR TRACIE stakeholders. The survey aimed to better understand their resource needs, the utility and applicability of our resources, top areas of concern, and to identify those willing to share COVID-19 lessons learned and emerging practices. We subsequently followed up with those willing to share (44% of total respondents). Figure 3 shows the results from the initial survey when respondents were asked how helpful were ASPR TRACIE resources.

Figure 3. Results of Survey Question: “How Helpful Have the Following ASPR TRACIE Resources Been for You?”



The Future of Technical Assistance

According to the [HHS 2019-2022 National Health Security Strategy](#), as the threat landscape to healthcare systems and the public health of communities globally continues to diversify, grow, and become more complex, so does the potential disruption of public health and healthcare systems. The tremendous growth in the volume of visitors and TA requests received during the COVID-19 pandemic highlights the critical need for the services ASPR TRACIE provides. It also demonstrates how healthcare and public health practitioners utilized a federal source for resources and assistance in their daily work. Further, the increase in new IE members revealed the important need for colleagues to be able to collaborate with and share experiences, questions, and information with each other during an emerging crisis.

We fully anticipate that the need for TA to healthcare and public health professionals will continue to increase but will require more innovative solutions for getting the right information to the right people at the right time. This may include developing or harnessing technology that can receive and provide TA in a quicker and more efficient manner, developing shorter tip sheets and resources that can serve as “just-in-time” guides for planners and responders, more efficiently harnessing and sharing knowledge and lessons learned from SMEs, and better anticipating and addressing the needs of our stakeholders before a disaster strikes. In the years ahead, ASPR TRACIE will continue to exemplify the “art and science” of providing TA through continued collaboration, innovation, and identifying and filling healthcare system preparedness knowledge gaps.