

Battle Buddies: Rapid Deployment of a Psychological Resilience Intervention for Health Care Workers During the Coronavirus Disease 2019 Pandemic

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The outbreak of the coronavirus disease 2019 (COVID-19) and its rapid global spread have created unprecedented challenges to health care systems. Significant and sustained efforts have focused on mobilization of personal protective equipment, intensive care beds, and medical equipment, while substantially less attention has focused on preserving the psychological health of the medical workforce tasked with addressing the challenges of the pandemic. And yet, similar to battlefield conditions, health care workers are being confronted with ongoing uncertainty about resources, capacities, and risks; as well as exposure to suffering, death, and threats to their own safety. These conditions are engendering high levels of fear and anxiety in the short term, and place individuals at risk for persistent stress exposure syndromes, subclinical mental health symptoms, and professional burnout in the long term. Given the potentially wide-ranging mental health impact of COVID-19, protecting health care workers from adverse psychological effects of the pandemic is critical. Therefore, we present an overview of the potential psychological stress responses to the COVID-19 crisis in medical providers and describe preemptive resilience-promoting strategies at the organizational and personal level. We then describe a rapidly deployable Psychological Resilience Intervention founded on a peer support model (Battle Buddies) developed by the United States Army. This intervention—the product of a multidisciplinary collaboration between the Departments of Anesthesiology and Psychiatry & Behavioral Sciences at the University of Minnesota Medical Center—also incorporates evidence-informed “stress inoculation” methods developed for managing psychological stress exposure in providers deployed to disasters. Our multilevel, resource-efficient, and scalable approach places 2 key tools directly in the hands of providers: (1) a peer support Battle Buddy; and (2) a designated mental health consultant who can facilitate training in stress inoculation methods, provide additional support, or coordinate referral for external professional consultation. In parallel, we have instituted a voluntary research data-collection component that will enable us to evaluate the intervention’s effectiveness while also identifying the most salient resilience factors for future iterations. It is our hope that these elements will provide guidance to other organizations seeking to protect the well-being of their medical workforce during the pandemic. Given the remarkable adaptability of human beings, we believe that, by promoting resilience, our diverse health care workforce can emerge from this monumental challenge with new skills, closer relationships, and greater confidence in the power of community. (Anesth Analg XXX;XXX:00–00)

GLOSSARY

APD = Anticipate-Plan-Deter; **COVID-19** = coronavirus disease 2019; **ED** = emergency department; **HCW** = health care workers; **ICU** = intensive care units; **MERS** = Middle East Respiratory Syndrome; **PPE** = personal protective equipment; **PTSD** = posttraumatic stress disorder; **RCT** = randomized controlled trial; **SARS** = severe acute respiratory syndrome

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Accepted for publication April 23, 2020.

Funding: None.

The authors declare no conflicts of interest.

Reprints will not be available from the authors.

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DOI: 10.1213/ANE.0000000000004912

The coronavirus disease 2019 (COVID-19) pandemic is presenting a unique set of stressors and psychological trauma-related challenges to health care workers (HCW). These challenges include uncertainty about the ultimate magnitude, duration, and effects of the crisis; concerns about level of preparedness within individual health care organizations and the public sector; lack of adequate personal protective equipment (PPE) and other needed medical supplies; and potential threats to one’s own health

and contagion risks to loved ones and coworkers.¹ In addition, the financial pressure created on health care systems as a result of the COVID-19 pandemic is contributing significantly to clinicians' concerns and well-being.

These ongoing challenges are creating unprecedented levels of anxiety along with fears for personal safety in HCW, not dissimilar to what is seen during battlefield conditions. When HCW experience high levels of anxiety coexisting with prolonged conditions of uncertainty, along with a reduced ability to exercise control or agency over the situation, they are at risk for the development of persistent stress exposure syndromes and professional burnout. Facilitating psychological resilience for HCW, particularly those assigned to the front lines of the crisis, is of the highest priority during this pandemic.

Unfortunately, little is known outside of military organizations about the optimal methods to prepare for and cope with such "battlefield conditions" for HCW, to maximize their health and well-being, their ability to perform their responsibilities, and their long-term psychological resilience. In this article, we present a brief overview of the potential psychological responses and the preemptive organizational and personal resilience factors for HCW during the current COVID-19 crisis. We then present a rapidly deployable Psychological Resilience Intervention that is derived from the Battle Buddy system developed in the US Army² and that also incorporates elements of the Anticipate-Plan-Deter (APD) model for mitigating psychological consequences for HCW who are responding to disasters.³ This intervention has been developed through close collaboration between colleagues in Anesthesiology and in Psychiatry & Behavioral Sciences at the University of Minnesota Medical Center. Our goal is to provide a proactive, cost-efficient, multilevel approach for bringing resilience interventions and mental health resources to frontline HCW through focused peer support (Battle Buddies), unit-specific small group discussions (Anticipate-Plan), and additional individual support, if needed (Deter).

PSYCHOLOGICAL CONSEQUENCES OF COVID-19 STRESS EXPOSURE

Posttraumatic Stress Reactions

Disasters—including serious disease outbreaks and epidemics—require a high level of emergent medical response that is often instituted without a focus on the psychological well-being of those providing the response. The combination of witnessing physical suffering and death along with the immediate threat to one's own safety can induce anxiety, hyperarousal, hypervigilance, sleep disturbance, intrusive recollections and thoughts, depression, and grief.⁴

Posttraumatic stress disorder (PTSD) is the most well-studied condition following disasters and has been found to occur at high rates in first responders following the World Trade Center disaster (10%–20%)⁵ and the 2004 Southeast Asian tsunami (up to 25%).^{6,7}

The number and quality of the stressors experienced by first responders are particularly important. Schreiber et al³ performed a study of HCW deployed to recovery efforts during Typhoon Haiyan in the Philippines in 2013. They found that when responders endured exposure to 6 or more traumatic or cumulative stress factors during their deployment, or a combination of 3 specific factors (performing duties outside of perceived skills; injury, death, or serious illness of a coworker; or felt like one's own life was in danger), they were at higher risk for development of PTSD 3 months later. These 3 specific factors are among the most frequently identified concerns of medical personnel in the COVID-19 crisis.¹

A small literature points to the specific psychological effects on HCW who are responding to highly infectious diseases. After the 2003 severe acute respiratory syndrome (SARS) outbreak in Hong Kong, Tam et al⁸ found that worse psychological outcomes were seen in HCW of younger age, female sex, nursing professionals, and those with poorer physical health. Employer support in the form of counseling had a protective effect on work-related stress. The specific stressors with the highest adverse impact were the fear of becoming infected, fear of infecting others including loved ones, and feelings of inadequacy—particularly around providing treatment to colleagues. Survival guilt was also observed at high rates. After a 2015 outbreak of Middle East Respiratory Syndrome (MERS) in Korea, HCW who performed MERS-related patient care tasks displayed higher rates of psychological distress than their counterparts not involved in MERS-related tasks.⁹ Specifically, these HCW showed increased rates of hyperarousal, avoidance, "numbness," and sleep problems.

In Hubei Province, at the heart of the COVID-19 pandemic, Chen et al¹⁰ developed a structured psychological intervention plan for medical staff, educating them on common psychological problems, providing a psychological assistance hotline, and offering stress relief efforts for groups.¹¹ However, staff showed a marked reluctance to participate, as well as refusal by some staff to accept help despite showing irritability, unwillingness to rest, and other signs of psychological distress. Medical staff tended to focus on tangible challenges, including lack of PPE and lack of sleep, but downplayed or did not acknowledge psychological stress as a factor in their well-being. One useful intervention was injecting counselors into the rest areas of the hospital, to allow for medical staff to

spontaneously voice their experiences as a form of stress relief.

Professional Burnout

While most individuals are resilient and will not develop clinical trauma responses, they can still experience subclinical symptoms that exert a powerful influence on their quality of life as well as their ability to perform optimally in personal and professional capacities. These include ongoing sense of distress, worry, irritability, disturbed sleep or concentration, alterations in work function, interpersonal relationship difficulties, increase in substance use, somatization (headaches, muscle tension, etc), and depression.¹² If such symptoms continue, along with ongoing increased uncertainty and burden in the workplace, individuals are at risk for professional burnout: the long-term hazards of depersonalization, emotional exhaustion, and a perception of reduced accomplishment. Indeed, it is the confluence of the physiological, cognitive/emotional, and interpersonal responses that a given individual has to their stressful situation that determines resilience versus burnout (Figure 1).

Burnout is a multifaceted response to job stress that includes elements of exhaustion, cynicism, and inefficacy.¹³ It has recently emerged as a significant risk factor for all clinicians but particularly for those exposed

to high rates of death and dying, trauma, as well as the perception of delivering inappropriate or insufficient care.¹⁴ Accompanying features of burnout are a loss of physical, cognitive, and emotional energy; reduction of ability to use effective coping strategies; and negative attitudes and disengagement from work.¹⁵⁻¹⁸

The consequences of burnout are substantial with long-ranging implications for workplace morale, patient safety, quality of care, and health care costs, including costs related to clinician turnover.¹⁹ Tragically, burnout is also linked to physician suicide across multiple specialties.²⁰⁻²³ Given the ongoing psychological stressors and the heightened complexity of medically managing patients with COVID-19, the unknown but likely significant risk associated with caring for these highly contagious patients, and the relative paucity of data on best management practices, provider burnout may be another hidden future cost of the pandemic.

PREEMPTING THE NEGATIVE EFFECTS OF COVID-19 PSYCHOLOGICAL STRESS EXPOSURE
Attending to Physiology: Sleep, Rest, Exercise, Nutrition

Attention to basic physiological and self-care needs is foundational for effective coping and cognitive functioning, yet adequate rest and restorative sleep are

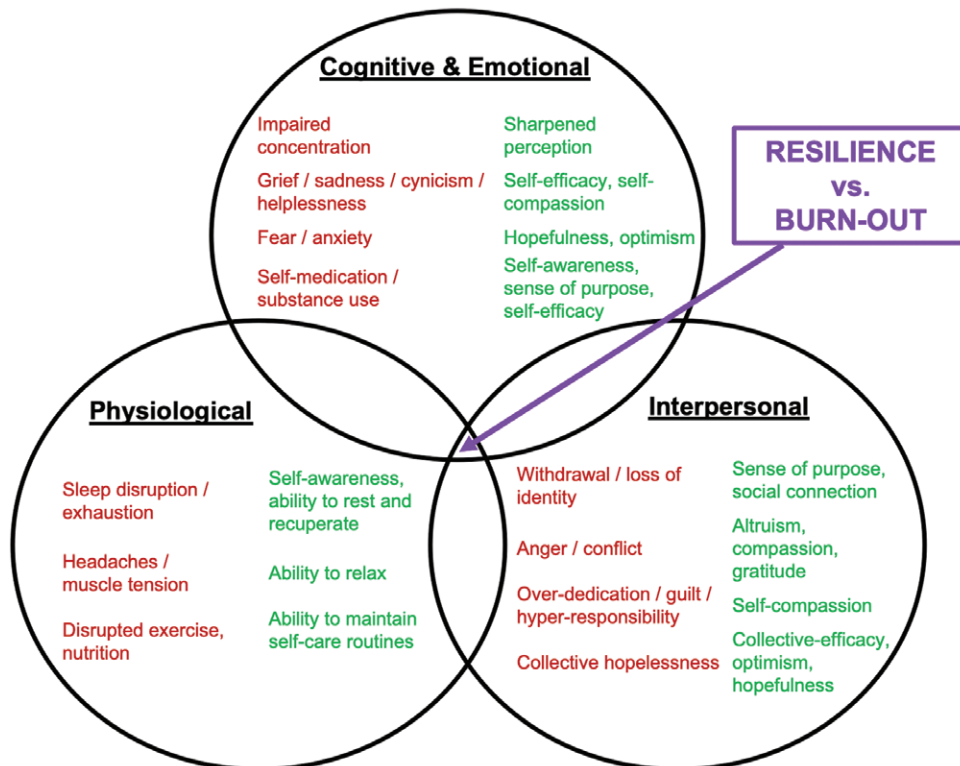


FIGURE 1. The physiological, cognitive/emotional, and interpersonal response of a given individual to their stressful situation determines resilience versus burnout. Items in green represent adaptive responses while items in red may be maladaptive. Note that responses are interdependent (physiological responses affect cognitive/emotional responses, etc) and that resilience and burnout lie at the confluence of these dimensions.

frequently very early casualties when HCW respond to highly stressful situations such as epidemics.²⁴ Sleep disruption has a negative effect on concentration, speed of processing, and mental flexibility in intensive care physicians,²⁵ while longer-term sleep disturbances—of the type that occur in extended medical crises such as a pandemic—contribute to even more severe cognitive effects as well as emotional dysregulation and anger/irritability. Regular caloric intake and adequate hydration are also necessary for optimal cognitive processing.^{26,27} A foundational principle of fostering optimal psychological resilience is to first attend to these basic physiological needs.

Engaging in Cognitive and Emotional Stress Inoculation

Schreiber et al,³ in their APD model, emphasize the idea of stress inoculation: the importance of cognitively and emotionally preparing HCW for the specific stressors they will be facing. In the Anticipate phase, HCW identify the exact nature of the traumatic and cumulative stressors they will be exposed to, including their expected specific stress responses, such as sleep disturbance, fear and anxiety, grief, anger, etc. In the Plan phase, they develop a personal resilience plan, in which they identify the specific stressors they feel will be personally most difficult for them, and they prepare a range of personalized adaptive coping responses and resources. In the Deter phase, they engage in self-monitoring for stress and learn to execute the plan effectively and seek additional help

as needed. The full APD model was implemented in 2 responder teams during Africa’s 2014–2015 Ebola epidemic and was found to be viable for protecting high-risk HCW from the negative psychological consequences of exposure to traumatic and cumulative stressors.³ During the 2003 SARS outbreak in Canada, Maunder²⁴ found that a stress-adaptation model was useful in naming and normalizing expected stress reactions (eg, anxiety, preoccupation) and supporting staff to adapt rather than view these reactions as pathological.

Developing Key Cognitive, Emotional, and Interpersonal Skills for Adaptive Responses

In addition to cognitive and emotional inoculation for the stressors of the COVID-19 pandemic, organizations and individuals can develop key cognitive, emotional, and interpersonal skills that foster adaptive coping responses and contribute to both an organizational and a personal resilience plan (Table). Hobfoll et al²⁸ identified self-efficacy, instillation of hope, and social connectedness, as being among the crucial elements for promoting resilience in populations affected by mass trauma.

Self-efficacy is possibly the most important skill for HCW. Related to self-awareness, it is the belief that one’s actions are likely to result in beneficial outcomes by exercising thoughtful self-monitoring and control over one’s emotional reactions and behaviors. Collective efficacy refers to the sense that one belongs to a group that is able to effectively

Table. Psychological Stress Responses to the COVID-19 Pandemic and Preemptive Strategies for Building Organizational (Italics) and Personal (Bold) Resilience

Common COVID-19 Psychological Stress Responses	Preemptive Strategies to Foster Organizational and Personal Resilience
Physical and cognitive/emotional exhaustion	<i>Actively communicate to staff the importance of adequate rest and self-care</i>
Fear, anxiety, anger related to threat to safety in self, family, coworkers (transmitting COVID-19)	Attend to physiological health and practice self-care for sleep, rest, nutrition, and exercise <i>Provide clear guidance/procedures about PPE, practice issues, avoiding transmission of the virus, etc.</i>
Fear, anxiety, sense of inadequacy about being redeployed to perform outside of perceived skills	Practice self-compassion; tap into sense of purpose, altruism, and compassion for others <i>Acknowledge scope of the pandemic and provide likelihood estimates of need for redeployment</i>
Panic; hyperarousal; sense of loss of control	Anticipate and Plan for the challenges; make use of peer support <i>Acknowledge uncertainty and change; foster hope; limit communications that contradict one another</i>
Depression; grief; disruption in sense of professional identity	Maximize self-efficacy activities where possible; develop personalized resilience plan for managing hyperarousal; limit consumption of media and intoxicants; make use of peer support; seek individual counseling <i>Acknowledge losses; avoid use of term nonessential</i>
Loneliness and isolation due to social distancing	Practice self-compassion and hope; actively engage in positive assertive control where possible; make use of peer support <i>Foster collective efficacy</i>
Resistance to mental health support, fear of stigma	Actively engage in remote social connection; foster collective efficacy; witness and share personal stories; share positive emotions of altruism, compassion, humor, and gratitude <i>Acknowledge normalcy of negative emotions; emphasize usefulness of preemptive interventions; combat stigma</i>
Poststress reactions; professional burnout	Make use of peer support; encourage peers who are experiencing high numbers of stressors to deter further issues by seeking professional support <i>Foster ongoing peer support programs and access to mental health services</i>
	Make use of peer support; Deter further consequences by seeking professional support

Abbreviation: COVID-19, coronavirus disease 2019.

enact change or control over the environment to the benefit of the group. Traumatic experiences place people at risk for losing a sense of self-efficacy, and if there is mass trauma, can erode organizational collective efficacy as well.^{29,30} During the 2003 SARS outbreak in Hong Kong, HCW perception of their risk and sense of control played a significant role in their resultant stress levels.⁸ During the 2003 SARS outbreak in Canada, nonfrontline staff who were deemed nonessential suffered a sense of isolation, lack of efficacy, and feelings of frustration about not contributing.²⁴ Identical reactions are being observed at present in colleagues who are sidelined by the COVID-19 crisis, and it is important to acknowledge their frustration and loss. Because medical training and practice is so strongly focused on exerting external control, loss of external control can jeopardize well-being and self-identity.³¹ In the face of an uncontrolled and uncertain environment, a combination of positive assertive control and positive yielding is most effective, for both organizations and individuals. This approach involves displaying decisiveness, leadership, and clear communications when possible and practicing assertive patience and acceptance when needed—while actively avoiding anger, blaming, overcontrol, dogmatism, indecisiveness, and manipulation.

Sense of purpose and altruism are key resilience factors that come easily to HCW, who have often chosen their professions based on these intertwined emotional and interpersonal drives. However, fear, anxiety, grief, helplessness, anger, and cynicism can overwhelm these drives during a major public health emergency where personal risk is high and PPE and ventilator shortages are occurring, and it is important to validate those very normal negative reactions. Self-compassion and hope can serve as antidotes for negative emotions and are associated with more favorable outcomes in HCW undergoing stressors, including (for self-compassion), an association with better sleep, better mental health, and more resilience.^{32,33} Hopefulness includes the belief in one's ability to positively impact one's own future³⁴ but extends to a more pervasive sense of confidence that there is a high probability that things will work out "as well as can reasonably be expected."³⁵

Finally, practicing social connectedness is just as foundational to organizational and psychological resilience as is physiological health. West African Ebola survivors who were abandoned by their families secondary to stigma showed higher levels of depression and anxiety and poorer outcomes.³⁶ Social connection promotes the practical sharing of resources and facilitates problem solving, emotional validation, normalization of traumatic reactions, and

mutual instruction on effective coping.²⁸ Social connection is at the root of collective efficacy and fosters hopefulness, as well as opportunities to witness and share the positive emotions of humor, compassion for others, altruism, and gratitude.

POTENTIAL GENERATIONAL EFFECTS IN HOW HCW RESPOND TO THE COVID-19 CRISIS

HCW represent a broad demographic with varying levels of education, training, life stage, responsibility, and authority. Even in the face of a common threat, individual responses to (and impact of) a crisis will be different across generations and roles.

The vast majority of HCW are worried about inadequate PPE: becoming contagious and a threat to their patients', colleagues', and family's health. However, individuals with greater seniority may also be concerned about their ability to provide effective leadership to younger colleagues coping with the COVID-19 situation, while also aware of their own vulnerability if they become ill. Midcareer practitioners may be the sole wage earner supporting aging parents (themselves at risk for illness) and teenagers facing college tuition expenses. Early-career clinicians are coping with adjustment to their professional role and skills in the face of unforeseen and unprecedented challenges, often with young children now needing to remain at home and high educational debt. Early-career female providers may be pregnant and struggling with how to protect their own health and the health of their pregnancy. Furthermore, an entire cadre of clinicians may be idled after years of education and training, often in the face of substantial debt.

The US military, which is also a culturally and demographically diverse organization, addresses this potential divide by assigning peer supporters (the Battle Buddy) who have similar levels of responsibility, life experience, and authority (ie, like with like). That is, teenage recruits are paired with other teen recruits, commanders with commanders, etc. A similar approach is used in successful physician peer support programs where physicians with similar experience and at similar professional stages are paired to help cope with adverse events or harm.³⁷

A RAPIDLY DEPLOYABLE PSYCHOLOGICAL RESILIENCE INTERVENTION FOR HCW

Overall Organization of the Intervention

The Psychological Resilience Intervention we are deploying in response to the COVID-19 pandemic focuses on operationalizing the personal resilience-promoting principles of focused attention to physiology (self-care), self-efficacy, and social connection, as well as providing rapid access to mental health

consultation and support as needed. Our intervention has 3 goals:

1. To support HCW in maintaining their sense of physiological well-being, self-efficacy, and hope, so they can continue to do their work in the midst of a crisis and to emerge without posttraumatic stress reactions or burnout.
2. To connect each individual HCW to their peers, to their unit/department, and to a mental health consultant. The philosophy of “leave no one behind” is critical for keeping HCW from feeling isolated and for enhancing social connection. Individual peer support also allows for sharing one’s narrative—a psychological process by which humans derive a sense of self-efficacy and sense of purpose.
3. To identify and support at-risk individuals who may be predisposed to stress reactions because of lower initial resilience, inadequate or inappropriate coping, or exposure to atypically high levels of risk/danger/trauma during the crisis.

In developing our program, we considered that during the 2003 SARS outbreak, HCW did not seek out formal mental health support, but did seem to benefit from peer support when it was available.⁸ More recently in Hubei province, medical staff made spontaneous use of counselors located in their rest areas, but did not actively seek out mental health resources.¹⁰ For this reason, we designed an approach where we put the resources directly into the hands of the HCW, by providing them with 2 key elements: a Battle Buddy to provide peer support, and a mental health consultant assigned to their unit who gets to know their activities and concerns and is available to facilitate the peer support process at the unit level, provide additional training in the APD model, and serve as a resource for individual needs.

Our intervention is thus organized into 3 levels of support (Figure 2):

Level 1, the Battle Buddy system, provides all HCW with peer support and requires no additional or specialized organizational resources to implement.

Level 2 provides specific frontline units/departments with unit-level support through an identified mental health consultant (a faculty member from the Department of Psychiatry & Behavioral Sciences) and is thus more resource intensive. The consultant attends unit meetings, gets to know unit leaders, and is available to facilitate group sessions in implementing methods derived from the Anticipate-Deter-Plan model. The group sessions do not focus on traditional mental health concerns (symptoms, diagnosis, suicide risk, psychotherapy, etc). Rather, the sessions assist Battle Buddy pairs in identifying their likely

stress risk factors/exposures and planning for how they will manage these factors, through their personal resilience plan (Table).

Level 3 provides individual support to those HCW who are experiencing a high degree of stressors and challenges and require specialized and rapid access to additional resources. The unit mental health consultants are prepared to meet with HCW individually and to refer them for immediate mental health support and evaluation if necessary. This is a confidential conversation, but not a clinical encounter.

Level 1: The Battle Buddy System

The US Army assigns a “Battle Buddy” to every soldier, beginning in Basic Training and continuing throughout one’s military career, ensuring that no one is left behind, particularly in combat. Critically, each Battle Buddy is expected to assist their partner in and out of combat. Through their daily contact, they can address and validate each other’s stressors, both professional and personal, that can potentially distract them from maintaining focus on their mission. This improves the US Army’s ability for readiness and resilience, by helping soldiers find solutions to challenges before they compromise the well-being of the soldier and the organization. Battle Buddies have been shown to reduce suicide rates in the Army—because each person watches their partner’s actions over time, a Battle Buddy can be the first to notice a worsening of negative thoughts and feelings and be the first to push for help.² Over 80% of soldiers report satisfaction with the system.²

Like new Army recruits, HCW in the current pandemic have been suddenly thrust into an unfamiliar and frightening landscape where they all share intense daily stresses and suffering, but without the benefit of a designated outlet to process what they are experiencing. To address this gap rapidly and efficiently, we have adapted the Army’s Battle Buddy system as the foundational (level 1) practice of our intervention. We ask each frontline unit or division to quickly assign Battle Buddies, pairing individuals together based on their clinical areas of practice, clinical responsibilities (prescribers/nonprescribers), clinical experience and seniority (career duration/

leadership role), and life circumstances (partnered, school-aged children/no children, etc). Everyone is asked to participate; no one is left behind.

Our objective is to rapidly and equitably create pairings based on similar professional perspectives, life experiences, and exposure to stressors, so that daily conversations can be initiated between peers that will foster a sense of connectedness, validation, support, trust, and useful feedback. In some cases, rather than make direct assignments, departments have asked individuals to identify 2–3 people they

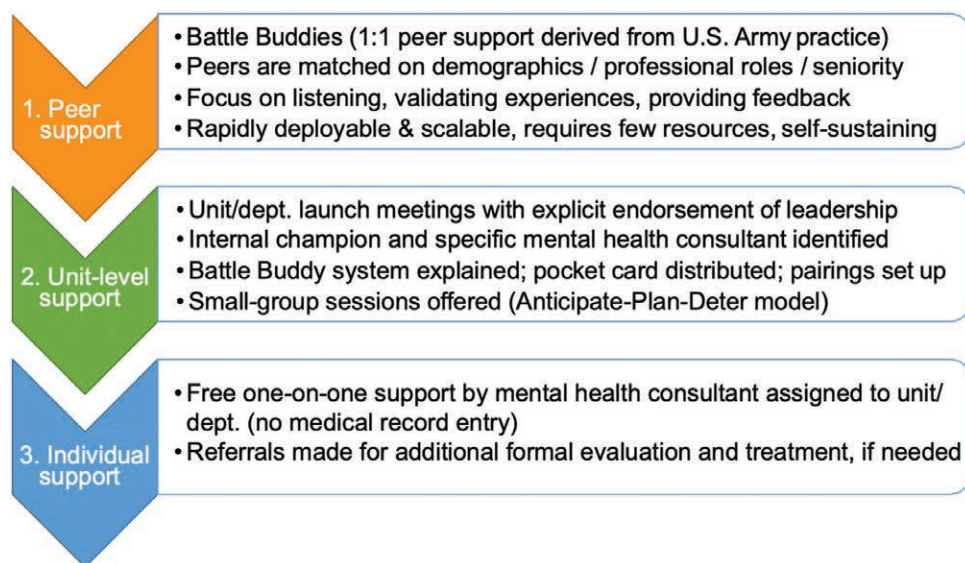


FIGURE 2. Three levels of support provided in the COVID-19 Psychological Resilience Intervention. COVID-19 indicates coronavirus disease 2019.

feel would make a good Battle Buddy, and then a neutral third party makes the assignment. Whenever possible, Battle Buddies are selected specifically not to be close friends or confidantes; sometimes difficult conversations or observations must be made without the fear of jeopardizing close friendships. Although some providers may feel they do not need this program, we emphasize to them that their participation may prove helpful to their colleague and that they have much to offer. Everyone is provided a “Battle Buddy Pocket Card” that outlines the rationale and processes of the system (Figure 3). Posters with similar information are also posted in work areas.

The Battle Buddy is not intended to be a therapist and the conversations between Battle Buddies are not confidential therapy sessions. If a Battle Buddy observes excessive anxiety or other maladaptive behaviors, only then will a patient-provider relationship be offered via the unit’s assigned mental health consultant (level 3). The conversations are also not intended to be opportunities for airing grievances. The intended outcome of these Battle Buddy relationships is that those with similar backgrounds can discuss daily challenges and successes with another peer who understands and appreciates the issue. The Battle Buddy, more than a spouse or other loved one, understands the significance of issues and challenges faced in the COVID-19 clinical setting and provides useful insights and recommendations. With practice, these daily conversations become mutually beneficial to the Battle Buddies, allowing work issues to remain at work, and leaving home environments as places of rest, recuperation, and relaxation.

Levels 2 and 3: The APD Model

When the Battle Buddy system is initiated on a unit or department, a faculty member from the Department of Psychiatry & Behavioral Science is also assigned to the unit or department, to serve as a mental health consultant. Their role is to support implementation of Anticipate and Plan phases of stress inoculation and to be available if stressors are escalating or accumulating for a given individual that require individual support or services (Deter). Anticipate and Plan discussions are held in focused small group sessions performed on each unit or department.

For organizations where a dedicated mental health consultant is not available, we propose that Battle Buddies who have especially strong relationships can work together to perform abbreviated versions of the Anticipate and Plan phases of stress inoculation. This would consist of talking together about the specific stressors they might encounter in their work; identifying the ones they are especially concerned about; and discussing how they might handle those traumas or stressors when they occur. The Table presents some of the common sources of stress and anxiety in the COVID-19 pandemic, as well as some resilience strategies that could serve as probe questions to help individuals engage in Anticipate and Plan conversations. The Pocket Card in Figure 3 also provides an overview of how Battle Buddies can engage in these conversations. Even in the absence of a dedicated mental health consultant, if exposures to stressors begin to accumulate and coping skills are overwhelmed, Battle Buddies can encourage one another to seek professional support through their Employee Assistance Program or other resources such as pastoral counseling or hotlines (the Deter phase of the APD model).

ADMINISTRATIVE CONSIDERATIONS

Early in the COVID-19 crisis, several groups within the University of Minnesota Medical Center

simultaneously identified multiple factors negatively affecting the mental health and well-being of frontline HCW. The Dean of the Medical School



COVID 19 Battle Buddy Support Program

Background: COVID-19 is a pandemic that threatens not only our patients but ourselves and our sense of safety and control. Like soldiers on a battlefield, our front line staff are coping with ongoing uncertainty about the scope of the threat, concerns about adequate PPE, and worry about the complex decisions that will be required of them. Many of us are experiencing unusual levels of professional anxiety and stress under these “battlefield conditions.” This places all of us at increased risk for burnout and psychological trauma reactions. In order to mitigate these risks, we must develop cognitive and emotional resilience in ourselves and our colleagues. Our goal is to provide you with tools based on the *Anticipate, Plan, and Deter* model fostering resilience in healthcare workers who are deployed in hazardous situations.¹ The first tool is the Battle Buddy system.

What Are Battle Buddies?

The US Army uses the Battle Buddy for peer mentoring and emotional support. Having a Battle Buddy helps you to: 1) Validate your experiences; 2) Identify and address stressors early; 3) Keep work at work; 3) Develop and maintain resilience.

Who Is the Ideal Battle Buddy?

Battle Buddies (BBs) are usually chosen by a third party but in some instances pair up spontaneously. BBs are matched based on a common working environment, clinical responsibilities, level of seniority, and stage in life, but without being close friends. BBs need to be able to be supportive and objective when assessing stress behavior and providing feedback.

What Does a Battle Buddy Do?

The BB is a listener. BBs do a brief check-in as they share their reactions to stressors and anxieties and validate each other’s experiences (e.g. “I’m afraid I’m going to bring the virus home”, “I keep doing chart checks on my patients late into the evening”). BBs understand the daily challenges of a particular unit, provide each other an additional perspective, support resilience and encourage additional help if stresses and anxieties escalate. Listening and validating is not debating or arguing. If this is occurring, it is best to reach out to a mental health professional or to your employee assistance program.

How Do Battle Buddies Help to Find Solutions?

BB’s support resilience: figuring out adaptive ways to cope with challenges so we can all perform successfully in a less-than-perfect environment. Daily BB conversations can also help identify specific issues that need to be addressed locally (within their unit) or that need to be escalated to leadership.

What is The End State for the Battle Buddy Program?

1. A working environment where everyone feels supported and validated. No one is left out.
2. Work stays at work. Home is a place for relaxation and recovery.
3. A cognitively and emotionally resilient team culture.

¹ Schreiber et al. *Maximizing the Resilience of HealthCare Workers in Multi Hazard Events: Lessons from the 2014-2015 Ebola Response in Africa*. *Military Medicine* 184;:114, 2019

FIGURE 3. (Continued)

BATTLE BUDDY CHECK-IN 1-10 MINUTES

- Aim to contact your Battle Buddy 2-3 times per week or more (daily if needed)
- Contact can be a quick text to check in; a short call to debrief; a zoom meeting to hash something out
- Listen, validate, and provide feedback; identify any issues that need more support or attention
- Identify any operational issues that need escalation

Sample questions for your check-in:

- What is hardest right now?
- What worried you today?
- What went well today?
- How are things at home?
- What challenges are you facing with sleep/rest, exercise, healthy nutrition?

If you or your Battle Buddy are ready to support one another in anticipating and planning for specific stressors you may encounter, please see the back of the card.

Stress Inoculation

Working with Your Battle Buddy to Anticipate and Plan for Specific Stressors

In our Psychological Resilience Intervention, after the Battle Buddy program is initiated, a mental health consultant will work with each unit or department to engage in stress inoculation: the **Anticipate** and **Plan** for the specific stressors they are likely to encounter. The mental health consultant is also available to help **Deter** more serious mental health problems, by working with individuals who experience escalating or cumulative stressors and whose coping responses are getting overwhelmed.

You can work with your BB to help each other engage in the **Anticipate** and **Plan** phases of stress inoculation on your own. In your BB conversations, support one another to do the following:

Anticipate	<ul style="list-style-type: none"> • Anticipate and identify the specific stressors you are likely to encounter • Describe your likely responses to these stressors
Plan	<ul style="list-style-type: none"> • Identify the stressors and responses that will be most difficult for you • Describe your personal resilience plan: How will you cope with these difficult stressors? What resources are available to you? What strengths and resilience factors will you make use of?
Deter	<ul style="list-style-type: none"> • If you or your Battle Buddy are experiencing escalating or cumulative stressors and coping responses are getting overwhelmed, it is not your job to be a therapist. Please move into the Deter phase by seeking or helping your BB to connect with your dedicated mental health consultant.

Here is a list of potential stressors and resilience factors to help initiate your conversations:

Stressors	Resilience Factors
<ul style="list-style-type: none"> • Experiencing working conditions that are hazardous or have insufficient supplies • Worrying about the safety of your loved ones and/or being unable to return home • Being worried about contracting COVID-19 • Witnessing COVID-19 in coworkers • Being asked to perform duties outside of current skills • Being unable to meet patient needs and/or being responsible for making difficult triage decisions • Being forced to abandon patient(s) • Witnessing an unusually high number of deaths • Witnessing the death of a child, adolescent or young adult • Having direct contact with grieving family members 	<ul style="list-style-type: none"> • Feeling your work was meaningful and contributed to the greater good • Feeling emotionally connected to or supported by someone (family member, friend, coworker, Battle Buddy) • Connecting with your Battle Buddy and receiving validation for your reactions • Getting enough sleep; staying hydrated, having access to food and time to eat • Getting at least 15 minutes of exercise each day • Fostering your positive emotions: expressing gratitude, feeling compassion for self and others; sharing your story; listening to music, spending time in nature, laughing • Spending time with your religious, faith-based, or spiritual practices

FIGURE 3. Battle buddy pocket card. COVID-19 indicates coronavirus disease 2019; PPE, personal protective equipment.

directed the Department of Psychiatry & Behavioral Sciences to develop a preemptive intervention. Diverse departments were highly motivated to

learn from one another, and the usual silos that exist within any large complex medical organization dissolved rapidly.

Leadership

We quickly focused on approaches developed by the military and/or by mental health professionals specializing in psychological trauma mitigation. A Steering Committee of key faculty with expertise in these areas was formed with representatives from Departments of Psychiatry & Behavioral Sciences, Anesthesiology, and Risk Management, including a faculty member currently serving as a Colonel in the Army Medical Reserve. Foundational to this plan—and clearly expressed—was the need to learn, share, and iterate. Once other Department Heads and service units became aware of the program through word-of-mouth as well as a formal communication from the Dean, multiple requests came in for our services. Administration of, and responsibility for, the intervention is performed by the Steering Committee in partnership with Unit Leaders or Department Heads. The Department Head for Psychiatry & Behavioral Sciences assumes responsibility for the mental health consultants' work and the research component.

Implementation

While all staff are affected by the COVID-19 crisis, variations in organizational unit structure, needs, and allegiances require a customized approach (Figure 4). Nursing and other staff, in partnership with nursing leadership, are offered support through their units (eg, intensive care units [ICU], emergency department [ED]) while medical staff and residents/fellows are offered support through their departments via a Physician Champion appointed by the Department Head. Representatives from the Steering Committee meet with departmental or unit leadership to learn about their unique needs and

stressors and explain the proposed program. This is followed quickly by “all-hands” launch meetings with faculty and frontline personnel (conducted remotely via teleconferencing), to ensure horizontal spread and acceptance of the program. During these launch meetings, staff are asked to identify the stressors they feel are most affecting their department or unit, or that they are most concerned about for their colleagues. Department and unit leaders (or the Physician Champion) then assign Battle Buddies for their areas and, when feasible, set up times for customized remote group sessions where the mental health consultant can initiate the *Anticipate* and *Plan* stress inoculation discussions.

The Steering Committee offers brief weekly drop-in huddle meetings (held via videoconferencing) to all unit and department leaders and mental health consultants who are involved in the program to resolve problems that arise, receive feedback, and perform course corrections. Mental health consultants meet separately once a week for peer supervision.

Critical to the evaluation of this first phase of study will be to understand the level of mental health resources required to meet the program's needs, how to pay for those resources, and how to measure the organizational impact of this initiative on our workforce resilience and longer-term outcomes. These are all questions that we actively seek to address via research as we simultaneously meet the acute mental health needs of our staff.

RESEARCH CONSIDERATIONS

There is limited empirical evidence about interventions that protect the mental health of frontline HCW. Concomitant with rolling out the Psychological

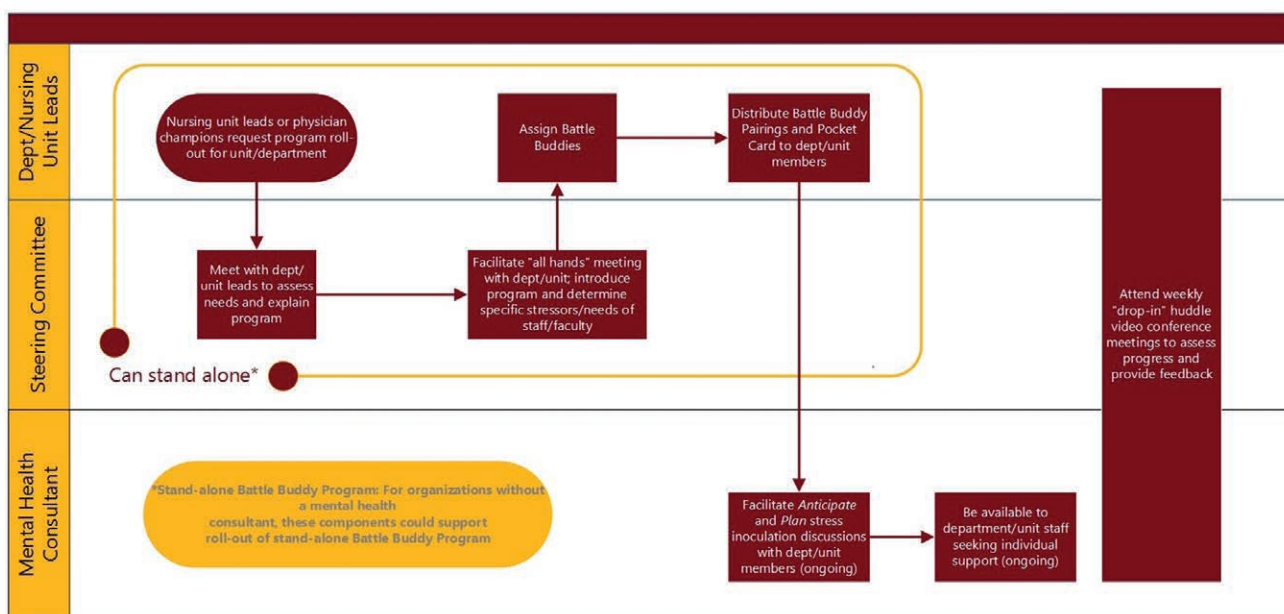


FIGURE 4. Specific steps for rolling out the Psychological Resilience Intervention.

Resilience Intervention described here, we have an observational study underway to understand how responses to traumatic stress and resilience strategies evolve over time and are related to longer-term outcomes, such as professional burnout and mental health symptoms, by remotely administering surveys to HCW before they start the peer support program, during their participation, and after resolution of the COVID-19 outbreak. The central hypothesis is that individuals who engage in a wider range of resilience strategies will be less likely to develop symptoms of traumatic stress or burnout even when their objective stress risk is increased. The long-term goal of this project is to identify the most salient resilience factors and iteratively incorporate them into the peer support program.

This study adopts a stratified delayed-start design to permit comparison of groups who experience different times to the intervention exposure. This project will stratify medical school departments affected by COVID-19 between groups A (early-start group) and B (delayed-start group) based on administrative implementation of the intervention. See Figure 5 for schematic describing the study design.

Randomized controlled trials (RCT) with adaptive design are felt to be a priority during an infectious disease outbreak since they can iteratively accept or reject key hypotheses related to the intervention throughout the trial while also considering power for meaningful clinical outcomes.³⁸ The current project will provide important data for designing a subsequent RCT to be deployed should there be a second wave of the COVID-19 pandemic.

CONCLUSIONS

The Psychological Resilience Intervention described here was developed contemporaneously with the emerging COVID-19 pandemic, was rapidly deployed, and is a work in progress at the time of this article.

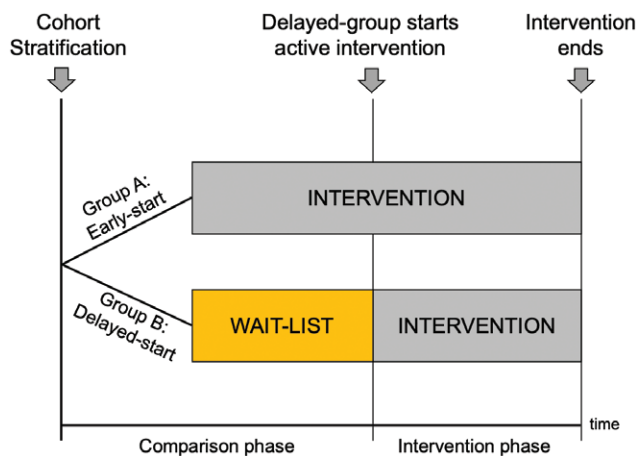


FIGURE 5. Diagram of a stratified-start observational study of effects of a Psychological Resilience Intervention for COVID-19 health care workers. COVID-19 indicates coronavirus disease 2019.

Level 1 of the program—the Battle Buddy system—is highly scalable, has no cost, and requires very few resources apart from endorsement on the part of unit and department leaders. Early anecdotal evidence (including the experience of the authors) suggests that it is easy to implement and very beneficial. It is our hope that this approach may provide direction to others who seek to implement their own psychological resilience programs. Ultimately, the data collected as part of this effort will aid in evaluating its effectiveness in addressing the mental health needs of a diverse health care workforce during a large-scale emergency.

Given the available evidence on long-term effects of psychological stress, attempting to systematically address these risks and to actively promote resilience in HCW is critical. In the course of studying this topic, we also hope to learn about potential long-term benefits of overcoming the stressors posed by the pandemic. Human beings are remarkably adaptable, and it is our belief that the vast majority of us can emerge stronger, closer, and wiser—with many new relationships and skills, as well as a new sense of our community strengths. Posttraumatic growth is a well-established phenomenon, and the literature does contain examples of positive responses to significant adversity. For example, Tam et al⁸ found that HCW experienced a deepening of relationships with family and colleagues, had a new sense of priorities (including a new respect for their profession), and felt a significant increase in altruism following their experiences during the outbreak. We are especially hopeful that our efforts will support the significant strengths and capacities of our organizations and our colleagues during this pandemic and will help to reduce the stigma surrounding the importance of psychological well-being for health care professionals. ■

ACKNOWLEDGMENTS

The authors thank Annie Walsh for her extensive organizational assistance in developing and executing the program and Brandon Schermitzler for his significant help in preparing this manuscript for submission.

DISCLOSURES

- Name:** Cristina Sophia Albott, MD.
- Contribution:** This author helped with defining the intellectual content; conducting literature research; writing, editing, and revising all sections of the manuscript; creation of Figures 1, 3, and 5; editing of Table 1 and Figure 2; and preparing the manuscript for publication.
- Name:** Jeffrey R. Wozniak, PhD.
- Contribution:** This author helped with conducting literature research; writing, and editing all sections of the manuscript; creating Figure 2; creating Table 1; and preparing the manuscript for publication.
- Name:** Brian P. McGlinch, MD.
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Contribution: This author helped with defining the intellectual content; writing and editing all sections of the manuscript, and approving the manuscript for publication.

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Contribution: This author helped with defining the intellectual content; writing and editing all sections of the manuscript, and approving the manuscript for publication.

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This manuscript was handled by: Richard C. Prielipp, MD.

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