



The following information resources have been selected by the National Health Library and Knowledge Service Evidence Virtual Team in response to your question. The resources are listed in our estimated order of relevance to practicing healthcare professionals confronted with this scenario in an Irish context. In respect of the evolving global situation and rapidly changing evidence base, it is advised to use hyperlinked sources in this document to ensure that the information you are disseminating to the public or applying in clinical practice is the most current, valid and accurate. For further information on the methodology used in the compilation of this document—including a complete list of sources consulted—please see our [National Health Library and Knowledge Service Summary of Evidence Protocol](#).

## YOUR QUESTION

How effective are early psychological interventions in preventing posttraumatic stress disorder in health workers exposed to traumatic scenarios in the context of the current COVID-19 pandemic?

### IN A NUTSHELL

It is widely acknowledged that health workers dealing with critical incidents or traumatic situations—particularly for an extended period—are at risk of psychological distress which, in some cases, can develop into more serious mental health problems including post-traumatic stress disorder (PTSD) [4, 5, 7, 46](#). Risk factors can include social isolation, stigma, or concern about family, gender or age [9, 39, 47, 48](#). While the focus of attention on PTSD has been in connection with military personnel, there is increasing recognition that its effects are wider and include health workers dealing with critical incidents and prolonged exposure to disease suffering [22](#).

While there is considerable evidence relating to the treatment of PTSD, there is a paucity of studies relating to its prevention [28, 39, 43](#). Stein et al note the opportunity inherent in the secondary prevention of PTSD: “Whereas many other mental disorders are no doubt fed by experiential inputs and fuelled by life stressors, PTSD cannot occur in the absence of trauma. We have here the chance to catch the traumatic spark before it burns and emotionally scars. This is the promise of the secondary prevention of PTSD [41](#).”

Studies have been conducted into the effectiveness of psychological interventions for the prevention of PTSD, but two Cochrane reviews [33, 34](#) have asserted that there is no conclusive evidence for either single or multiple session psychological intervention in the prevention of PTSD. Rose goes on to state that the routine use of single session debriefing may actually increase the risk of post-traumatic stress and so cannot be supported [34](#). Roberts et al [33](#) explored the use of multiple session psychological interventions; and, although finding some beneficial effects, concluded that

the poor quality of the studies would not permit any recommendation for multiple session intervention. The concern expressed in these two reviews regarding the effectiveness of early psychological intervention for all those involved in the traumatic event is echoed by other studies which suggest that interventions for the prevention of PTSD are more effective when given to those identified as being most at risk<sup>23,41</sup>. Other authors cite the need for assessment of those at risk<sup>16,37</sup>; and organisational planning to address mental health issues arising from trauma or disaster scenarios<sup>2,8</sup>.

Several studies address the prevention of PTSD and other serious mental health issues by emphasizing the importance of psychological interventions that will address the issues that give rise to psychological distress among HCWs. These include CBT<sup>3,17,25,29</sup>, psychological first aid<sup>8</sup>, resilience training at both individual<sup>30,31,36,49</sup> and organisational<sup>11</sup> level, mindfulness training<sup>6,20,27</sup>, critical incident stress management<sup>15,24,32,42</sup> and eye movement desensitization and reprocessing<sup>18</sup>. Other studies also note the physical concerns of HCWs such as the need for PPE, rest, food and sleep<sup>1,9</sup>, the unavailability of which can give rise to psychological distress. Several authors also focus on the benefits of social or peer support<sup>1,5,26,38,45</sup>, and the potential to provide psychological interventions using technology<sup>4,13,21,26,35</sup>.

Due to the limited evidence relating to the current pandemic, this summary incorporates articles relating to previous pandemics and other trauma scenarios.

One commentator offers a possible way forward for researchers looking into the effectiveness of psychological interventions in the prevention of PTSD: "What is truly remarkable about the study of traumatic stress, however, is the resilience of human beings, the fact that the majority of individuals who are exposed to truly horrific events do not develop psychopathology. Perhaps the field of PTSD prevention needs this shift in perspective. Preventive efforts may be faltering because the quest to eradicate illness has distracted us from first supporting health. Future prevention of PTSD may be more likely to come from understanding the factors that create resilience and allow individuals to find growth in the most difficult of circumstances. Interventions should be developed to support the psychological and biological processes that lead to effective coping long before it is necessary to address emerging psychopathology<sup>41</sup>."



---

## IRISH AND INTERNATIONAL GUIDANCE

### What do the Centers for Disease Control and Prevention (United States) say?

#### [Emergency responders: tips for taking care of yourself<sup>1</sup>](#)

Responding to disasters is both rewarding and challenging. Sources of stress for emergency responders may include witnessing human suffering, risk of personal harm, intense workloads, life-and-death decisions and separation from family. Stress prevention and management is critical for responders to stay well and to continue to help.

#### Get Support from Team Members: Develop a Buddy System

In a buddy system, two responders partner together to support each other, and monitor each other's stress, workload and safety.

- Get to know each other. Talk about background, interests, hobbies, and family. Identify each other's strengths and weaknesses.
- Keep an eye on each other. Try to work in the same location if you can.
- Set up times to check-in with each other. Listen carefully and share experiences and feelings. Acknowledge tough situations and recognize accomplishments, even small ones.
- Offer to help with basic needs such as sharing supplies and transportation.
- Monitor each other's workloads. Encourage each other to take breaks. Share opportunities for stress relief: rest, routine sleep, exercise, and deep breathing.
- Communicate your buddy's basic needs and limits to leadership: make your buddy feel 'safe' to speak up.

#### Responder Self-Care Techniques

- Limit working hours to no longer than 12-hour shifts.
- Work in teams and limit amount of time working alone.
- Write in a journal.
- Talk to family, friends, supervisors and teammates about your feelings and experiences.



- Practice breathing and relaxation techniques.
- Maintain a healthy diet and get adequate sleep and exercise.
- Know that it is okay to draw boundaries and say 'no.'
- Avoid or limit caffeine and use of alcohol.

It is important to remind yourself:

- It is not selfish to take breaks.
- The needs of survivors are not more important than your own needs and well-being.
- Working all of the time does not mean you will make your best contribution.
- There are other people who can help in the response.

Responding to disasters can be both rewarding and stressful. Knowing that you have stress and coping with it as you respond will help you stay well, and this will allow you to keep helping those who are affected.

---

## POINT-OF-CARE TOOLS

### What does BMJ Best Practice say?

#### [Mental health response to disasters and other critical incidents<sup>2</sup>](#)

The management of critical incident stress has been proposed as a method of reducing short- and long-term problems— especially, but not exclusively, mental illnesses— that might follow a single, distinct life event or a public disturbance. Originally arising from concerns about soldiers and first responders, the mental health dimensions of disasters and other critical incidents are now considered a priority in disaster planning, response and research.

Several groups have worked on consensus recommendations for the management of disasters and other critical incidents. A trauma group in the US has proposed a management strategy. The European Network for Traumatic Stress (TENTS) conducted a three-round Delphi process, and other organisations have also developed guidelines from consensus. From Chile, a similar model has been proposed based on a literature review. While the scientific evidence base for responding to the immediate- and, to a lesser degree, long-term mental health aftermath of trauma and disaster is still



emerging, the content in this topic reflects best practice in this area based on available expert consensus and experience.

### **What does UpToDate say?**

#### **[Treatment of acute stress disorder in adults<sup>3</sup>](#)**

Acute stress disorder (ASD) is characterized by acute stress reactions that may occur in the initial month after a person is exposed to a traumatic event. Some patients who experience ASD go on to experience posttraumatic stress disorder (PTSD), which is diagnosed only after four weeks following exposure to trauma.

Efficacy in preventing PTSD: trauma-focused CBT has been found to reduce the likelihood of subsequent PTSD in people with acute stress disorder. A meta-analysis of five randomized clinical trials found that CBT reduced the proportion of patients meeting diagnostic criteria for PTSD at six months (relative risk = 0.56 (95% CI 0.42-0.76)), with continued benefit seen at three years of follow-up. A subsequent meta-analysis of 10 randomized clinical trials found that CBT to have a moderate effect size at initial follow-up (effect size = 0.54) that was reduced to a small effect size at extended follow-up (effect size = 0.34).

---

## **INTERNATIONAL LITERATURE**

### **What does the international literature say?**

LITERATURE RELATING TO COVID-19

#### **[BLAKE et al \(2020\) Mitigating the Psychological Impact of COVID-19 on Healthcare Workers: A Digital Learning Package<sup>4</sup>](#)**

The coronavirus pandemic (COVID-19) will undoubtedly have psychological impacts for healthcare workers which could be sustained; frontline workers will be particularly at risk. Actions are needed to mitigate the impacts of COVID-19 on mental health by protecting and promoting the psychological wellbeing of healthcare workers during and after the outbreak. We developed and evaluated a digital learning package using Agile methodology within the first three weeks of the UK outbreak. This e-package includes evidence-based guidance, support and signposting relating to psychological

wellbeing for all UK healthcare employees. A three-step rapid development process included public involvement activities (PPIs) (STEP 1), content and technical development with iterative peer review (STEP 2), and delivery and evaluation (STEP 3). The package outlines the actions that team leaders can take to provide psychologically safe spaces for staff, together with guidance on communication and reducing social stigma, peer and family support, signposting others through psychological first aid (PFA), self-care strategies [eg rest, work breaks, sleep, shift work, fatigue, healthy lifestyle behaviours], and managing emotions [eg moral injury, coping, guilt, grief, fear, anxiety, depression, preventing burnout and psychological trauma].

### [CONVERSANO et al \(2020\) Psychological distress among healthcare professionals involved in the COVID-19 emergency: Vulnerability and resilience factors<sup>5</sup>](#)

The aim of this paper is to outline some considerations about the psychological distress in healthcare professional during the COVID-19 pandemic. We summarize available literature both on 'protective' and 'predisposing' factors potentially involved in the occurrence of psychological distress, including PTSD, in frontline healthcare operators. Valid social support, self-efficacy, internal locus of control (LOC) and sense of coherence (SOC) have been considered as resilience factors in previous studies. Similarly, several observations pointed to the relevance of individual and environmental vulnerabilities. No real evidence is available about strategies to address the emotional burden for healthcare operators due to the present COVID-19 scenario; however, we strongly believe that the containment of isolation anxiety with an appropriate emotional support should be the first instrument to minimise the psychological effect of pandemic on the more exposed healthcare professionals.

### [DI GIUSEPPE et al \(2020\) Psychological resources against the traumatic experience of COVID-19<sup>6</sup>](#)

Psychological resources such as defense mechanism and mindfulness practice can mediate the individual reaction to traumatic experiences as the ongoing COVID-19 pandemic outbreak. A novel self-reported measure based on the DMRS (DMRS-SR-30), has been developed with the aim of assessing potential adaptive defensive strategies against the traumatic experience of COVID-19. Preliminary validation of the DMRS-SR-30 showed good internal consistency in both overall defensive functioning and subscales. Combining



adaptive defense mechanisms and mindfulness practice could prevent psychological distress due to the effect of COVID-19 losses and quarantining.

### [DUTHEIL et al \(2020\) PTSD as the second tsunami of the SARS-Cov-2 pandemic<sup>7</sup>](#)

In the context of disaster medicine with a lack of human and technical resources, healthcare workers could also develop acute stress disorders, potentially degenerating into chronic PTSD. Globally, WHO estimates 30-50% of the population affected by a disaster suffered from diverse psychological distress. PTSD individuals are more at risk of suicidal ideation, suicide attempt and deaths by suicide. We draw attention towards PTSD as a secondary effect of the SARS-Cov-2 pandemic both for the general population, patients and healthcare workers. Healthcare policies need to take into account preventive strategy of PTSD and the related risk of suicide in forthcoming months.

### [HORESH and Brown \(2020\) Traumatic Stress in the Age of COVID-19: A Call to Close Critical Gaps and Adapt to New Realities<sup>8</sup>](#)

The COVID-19 crisis is throwing down the gauntlet for better prevention programs. Both empirical data from previous mass-trauma studies and theoretical models of PTSD have pointed out the need to let the 'dust settle,' as most people will be resilient in the long term. However, when faced with mass trauma such as COVID-19 even a significant minority of traumatized individuals will mean that the mental health burden may be significant. Mental health researchers, practitioners and those working in professions in which trauma exposure is routine must find ways to work more closely together to test novel interventions to protect and reduce the incidence of COVID-19-related traumatic stress.

One promising way of achieving this may be through advancements made in the field of psychological first aid and early trauma. Since the peritraumatic phase of the COVID-19 crisis may be long, treating people for acute stress disorder and/or initial posttraumatic symptoms which have not yet crystalized into full-blown PTSD may be of particular importance.

Finally, special consideration should be given not only to patients and their families, but also to physicians and medical system workers. Well-established models of secondary traumatization, compassion fatigue, moral injury and burnout should be applied and used to assist these workers in their daily effort to cope with massive amounts of work and stress.



### [KISELY et al \(2020\) Occurrence, prevention, and management of the psychological effects of emerging virus outbreaks on healthcare workers: rapid review and meta-analysis<sup>9</sup>](#)

Risk factors for psychological distress included being younger, being more junior, being the parents of dependent children or having an infected family member. Longer quarantine, lack of practical support and stigma are also contributors. Clear communication, access to adequate personal protection, adequate rest and both practical and psychological support were associated with reduced morbidity.

Effective interventions are available to help mitigate the psychological distress experienced by staff caring for patients in an emerging disease outbreak. These interventions were similar despite the wide range of settings and types of outbreaks covered in this review, and thus could be applicable to the current COVID-19 outbreak.

### [Li et al \(2020\) Vicarious traumatization in the general public, members, and non-members of medical teams aiding in COVID-19 control<sup>10</sup>](#)

Psychological stress, especially vicarious traumatization caused by the COVID-19 pandemic, should not be ignored. To address this concern, the study employed a total of 214 general public and 526 nurses [234 front-line nurses and 292 non-front-line nurses] to evaluate vicarious traumatization scores via a mobile app-based questionnaire. Front-line nurses are engaged in the process of providing care for patients with COVID-19. The results showed that the vicarious traumatization scores for front-line nurses including scores for physiological and psychological responses, were significantly lower than those of non-front-line nurses ( $P < 0.001$ ). Interestingly, the vicarious traumatization scores of the general public were significantly higher than those of the front-line nurses ( $P < 0.001$ ); however, no statistical difference was observed compared to the scores of non-front-line nurses ( $P > 0.05$ ). Therefore, increased attention should be paid to the psychological problems of the medical staff, especially non-front-line nurses and the general public under the situation of the spread and control of COVID-19. Early strategies that aim to prevent and treat vicarious traumatization in medical staff and general public are extremely necessary.

### [Wu et al \(2020\) COVID-19: Peer Support and Crisis Communication Strategies to Promote Institutional Resilience<sup>11</sup>](#)

Caring for patients with the novel coronavirus infection is placing great stress on health care systems and health care workers. On the basis of their experiences responding to other pandemics, the authors summarize lessons



learned and offer some best practices for facilitating organizational resilience and supporting health care workers during the COVID-19 pandemic.

### [WU et al \(2020\) Analysis of Psychological and Sleep Status and Exercise Rehabilitation of Front-Line Clinical Staff in the Fight Against COVID-19 in China<sup>12</sup>](#)

The aim of this study was to understand the changes in psychological factors and sleep status of front-line medical staff in the fight against COVID-19 and provide evidence of exercise interventions to relieve psychological stress and improve sleep status for medical staff. A survey study was conducted among 120 front-line medical staff in the fight against COVID-19, of which 60 medical staff worked at the designated hospital [experimental group] and 60 medical staff worked at the non-designated hospital [control group]. The Symptom Checklist 90 (SCL-90), Self-Rating Anxiety Scale (SAS), Self-Rating Depression Scale (SDS), and PTSD Checklist-Civilian Version (PCL-C) were used to assess mental status. Sleep status was assessed using the Pittsburgh Sleep Quality Index (PSQI). RESULTS SCL-90 scores of somatization, depression, anxiety, and terror were higher than normal in front-line medical staff at the designated hospital. The SAS ( $45.89 \pm 1.117$ ), SDS ( $50.13 \pm 1.813$ ), and PCL-C ( $50.13 \pm 1.813$ ) scores in the experimental group were higher than the normal control group, and were significantly different from those in the control group on SDS and PCL-C scales ( $P < 0.05$ ). The total average PSQI of the experimental group was  $16.07 \pm 3.761$ , indicating that the sleep quality was poor. Among them, participants with moderate insomnia reached 61.67%, and participants with severe insomnia reached 26.67%.

There are psychological symptoms and sleep symptoms in front-line medical staff who participate in the fight against COVID-19, and they affect each other. Hospitals should improve emergency management measures, strengthen psychological counseling for clinical front-line medical staff, strengthen exercise intervention, and improve their sleep quality and mental health.

### [WU et al \(2020\) Mitigating the psychological effects of COVID-19 on health care workers<sup>13</sup>](#)

The psychological effects related to the current pandemic are driven by many factors, including uncertainty about the duration of the crisis, lack of proven therapies or a vaccine, and potential shortages of health care resources, including personal protective equipment. Health care workers are also distressed by the effects of social distancing balanced against the desire to be present for their families, and the possibility of personal and family illness.



All of these concerns are amplified by the rapid availability of information and misinformation on the Internet and social media.

Health care workers may experience psychological distress from providing direct care to patients with COVID-19, knowing someone who has contracted or died of the disease, or being required to undergo quarantine or isolation. Mitigation strategies for all scenarios are vital to ensure psychological wellness and in turn ensure a healthy and robust clinical workforce.

Psychiatric support was offered to health care workers during the SARS outbreak at first informally and then through confidential telephone lines and drop-in centres. The current need for physical distancing necessitates adjustments to these supportive interventions by leveraging today's technology: eg online video and audio capabilities. At the end of March 2020, mental health workers in Ontario established free confidential services via online registration for health care workers who care for patients with COVID-19. System-level changes [safe hospital policies and adequate resource provision] are likely to have more far-reaching effects than individual support, especially since capacity to counsel large numbers of affected health care workers may be limited.

### [YIN \(2020\) Posttraumatic Stress Symptoms of Health Care Workers during the Corona Virus Disease 2019 \(COVID-19\)<sup>14</sup>](#)

The COVID-19 outbreak is unique in its rapid transmission and results in heavy stress for front-line health care workers. The current study aimed to examine posttraumatic stress symptoms (PTSS) of HCWs fighting for the COVID-19 and to evaluate their sleep quality after one-month stressful suffering. 377 HCWs working in different provinces of China participated in the survey between February 1st and 5th. The demographic information was collected firstly. The Posttraumatic Stress Disorder Checklist for DSM-5 (PCL-5) and the Pittsburgh Sleep Quality Index (PSQI) were selected to measure PTSS and sleep quality. Results showed that one month after the outbreak, the prevalence of PTSS was 3.8% in HCWs. Female HCWs were more vulnerable to PTSS with hazard ratio of 2.136 (95% CI= 1.388-3.286). HCWs with higher exposure level also significantly rated more hyper-arousal symptoms (hazard ratio= 4.026, 95% CI= 1.233-13.140). There was a significant difference of sleep quality between participants with and without PTSS (Z value= 6.014,  $p < 0.001$ ) and among different groups with various contact frequency (Chi-square=7.307,  $p = 0.026$ ). Path analysis showed that there was a significant indirect effect from exposure level to PTSS through sleep quality



(coefficient =1.750, 95% CI of Boostroop test = 0.543-2.998). In summary, targeted interventions on sleep contribute to the mental recovery during the outbreak of COVID-19. Understanding the mental health response after a public health emergency might help HCWs and communities prepare for a population's response to disaster.

## OTHER TRAUMATIC SITUATIONS

### [\*\*Blackrock \(2012\) Interventions Following a Critical Incident: Developing a Critical Incident Stress Management Team<sup>15</sup>\*\*](#)

This article describes the development and implementation of a stress management model for assisting hospital staff after critical incidents using an adaptation of Mitchell's model. A survey was conducted following the first major incident using the Impact of Event Scale (1979) 10 days and again 6 weeks following the incident to measure its emotional impact on staff. Outcomes included being symptom-free of critical incident stress after a 3-month period. The interventions were intended to help staff at a large metropolitan multispecialty hospital in Queensland in the immediate period following critical incidents. The implications of this program indicated the importance of emotional support at critical times for health professionals.

### [\*\*BOCK et al \(2020\) Secondary Traumatic Stress, Mental State, and Work Ability in Nurses-Results of a Psychological Risk Assessment at a University Hospital<sup>16</sup>\*\*](#)

Nurses with secondary traumatic symptoms reported higher depression ( $p < 0.001$ ) and anxiety scores ( $p < 0.001$ ) compared to nurses without secondary trauma experience; and to nurses with secondary trauma experience but without secondary traumatic stress (both  $p < 0.001$ ). Further, nurses with secondary traumatic stress reported significantly reduced work ability, social support and control over work, and increased emotional strain and labor time. Nurses with secondary traumatic stress may be at increased risk of developing major depression and anxiety disorders, and particularly need support in overcoming secondary traumatic experiences. Psychological risk assessment is a useful tool to identify groups at risk and pave the way to implement strategies to support high-risk groups.

### [\*\*BRUNET et al \(2013\) Two-year follow-up of a brief dyadic cognitive-behavioral intervention designed to prevent PTSD<sup>17</sup>\*\*](#)



There is a dearth of effective interventions to prevent the development of post-traumatic stress disorder (PTSD). We evaluated the efficacy of a brief dyadic two-session cognitive-behavioral intervention through a controlled trial involving trauma-exposed individuals recruited at the hospital's emergency room. Participants were randomly assigned to either the dyadic intervention group (n=37) or to a waiting list (assessment only) group (n=37). Results: In an intent-to-treat analysis, a time-by-group interaction was found, whereby the treated participants had less PTSD symptoms at the post-treatment but not at the pre-treatment compared to controls. Controlling for the improvement observed in the control participants, the intervention yielded a net effect size of  $d=0.39$ .

Conclusions: A brief, early and effective intervention can be provided by nurses or social workers in hospital settings at a fairly low cost to individuals presenting to the emergency room as the result of trauma exposure.

### [BUYDENS et al \(2014\) Effects of the EMDR protocol for recent traumatic events on acute stress disorder: a case series<sup>18</sup>](#)

The purpose of this study was to evaluate the effectiveness of the eye movement desensitization and reprocessing (EMDR) protocol for recent traumatic events in the treatment of acute stress disorder. Within weeks of being exposed to an isolated traumatic event, 7 adults diagnosed with acute stress disorder were provided with multiple sessions of the EMDR protocol for recent traumatic events, an extended version of the EMDR therapy standard protocol. In each case, an individual's subjective distress caused by the traumatic events was measured using the Impact of Events Scale-Revised and the goal of alleviating symptoms was accomplished. The positive results suggest the EMDR protocol for recent traumatic events may be an effective means of providing early treatment to victims of trauma, potentially preventing the development of the more severe symptoms of posttraumatic stress disorder.

### [DE BOER et al \(2011\) Work-related critical incidents in hospital-based health care providers and the risk of post-traumatic stress symptoms, anxiety, and depression: a meta-analysis<sup>19</sup>](#)

This meta-analysis reviewed existing data on the impact of work-related critical incidents in hospital-based health care professionals. Eleven [included] studies, which comprised 3866 participants, evaluated the relationship between work-related critical incidents and post-traumatic stress symptoms. Six of these studies, which comprised 1695 participants,



also reported on the relationship between work-related critical incidents and symptoms of anxiety and depression. Heterogeneity among studies was high and could not be accounted for by study quality, character of the incident, or timing of data collection. Pooled effect sizes for the impact of work-related critical incidents on post-traumatic stress symptoms, anxiety and depression were small to medium. Remarkably, the effect was more pronounced in the longer than in the shorter term. In conclusion, this meta-analysis supports the hypothesis that work-related critical incidents are positively related to post-traumatic stress symptoms, anxiety and depression in hospital-based health care professionals. Health care workers and their supervisors should be aware of the harmful effects of critical incidents and take preventive measures.

### [\*\*DUCAR et al \(2020\) Mindfulness for healthcare providers fosters professional quality of life and mindful attention among emergency medical technicians<sup>20</sup>\*\*](#)

Emergency medical service (EMS) providers are systematically subjected to intense stimuli in their work that may result in distress and emotional suffering. While it is known that mindfulness-based stress reduction (MBSR) helps to foster well-being in healthcare workers, the effectiveness of MBSR among EMS providers is less understood. We explored the impact of a modified version of MBSR for healthcare workers called Mindfulness for Healthcare Providers (MHP) on reducing distress and promoting wellbeing in EMS providers.

Fifteen veteran EMS providers enrolled in the course; four participants dropped out. Prior to initiation of the study, no significant differences were revealed between those who did not participate ( $n = 48$ ) and those who did ( $n = 11$ ). After the intervention EMS providers endorsed statistically significant increases in compassion satisfaction, trait mindfulness and decreases in burnout compared to the beginning of the program. These changes were sustained at six months post-completion. No significant changes over time were found for secondary trauma or perceived stress.

### [\*\*EBERT et al \(2018\) Internet- and mobile-based psychological interventions: Applications, efficacy, and potential for improving mental health: A report of the EFPA E-Health Taskforce<sup>21</sup>\*\*](#)

The majority of mental health disorders remain untreated. Many limitations of traditional psychological interventions such as limited availability of evidence-based interventions and clinicians could potentially be overcome by providing Internet- and mobile-based psychological interventions (IMIs). This

paper is a report of the Taskforce E-Health of the European Federation of Psychologists' Association and will provide an introduction to the subject, discusses areas of application, and reviews the current evidence regarding the efficacy of IMIs for the prevention and treatment of mental disorders. Meta-analyses based on randomized trials clearly indicate that therapist-guided stand-alone IMIs can result in meaningful benefits for a range of indications including depression, anxiety, insomnia or posttraumatic stress disorders. The clinical significance of results of purely self-guided interventions is for many disorders less clear, especially with regard to effects under routine care conditions. Studies on the prevention of mental health disorders (MHD) are promising. Blended concepts, combining traditional face-to-face approaches with Internet- and mobile-based elements might have the potential of increasing the effects of psychological interventions on the one hand or to reduce costs of mental health treatments on the other hand. We also discuss mechanisms of change and the role of the therapist in such approaches, contraindications, potential limitations, and risk involved with IMIs, briefly review the status of the implementation into routine health care across Europe, and discuss confidentiality as well as ethical aspects that need to be taken into account when implementing IMIs. Internet- and mobile-based psychological interventions have high potential for improving mental health and should be implemented more widely in routine care.

### [ELLIS et al \(2018\) Assessment and Management of Posttraumatic Stress Disorder<sup>22</sup>](#)

Mitigation of the risk of PTSD pretrauma in the military and first responders is gaining momentum, given concerns about the cost and disability associated with PTSD. Interest is also growing in screening for PTSD in medical populations, with evidence of improved clinical outcomes. Preliminary research supports the treatment of PTSD with repetitive transcranial magnetic stimulation.

PTSD is a trauma-related disorder with features of fear and negative thinking about the trauma and the future. Untreated, it leads to ongoing disruption of life due to avoidance, impaired vocational and social functioning, and other symptoms, depending on the phenotype. Despite a theoretical understanding of underlying mechanisms, PTSD remains challenging to treat, although evidence exists for benefit of pharmacologic agents and trauma-focused therapies. A need still remains for treatments that are more effective and efficient, with faster onset.



### **[FODOR et al \(2015\) \[Hungarian with English abstract\] Psychological interventions following trauma to prevent posttraumatic stress disorder: A systematic review of the literature<sup>23</sup>](#)**

Multi-session cognitive behavior therapy is preferred over immediate one session interventions especially over debriefing. A natural decline of symptoms was observed among controls and, therefore, targeted interventions are recommended only for people with higher risk for developing subsequent posttraumatic stress disorder.

### **[FOLZ \(2018\) Implementation of critical incidence stress management program at a tertiary care hospital: Dynamics of Critical Care 2018, Calgary, Alberta Canada, Sept 24-25th 2018<sup>24</sup>](#)**

It is becoming increasingly known that staff and physicians who work in acute care settings can also be prone to similar PTSD symptoms, moral distress, compassion fatigue and burnout. With the intention of building a more psychologically healthy workplace, a Critical Incidence Stress Management (CISM) team was developed at the Alberta Children's Hospital, Calgary, to support staff with managing the heavy load of complex, ethically challenging and potentially traumatic cases such as non-accidental trauma, organ donation, unanticipated deaths, resuscitations and end-of-life care. Following the introduction of a CISM team in 2013 in the Pediatric Intensive Care Unit, vacant positions in the ACH PICU dropped by 75% between May 2014 and November 2016. Staff sick hours decreased by 46% between October 2015 and November 2016. While it is impossible to directly attribute these improvements to the CISM program alone, anecdotal evidence suggests that some progress may be attributed to the well-established CISM program in the unit.

### **[FORNERIS et al \(2013\) Interventions to prevent post-traumatic stress disorder: A systematic review<sup>25</sup>](#)**

Traumatic events are prevalent worldwide; trauma victims seek help in numerous clinical and emergency settings. Using effective interventions to prevent post-traumatic stress disorder (PTSD) is increasingly important. This review assessed the efficacy, comparative effectiveness, and harms of psychological, pharmacologic, and emerging interventions to prevent PTSD. Nineteen studies covered various populations, traumas, and interventions. In meta-analyses of three trials for people with acute stress disorder, brief trauma-focused cognitive behavioral therapy was more effective than



supportive counseling in reducing the severity of PTSD symptoms [moderate-strength]; these two interventions had similar results for incidence of PTSD [low-strength]; depression severity [low-strength]; and anxiety severity [moderate-strength]. PTSD symptom severity after injury decreased more with collaborative care than usual care [single study; low-strength]. Debriefing did not reduce incidence or severity of PTSD or psychological symptoms in civilian traumas [low-strength]. Evidence about relevant outcomes was unavailable for many interventions or was insufficient owing to methodologic shortcomings.

Conclusions: Evidence is very limited regarding best practices to treat trauma-exposed individuals. Brief cognitive behavioral therapy may reduce PTSD symptom severity in people with acute stress disorder; collaborative care may help decrease symptom severity post-injury.

### **[FREEDMAN et al \(2015\) Early intervention for preventing posttraumatic stress disorder: an Internet-based reality treatment<sup>26</sup>](#)**

Posttraumatic stress disorder develops in approximately 20% of people exposed to a traumatic event, and studies have shown that cognitive-behavioral therapy is effective as a treatment for chronic PTSD. It has also been shown to prevent PTSD when delivered early after a traumatic event. However, studies have shown that uptake of early treatment is generally low and therefore the need to provide interventions through other mediums has been identified. The use of technology may overcome barriers to treatment.

There is good evidence that social support both within communities and organizations can be highly protective of mental health. For instance, within the military, camaraderie has been shown to be protective of the troop's mental health both whilst deployed and when in safer environments. The social bonds between people have also been found to be protective within community settings after disasters. More recently, peer support programs have been trialled within organizations in an attempt to ensure that consistent social support is available to trauma-exposed individuals. The most widely researched of these is the Trauma Risk Management program which started in the UK Royal Marines Commandos and has since been adopted by the whole UK military, many UK emergency services and a number of other trauma exposed organizations. Trauma Risk Management has been the subject of a number of research studies which show that it helps to mobilize social support and improve post-traumatic help seeking as well potentially having a positive impact on sickness absence post-disaster in



emergency service personnel. While certainly not a panacea for dealing with any traumatic incident, there appears to be good evidence that peer support systems such as this program may be of benefit within trauma-exposed organizations.

### [\*\*HARKER et al \(2016\) Exploring resilience and mindfulness as preventative factors for psychological distress burnout and secondary traumatic stress among human service professionals<sup>27</sup>\*\*](#)

Cultivating and sustaining resilience can buffer the impact of occupational stressors on human service professionals. One of the psychological factors associated with cultivating resilience is mindfulness. The aim of this current research is to improve our understanding of the relationship between resilience, mindfulness, burnout, secondary traumatic stress, and psychological distress among human service professionals. We surveyed 133 human service professionals working in the fields of psychology, social work, counselling, youth and foster care work to explore the predictive relationship between resilience, mindfulness, and psychological distress.

The results showed that higher levels of resilience were a significant predictor of lower levels of psychological distress, burnout and secondary traumatic stress. In addition, higher levels of mindfulness were a significant predictor of lower levels of psychological distress and burnout.

Conclusions: The findings suggest that cultivating resilience and mindfulness in human service professionals may assist in preventing psychological distress burnout and secondary traumatic stress. Limitations of this study are discussed together with implications for future research.

### [\*\*KEARNS et al \(2012\) Early interventions for PTSD: A review<sup>28</sup>\*\*](#)

The high prevalence of trauma exposure and subsequent negative consequences for both survivors and society as a whole emphasize the need for secondary prevention of posttraumatic stress disorder. However, clinicians and relief workers remain limited in their ability to intervene effectively in the aftermath of trauma and alleviate traumatic stress reactions that can lead to chronic PTSD. The scientific literature on early intervention for PTSD is reviewed, including early studies on psychological debriefing, pharmacological, and psychosocial interventions aimed at preventing chronic PTSD. Studies on fear extinction and memory consolidation are discussed in relation to PTSD prevention and the potential importance of immediate versus delayed intervention approaches and genetic predictors are briefly reviewed. Preliminary results from a modified



prolonged exposure intervention applied within hours of trauma exposure in an emergency room setting are discussed, along with considerations related to intervention reach and overall population impact. Suggestions for future research are included. Prevention of PTSD, although currently not yet a reality, remains an exciting and hopeful possibility with current research approaches translating work from the laboratory to the clinic.

### [\*\*KORNER et al \(2008\) Early trauma-focused cognitive-behavioural therapy to prevent chronic post-traumatic stress disorder and related symptoms: A systematic review and meta-analysis<sup>29</sup>\*\*](#)

There is evidence for the effectiveness of TFCBT compared to Supportive Counselling in preventing chronic PTSD in patients with an initial ASD diagnosis. As this evidence originates from one research team replications are necessary to assess generalisability. The evidence about the effectiveness of TFCBT in traumatised populations without an ASD diagnosis is insufficient.

### [\*\*MEALER et al \(2014\) A 12-week multimodal resilience training program for intensive care unit nurses: Results of a pilot study<sup>30</sup>\*\*](#)

Objective: To determine if a multimodal resilience training program for ICU nurses was feasible to perform and acceptable to the study participants. In a randomized and controlled 12-week intervention study, treatment and control groups completed demographic questions and measures of resilience, anxiety, depression, posttraumatic stress disorder and burnout syndrome before and after the intervention. The intervention included a 2-day educational workshop, written exposure sessions, event-triggered counselling sessions, mindfulness-based stress reduction exercises, and a protocolized aerobic exercise regimen. Nurses in the intervention arm also completed satisfaction surveys for each component of the intervention. This multimodal resilience training program was feasible to conduct and acceptable to ICU nurses. Both nurses randomized to the treatment group and nurses randomized to the control group showed a significant decrease in PTSD symptom score after the intervention.

Conclusions: A multifaceted resilience training program for ICU nurses was both feasible and acceptable. A sufficiently powered, randomized clinical trial is needed to assess the effect of the intervention on improving individuals' level of resilience and improving psychological outcomes such as symptoms of anxiety, depression, burnout syndrome and PTSD.



### **[MEALER et al \(2012\) A qualitative study of resilience and posttraumatic stress disorder in United States ICU nurses<sup>31</sup>](#)**

The purpose of this study was to identify mechanisms employed by highly resilient ICU nurses to develop preventative therapies to obviate the development of PTSD in ICU nurses.

Thirteen highly resilient nurses and fourteen nurses with PTSD were interviewed (n = 27). Differences were identified in four major domains: worldview; social network; cognitive flexibility; and self-care/balance. Highly resilient nurses identified spirituality, a supportive social network, optimism and having a resilient role model as characteristics used to cope with stress in their work environment. ICU nurses with a diagnosis of PTSD possessed several unhealthy characteristics including a poor social network, lack of identification with a role model, disruptive thoughts, regret and lost optimism.

Highly resilient ICU nurses utilize positive coping skills and psychological characteristics that allow them to continue working in the stressful ICU environment. These characteristics and skills may be used to develop target therapies to prevent PTSD in ICU nurses.

### **[PENDER et al \(2016\) Exploring the Process: A Narrative Analysis of Group Facilitators' Reports on Critical Incident Stress Debriefing<sup>32</sup>](#)**

Critical incident stress debriefing (CISD) is a psychoeducational group intervention offered after exposure to potentially traumatizing events. This exploratory inquiry examined how mental health and peer facilitators utilized elements of group work practices during CISD interventions. Narratives from 16 mental health and 14 peer facilitators reported how elements of group planning, performing and processing appear. Important group-process aspects included attention to establishing ground rules and defining boundaries for confidentiality, managing member disclosure and pacing the process to prevent harm from over-processing the traumatic event. Implications for practice suggest that following best practice guidelines in group work is protective of the CISD process and the participants.

### **[ROBERTS et al \(2019\) \[Cochrane Systematic Review\] Multiple session early psychological interventions for the prevention of post-traumatic stress disorder<sup>33</sup>](#)**

The prevention of long-term psychological distress following traumatic events is a major concern. Systematic reviews have suggested that individual psychological debriefing is not an effective intervention at preventing post-

traumatic stress disorder (PTSD). Over the past 20 years, other forms of intervention have been developed with the aim of preventing PTSD.

Objective: To examine the efficacy of psychological interventions aimed at preventing PTSD in individuals exposed to a traumatic event but not identified as experiencing any specific psychological difficulties, in comparison with control conditions — usual care, waiting list and no treatment — and other psychological interventions.

Conclusions: While the review found some beneficial effects of multiple session early psychological interventions in the prevention of PTSD, the certainty of the evidence was low due to the high risk of bias in the included trials. The clear practice implication of this is that at present multiple session interventions aimed at everyone exposed to traumatic events cannot be recommended. There are a number of ongoing studies demonstrating that this is a fast moving field of research. Future updates of this review will integrate the results of these new studies.

### [ROSE \(2020\) \[Cochrane Systematic Review\] Psychological debriefing for preventing post traumatic stress disorder \(PTSD\)<sup>34</sup>](#)

This review concerns the efficacy of single session psychological debriefing in reducing psychological distress and preventing the development of post-traumatic stress disorder (PTSD) after traumatic events. Psychological debriefing is either equivalent to or worse than control or educational interventions in preventing or reducing the severity of PTSD, depression, anxiety and general psychological morbidity. There is some suggestion that it may increase the risk of PTSD and depression. The routine use of single session debriefing given to non-selected trauma victims is not supported. No evidence has been found that this procedure is effective.

### [ROY et al \(2017\) An App a Day Keeps the Doctor Away: Guided Education and Training via Smartphones in Subthreshold Post Traumatic Stress Disorder<sup>35</sup>](#)

Post-traumatic stress disorder symptoms are common in military service members (SMs), but stigma can impede treatment initiation. Smartphone applications are available anywhere, anytime, with the potential to both mitigate the impact of stigma and reduce PTSD symptom severity. We provided 144 SMs or family members with subthreshold PTSD symptoms with apps promoting psychoeducation, social engagement and relaxation and randomized them to 6 weeks of resilience enhancement [brief cognitive-behavioral session, followed by daily text messages directing app



use] or a control group [daily text messages of inspirational quotes]. Participants—54 percent males, 87 percent SMs—in both groups reported reductions in PTSD, anxiety and depression symptoms during the 6-week intervention, which were sustained at 3 months, but exhibited partial rebound at 6-12 months. Our preliminary results suggest that app use, with or without specific direction, feasibly and effectively reduces symptom severity. Future studies should consider a longer intervention, enhanced compliance tracking or boosters to sustain benefits.

### **SCHÄFER (2018) Mental health in anesthesiology and ICU staff: Sense of coherence matters<sup>36</sup>**

Hospitals and particularly ICUs are demanding and stressful workplaces. Physicians and nurse staff are exposed to various stressors: emergency situations, patients' deaths and team conflicts. Correspondingly, several studies describe increased rates of PTSD symptoms and other mental health problems in hospital staff. Therefore, it is important to identify factors that lower the risk of psychopathological symptoms. High levels of sense of coherence (SOC) and general resilience as well as an internal locus of control (LOC) have already been identified as important health-benefitting factors in medical staff. The current study aimed to evaluate their unique impact in an ICU and an anesthesiology unit.

SOC was found to be the most important correlate of both general mental health problems and PTSD symptoms in an ICU and an anesthesiology unit. If further evidenced by longitudinal studies, implementing interventions focusing on an enhancement of SOC in training programs for ICU and anesthesiology unit staff might be a promising approach to prevent or reduce psychopathological symptoms.

### **SHALEV (2019) Estimating the risk of PTSD in recent trauma survivors: Results of the International Consortium to Predict PTSD (ICPP)<sup>37</sup>**

A timely determination of the risk of post-traumatic stress disorder (PTSD) is a prerequisite for efficient service delivery and prevention. We provide a risk estimate tool allowing a calculation of individuals' PTSD likelihood from early predictors. Members of the International Consortium to Predict PTSD (ICPP) shared individual participants' item-level data from ten longitudinal studies of civilian trauma survivors admitted to acute care centers in six countries. Eligible participants (N=2,473) completed an initial clinical assessment within 60 days of trauma exposure, and at least one follow-up assessment 4-15 months later. The Clinician-Administered PTSD Scale for DSM-IV (CAPS)

evaluated PTSD symptom severity and diagnostic status at each assessment. Participants' education, prior lifetime trauma exposure, marital status and socio-economic status were assessed and harmonized across studies. The study's main outcome was the likelihood of a follow-up PTSD given early predictors. The prevalence of follow-up PTSD was 11.8%, 9.2% for male participants and 16.4% for females. A logistic model using early PTSD symptom severity as a predictor produced remarkably accurate estimates of follow-up PTSD [predicted vs. raw probabilities:  $r=0.976$ ]. Adding respondents' female gender, lower education, and exposure to prior interpersonal trauma to the model yielded higher PTSD likelihood estimates, with similar model accuracy [predicted vs. raw probabilities:  $r=0.941$ ]. The current model could be adjusted for other traumatic circumstances and accommodate risk factors not captured by the ICPP. In line with their use in general medicine, risk estimate models can inform clinical choices in psychiatry. It is hoped that quantifying individuals' PTSD risk will be a first step towards systematic prevention of the disorder.

### [SHELEF et al \(2020\) \[Hebrew with English abstract\] The psychological impact of a pandemic outbreak on medical staff<sup>38</sup>](#)

The aim of the present study is to review the current professional literature dealing with the psychological impact of a pandemic outbreak on medical staff. There is a paucity of current literature; however, there is some evidence of the short- and long-term impact of such epidemics on the mental health of medical teams. Direct exposure to affected patients, the risk of contagion, a subjectively negative perception of medical condition and being in isolation or quarantine all constitute risk factors for mental symptoms such as depression, anxiety and post-trauma. A sense of control [especially in respect of infection prevention], altruistic acceptance of work-related risks, social support, good team spirit in the medical unit and support from superiors are all protective factors.

### [SKEFFINGTON et al \(2013\) The primary prevention of PTSD: A systematic review<sup>39</sup>](#)

There has been abundant research targeting the secondary and tertiary prevention and treatment of posttraumatic stress disorder (PTSD), including different forms of debriefing, treatments for acute stress disorder, and targeted intervention strategies. However, there remains a scarcity of research pertaining to the primary, pre trauma prevention of PTSD. A systematic review was conducted in order to identify and synthesize all programs aimed at the primary prevention of PTSD to date. A total of 7



studies were identified as meeting these criteria. Currently, there is no solid body of research on the primary prevention of PTSD to justify or guide interventions. The limitations and future directions of research in this domain are discussed.

### [SONES et al \(2011\) Prevention of posttraumatic stress disorder<sup>40</sup>](#)

Traumatic events are common, but the psychological distress that may follow usually subsides naturally. For some individuals, distress develops into posttraumatic stress disorder (PTSD). PTSD lends itself to the application of prevention strategies for at-risk individuals. The identification of a causal event may make prevention efforts for PTSD more feasible and effective than for other psychological disorders. For PTSD, these efforts target those traumatized persons who are beginning to exhibit symptoms of PTSD. These interventions could also target individuals meeting criteria for acute stress disorder with the goal of preventing chronic PTSD.

In addition to testing currently used treatments for PTSD as intervention methods, research should focus on the development of new PTSD prevention techniques. These efforts should focus on targeting the mechanisms discussed in the various theories of PTSD development. Although there are many efforts to make the world safer, people will always be confronted with traumatic events. Those who experience such events are at risk for the development of PTSD and the individual and societal costs that entails. PTSD presents a formidable challenge and a clear opportunity. If PTSD can be prevented, it could benefit millions worldwide and it could inform our prevention efforts for other psychological disorders.

### [STEIN et al \(2013\) What's impeding post-traumatic stress disorder prevention?<sup>41</sup>](#)

The mental health community has an opportunity to implement secondary prevention of PTSD by mitigating the risk of PTSD to people exposed to traumatic events. This is an unusual situation in which mental health practitioners find themselves: positioned to prevent mental illness because the inciting event can be clearly identified. This is truly a unique characteristic of PTSD among mental illnesses. Whereas many other mental disorders are no doubt fed by experiential inputs and fueled by life stressors, PTSD cannot occur in the absence of trauma. We have here the chance to catch the traumatic spark before it burns and emotionally scars. This is the promise of the secondary prevention of PTSD.

What is truly remarkable about the study of traumatic stress, however, is the resilience of human beings, the fact that the majority of individuals who are exposed to truly horrific events do not develop psychopathology. Perhaps the field of PTSD prevention needs this shift in perspective. Preventive efforts may be faltering because the quest to eradicate illness has distracted us from first supporting health. Future prevention of PTSD may be more likely to come from understanding the factors that create resilience and allow individuals to find growth in the most difficult of circumstances. Interventions should be developed to support the psychological and biological processes that lead to effective coping long before it is necessary to address emerging psychopathology.

### [\*\*TUCKEY et al \(2014\) Group critical incident stress debriefing with emergency services personnel: A randomized controlled trial<sup>42</sup>\*\*](#)

Although single-session individual debriefing is contraindicated, the efficacy of group psychological debriefing remains unresolved. We conducted the first randomized controlled trial of critical incident stress debriefing (CISD) with emergency workers following shared exposure to an occupational potentially traumatic event (PTE). The goals of group CISD are to prevent post-traumatic stress and promote return to normal functioning following a PTE. To assess both goals we measured four outcomes, before and after the intervention: post-traumatic stress, psychological distress, quality of life and alcohol use. Fire brigades were randomly assigned to one of three treatment conditions: 1 CISD; 2 screening [no-treatment]; or 3 stress management education. Controlling for pre-intervention scores, CISD was associated with significantly less alcohol use post-intervention relative to screening; and significantly greater post-intervention quality of life relative to education. There were no significant effects on post-traumatic stress or psychological distress. Overall, CISD may benefit broader functioning following exposure to work-related PTEs. Future research should focus on individual, group and organizational factors and processes that can promote recovery from operational stressors. Ultimately, an occupational health rather than victim-based approach will provide the best framework for understanding and combating potential threats to the health and well-being of workers at high risk for PTE exposure.

### [\*\*WEI et al \(2016\) Prevention of Post-Traumatic Stress Disorder After Trauma: Current Evidence and Future Directions<sup>43</sup>\*\*](#)



Post-traumatic stress disorder (PTSD) is a frequent, tenacious, and disabling consequence of traumatic events. The disorder's identifiable onset and early symptoms provide opportunities for early detection and prevention. Empirical findings and theoretical models have outlined specific risk factors and pathogenic processes leading to PTSD. Controlled studies have shown that theory-driven preventive interventions, such as cognitive behavioral therapy (CBT), or stress hormone-targeted pharmacological interventions, are efficacious in selected samples of survivors. However, the effectiveness of early clinical interventions remains unknown, and results obtained in aggregates overlook individual heterogeneity in PTSD pathogenesis. We review current evidence of PTSD prevention and outline the need to improve the disorder's early detection and intervention in individual-specific paths to chronic PTSD.

#### LITERATURE RELATING TO OTHER PANDEMICS

##### **[CHAN \(2004\) Psychological impact of the 2003 severe acute respiratory syndrome outbreak on health care workers in a medium size regional general hospital in Singapore<sup>44</sup>](#)**

Many healthcare workers were emotionally traumatized during the SARS outbreak. Coping strategies included: clearly communicated directives or precautionary measures; ability to give feedback to or obtain support from management; ability to obtain support from supervisors and colleagues. Support from supervisors and colleagues was a significant negative predictor for psychiatric symptoms and PTSD.

##### **[GREENBERG \(2015\) Potential mental health consequences for workers in the Ebola regions of West Africa - A lesson for all challenging environments<sup>45</sup>](#)**

There is considerable evidence that most individuals who are exposed to highly challenging or traumatic events exhibit resilience and do not suffer any long-term negative psychological effects. However, inevitably a proportion will suffer distress; in most cases these symptoms resolve without the need for any formal interventions although it is equally true that some trauma-exposed individuals will develop formal mental health disorders including but not limited to PTSD. It follows that organisations that operate in an environment where the potential for trauma exposure is considerable — 'trauma-exposed organisations' — should carefully consider potential psychological fallout.



Evaluations of new methods of support are sorely needed as the evidence is sparse and often focussed on troop deployment. One novel support system is now provided by the South London and Maudsley NHS Foundation Trust following discussions with healthcare workers in Sierra Leone. The NHS Trust's clinical psychologists have set up a volunteer support system that provides a listening ear for individuals who are deployed before, during and after their deployment through face-to-face contacts, email, phone and Skype. This provides more support than is currently provided in the trauma world particularly during deployment, but mirrors some of the suggestions in the TRiM programme for peer support. The programme aims to support resilience, prevent motivational decreases which may result in errors during deployment and to sustain team leadership and cohesion which is a clear predictor of trauma effects. Whether this is too much or too little support will only be apparent after independent evaluation.

### [\*\*KIM et al \(2016\) Factors Influencing Emergency Nurses' Burnout During an Outbreak of Middle East Respiratory Syndrome Coronavirus in Korea<sup>46</sup>\*\*](#)

Study participants were ED nurses working in eight hospitals designated for treating MERS-CoV-infected patients in Korea. We performed multiple regression analysis to explore the factors influencing burnout. The ED nurses' burnout was affected by job stress ( $\beta=0.59$ ,  $p<.001$ ), poor hospital resources for the treatment of MERS-CoV ( $\beta = -0.19$ ,  $p<.001$ ) and poor support from family and friends ( $\beta = -0.14$ ,  $p<.05$ ). These three variables explained 47.3% of the variance in burnout.

Conclusions: ED nurses taking care of MERS-CoV-infected patients should be aware that burnout is higher for nurses in their divisions than nurses in other hospital departments and that job stress is the biggest influential factor of burnout. To be ready for the outbreak of emerging contagious diseases such as MERS-CoV, efforts and preparations should be made to reduce burnout. Job stress should be managed and resolved. Working conditions for mitigating job stress and systematic stress management programs should be provided, and hospital resources for the treatment of MERS-CoV need to be reinforced.

### [\*\*LEE et al \(2005\) Facing SARS: psychological impacts on SARS team nurses and psychiatric services in a Taiwan general hospital<sup>47</sup>\*\*](#)

The outbreak of severe acute respiratory syndrome (SARS) in 2003 resulted in 346 probable SARS cases and 37 deaths in Taiwan. This descriptive study, which was conducted from May to June 2003, intended to identify staff



stress and coping strategies among a SARS team of nursing staff during the outbreak.

SARS had both positive and negative psychological impacts on the nurses. While worrying about infecting their families and colleagues, nurses were able to cope with the situation through various means. Additional findings include the need for more psychiatric staff to provide flexible and continuous service, the importance of meetings to improve teamwork and reduce conflict between doctors and nurses and the useful discovery that video cell phones provided needed reassurance from afar to the worried families of the nurses. Conclusions: This study reinforces the importance and benefits of psychiatric services for SARS team members in reducing their secondary traumatization; it is hoped that the results will enhance our knowledge on the needs of frontline health care workers and support the planning of better psychiatric services in future epidemics.

### [MAUNDER \(2004\) The experience of the 2003 SARS outbreak as a traumatic stress among frontline healthcare workers in Toronto: lessons learned<sup>48</sup>](#)

The outbreak of severe acute respiratory syndrome (SARS) in the first half of 2003 in Canada was unprecedented in several respects. Understanding the psychological impact of the outbreak on healthcare workers — especially those in hospitals — is important in planning for future outbreaks of emerging infectious diseases. This review draws upon qualitative and quantitative studies of the SARS outbreak in Toronto to outline the factors that contributed to healthcare workers' experiencing the outbreak as a psychological trauma. Overall, it is estimated that a high degree of distress was experienced by 29% to 35% of hospital workers. Three categories of contributory factors were identified. Relevant contextual factors were being a nurse, having contact with SARS patients and having children. Contributing attitudinal factors and processes were experiencing job stress, perceiving stigmatization, coping by avoiding crowds and colleagues, and feeling scrutinized. Pre-existing trait factors also contributed to vulnerability. Lessons learned from the outbreak include: 1 that effort is required to mitigate the psychological impact of infection control procedures, especially the interpersonal isolation that these procedures promote; 2 that effective risk communication is a priority early in an outbreak; 3 that healthcare workers may have a role in influencing patterns of media coverage that increase or decrease morale; 4 that healthcare workers benefit from resources that facilitate reflection on the effects of extraordinary stressors;



and 5 that healthcare workers benefit from practical interventions that demonstrate tangible support from institutions.

### [SCHREIBER et al \(2019\) Maximizing the Resilience of Healthcare Workers in Multi-hazard Events: Lessons from the 2014-2015 Ebola Response in Africa](#)<sup>49</sup>

There is increasing knowledge that HCWs can experience a variety of emotional impacts when responding to disasters and terrorism events. The Anticipate, Plan and Deter (APD) Responder Risk and Resilience Model was developed to provide a new, evidence-informed method for understanding and managing psychological impacts among HCWs. APD includes pre-deployment development of an individualized resilience plan and an in-theatre, real-time self-triage system which together allow HCWs to assess and manage the full range of psychological risk and resilience for themselves and their families. The inclusion of objective mental health risk factors to prompt activation of a coping plan in connection with unit leadership real-time situational awareness enables the first known evidence-driven targeted action plan to address responder risk early before PTSD and impairment become established.

---

## OTHER

### [CHAPOVALOV \(2018\) \[News Article\] PTSD in healthcare professionals](#)<sup>50</sup>

In general, organizations who engage in proactive primary prevention should develop a prevention program specific to psychological health and safety that will include an element of PTSD prevention as well as appropriate post-incident response.

One example of primary prevention is resiliency training. Resiliency training should include an overview of what resiliency is and why it matters, how resiliency is related to prevention of PTSD, information for reducing arousal symptoms, techniques for managing distressing emotions and preparing for a crisis. Additionally, understanding the risk factors such as severity of exposure should be included in training.

Peer-support programs are becoming particularly common in organizations with high-risk of exposure to traumatic events. Although the evidence to show the efficacy of such programs is sparse, organizations and workers who have implemented peer-support have given very positive feedback.



There seems to be a benefit to having access to an individual within the organization who is skilled and knowledgeable in trauma counselling. Psychologically healthy and safe workers are essential for quality patient care, successful functioning of an organization and a strong health system.

## [PsychologyTools \[Website\] Psychological Resources For Coronavirus \(COVID-19\)<sup>51</sup>](#)

During the outbreak many mental health professionals will be working to offer psychological support and advice to frontline medical staff as well as to other clients and the public. This webpage collates links to resources which might assist your clinical practice during the current global health crisis.

Produced by the members of the National Health Library and Knowledge Service Evidence Team†. Current as at 22 May 2020. This evidence summary collates the best available evidence at the time of writing and **does not replace clinical judgement or guidance**. Emerging literature or subsequent developments in respect of COVID-19 may require amendment to the information or sources listed in the document. Although all reasonable care has been taken in the compilation of content, the National Health Library and Knowledge Service Evidence Team makes no representations or warranties expressed or implied as to the accuracy or suitability of the information or sources listed in the document. This evidence summary is the property of the National Health Library and Knowledge Service and subsequent re-use or distribution in whole or in part should include acknowledgement of the service.

The following PICO(T) was used as a basis for the evidence summary:

<b>P</b> Population	person location condition/patient characteristic	HEALTH CARE STAFF
<b>I</b> Intervention	length location type	EARLY INTERVENTION USING BRIEF INTERVENTION TOOLS
<b>C</b> Comparison	another intervention no intervention location of the intervention	
<b>O</b> Outcome		PREVENTION OF PTSD

The following search strategy was used [PsycInfo]:

- S1 counsel\* or psychotherap\* or trauma input or trauma informed counsel\* or critical incident stress management or CISM or person centred therap\* or person centered therap\* or psychodynamic therap\* or cognitive behaviour\* therap\* or cognitive behavior\* therap\* or CBT or sensorimotor therap\* or sensori motor therap\* or sensorymotor therap\* or sensory motor therap\* or somatic experienc\* therap\* or EMDR or eye movement desensitisation N1 reprocessing or eye movement desensitization N1 reprocessing
- S2 "Counseling+"
- S3 "Psychotherap+"
- S4 "Cognitive Behavior Therapy+"
- S5 "Eye Movement Desensitization Therapy"
- S6 S1 OR S2 OR S3 OR S4 OR S5
- S7 post traumatic stress or posttraumatic stress or post traumatic stress disorder or posttraumatic stress disorder or ptsd or trauma\*
- S8 "Posttraumatic Stress Disorder" OR "Complex PTSD" OR "Desnos"
- S9 S7 OR S8
- S10 S6 AND S9
- S11 short term or single session or brief intervention or brief therap\* or manualised therap\* or manualized therap\*
- S12 "Brief Psychotherapy"
- S13 S11 OR S12
- S14 S10 AND S13



Helen Clark, Sligo University Hospital [Author]; Nicola Fay, Midland Regional Hospital, Tullamore [Author];  
Brendan Leen, Area Library Manager, HSE South [Editor]



National Health Library and Knowledge Service |  
Evidence Team



- 
- <sup>1</sup> Centers for Disease Prevention and Control (2020). Emergency responders: tips for taking care of yourself. <https://emergency.cdc.gov/coping/responders.asp>. [Accessed 26/05/2020].
- <sup>2</sup> BMJ Best Practice. Mental health response to disasters and other critical incidents <https://bestpractice.bmj.com/topics/en-gb/1065#referencePop1> [Accessed 27/05/2020].
- <sup>3</sup> UpToDate. Treatment of acute stress disorder in adults [https://www.uptodate.com/contents/treatment-of-acute-stress-disorder-in-adults?search=posttraumatic%20stress%20disorder&topicRef=14634&source=see\\_link#H778995456](https://www.uptodate.com/contents/treatment-of-acute-stress-disorder-in-adults?search=posttraumatic%20stress%20disorder&topicRef=14634&source=see_link#H778995456) [Accessed 27/05/2020].
- <sup>4</sup> Blake H, Bermingham F, Johnson G, Tabner A. Mitigating the Psychological Impact of COVID-19 on Healthcare Workers: A Digital Learning Package. *Int J Environ Res Public Health*. 2020;17(9):E2997. Published 2020 Apr 26. doi:10.3390/ijerph17092997
- <sup>5</sup> Conversano, C., Marchi, L., Miniati, M. (2020). Psychological distress among healthcare professionals involved in the COVID-19 emergency: vulnerability and resilience factors. *Clinical Neuropsychiatry*, 17 (2), 94-96. <https://www.clinicalneuropsychiatry.org/download/psychological-distress-among-healthcare-professionals-involved-in-the-covid-19-emergency-vulnerability-and-resilience-factors/> [Accessed 27/05/2020]
- <sup>6</sup> Citation: Di Giuseppe, M., Gemignani, A., Conversano, C. (2020). Psychological resources against the traumatic experience of COVID-19. *Clinical Neuropsychiatry*, 17 (2), 85-87. <https://www.clinicalneuropsychiatry.org/download/psychological-resources-against-the-traumatic-experience-of-covid-19/> [Accessed 27/05/2020]
- <sup>7</sup> Duthheil F, Mondillon L, Navel V. PTSD as the second tsunami of the SARS-Cov-2 pandemic [published online ahead of print, 2020 Apr 24]. *Psychol Med* 2020;1- 2. doi:10.1017/S0033291720001336
- <sup>8</sup> Horesh D, Brown AD. Traumatic stress in the age of COVID-19: A call to close critical gaps and adapt to new realities. *Psychol Trauma*. 2020;12(4):331- 335. doi:10.1037/tra0000592
- <sup>9</sup> Kisely S, Warren N, McMahon L, Dalais C, Henry I, Siskind D. Occurrence, prevention, and management of the psychological effects of emerging virus outbreaks on healthcare workers: rapid review and meta-analysis. *BMJ*. 2020;369:m1642. Published 2020 May 5. doi:10.1136/bmj.m1642
- <sup>10</sup> Li Z, Ge J, Yang M, et al. Vicarious traumatization in the general public, members, and non-members of medical teams aiding in COVID-19 control [published online ahead of print, 2020 Mar 10]. *Brain Behav Immun*. 2020;S0889-1591(20)30309-3. doi:10.1016/j.bbi.2020.03.007



- <sup>11</sup> Wu AW, Connors C, Everly GS Jr. COVID-19: Peer Support and Crisis Communication Strategies to Promote Institutional Resilience [published online ahead of print, 2020 Apr 6]. *Ann Intern Med.* 2020;M20-1236. doi:10.7326/M20-1236
- <sup>12</sup> Wu K, Wei X. Analysis of Psychological and Sleep Status and Exercise Rehabilitation of Front-Line Clinical Staff in the Fight Against COVID-19 in China. *Med Sci Monit Basic Res.* 2020;26:e924085. Published 2020 May 11. doi:10.12659/MSMBR.924085
- <sup>13</sup> Wu PE, Styra R, Gold WL. Mitigating the psychological effects of COVID-19 on health care workers. *CMAJ.* 2020;192(17):E459-E460. doi:10.1503/cmaj.200519
- <sup>14</sup> Yin Q, Sun Z, Liu T, et al. Posttraumatic Stress Symptoms of Health Care Workers during the Corona Virus Disease 2019 (COVID-19) [published online ahead of print, 2020 May 15]. *Clin Psychol Psychother.* 2020;10.1002/cpp.2477. doi:10.1002/cpp.2477
- <sup>15</sup> Blackrock E. Interventions following a critical incident: developing a critical incident stress management team. *Arch Psychiatr Nurs.* 2012;26(1):2–8. doi:10.1016/j.apnu.2011.04.006.
- <sup>16</sup> Bock C, Heitland I, Zimmermann T, Winter L, Kahl KG. Secondary Traumatic Stress, Mental State, and Work Ability in Nurses—Results of a Psychological Risk Assessment at a University Hospital. *Front Psychiatry.* 2020;11:298. Published 2020 Apr 27. doi:10.3389/fpsy.2020.00298
- <sup>17</sup> Brunet A, Des Groseilliers IB, Cordova MJ, Ruzek JI. Randomized controlled trial of a brief dyadic cognitive-behavioral intervention designed to prevent PTSD. *Eur J Psychotraumatol.* 2013;4:10.3402/ejpt.v4i0.21572. Published 2013 Aug 26. doi:10.3402/ejpt.v4i0.21572
- <sup>18</sup> Buydebs, S L et al Effects of the EMDR Protocol for Recent Traumatic Events on Acute Stress Disorder: A Case Series. *Journal of EMDR Practice and Research*8(1) DOI: 10.1891/1933-3196.8.1.2 <https://connect.springerpub.com/content/sgremdr/8/1/2> [Accessed 27/05/2020]
- <sup>19</sup> de Boer J, Lok A, Van't Verlaat E, Duivenvoorden HJ, Bakker AB, Smit BJ. Work-related critical incidents in hospital-based health care providers and the risk of post-traumatic stress symptoms, anxiety, and depression: a meta-analysis. *Soc Sci Med.* 2011;73(2):316–326. doi:10.1016/j.socscimed.2011.05.009
- <sup>20</sup> Ducar DM, Penberthy JK, Schorling JB, Leavell VA, Calland JF. Mindfulness for healthcare providers fosters professional quality of life and mindful attention among emergency medical technicians. *Explore (NY).* 2020;16(1):61–68. doi:10.1016/j.explore.2019.07.015.
- <sup>21</sup> Ebert, D. D., Van Daele, T., Nordgreen, T., Karekla, M., Compare, A., Zarbo, C., Brugnera, A., Øverland, S., Trebbi, G., Jensen, K. L., Kaehlke, F., Baumeister, H., & Taylor, J. (2018). Internet- and mobile-based psychological interventions: Applications, efficacy, and potential for improving mental health: A report of the EFPA E-Health Taskforce. *European Psychologist, 23*(2), 167–187. <https://doi.org/10.1027/1016-9040/a000318> [Accessed 27/05/2020]
- <sup>22</sup> Ellis J, Zaretsky A. Assessment and Management of Posttraumatic Stress Disorder. *Continuum (Minneapolis Minn).* 2018;24(3, BEHAVIORAL NEUROLOGY AND PSYCHIATRY):873–892. doi:10.1212/CON.0000000000000610
- <sup>23</sup> Fodor KE, Bitter I. Pszichológiai intervenciók traumatikus események után a poszttraumás stressz zavar megelőzésére. Szisztematikus irodalmi áttekintés [Psychological interventions following trauma to prevent posttraumatic stress disorder. A systematic review of the literature]. *Orv Hetil.* 2015;156(33):1321–1334. doi:10.1556/650.2015.30231
- <sup>24</sup> Folz, E (2018) Implementation of critical incidence stress management program at a tertiary care hospital. <https://caccn.ca/wp-content/uploads/2019/05/PP6-Implementation-of-a-CISM-Program-Folz-E-and-Kampman-R.pdf>. [Accessed 27/05/2020].
- <sup>25</sup> Forneris CA, Gartlehner G, Brownley KA, et al. Interventions to prevent post-traumatic stress disorder: a systematic review. *Am J Prev Med.* 2013;44(6):635–650. doi:10.1016/j.amepre.2013.02.013
- <sup>26</sup> Freedman SA, Dayan E, Kimelman YB, Weissman H, Eitan R. Early intervention for preventing posttraumatic stress disorder: an Internet-based virtual reality treatment. *Eur J Psychotraumatol.* 2015;6:25608. Published 2015 Apr 2. doi:10.3402/ejpt.v6.25608.
- <sup>27</sup> Harker R, Pidgeon AM, Klaassen F, King S. Exploring resilience and mindfulness as preventative factors for psychological distress burnout and secondary traumatic stress among human service professionals. *Work.* 2016;54(3):631–637. doi:10.3233/WOR-162311
- <sup>28</sup> Kearns MC, Ressler KJ, Zatzick D, Rothbaum BO. Early interventions for PTSD: a review. *Depress Anxiety.* 2012;29(10):833–842. doi:10.1002/da.21997
- <sup>29</sup> Kornør H, Winje D, Ekeberg Ø, et al. Early trauma-focused cognitive-behavioural therapy to prevent chronic post-traumatic stress disorder and related symptoms: a systematic review and meta-analysis. *BMC Psychiatry.* 2008;8:81. Published 2008 Sep 19. doi:10.1186/1471-244X-8-81.
- <sup>30</sup> Mealer M, Conrad D, Evans J, et al. Feasibility and acceptability of a resilience training program for intensive care unit nurses [published correction appears in *Am J Crit Care.* 2016 Mar;25(2):172]. *Am J Crit Care.* 2014;23(6):e97–e105. doi:10.4037/ajcc2014747
- <sup>31</sup> Mealer M, Jones J, Moss M. A qualitative study of resilience and posttraumatic stress disorder in United States ICU nurses. *Intensive Care Med.* 2012;38(9):1445–1451. doi:10.1007/s00134-012-2600-6
- <sup>32</sup> Pender, D. A., & Anderton, C. (2016). Exploring the process: A narrative analysis of group facilitators' reports on critical incident stress debriefing. *Journal for Specialists in Group Work, 41*(1), 19–43. <https://doi.org/10.1080/01933922.2015.1111485>
- <sup>33</sup> Roberts NP, Kitchiner NJ, Kenardy J, Robertson L, Lewis C, Bisson JI. Multiple session early psychological interventions for the prevention of post-traumatic stress disorder. *Cochrane Database of Systematic Reviews* 2019, Issue 8. Art. No.: CD006869. DOI:



10.1002/14651858.CD006869.pub3. <https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD006869.pub3/full> [Accessed 27/05 2020]

<sup>34</sup> Rose SC, Bisson J, Churchill R, Wessely S. Psychological debriefing for preventing post traumatic stress disorder (PTSD). Cochrane Database of Systematic Reviews 2002, Issue 2. Art. No.: CD000560. DOI: 10.1002/14651858.CD000560.

<https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD000560/full> [Accessed 27/05/2020]

<sup>35</sup> Roy MJ, Costanzo ME, Highland KB, Olsen C, Clayborne D, Law W. An App a Day Keeps the Doctor Away: Guided Education and Training via Smartphones in Subthreshold Post Traumatic Stress Disorder. *Cyberpsychol Behav Soc Netw*. 2017;20(8):470–478. doi:10.1089/cyber.2017.0221.

<sup>36</sup> Schäfer SK, Lass-Hennemann J, Groesdonk H, et al. Mental Health in Anesthesiology and ICU Staff: Sense of Coherence Matters. *Front Psychiatry*. 2018;9:440. Published 2018 Sep 19. doi:10.3389/fpsy.2018.00440

<sup>37</sup> Shalev AY, Gevonden M, Ratanatharathorn A, et al. Estimating the risk of PTSD in recent trauma survivors: results of the International Consortium to Predict PTSD (ICPP). *World Psychiatry*. 2019;18(1):77–87. doi:10.1002/wps.20608

<sup>38</sup> Shelef L, Schiff M, Zalsman G. *Harefuah*. 2020;159(5):326–331.

<sup>39</sup> Skeffington PM, Rees CS, Kane R. The primary prevention of PTSD: a systematic review. *J Trauma Dissociation*. 2013;14(4):404–422. doi:10.1080/15299732.2012.753653

<sup>40</sup> Sones HM, Thorp SR, Raskind M. Prevention of posttraumatic stress disorder. *Psychiatr Clin North Am*. 2011;34(1):79–94. doi:10.1016/j.psc.2010.11.001

<sup>41</sup> Stein MB, Lang AJ. What's impeding post-traumatic stress disorder prevention?. *Am J Prev Med*. 2013;44(6):692–693. doi:10.1016/j.amepre.2013.03.002

<sup>42</sup> Tuckey MR, Scott JE. Group critical incident stress debriefing with emergency services personnel: a randomized controlled trial. *Anxiety Stress Coping*. 2014;27(1):38–54. doi:10.1080/10615806.2013.809421

<sup>43</sup> Qi W, Gevonden M, Shalev A. Prevention of Post-Traumatic Stress Disorder After Trauma: Current Evidence and Future Directions. *Curr Psychiatry Rep*. 2016;18(2):20. doi:10.1007/s11920-015-0655-0.

<sup>44</sup> Chan AO, Huak CY. Psychological impact of the 2003 severe acute respiratory syndrome outbreak on health care workers in a medium size regional general hospital in Singapore. *Occup Med (Lond)*. 2004;54(3):190–196. doi:10.1093/occmed/kqh027

<sup>45</sup> Greenberg N, Wessely S, Wykes T. Potential mental health consequences for workers in the Ebola regions of West Africa--a lesson for all challenging environments. *J Ment Health*. 2015;24(1):1–3. doi:10.3109/09638237.2014.1000676

<sup>46</sup> Kim JS, Choi JS. Factors Influencing Emergency Nurses' Burnout During an Outbreak of Middle East Respiratory Syndrome Coronavirus in Korea. *Asian Nurs Res (Korean Soc Nurs Sci)*. 2016;10(4):295–299. doi:10.1016/j.anr.2016.10.002

<sup>47</sup> Lee SH, Juang YY, Su YJ, Lee HL, Lin YH, Chao CC. Facing SARS: psychological impacts on SARS team nurses and psychiatric services in a Taiwan general hospital. *Gen Hosp Psychiatry*. 2005;27(5):352–358. doi:10.1016/j.genhosppsy.2005.04.007

<sup>48</sup> Maunder R. The experience of the 2003 SARS outbreak as a traumatic stress among frontline healthcare workers in Toronto: lessons learned. *Philos Trans R Soc Lond B Biol Sci*. 2004;359(1447):1117–1125. doi:10.1098/rstb.2004.1483

<sup>49</sup> Schreiber M, Cates DS, Formanski S, King M. Maximizing the Resilience of Healthcare Workers in Multi-hazard Events: Lessons from the 2014–2015 Ebola Response in Africa. *Mil Med*. 2019;184(Suppl 1):114–120. doi:10.1093/milmed/usy400

<sup>50</sup> Chapovalov, Olena PTSD in healthcare professionals *Hospital News*  
<https://hospitalnews.com/ptsd-in-healthcare-professionals/>. [Accessed 27/05/2020]

<sup>51</sup> Psychological Resources For Coronavirus (COVID-19) *Psychology Tools*  
<https://www.psychologytools.com/psychological-resources-for-coronavirus-covid-19/>. [Accessed 27/05/2020]