

COVID-19 Vaccine Planning and Distribution: Disaster Behavioral Health Principles and Supports

Colorado

Colorado Department of Public Health and Environment

Jill Ryan, Executive Director

Disease Control Public Health Response Division

Scott Bookman, Interim Director

Office of Emergency Preparedness and Response

Greg Stasinios, Interim Director

Document Authors:

Aimee Voth Siebert, MA International Disaster Psychology

Behavioral Health and Inclusion Worklead

Curt Drennen, PsyD, RN

Healthcare Operations and Response Branch Supervisor

Lynn Garst, M.Ed

Pediatric Disaster Coordinator & Responder Health & Safety Specialist

Juliet Madsen, MA International Disaster Psychology

Colorado Spirit COVID-19 Crisis Counseling Program Coordinator

Disaster Behavioral Health in COVID-19

What is Disaster Behavioral Health (DBH)? Behavioral health describes the continuum of one's emotional, cognitive and relational wellbeing and is a key factor in what behaviors people engage in. Disaster behavioral health responders are trained specifically in responding to experiences of extreme fear, overwhelm, and cognitive shutdown through a lens of resilience.

Why is DBH important to consider in disasters? Disasters disrupt people's routines and worldview. Disaster conditions require people to adapt and change many behaviors. People's behavioral health experiences shape their likelihood to participate in new behaviors and comply with community interventions.

DBH Goal: The overarching goal of DBH is to improve people's adaptive functioning and motivation, making them better able to maintain response work and community behaviors which will reduce overall disease transmission and impact.

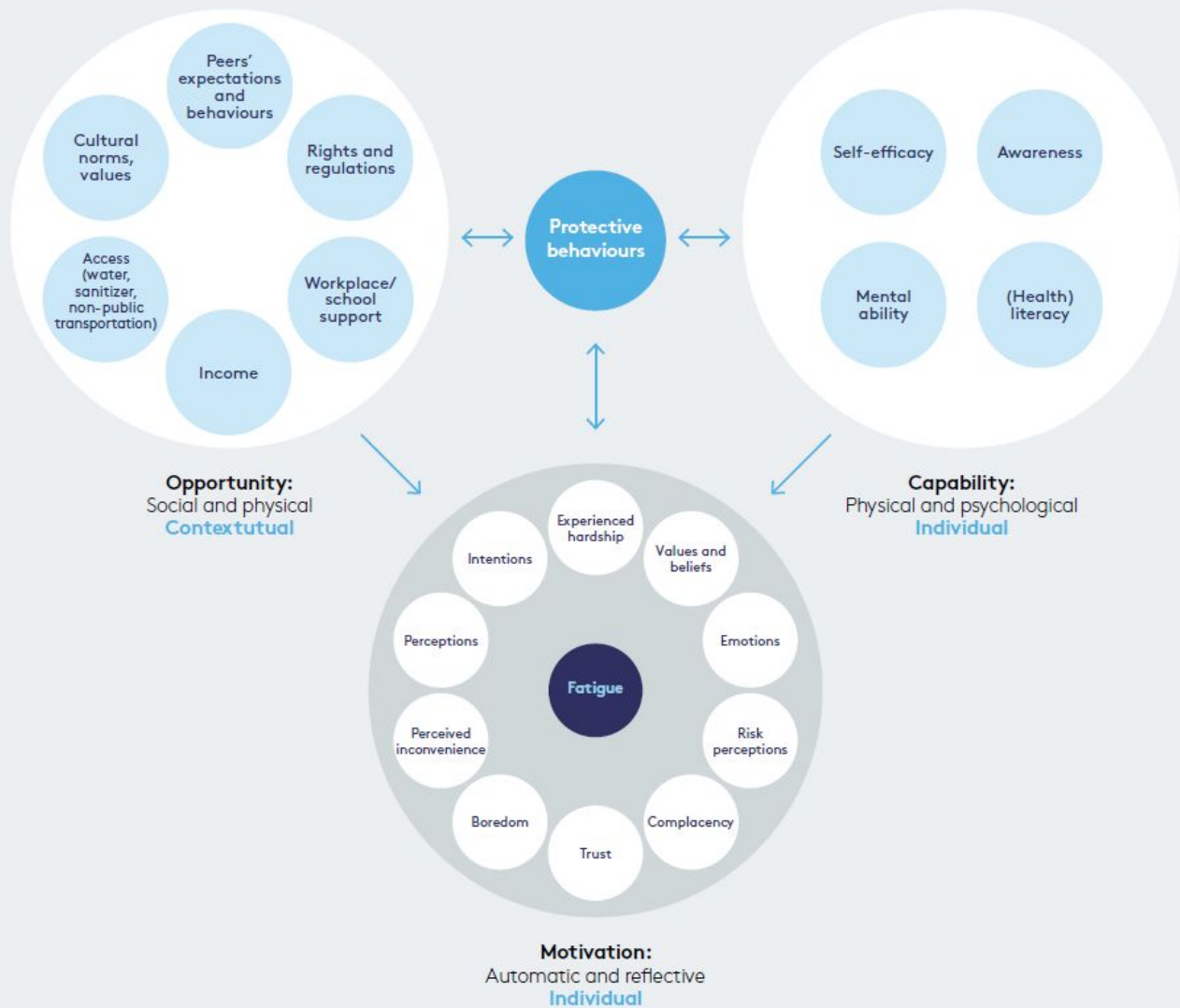
Desired DBH Outcomes

- Support staff wellness, willingness to respond, and participation in public mitigation activities (e.g. vaccines)
- Manage limited human and medical resources effectively.
- Reduce public stress and fear, improve public cooperation, and increase acceptance of protective behaviors.

Situation and Assumptions

- Novel public health disasters have many factors that increase the risk of fear and confusion such as:
 - New, complex, and changing information about the disease as well as limited community understanding about how disease spreads, and public health actions, etc.
 - Widespread impact of community interventions on people's lives
 - Long-lasting disruptions that require major changes to people's behavior
 - Different disease patterns and different impacts to communities that make universal messages difficult.
- Community cooperation and participation in healthy, protective behaviors is critical to successful public health emergency responses; people's behaviors, their noncompliance or adherence to protective behaviors, determine whether the disease spreads or is controlled.
- In Disaster Behavioral Health literature, five intervention principles are shown to help reduce people's stress and increase their functioning (see Hobfoll et al, 2007). Promoting any of the following experiences in disaster environments and among response staff or community members will support the behavioral health experiences and outcomes for individuals and the community. (Note, that there is room for significant local variation and innovation in terms of applying these principles.)
 - Safety
 - Calm
 - Connectedness
 - Efficacy
 - Hope
- A widely used theory of behavior change (COM-B) holds that people's engagement of protective behaviors needs support from three factors: individual capability, contextual opportunity, and individual motivation. This image from WHO Europe identifies drivers/barriers within each of these areas that may affect a desired behavior. (See: <https://apps.who.int/iris/bitstream/handle/10665/335820/WHO-EURO-2020-1160-40906-55390-eng.pdf>)

Fig. 1. The interplay of factors affecting COVID-19 protective behaviours



- The two main factors that affect whether an individual will practice protective behaviors are 1. their perceptions of threats and fear and 2. their belief in the efficacy of those protective behaviors. When people believe they have the skills and resources to practice effective behaviors, and when they see the behavior's relevancy to an urgent threat, they are more likely to practice the healthy behaviors. (see Extended Parallel Processing Model (Witte, K., 1992, 1994; Cho, H. & Witte, K., 2005)).

Extended Parallel Processing Model

How rational and emotional input influence behavioral decisions

An HC3 Research Primer

	High Efficacy – Belief in the effectiveness of solutions and the confidence to practice them	Low Efficacy – Doubts about effectiveness and about one's ability to practice them
High Threat – belief that the threat is harmful and that one is at-risk	Danger control People take protective action to avoid or reduce the threat	Fear Control People are too afraid to act, just try to reduce their fear and feel better.
Low Threat – Belief that the threat is trivial and that one is not at-risk	< Danger control People know what to do but are not really motivated to do much	No Response People don't feel at risk and don't know what to do about it anyway.

Applying Disaster Behavioral Health Principles and Supports to Mass Vaccination Efforts

Three major strategies to address fear and other disaster behavioral health experiences with regard to mass vaccination efforts are staff training and wellness, public information, and vaccine clinic behavioral health support. Sections for these three strategies include key fears and concerns, considerations and activities. Highlights for Colorado's three phases are provided.

- **Phase 1: Potentially Limited Doses Available**
- **Phase 2: Large Number of Doses Available, Supply Likely to Meet Demand**
- **Phase 3: Likely Sufficient Supply, Slowing Demand**

Staff Training and Wellness

1. Staff and Organizational Fears

In addition to delivering vaccine services, health care providers and organizations are also staffed by individuals who may have their own fears or reservations around vaccine acceptance and advocacy. Healthcare workers' acceptance of vaccines is important not only to their own health, but to the public's health. It has been found that many people respond well when their healthcare workers (HCWs) are open to discussing vaccinations and what the ramification and impact of those vaccines can be. In fact, some studies suggest that healthcare workers with a higher confidence in healthcare organizations and vaccinations, who are more willing to take vaccines themselves, and recommend them to patients have a higher than average number of patients who accept vaccinations. Studies also show that providers who show confidence when promoting vaccinations and spoke from their own personal experience were more likely to influence the general public and persuade individuals to accept vaccines when they were unsure of the process. (See: <https://www.sciencedirect.com/science/article/pii/S0264410X1630977X>)

When research around HCWs and their influenza vaccine acceptance rates is examined (extremely low vaccine acceptance among hospital staff, </= 20% in multiple studies) it reveals that HCWs have concerns similar to the non-healthcare public:

- Widespread fear and mistrust around the sources of the vaccine (including historically rooted mistrust of the systems which have been instrumental in developing these vaccines), the accelerated development and production of the vaccines, and lack of clarity about long-term impacts of the Covid-19 vaccination
- Debates around the efficacy of the vaccine, such as the general lack of knowledge around the coverage of the vaccine, the length of the coverage, and contra-indicated populations
- Vaccine injury or side effects
- Overall lack of knowledge around coronavirus and the vaccination process
- Increased stress and lack of knowledge around the availability of a vaccine and the potential difficulty or inconvenience in accessing the vaccine sites
- Lack of knowledge that HCWs are a common source of influenza spread by coming to work sick. (Recent COVID-19 research findings suggest that as many as one in five individuals will test positive for coronavirus without having symptoms. As a result it is more important than ever to stress solid education around proper hand sanitizing, the wearing of masks, social distancing, isolation when necessary, and the use of testing and tracing procedures to allow for tracking of the virus as it moves through the healthcare workforce and general population. See: <https://www.healthline.com/health-news/20-percent-of-people-with-covid-19-are-asymptomatic-but-can-spread-the-disease#COVID-19-can-have-hidden-symptoms>)

To increase vaccine acceptance rates among HCWs, studies found that the following factors could improve rates and were more than likely transferable to the non-healthcare working public.

- Increasing one's belief that a vaccine can be supportive in self-protection or for the protection of one's family members, or one's neighbors or extended family
- Understanding that as one ages vaccines are needed in preventative care, as the immune system weakens
- One is more likely to accept vaccines if they better understand and acknowledge the risk of a disease and have a better understanding of how a vaccine works and what it does in one's body (vaccine science)
- Individuals are more likely to express interest in vaccines following an experience of influenza or influenza-like illness, or if they have a chronic illness which leaves them more susceptible to influenza

While there may be differences between COVID-19 and influenza vaccine considerations, it is clear that individual fears and barriers need to be addressed for effective vaccine uptake in HCWs, especially among providers designated in **Phase 1** critical populations, in order to promote widespread uptake in **Phases 2 & 3**. Basic education and communication is needed with the healthcare workforce as much as with the public.

On organization levels, health care providers who administer vaccines often have concerns about liability and the financial consequences of vaccine side effects or injury. They may also fear promoting the vaccine because of backlash and the loss of trust they could experience if their community mistrusts the vaccine. Therefore, effective public information campaigns are critical.

Finally, many potential COVID-19 vaccines have challenging distribution requirements (see: [Vaccine Chaos Is Looming: The COVID-19 vaccines furthest along in clinical trials are the fastest to make, but they are also the hardest to deploy.](#)).

While some solutions for these logistical challenges may be found, providers are experiencing stress in planning for these complexities and should find support from other emergency and community partners around additional resulting tasks.

2. Skills & Resources for reducing stress and increasing function

The Behavioral Health Unit (contact Aimee Voth Siebert, aimee.vothsiebert@state.co.us) is happy to consult or train with vaccination teams on how best to apply disaster behavioral health principles throughout vaccine planning and distribution. There are foundational disaster behavioral health trainings and skills that can help manage stress and support people while delivering healthcare or public health services to the public; vaccines and otherwise.

- Psychological First Aid (PFA) - PFA is the primary early intervention for disaster behavioral health. This training introduces participants to the brain under stress, evidence-informed disaster behavioral health principles, and nine core actions to help people reduce their stress and increase their functioning in the face of the current emergency or crisis. The Behavioral Health Unit can work with different disaster operations to identify key concerns where PFA principles and actions can be supportive.
- [Engage Calm Distract](#) – A resource kit for understanding and responding to children in crisis. Originally developed for Emergency Medical Services (EMS) and emergency department providers, the recommendations and guidance within this training can help guide individuals interacting with kids who are experiencing distress.

Staff wellness and care are important throughout all vaccine planning and distribution efforts. Qureshi et al (2005) found four primary barriers to working during any disaster events:

- Fear and concern for family and self. When considering **Phase 1** of a mass vaccination effort, this would be connected to concerns around whether one’s family members are being prioritized with limited vaccine stores above others within a community.
- Difficulty with transportation during the disaster.
- Personal and family health issues.
- Dependent care. Disruptions to family routine and functioning can impact a health care workers’ willingness to respond or volunteer in the first place.

In their analysis of preventing staff absenteeism, Lesperance and Miller (2009) unpacks similar functional barriers and needs. They identified nine areas and considerations that can help minimize absenteeism and maximize the effectiveness of HCWs during a disaster (more information about organizational planning to support staff resilience can be found: https://www.pnnl.gov/main/publications/external/technical_reports/PNNL-18405.pdf).

Public Information

Public information is one of the first and farthest-reaching interventions to support people’s stress and adaptive behaviors in disasters.

1. Key Topics and Talking Points

Across all messages, it is helpful to promote safety, calm, connectedness, efficacy and hope, and to encourage active coping skills among the public. People are resilient. The following topics and talking points apply especially to mass vaccination.

Recognize, empathize with people's fear – It is always good to START with a message that respects the fear that people might be coming with. If we jump to over-reassuring everyone, people will not feel heard which may deepen their vaccine hesitancy or resistance. Even if there is science or other reasons not to be scared, that does not change that people *are* scared. We need to meet them where they are.

Remember: People don’t care what you know until they know that you care.

Rapidly changing information and novel, complicated details make people feel uncertain. It is common and understandable that across **Phases 1 -3**, efforts will need to be made to keep the public learning and paying attention as active participants in community interventions. Public information efforts that listen to people’s concerns and fears will also be able to shape future talking points more effectively.

Message about how safety is priority, and what safety measures are part of vaccine development. Include messages about what we know, what we don’t know, how we’re learning more, and how we’re keeping people safe while we learn. In particular, the following questions or concerns relate to COVID-19 vaccines

- *Basic vaccine literacy, safety, and efficacy* – Many people do not have a basic understanding about how vaccines work. Simple health education about how vaccines protect one’s family by preventing infection or helping to manage the course of the disease will be key safety messages. Additional messages should be tailored to specific, authorized COVID-19 vaccine(s) being distributed at any given moment.
 - Vaccines are not 100% effective, so messages should also help community members manage risk expectations and weigh the cost and benefit of accepting a vaccine.
 - Vaccine Injury, Side Effects – Past vaccine histories and experiences, including debates and sensationalized stories, have increased people’s fear of vaccine injury and side effects. Messaging will need to give people reasonable expectations about any side effects that may come with the vaccine, and how the benefit of vaccine protection balances or outweighs side effects (especially if there are differences among groups within the general public).
- *Speed and novelty of COVID-19 vaccine development processes* – The media and public have noticed the accelerated development course of the COVID-19 vaccine, and as a result it is a source of concern for many people. A Stat/Harris Poll in association with NASEM in September 2020 found that only 54% of people would get the COVID-19 vaccine as soon as they could and 79% of people would worry about a vaccine’s safety if it is approved quickly. In order for early critical population groups to even want vaccines **in Phase 1**, talking points must address the safety checks and measures in place for faster and, in some cases novel, vaccine development processes.
 - Mistrust of (federal) government – People’s perception of the safety of the vaccine development processes interacts with which actors are responsible for ensuring the safety of those processes. Because some groups in the public have mistrust of different actors, talking points should describe the safety measures by actors at all levels of government and by neutral, non-government scientific experts.
 - Emergency Use Authorization – What does it mean? How does it work and assure safety?
- *The seriousness of COVID-19 and need for vaccinations* - When people have not been impacted by COVID-19 themselves, they may not feel the urgency to participate in vaccination efforts.
- *Lack of agreement among experts* – Information and assurance from healthcare workers (HCWs) is reported by laypeople as a key factor in their decision to get vaccinated. If there is a split between medical/healthcare providers or public health providers who are skeptical of the vaccine and those who will be promoting it, that can increase fear and confusion. Agreement and alignment among community experts, both formal and informal, will be important to monitor and promote.
- *Health, vaccine trauma and history among particular communities* - Tribal and Native communities, communities of color, people with disabilities and other groups have negative histories with public health and healthcare.
 - Interventions, including vaccines, have been tested on these disproportionately impacted communities, many times without consent. The cumulative effect of historical trauma related to research abuse, medical negligence, and systemic neglect, mean that mistrust of government and the pharmaceutical industry are often amplified in these communities. On top of the public’s baseline worry about vaccine safety, a rushed vaccine may have particular negative interpretation in these communities.
 - In the 2019 Colorado Health Access Survey, more than 20% of black (non-Hispanic/Latinx) Coloradoans said they were sometimes or often treated unfairly by health care providers. . . .“ The Colorado Health Institute wrote “Studies show that implicit racial bias among health care providers continues to influence health care quality.”

In Phase 1 and 2, belief in the safety of the vaccine and trust in healthcare providers will be as important as understanding the criteria by which limited vaccine supplies are assigned, especially among people from these groups in the early critical populations. Acknowledging historical wrongdoings may need to be a part of vaccine communications in order for those with negative public health experiences to believe this effort will be different. Consistent and meaningful partnership with trusted institutions within these communities will be vital to successful vaccine distribution. Perspectives from these communities should be sought and listened to throughout the distribution process so that culturally-responsive and trauma-informed outreach can occur. Engage key community leaders and stakeholders to demonstrate accountability and inform public messaging for

improved practices and trust. (See “Key community messengers and channels to distribute information - How to increase reach and trust” section below.) Also see [A group of Black physicians created their own expert task force to independently vet COVID-19 vaccines and counter mistrust and misinformation in Black communities.](#) (From NIHCM newsletter)

Message about how vaccines will reach the public safely and accessibly. Vaccine acceptance is affected by people’s access and trust in how the vaccines are distributed. Community conversations and other public health operations have identified the following concerns as potential barriers to vaccine uptake:

- People may fear exposure to COVID-19 at vaccine distribution sites. Message what will be done to keep people safe at these sites.
- Parents worry about their children getting the COVID-19 vaccine at the same time as they get other childhood vaccines. Recent research indicates that children who receive more than four vaccines at once are more likely to develop needle phobia when older. Plans to deliver COVID-19 vaccine at public health clinics will need to keep this in mind.
- Vaccine sites and services should reduce the following barriers
 - Cost – remove all out-of-pocket costs possible
 - Transportation – families without vehicles have had difficulty accessing other public health services provided as drive-up locations. Having options that are neighborhood based and easily reached through safe public transportation are important to have and share in public information (consider within [Offsite Vaccination Clinic Operational Playbook](#))
 - Access - Remove unnecessary requirements or steps to access care.
 - Consider community barriers or needs related to Communication, Maintaining Health, Independence, Safety/Support/Services, and Transportation that could affect an individual’s ability to understand and access public vaccine efforts. These areas are recognized as 5 key [access and functional needs](#) during disasters and emergencies
 - Provide times of operation that accommodate diverse work and school schedules.
 - Requirements for photo IDs were a point of concern at testing locations early in COVID-19, and should not be a barrier to vaccine access.
 - Message about other accommodations that will be available onsite (e.g. interpretation) or how people can request accommodations. People who have historically found it difficult to get their needs met may not believe that public locations will be accessible to them unless the messages make it explicit that services are available.
- Some of the COVID-19 vaccines in development will require at least 2 doses for maximum effectiveness. Public information and vaccine providers will have to collaborate and redouble messaging about vaccine efficacy, distribution processes, etc. to motivate people to return for the 2nd dose, especially:
 - Conveying urgency for both doses by describing the difference in risk and efficacy between 1 dose and 2 doses
 - Making plans for both vaccine appointments at the same time - help with scheduling, removing barriers
 - Providing reminders closer to the 2nd appointment

Needle phobia, or the fear of needles, is a phenomenon experienced by around 22% of the adult population; 3.5-10% of the population may experience a full anxiety disorder ([needle phobia article](#)). Reducing the visual cues of needles and sharing messages that emphasize the benefit of the vaccine over discomfort may help public information efforts.

Vaccine requirements and impact on jobs. Some people fear losing their jobs if they do not want a vaccine and their employers require vaccination for staff. Where possible, incentivizing and appealing workers to receive the vaccine rather than compelling them to participate will help decrease people’s fears, increase their sense of control in the pandemic environment, and increase vaccine acceptance. Creating a sense that vaccine acceptance is a workplace norm without requiring it and thanking people for their cooperation will also support individual’s motivation to participate through connectedness rather than constraint.

2. Key community messengers and channels to distribute information - How to increase reach and trust

Along the way to vaccine distribution, many different groups can become key distributors of public information. As shared by the National Council of PTSD, “Healthcare providers, community and religious leaders, and government officials all have a role to play in helping people cope effectively and manage their stress in the current climate of concerns about COVID-19 transmission. They can:

- provide the public with accurate and calming information about COVID-19 risk
- help the public recognize signs of stress in themselves and their loved ones
- teach them how to relieve anxiety reactions, and
- provide them with resources so they can seek further help if necessary.”

Since having these health and community-based organizations involved can be helpful, it is important to address their fears and concerns. Like the members of the public, health or community organizations can worry about vaccine safety, and may fear promoting the vaccine because of backlash and the loss of trust they could experience if their community mistrusts the vaccine.

When unified messages are shared through trusted providers and community-based organizations, it increases the likelihood that messages are received through familiar communication channels. Circulating the message where people already communicate requires less behavior change and increases the likelihood people receive a message the first time and multiple times afterwards.

When people receive initial warnings or instructions during disasters, they tend to interact with others, get more information, and look for confirming information before they decide to take action. This is called “Milling.” Involving organizations and community connectors in sharing unified messages will increase the speed of this milling process and the likelihood that recommended behaviors are adopted.

Sharing messages through these community connectors can also help identify unexpected barriers to recommended behaviors. Existing relationships and two-way communication between trusted organizations and their communities often recognize what resources affect the community’s behavior and well-being. Response and containment efforts become more effective when they use this information to remove barriers and resource the community’s ability to follow protective behaviors and recommendations.

The means by which information is shared, as much as the messages themselves, can promote people’s sense of safety, community efficacy, and connectedness.

Behavioral Health Responders, Activities to Support Mass Vaccination Sites

As mentioned in “Staff training and wellness,” there are foundational disaster behavioral health training and skills which can help manage stress and support people while delivering healthcare or public health services to the public, vaccines and otherwise. Vaccine site staff can be trained in these skills, and trained disaster behavioral health responders and teams can attend vaccine sites to deliver behavioral health support. This section highlights activities to prepare behavioral health support for vaccine distribution, before, during and after the site is active.

1. Before activation

Just-in-time training, planning discussions, and exercises/drills to prepare for vaccine sites can integrate behavioral health partners, questions, and considerations for more effective planning. These pre-activation discussions are also opportunities to educate onsite staff with interpersonal tools like Psychological First Aid to improve handling of highly anxious community members.

The Disaster Behavioral Health Unit encourages local DBH team leaders to connect with their vaccine planning groups, operational staff and/or volunteers about DBH principles and how to apply them. The DBH Unit is happy to make local introductions where needed.

Community functioning also interacts with “access and functional needs.” As discussed in the Offsite Vaccination Clinic Operational Playbook, it is critical to plan for functional services that will allow members of the public with different backgrounds and needs to effectively access and participate in vaccine clinics. This document for [Access and Functional Needs Inclusion in Mass Vaccination Distribution](#) includes additional considerations and questions for pre-planning discussions.

2. Onsite or During Vaccine Distribution

Disaster behavioral health responders can be trained to fill numerous non-clinical vaccine site roles. While filling these roles, they are in place to identify and support people experiencing high anxiety or other behavioral health reactions through simple interventions like psychological first aid. This timely support may increase the likelihood of that person successfully finishing their vaccination. Having [Engage, Calm, Distract](#) activities and materials available throughout the vaccine site flow can help kids and parents handle reactions to the environment and the vaccine experience.

The following roles or stations at a vaccine site are good options for embedding disaster behavioral health responders.

- Greeters, Line Support – Greeting people at the doors and other active engagement while people wait for their vaccines has a distinct impact on quieting fears. Behavioral health responders can also glean a great deal of information from simple interactions and then act accordingly to improve outcomes - how is an individual's behavior affected by their fear? Are they trusting the process or are they directing anger or blame toward vaccine site staff or other public health/government officials?
- Education – A major role in the behavioral health field is psycho-education. Behavioral health responders can play an active role in sharing information with those coming to receive medications/vaccinations and increase the likelihood that the educational material will actually be heard, processed, understood and followed. These BH responders can also be available after people receive the vaccine to support any concerns or questions that come up. This gentle engagement may improve people's evaluation of the experience, which may make word-of-mouth sharing in the community more positive.
- Dispensers – Some people have needle phobia.* How this is addressed can have a positive or negative impact, not only on the person with the phobia, but on their family and friends, as well as anyone who witnesses the interaction. Having psychiatric nurses, or other appropriately-trained behavioral health responders available to work with those needle phobic individuals can make the dispensing process significantly smoother. A psychiatric nurse allows for a combined medical and behavioral health (BH) role, while another BH responder could come alongside a medical provider to address the phobia at the same time as they provide the vaccination.
 - a. Medical versus BH Role
 - i. The medical role focuses on the education, assessment, and delivery of the vaccine.
 - ii. The behavioral health role focuses on the identification, education, assessment and behavioral health interventions to ground and create safety with the person receiving the vaccine, in order to increase positive outcomes.
 - b. Before Shot
 - i. The medical role educates the consumer about the vaccine, potential side effects, and vaccination process while also gathering information for potential allergies or adverse responses.
 - ii. The behavioral health role identifies those who may have a needle phobia, builds a connection, gathers history around needle phobia and plans the intervention.
 - c. During Shot
 - i. The medical role gathers the appropriate dosage, supplies for delivery, cleans the site and delivers vaccine.
 - ii. The behavioral health role works to ground the consumer, slow their breathing, keep them present, and talks to the fear directly.
 - d. After Shot
 - i. The medical role monitors for immediate adverse reactions and takes appropriate actions.

- ii. The behavioral role monitors for immediate adverse reactions and takes appropriate actions.
- e. In the Event of a Black Out
 - i. Standard procedures dictate to get the consumer flat, and then uncross their legs at the ankle and raise their legs on a large pillow or small box. Do not shake, slape, force to stand or take other action to return them to consciousness.
 - ii. Check vitals.
 - iii. Once conscious, observe for 30 minutes. Behavioral health role can use this time to process with the consumer about the faint, normalizing the biological response and giving pointers for managing the needle phobia the next time.

When working with people with needle phobias, remember that most helpful skills come back to “being present” and demonstrating a “compassionate presence.” In this environment, that means hearing the individual’s concerns about vaccinations, validating and empathizing with their fear, and taking time to respect and talk about their concerns.

Lessons from the Field: Meningitis at Colorado State University: In 2010, a meningitis outbreak prompted a campus-wide vaccination effort following deaths and growing infection concerns. Public health workers collaborated to vaccinate individuals across the campus from various backgrounds and belief systems. Vaccination procedures and behavioral health concepts were combined in order to contain the outbreak and support community cooperation. Examples from this effort included behavioral health responders as greeters who identified highly anxious people, as educators who taught people about typical stress reactions, and as support for clinic checkpoints to normalize fears and offer resources.

3. Follow up post vaccination

When people are having strong stress reactions, their ability to understand and recall information is not at its most effective. Any education or scheduling for future vaccine doses can be helped by giving people information in a form that they can refer back to such as a written schedule, text, or calendar reminder.

Informational materials from vaccine sites can also be an opportunity to connect people with behavioral health resources when they return home. COVID-19 is causing people stress in many ways, and even beyond vaccine concerns, helping people resource themselves for other disaster stresses will increase community resilience and effectiveness in combating COVID-19. Ask your local disaster behavioral health partners what information and materials can be shared with the public.

References

- Citroner, G. (2020). 20% of Coronavirus infections are asymptomatic but still contagious. *Healthline*. Retrieved November 16, 2020, from <https://www.healthline.com/health-news/20-percent-of-people-with-covid-19-are-asymptomatic-but-can-spread-the-disease#COVID-19-can-have-hidden-symptoms>
- Cohen, D., & Casken, J. (2012). Why are healthcare workers so resistant to the acceptance of influenza vaccine? a review of the literature to examine factors that influence vaccine acceptance. *International Journal Caring Sciences*, 5(1)26, 26-35.
- Hobfoll, S. E., Watson, P. J., Bell, C. C., Bryant, R. A., Brymer, M. J., Friedman, M. J., et al. (2007). Five essential elements of immediate and mid-term mass trauma intervention: Empirical evidence. *Psychiatry*, 70(4), 283-315.
- Karlsson, L.C., Lewandowsky, S., Antfolk, J., Salo, P., Lindfelt, M., & Oksanen, T., et al. (2019). The association between vaccination confidence, vaccination behavior, and willingness to recommend vaccines among Finnish healthcare workers. *PLoS ONE*, 14(10), e0224330. <https://doi.org/10.1371/journal.pone.0224330>
- Lesperance, A.M., & Miller, J.S. (2009). *Preventing absenteeism and promoting resilience among health care workers in biological emergencies* (PNNL-18405) [Report]. U.S. Department of Energy. https://www.pnnl.gov/main/publications/external/technical_reports/PNNL-18405.pdf
- Michie, S., van Stralen, M., & West, R. (2011). The behaviour change wheel: a new method for characterising and designing behaviour change interventions. *Implementation Science*. 6(1)42. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3096582/>
- National Center for PTSD. (2020, March). *For providers and community leaders: helping people manage stress associated with the COVID-19 virus outbreak*. <https://grit.uccs.edu/sites/g/files/kjihxj1426/files/2020-04/For%20Providers%20and%20Community%20Leaders-%20Helping%20People%20Manage%20Stress%20Associated%20with%20the%20COVID-19%20Virus%20Outbreak.pdf>
- Paterson, P., Meurice, F., Stanberry, L., Glismann, S., Rosenthal, S., & Larson, H. (2016). Vaccine hesitancy and healthcare providers. *Vaccine*, 34(52), 6700-6706. <https://www.sciencedirect.com/science/article/pii/S0264410X1630977X>
- Qureshi, K., Gershon, R., Sherman, M., Straub, T., Gebbie, E., McCollum, M., Erwin, M., & Morse, S. (2005). Health care worker's ability and willingness to report to duty during catastrophic disasters. *Journal of Urban Health: Bulletin of the New York Academy of Medicine*, 82(3), 378-388.
- Vasilevska, M., Ku, J., & Fisman, D. (2014). Factors associated with healthcare worker acceptance of vaccination: a systematic review and meta-analysis. *Infection Control & Hospital Epidemiology*, 35(6), 699-708. doi: 10.1086/676427. <https://doi.org/10.1086/676427>
- WHO Europe. (2020). *Pandemic fatigue - reinvigorating the public to prevent COVID-19, September 2020*. Policy framework for supporting pandemic preventing and management. <https://apps.who.int/iris/bitstream/handle/10665/335820/WHO-EURO-2020-1160-40906-55390-eng.pdf>
- Witte, K. (2009). Putting the fear back into fear appeals: The extended parallel process model. *Communication Monographs*, 59(4), 329-349. <https://doi.org/10.1080/03637759209376276>
- Witte, K. (2009). Fear control and danger control: A test of the extended parallel process model. *Communication Monographs*, 61(2), 113-134. <https://doi.org/10.1080/03637759409376328>