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Applying the Lessons of SARS to Pandemic Influenza:

An Evidence-based Approach to Mitigating the Stress Experienced by Healthcare Workers

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Abstract

We describe an evidence-based approach to enhancing the resilience of healthcare workers in preparation for an influenza pandemic, based on evidence about the stress associated with working in healthcare during the SARS outbreak. SARS was associated with significant long-term stress in healthcare workers, but not with increased mental illness. Reducing pandemic-related stress may best be accomplished through interventions designed to enhance resilience in psychologically healthy people. Applicable models to improve adaptation in individuals include Folkman and Greer's framework for stress appraisal and coping along with psychological first aid. Resilience is supported at an organizational level by effective training and support, development of material and relational reserves, effective leadership, the effects of the characteristics of "magnet hospitals," and a culture of organizational justice. Evidence supports the goal of developing and maintaining an organizational culture of resilience in order to reduce the expected stress of an influenza pandemic on healthcare workers. This recommendation goes well beyond the provision of adequate training and counseling. Although the severity of a pandemic is unpredictable, this effort is not likely to be wasted because it will also support the health of both patients and staff in normal times.

Keywords

Health personnel; communicable diseases; stress; psychological; organizational culture; disaster planning

The Severe Acute Respiratory Syndrome (SARS) outbreak demonstrated that an extraordinary infectious outbreak causes enduring stress in healthcare workers.¹ Currently, health-care organizations are preparing for an influenza pandemic.² While the occurrence of

pandemic influenza is considered inevitable, neither the timing nor the severity of the next pandemic can be predicted. A severe pandemic would cause high mortality, high healthcare demands, high absenteeism among healthcare workers, rationing of basic healthcare supplies and extraordinary stress.^{2,3} Under such circumstances, the healthcare system could not afford a further loss of professionals due to the effects of stress. The purpose of this review is to provide an evidence-based approach to reducing healthcare workers' distress by building resilience prior to the pandemic.

The stressful impact of SARS on healthcare workers

The SARS outbreak was associated with clinically significant distress in a third to half of healthcare workers.⁴⁻⁷ Greater distress was associated with quarantine,⁸ treating colleagues with SARS,⁹ fear of contagion,^{7,10,11} concern for family health,^{6,11,12} job stress,^{7,11} interpersonal isolation,^{7,11} and perceived stigma.^{7,8,13} Two aspects of these healthcare workers' experience distinguish the stress of an infectious disease from other disasters. First, SARS experience contributed to social isolation for several reasons: infection control procedures increased interpersonal distance; stigma and interpersonal avoidance diminished social and community interaction; and being assigned to unfamiliar work groups reduced collegial interaction.^{7,12} Second, while family support usually buffers stress, healthcare workers with children experienced higher levels of distress during SARS,¹² presumably due to the perceived risk of infecting loved ones and concerns about caring for children if the parent is ill.

Two years after the outbreak's resolution, healthcare workers in hospitals that treated SARS patients had significantly elevated rates of signs of chronic stress compared to workers in other similar hospitals.¹⁴ These included professional burnout (30 vs. 19%), depressive and anxiety symptoms (45 vs. 30%), increased smoking, drinking or problem behaviour (21 vs. 8%) and missing 4 or more work shifts over 4 months due to stress or illness (22 vs. 13%). Importantly, healthcare workers in affected hospitals were more likely to have decreased face-to-face contact with patients (17 vs. 8%) and decreased work hours (9 vs. 2%) following SARS. However, rates of depression, post-traumatic stress disorder or other mental illness were not elevated.¹⁵ Thus, long-term effects of SARS were common but were predominantly in the range of subsyndromal stress response syndromes. This should shift thinking about reducing pandemic-related stress away from models of clinical intervention for mental health problems and towards models of adaptation and resilience in psychologically healthy people.

Mediators of long-term SARS stress could become targets for interventions. Chronic stress was lower in workers with longer healthcare experience and in those who felt effectively trained and supported by their hospital. Greater chronic stress was reported by workers who coped using strategies of avoidance and self-blame.¹⁴

Key differences between SARS and pandemic influenza

The stress of pandemic influenza will differ from SARS because of the inability to contain pandemic influenza through infection control procedures, the potential difference in scale

and severity, and the opportunity to prepare for a pandemic. SARS was a nosocomial infection with minimal community transmission and minimal infectious transmission prior to the onset of symptoms.¹⁶ Infection control procedures were key aspects of containing the outbreak.¹⁷ Influenza, on the other hand, is readily transmitted before the onset of clinical illness and is prone to mutations that favour the virus's survival. Thus, pandemic influenza will be a community-acquired disease.¹⁸ This difference may reduce some of the isolation that was experienced by healthcare workers in SARS due to quarantine, reduced social contact within the hospital and stigma. In a severe pandemic, however, the benefit of reduced isolation will be outweighed by the burden of the scale of disease. Thus, it is important to fully exploit our opportunity to plan effectively and implement resilience-enhancing measures before the pandemic occurs.

Fostering individual resilience

Resilience is the ability to reduce the effect of a distressing event by anticipation and preparation or to “bounce back” once it has occurred. Two evidence-based approaches to individual resilience are particularly apt for pandemic preparation. Folkman and Greer's framework for maintaining psychological well-being during serious illness describes a sequence of appraisal and coping processes that are designed to recover positive emotions and effective adaptation.¹⁹ They describe a sequential approach to coping that is experience-near for many healthcare workers: problem solving for events that are appraised to be within one's control, emotion-based coping to enhance support and reduce isolation, and meaning-based coping for events that are unresolved and cause persistent distress after problem-focused efforts. This framework facilitates flexibility, acknowledging that distress and coping are highly individual and depend on experience, values and expectations. It also facilitates discussion of the strengths and weaknesses of various approaches to coping, and the evidence that coping through escape-avoidance and self-blame are maladaptive in healthcare workers responding to infectious disease.¹⁴

The second approach that we advocate is psychological first aid,²⁰ an evidence-based approach to facilitating resilience immediately after trauma. Healthcare workers can learn psychological first aid without any prior mental health education. Furthermore, learning to support others may also enhance the resilience of the provider. As with Folkman and Greer's model, psychological first aid does not pathologize people who are stressed by extraordinary events. Rather, it assumes that those who are stressed are competent and are able to determine whether or not they wish or need assistance. It teaches a respectful approach to reducing distress through enhancing safety and comfort, helping survivors of trauma to identify their needs, providing information and facilitating social connection.²⁰

Fostering organizational resilience

The resilience of healthcare organizations is influenced by factors beyond the resilience of people within the organization. Organizational resilience may contribute to individual resilience, however, by buffering workplace stressors during and after a crisis. It is a key task of pre-pandemic preparation.

Organizational resilience depends on establishing reserves prior to crises. Pandemic plans note the need for material reserves (e.g., stockpiles of supplies).^{3,21,22} Additionally, business models of resilience emphasize the value of back-up plans and succession plans, a culture of flexibility and the central role of effective leadership.^{23,24} Evidence from the SARS outbreak reinforces the importance of effective training.¹⁴ This may include training in skills that will be required when adaptation to the pandemic requires staff to work outside of their usual area of familiarity, and may also include training in psychological first aid and coping. In SARS, psychosocial support was far more effective when provided in the context of trusted pre-existing relationships.¹ We advocate building relational reserves prior to the pandemic, by which we refer to supportive, collaborative, interdisciplinary relationships which can provide the basis for formal and informal support during a crisis. Healthcare organizations may also benefit from the recovery-enhancing power that flows from a shared sense of moral purpose,²⁴ such as a shared dedication to caring for the sick.

Two evidence-supported constructs are particularly applicable to building a culture of organizational resilience. First, magnet hospitals, originally identified by their ability to recruit and retain nursing staff more effectively than neighbouring hospitals, are characterized by decentralized decision-making by caregivers, a nurse among the hospital executive, flexible scheduling, investment in continuing education and unit-level self-government.²⁵ Magnet hospitals tend to have lower patient mortality,²⁶ and also have lower rates of burnout among staff.²⁷ The characteristics of magnet hospitals echo the findings that health is negatively affected by high demand/low control occupations and effort-reward imbalance.^{28,29} While SARS experience teaches that decentralized decision-making may need to give way to hierarchical structures during a crisis,¹ we expect that the resilience associated with the culture of magnet hospitals will aid staff in their recovery from the strain of such adjustments after the pandemic has passed.

Second, organizational justice describes two further characteristics of large organizations that are associated with greater physical well-being among employees.³⁰ Organizational justice includes the degree to which supervisors take their employees' viewpoints into account, suppress their own biases and deal with subordinates in a fair and truthful manner (relational justice), and fairness in formal decision-making procedures (decisional justice). Thus, organizational goals that serve the interests of both patients and staff during normal functioning may also build relational reserves which bolster resilience in the face of a severe pandemic.

CONCLUSION

Preparing for pandemic influenza requires attention to hospital processes at both a macro- and a micro-level, and attention to both individual and organizational characteristics. The evidence supports planning that goes well beyond the provision of adequate training and counseling. Indeed, the evidence supports the much broader goal of maintaining an organizational culture of resilience. This effort will not be wasted, regardless of the timing and severity of the next pandemic, because both patients and staff will be healthier in a resilient hospital even during times of normal function.

The complexity of preparing for a pandemic and the inherent value of building and maintaining inter-professional relationships argue for pandemic planning through organization-wide collaboration. Planning to reduce psychosocial stress should involve representatives from psychiatry, psychology, nursing, social work, chaplaincy, employee health, communications and hospital administration.²¹ The important links between psychosocial resilience and other aspects of pandemic planning (e.g., infection control, human resources, and risk communication) also benefit from a broad-based planning process. Experience with SARS has provided valuable insight into what to expect from pandemic influenza and how we can best prepare healthcare workers.

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