Lessons learned from adverse outcomes on clinician resilience

Understand what to expect in the wake of COVID-19

The ongoing pandemic of the novel coronavirus is unprecedented in many ways. While the circumstances of COVID-19 continue to present unique challenges for health care workers, we can learn from, and set appropriate expectations for the impact that COVID-19 will have on clinician resilience based on key historical events. This table compiles data on the adverse outcomes that prior events have had on clinician resilience, details applicability, and lessons learned for each.

Event	Impact on clinician resilience	Applicability to COVID-19	Lessons learned
COVID-19 (2019 – present) *Ongoing COVID-19 (SARS-CoV-2) global pandemic.*	In a study of Health Care Workers (HCW's) in China, participants experienced the following symptoms: • 50.4% reported depression • 44.6% reported anxiety • 34.0% reported insomnia • 71.5% reported distress[1]		• In the same study (of which 76.7% of participants were women) nurses, women, frontline HCW's, clinicians working in Wuhan, China, reported more severe measurements of all mental health symptoms than other HCW's[2]
SARS (Severe Acute Respiratory Syndrome) (2002 – 2004) *SARS (SARS-CoV-1) caused 8096 cases world-wide with 774 deaths,[3] and affected 29 different countries.*	• 18% to 57% of HCW's reported significant emotional distress (surveyed in Canada)[4] • 93.5% of emergency medical staff considered the SARS outbreak to be a traumatic experience (surveyed in Taiwan)[5] • 70% of nurses developed their own PPE (surveyed in Taiwan)[6] • 89% of HCW's who were in high-risk situations reported symptoms of psychological distress (surveyed in Hong Kong)[7]	• **Personal risk to HCW's and first responders*** • Risk to general public • **Shortage of personal protective equipment (PPE)** • Increased exposure to trauma • Large-scale fatalities • Death of colleagues • **Longevity of the event** • **Conflicting information on the virus** • Widespread collective grief • Long lasting impact to HCW's and first responders	• While high-risk staff were affected by SARS, the primary determinants of adverse outcomes were not exposure to high-risk and high-intensity work settings (or direct exposure to infected patients). Rather, the duration of perceived risk in HCW's after SARS is correlated with the severity of adverse outcomes • Identifying and supporting HCW's who are at a high risk for persistent psychological consequences is possible by identifying HCW's whose perceived risk has not returned to normal a few months after the event[8]

*The bullets that are bolded in the "Applicability to COVID-19" column are the most relevant applicable aspects of the event.

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HIV/AIDS (Human immunodeficiency virus/acquired immune deficiency syndrome) Epidemic (1981 – present) *Between 1981 and 2018, HIV/AIDS infected 74.9 million people, and resulted in 32.0 million deaths.[9] It is most widespread in sub-Saharan Africa.*	In a study of HCW's in Malawi, 63% met the criteria for burnout; of those: • 55% reported moderate-high emotional exhaustion • 31% reported moderate-high depersonalization • 46% reported low-moderate sense of professional accomplishment[10]	• Personal risk to HCW's and first responders • Risk to general public • Shortage of PPE • **Increased exposure to trauma** • **Large-scale fatalities** • Death of colleagues • **Longevity of the event** • Conflicting information on the virus • Widespread collective grief • Long lasting impact to HCW's and first responders	• HCW's were subject to the social stigma of HIV/AIDS in working closely with infected patients • Many health care workers perceived a high occupational risk[11] (e.g., accidental needle prick) but studies suggest the occupational risk of exposure to HIV/AIDS is low[12]
West-African Ebola Virus Epidemic (2013 – 2016) *The most widespread outbreak of Ebola affected Guinea, Liberia, and Sierra Leone. In total (in countries with widespread transmission) Ebola resulted in 28,652 infections and 11,325 deaths.[13]*	In a study of HCW's in Sierra Leone, those who worked directly with Ebola patients (nurses, red zone cleaners, blood-team members) had the following significant psychological symptoms: • Obsession-compulsion • Interpersonal sensitivity • Paranoid ideation[14]	• **Personal risk to HCW's and first responders** • **Risk to general public** • **Shortage of PPE** • Increased exposure to trauma • **Large-scale fatalities** • Death of colleagues • Longevity of the event • Long lasting impact to HCW's and first responders	• HCW's were subject to the social stigma of Ebola in working closely with infected patients. Some were even physically assaulted: eight HCW's in Guinea were killed for raising awareness on Ebola[15] • In a study of Ebola in Liberia, resilience in staff was identified as an important attribute of a strong health care system (which requires long-term investment, and attention)[16]

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Hurricane Maria (09/2017) *Maria was a deadly category five hurricane affecting Dominica, Puerto Rico, and St. Croix and resulted in an estimated 3000 deaths.*[17]	A year after Hurricane Maria (in Puerto Rico): • 49% of HCW's experienced post-traumatic stress disorder (PTSD) • 32% of HCW's experienced anxiety[18]	• Personal risk to HCW's and first responders • Risk to general public • Increased exposure to trauma • **Large-scale fatalities** • Widespread collective grief • **Long lasting impact to HCW's and first responders**	• Mental health and health care providers have higher rates of PTSD symptoms as compared to the general public in post-disaster settings. These rates typically range from 13% to 32% (as compared with 7.8% in the general public)[19]
September 11th Terror Attacks (09/11/2001) *Four coordinated attacks by terrorist group Al-Qaeda. Resulted in 2977 deaths,*[20] *and thousands of injuries.*[21]	• 12.9% of police officers[22] who responded to the event still showed symptoms of PTSD 10 years later • 72.4% of police officers who had PTSD also reported depression and anxiety In a survey of those who were physically present[23] during the world trade center towers attack: • 13% still experienced symptoms of PTSD 14 years later • 68% of those with PTSD also reported symptoms of depression[24]	• **Personal risk to HCW's and first responders** • Risk to general public • **Increased exposure to trauma** • **Large-scale fatalities** • **Widespread collective grief** • **Long lasting impact to HCW's and first responders**	• 9/11 had long lasting impact on the mental and physical health of first responders, and those who were physically present at the event

*The bullets that are bolded in the "Applicability to COVID-19" column are the most relevant applicable aspects of the event

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References

[1]"Factors Associated With Mental Health Outcomes Among Health Care Workers Exposed to Coronavirus Disease 2019," JAMA Network, https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2763229
[2]Ibid
[3]"SARS Basic Fact Sheet," CDC, https://www.cdc.gov/sars/about/fs-sars.html
[4]"Long-term Psychological and Occupational Effects of Providing Hospital Healthcare during SARS Outbreak," NCBI, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3291360/
[5]"The psychological effect of severe acute respiratory syndrome on emergency department staff," NCBI, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2658141/
[6]"Dying and caring on the edge: Taiwan's surviving nurses' reflections on taking care of patients with severe acute respiratory syndrome," Science Direct, https://www.sciencedirect.com/science/article/pii/S0897189707000985?via%3Dihub
[7]"Psychological Effects of the SARS Outbreak in Hong Kong on High-Risk Health Care Workers," NIH, https://pubmed.ncbi.nlm.nih.gov/15283534/
[8]"Long-term Psychological and Occupational Effects of Providing Hospital Healthcare during SARS Outbreak," NCBI, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3291360/
[9]"Global HIV & AIDS Statistics – 2019 Fact Sheet," UNAIDS, https://www.unaids.org/en/resources/fact-sheet
[10]"Burnout and self-reported suboptimal patient care amongst health care workers providing HIV care in Malawi," PLOS ONE, https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0192983
[11]"Difficulties facing healthcare workers in the era of AIDS treatment in Lesotho," NCBI, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5642438/
[12]"HIV and Occupational Exposure," CDC, https://www.cdc.gov/hiv/workplace/healthcareworkers.html
[13]"2014-2016 Ebola Outbreak in West Africa," CDC, https://www.cdc.gov/vhf/ebola/history/2014-2016-outbreak/index.html
[14]"Prevalence of psychological symptoms among Ebola survivors and healthcare workers during the 2014-2015 Ebola outbreak in Sierra Leone: a cross-sectional study," NCBI, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5355054/
[15]"Psychosocial effects of an Ebola outbreak at individual, community and international levels," WHO, https://www.who.int/bulletin/volumes/94/3/15-158543/en/
[16]"Beyond the crisis: did the Ebola epidemic improve resilience of Liberia's health system?," Oxford Academic, https://academic.oup.com/heapol/article/32/suppl_3/iii40/4621473
[17]"A Year After Hurricane Maria, Puerto Rico Finally Knows How Many People Died," The Atlantic, https://www.theatlantic.com/politics/archive/2018/08/puerto-rico-death-toll-hurricane-maria/568822/
[18]"Many responders in emotional distress one year after hurricane in Puerto Rico, study finds," Illinois New Bureau, https://news.illinois.edu/view/6367/807893
[19]Ibid
[20]"September 11 Terror Attacks Fast Facts," CNN, https://www.cnn.com/2013/07/27/us/september-11-anniversary-fast-facts/index.html
[21]"9/11 death and injury toll still rising," USA Today, https://www.usatoday.com/story/news/2015/09/09/911-death-and-injury-total-still-rising/71943340/
[22]First Responders to the attacks, comparable with health care workers.
[23]All of those who were physically present; includes civilians, first responders, etc.
[24]"PTSD in Survivors of 9/11," Psychology Today, https://www.psychologytoday.com/us/blog/media-spotlight/201810/ptsd-in-survivors-911

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