Evidence check

Updated 15 April 2020

Rapid evidence checks are based on a simplified review method and may not be entirely exhaustive, but aim to provide a balanced assessment of what is already known about a specific problem or issue. This brief has not been peer-reviewed and should not be a substitute for individual clinical judgement, nor is it an endorsed position of NSW Health.

Mental health of healthcare workers

Rapid review questions

What evidence is available about the psychological impact of COVID-19 on healthcare workers?

What organisational responses can be implemented to reduce the risk of physiological distress and mental health issues for healthcare workers responding to COVID-19?

In brief

- Healthcare workers are at increased risk of mental health issues when faced with the challenges associated with the COVID-19 pandemic.
- Early findings from China and Singapore showed healthcare workers experienced symptoms of depression, anxiety, insomnia and distress.
- A survey conducted by TKW Research (a research data collection and recruitment organisation) with 433 health care workers found 49% had experienced anxiety and tiredness since the outbreak of COVID-19.
- Previous pandemics, such as SARS, resulted in high levels of psychological distress and mental health issues among healthcare workers.
- Some studies show that frontline healthcare workers experience higher anxiety than the general community about contacting the virus during a pandemic.
- There is limited guidance on how best to respond and mitigate risks to healthcare workers. Current recommendations include; the provision of clear, accurate and updated information about COVID-19, establishing and encouraging support systems and supporting health care workers to take breaks.

Limitations

- Evidence on this topic is emerging rapidly.
- Recent studies have small sample sizes, data was collected from single hospital/geographical area and were conducted over a short period of time. Some studies are online firsts, viewpoints or letters.
- The scope of the review did not include (1) responses or interventions to support health care workers address symptoms and manage their own mental health (2) mental health impacts of communities/public; (3) the effectiveness of mental health interventions.

Background

Healthcare workers responding to COVID-19 are at heightened risk of psychological distress and other mental health issues.

Methods

Google and PubMed were searched using terms mental health, psychological distress, pandemic, coronavirus and COVID-19 (see Appendix 1).

Results

Healthcare workers who are directly involved in the diagnosis, treatment, and care of people with COVID-19 may be at risk of psychological distress and other mental health issues (Table one).

Workers responding to the COVID-19 pandemic are faced with heightened pressure to prioritise and allocate scarce resources, extreme changes to their work demands and long hours. They also experience separation from, and concern about, family members and have fears about infection and subsequent implications for self, patients, and family. (1-4)

Responses to these pressures include anger and irritability, sleeping problems, low mood and anxiety. (2-4)

A small study from China (n=13), found that being infected with the virus was not an immediate concern for healthcare workers. Workers were concerned about their families, not knowing how to manage patients unwilling to be quarantined at the hospital and protective equipment shortages. (1)

Finding from previous pandemics (Table three) document high levels of psychological distress and mental health issues among healthcare workers.

While limited, some publications provide recommendations for organisational responses to foster resilience, reduce burnout and the risk of psychological distress and mental health issues (Table two). These include:

- Ensuring that good quality communication and accurate information updates are provided to all healthcare workers
- Preparing healthcare workers for changes in their roles and responsibilities, and associated challenges
- Rotating workers from high-stress to lower-stress functions
- Actively monitoring, supporting, and, where necessary, providing with healthcare staff with evidence based treatments
- Applying the principles of Psychological First Aid to all healthcare staff
- Focusing on longer term occupational capacity rather than repeated short-term crisis responses (3, 5)

Experience in healthcare organisations in the UK reveals the importance of timing of direct psychological interventions with staff; as intervening in natural coping mechanisms too early can be detrimental. (3, 5) A recent study in China found healthcare workers who responded to COVID-19 were reluctant to participate in the group or individual psychological interventions. (2)

Table 1. COVID19 and mental health studies

<table>
<tr><th>Study</th><th>Country</th><th>Study type</th><th>Findings</th></tr>
<tr><td>Shanafelt, 2020(6)</td><td>USA</td><td>Qualitative</td><td>Results from eight listening sessions with groups of physicians, nurses, advanced practice clinicians, residents, and fellows (involving a total of 69 individuals) held during the first week of the COVID-19 pandemic:

Table. Requests From Health Care Professionals to Their Organization During the Coronavirus Disease 2019 Pandemic

<table>
<tr><th>Request</th><th>Principal desire</th><th>Concerns</th><th>Key components of response</th></tr>
<tr><td>Hear me</td><td>Listen to and act on health care professionals' expert perspective and frontline experience and understand and address their concerns to the extent that organizations and leaders are able</td><td>Uncertainty whether leaders recognize the most pressing concerns of frontline health care professionals and whether local physician expertise regarding infection control, critical care, emergency medicine, and mental health is being appropriately harnessed to develop organization-specific responses</td><td>Create an array of input and feedback channels (listening groups, email suggestion box, town halls, leaders visiting hospital units) and make certain that the voice of health care professionals is part of the decision-making process</td></tr>
<tr><td>Protect me</td><td>Reduce the risk of health care professionals acquiring the infection and/or being a portal of transmission to family members</td><td>Concern about access to appropriate personal protective equipment, taking home infection to family members, and not having rapid access to testing through occupational health if needed</td><td>Provide adequate personal protective equipment, rapid access to occupational health with efficient evaluation and testing if symptoms warrant, information and resources to avoid taking the infection home to family members, and accommodation to health care professionals at high risk because of age or health conditions</td></tr>
<tr><td>Prepare me</td><td>Provide the training and support that allows provision of high-quality care to patients</td><td>Concern about not being able to provide competent nursing/medical care if deployed to new area (eg, all nurses will have to be intensive care unit nurses) and about rapidly changing information/communication challenges</td><td>Provide rapid training to support a basic, critical knowledge base and appropriate backup and access to experts

Clear and unambiguous communication must acknowledge that everyone is experiencing novel challenges and decisions, everyone needs to rely on each other in this time, individuals should ask for help when they need it, no one needs to make difficult decisions alone, and we are all in this together</td></tr>
<tr><td>Support me</td><td>Provide support that acknowledges human limitations in a time of extreme work hours, uncertainty, and intense exposure to critically ill patients</td><td>Need for support for personal and family needs as work hours and demands increase and schools and daycare closures occur</td><td>Provide support for physical needs, including access to healthy meals and hydration while working, lodging for individuals on rapid-cycle shifts who do not live in close proximity to the hospital, transportation assistance for sleep-deprived workers, and assistance with other tasks, and provide support for childcare needs

Provide support for emotional and psychologic needs for all, including psychologic first aid deployed via webinars and delivered directly to each unit (topics may include dealing with anxiety and insomnia, practicing self-care, supporting each other, and support for moral distress), and provide individual support for those with greater distress</td></tr>
<tr><td>Care for me</td><td>Provide holistic support for the individual and their family should they need to be quarantined</td><td>Uncertainty that the organization will support/take care of personal or family needs if the health care professional develops infection</td><td>Provide lodging support for individuals living apart from their families, support for tangible needs (eg, food, childcare), check-ins and emotional support, and paid time off if quarantine is necessary</td></tr>
</table>
</td></tr>
</table>

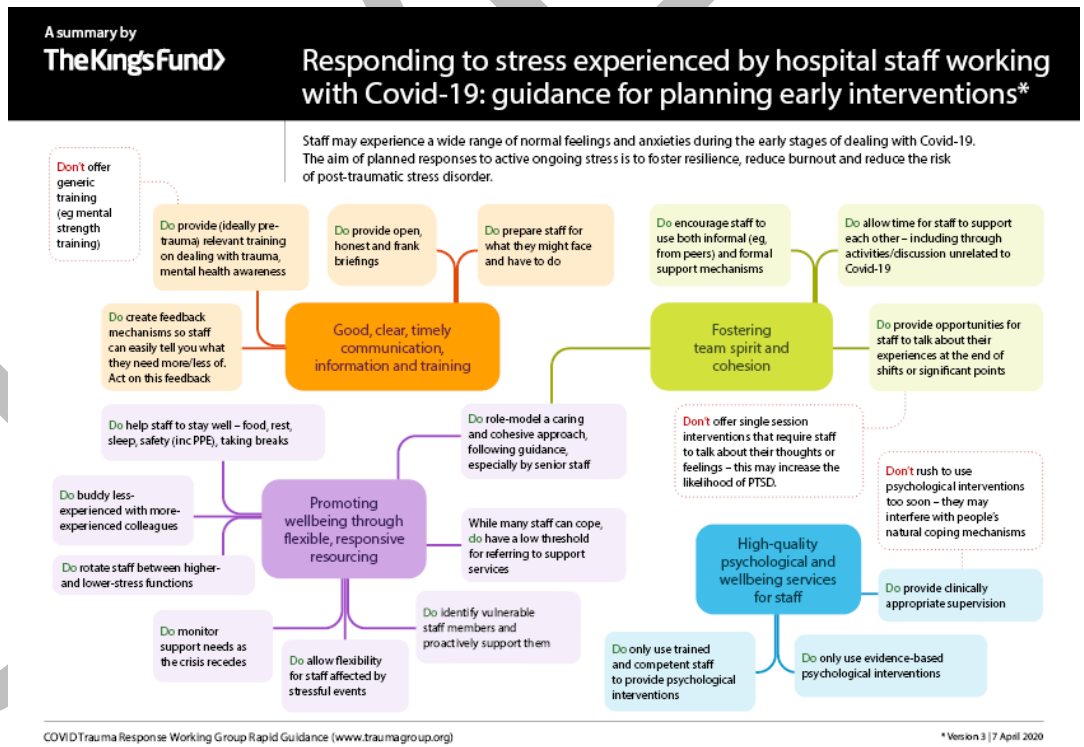
Study	Country	Study type	Findings
Tan, 2020 (7)	Singapore	Self-administered questionnaire with 470 health care workers	Self-administered questionnaire was conducted between 19 February 2020 and 13 March 2020 at two tertiary institutions. Health care workers included “medical” (physicians, nurses) and “nonmedical” personnel (allied health professionals, pharmacists, technicians, administrators, clerical staff, and maintenance workers). Sixty-eight (14.5%) participants screened positive for anxiety, 42 (8.9%) for depression, 31 (6.6%) for stress, and 36 (7.7%) for clinical concern of post-traumatic stress disorder. The prevalence of anxiety was higher among nonmedical health care workers than medical personnel (20.7% versus 10.8%).
Le Grand, 2020 (8)	Australia	Survey with 433 health care workers	TKW Research has a database of more than 80,000 healthcare workers. It is used exclusively for market research with specialists, general practitioners and allied health professionals. The survey was designed, funded and administered by TKW Research. It was sent to a representative sample of 5,000 from the database and was conducted across two and a half days between 25 and 27 March 2020. 433 healthcare workers completed surveys. 78% of respondents reported concerns about contacting (and passing on the virus). 49% experienced anxiety and tiredness since the outbreak. 55% experienced increased workloads since the outbreak and 71% reported more stress at work.
Xiao, 2020 (9)	China	Observational study with 180 medical staff	A cross-sectional observational study conducted between 29 January 2020 and 3 February 2020. Levels of anxiety, self-efficacy, stress, sleep quality, and social support were measured using validated tools. Levels of social support for medical staff were significantly associated with self-efficacy and sleep quality and negatively associated with the degree of anxiety and stress. Levels of anxiety were significantly associated with the levels of stress, which negatively impacted self-efficacy and sleep quality. Anxiety, stress, and self-efficacy were mediating variables associated with social support and sleep quality.
Lai, 2020 (2)	China	Cross-sectional study – 34 hospitals responding across multiple regions of China.	Hospital-based survey conducted from 29 January 2020 to 3 February 2020.1257 health care workers in 34 hospitals equipped with fever clinics or wards for patients with COVID-19 in multiple regions of China. A total of 813 (64.7%) were aged 26 to 40 years, and 964 (76.7%) were women. Of all participants, 764 (60.8%) were nurses, and 493 (39.2%) were physicians; 760 (60.5%) worked in hospitals in Wuhan, and 522 (41.5%) were frontline health care workers. A considerable proportion of participants reported symptoms of depression (634 [50.4%]), anxiety (560 [44.6%]), insomnia (427 [34.0%]), and distress (899 [71.5%]).

Study	Country	Study type	Findings
Chen, 2020 (1)	China	Interviews with 13 medical staff from Xiangya Hospital	Results identified that getting inflected was not an immediate worry to medical staff. Staffed were worried about their families, not knowing how to manage patients unwilling to be quarantined at the hospital and protective equipment shortages. In response, the hospital provided a place for rest where staff could temporarily isolate themselves from their family; guaranteed food and daily living supplies; helped staff to video record their routines in the hospital to share with their families and alleviate family members' concerns; developed detailed rules on the use and management of protective equipment to reduce worry; leisure activities and training on how to relax were properly arranged to help staff reduce stress; and psychological counsellors regularly visited the rest area to provide support.

Table 2. COVID19 and mental health recommendations for healthcare workers

Study	Country	Study type	Recommendations
Teoh, 2020 (10)	England	BMJ Opinion	• Taking certain steps to protect individual wellbeing during the COVID19 pandemic by ensuring the three their basic psychological needs are met—autonomy, belonging, and competence (ABC's)
Greenberg, 2020 (3)	England	Article	• Proactively take steps to protect the mental wellbeing of staff • Having frank and honest conversations about the situations staff are likely to face in response to the pandemic • Providing regular contact to discuss decisions and check on wellbeing. This could be achieved by using Schwarz rounds • Establishing support processes, such as peer support programmes, for healthcare staff that includes a briefing on moral injuries, as well as an awareness of other causes of mental health issues • Monitoring, supporting, and, where necessary, providing staff with evidence based treatments (once the crisis begins to recede)
World Health Organisation (4)	Switzerland	Considerations	• Rotating staff from higher-stress to lower-stress functions • Partnering inexperienced workers with their more experienced colleagues. The buddy system can help to provide support, monitor stress and reinforce safety procedures. • Initiating, encouraging and monitoring work breaks

			• Implementing flexible schedules for staff who are directly impacted or have a family member impacted by a stressful event • Building in time for colleagues to provide social support to each other
University College London and Camden and Islington NHS Trust, 2020 (5)	England	Guidance	• Ensuring basic physical needs of staff are being met including sleep, rest, food and safety (including appropriate access to personal protective equipment) • Supporting staff to take breaks and attend to self-care. Role modelling of these behaviours by senior staff will be important • Providing training on the potentially traumatic situations that staff might be exposed to including honest communication of the facts, developing skills to cope with these and awareness of potential mental health issues • Facilitating team cohesion and trying to foster strong supportive links between team members and managers • Considering more naturalistic forms of 'debriefing' or 'demobilising' at the end of shifts or at significant points in the response
Department of Veterans Affairs	USA	Considerations	• Encouraging workers to check-in with colleagues, family and friends during shift • Facilitating brief relaxation/stress management breaks (including time-outs for basic bodily care and refreshment) • Conducting regular peer consultation and supervision • Regularly seeking out accurate information and mentoring to assist in making decisions
Ho, 2020 (11)	Singapore	Article (in press)	• Shortening working hours, regular rest periods, and rotating shifts for those working in high-risk areas • Facilitating support from colleagues/supervisors including peer support programs • Ensuring clear communication of directives/precautionary measures
Zimmerman, 2020 (12)	England	Rapid review	Centre for Evidence Based Medicine Rapid conducted a rapid review to identify the best available current evidence to support clinicians in responding to COVID-related anxiety: • Regulating exposure to COVID-related media • Maintaining a strong social network • Looking after your body and avoiding unhealthy coping strategies. • Focusing on self-care techniques including mindfulness.

Ayanian, 2020 (13)	USA	Editors comment	• Providing support through telehealth services, including video visits with mental health professionals, mobile apps, online resources and virtual peer support • Monitoring the mental health outcomes of clinicians and other health care workers over time • Prioritising the mental and physical health needs and recovery of individuals caring for patients with COVID-19.
Kings Fund, 2020 (14)	England	Infographic	 The infographic is developed based on rapid guidance from the COVID trauma response working group (5)
The Blackdog	Australia	Considerations	• Keeping healthcare workers informed

Institute, 2020 (15)			• Ensuring healthcare workers have access to appropriate protective equipment and psychological support • Establishing an ongoing program of mental health monitoring for impacted healthcare workers.
Rana, 2020(16)	Pakistan	Considerations	• building a mental health intervention medical team to provide online courses for awareness of psychological impact of stressful events to guide medical workers • establishing a psychological assistance hotline intervention for medical workers to discuss their psychological concerns with the trained and specialised team of mental health practitioners • providing frequent shift-system • ensuring food and living supplies • offering pre-job training to address identification and responses to psychological issues in patients, families, and themselves • ensuring psychological counsellors/counselling psychologists regularly visit medical workers to listen to their stories for their catharsis and provide support

Table 3. Pandemics and mental health studies

Study	Country	Study type	Findings
Lung 2009 (17)	Taiwan	Cross sectional survey - 127 healthcare workers who had taken care of suspected SARS patients	Healthcare workers that had mental symptoms at follow-up reported the symptoms were associated with daily-life stress and not the SARS crisis. The physicians had more somatic symptoms than nurses, suggesting different professions have different impact on mental health.
Tam 2004 (18)	Hong Kong	Cross sectional survey – 3 hospitals responding to SARS	Sixty-eight per cent of participants reported a high level of stress. About 57 % were found to have experienced psychological distress. The healthcare workers' psychological morbidity was best understood by the perceptions of personal vulnerability, stress and support in the workplace.
Goulia 2010 (19)	Greece	Cross sectional survey - 469 healthcare workers regarding	More than half of the present study's healthcare workers (56.7%) reported they were worried about the A/H1N1 influenza pandemic, their degree of anxiety being moderately high (median 6/9). Worry and degree of worry were significantly associated

		concerns and worries about the new A/H1N1 influenza pandemic	with intended absenteeism ($p < 0.0005$), restriction of social contacts ($p < 0.0005$), and psychological distress ($p = 0.036$).
Maunder 2006 (20)	Canada	Cross sectional survey with control – 9 health care workers who treated SARS and 4 hospitals who did not	The healthcare workers from the 9 hospital treating SARS patients reported significantly higher levels of burnout ($p = 0.019$), psychological distress ($p<0.001$), and posttraumatic stress ($p<0.001$). They were more likely to have reduced patient contact and work hours and to report behavioural consequences of stress.
Verma 2004 (21)	Singapore	Cross sectional survey – GPs and Chinese health workers post SARS outbreak	The mean score of the GHQ somatic, anxiety and social dysfunction subscales were significantly higher in GPs as compared to TCM Practitioners ($P <0.001$). The GHQ total score as well as the subscales was significantly correlated with the IES-R and stigma subscales ($P <0.05$). The fear, uncertainty and stigma caused by SARS are associated with psychological distress among some of the primary healthcare providers in Singapore.
Wong 2005 (22)	Hong Kong	Cross sectional survey –SARS outbreak	The mean overall distress levels for doctors, nurses and healthcare assistants were 5.91, 6.52 and 5.44, respectively. The overall distress level for nurses was significantly higher than for assistants, but not doctors. The scores for nurses were significantly higher than for doctors in terms of the six sources of distress.
Chen 2005 (23)	Taiwan	Cross sectional survey – during the peak of the SARS outbreak	The results showed that 11 percent of the nurses surveyed had stress reaction syndrome. The symptoms of psychological stress reactions included anxiety, depression, hostility, and somatization. The highest rate of stress reaction syndrome was observed in the group that originally worked in a high-risk unit, and the conscripted group experienced the most severe distress on average.
Chen 2007 (24)	Taiwan	Cross sectional survey –after caring for patients during the SARS outbreak	The impact of the SARS outbreak on SARS HCWs was significant in many dimensions of general health. The vitality and mental health status of SARS healthcare workers 1 month after self-quarantine and off-duty shifts remained inferior to those of the control group.
Chan 2004 (25)	Singapore	Cross sectional survey –SARS outbreak	27% overall including 35% doctors and 25% nurses had a GHQ 28 score >or=5. Doctors and single health care workers were at higher risk compared to nurses and those who were married. Approximately 20% of the participants had IES scores >or=30, indicating the presence of post-traumatic stress disorder (PTSD). Four areas were classified as more important using factor analysis: health and relationship with the family, relationship with friends/colleagues, work and spiritual.

Maunder 2004 (26)	Canada	Cross sectional survey was completed by 1557 healthcare workers at three Toronto hospitals in May and June 2003 regarding SARS	Higher Impact of Event Scale scores are found in nurses and healthcare workers having contact with patients with severe acute respiratory syndrome.
Nickell 2004 (27)	Canada	Cross sectional survey –SARS outbreak	SARS outbreak had significant psychosocial effects on hospital staff. Two-thirds of the respondents reported SARS-related concern for their own or their family's health. A total of 148 respondents (29%) scored above the threshold point on the GHQ-12, indicating probable emotional distress; the rate among nurses was 45%.
Bai 2004 (28)	Taiwan	Cross sectional survey –SARS outbreak	Seventeen staff members (5 percent) suffered from an acute stress disorder; stepwise multiple logistic regression analysis determined that quarantine was the most related factor. Sixty-six staff members (20 percent) felt stigmatized and rejected in their neighbourhood because of their hospital work, and 20 of 218 health care workers (9 percent) reported reluctance to work or had considered resignation.
Lancee 2008 (29)	Canada	Cross sectional survey –SARS outbreak	The lifetime prevalence of any depressive, anxiety, or substance use diagnosis was 30%. Only one health care worker who identified the SARS experience as a traumatic event was diagnosed as having PTSD. New episodes of psychiatric disorders occurred among seven health care workers (5%). Incidence of new episodes of psychiatric disorders after the SARS outbreak were similar to or lower than community incidence rates, which may indicate the resilience of health care workers.
Chua, 2004 (30)	Hong Kong	Cross sectional survey –79 SARS patients and 145 control subjects	Stress was significantly higher in SARS patients than in healthy control subjects. Stress correlated significantly with negative psychological effects. Of SARS patients, 39% (n = 30) were infected health care workers; these individuals reported significantly more fatigue and worries about health than did other patients

Appendix one

PubMed earch terms: ((("pandemics"[MeSH Terms] OR "pandemic*"[title/abstract] OR "disease outbreak*"[title/abstract] OR SARS[title/abstract])) AND ((healthcare[title/abstract] OR staff[title/abstract] OR worker[title/abstract] OR professional[title/abstract]))) AND (("mental health"[MeSH Terms] OR "mental"[title/abstract] OR "psychological distress"[title/abstract])) AND (english[Filter])

PubMed earch terms: ((healthcare[title/abstract] OR staff[title/abstract] OR worker[title/abstract] OR professional[title/abstract])) AND (((2019-nCoV[title/abstract] or nCoV[title/abstract] or covid-19[title/abstract] or covid19[title/abstract] or "covid 19"[title/abstract] OR "coronavirus"[MeSH Terms] OR "coronavirus"[title/abstract])) AND (("mental health"[MeSH Terms] OR "mental"[title/abstract] OR "psychological distress"[title/abstract]) AND (english[Filter]))

Document history

Original search 30 March 2020	**Updates**
Review 15 April 2020	• Updated evidence search, four new studies added to Table 1 (6-9), five sources of recommendations added to Table 2 (12-16) and one study added to Table 3 (30) • Added limitation section • Key messages remain the same with an additional point added to the brief

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