



Sonographer safety issues during the COVID-19 pandemic

Nikki Brewer¹ · Gary Huang¹  · Younghoon Kwon¹

Received: 1 May 2020 / Accepted: 11 May 2020 / Published online: 19 May 2020
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Dear Editor,

We have read with great interest the article by Marriner et al., which provided important insights from a sonographer's standpoint into the processes of ensuring high-quality echocardiography [1]. An emerging area of concern for sonographers or echocardiographers is the issue of safety, especially in the setting of the COVID-19 pandemic, given the imminent danger the pandemic has placed on front-line healthcare workers [2, 3]. A recent report by the CDC suggested that healthcare workers account for about approximately 11% of COVID-19 infections, but this number is likely underestimated due to the lack of testing and reporting [4].

As asserted by Marriner et al., the highly specialized knowledge and skills of sonographers is crucial in the diagnosis and treatment of patients [1]. Such skillsets are particularly vital during the COVID-19 pandemic, given the noninvasive, convenient, and portable nature of echocardiography. While overall echocardiography volume has decreased, driven by health system-wide mandates to control the pandemic, the need for timely performance of high-quality echocardiography, particularly for critically ill patients when indicated, remains great. Sonographers are at an especially high risk of exposure in the setting of this pandemic due to our close proximity to the patient during the scan, with the study duration ranging from 20 min to upwards of 1 h [3].

As Seattle, Washington became the initial epicenter of COVID-19, sonographers in the region experienced first-hand the challenges associated with maintaining safety

amidst the pandemic [5]. As the outbreak ensued, our echocardiography laboratory developed, after having undergone many revisions, safety measures in line with hospital policies and state public health recommendations. Areas in which these changes occurred included personal protective equipment (PPE) usage, COVID-19 testing criteria, and examination protocols.

The major challenges facing our sonographers have been a shortage in the supply of PPE and ambiguous testing criteria for staff. PPE, including N95 masks and powered air purifying respirators (PAPR) hoods, are strictly worn by sonographers performing transthoracic or transesophageal echocardiography (TEE) in patients with suspected or confirmed COVID-19 infection. TEE performed on confirmed negative COVID-19 patients still required droplet precaution, including wearing surgical masks and eye protection. As recently announced by the Society of Diagnostic Medical Sonography in an open letter, we believe an adequate supply of PPE is critical to minimize the risk of transmission among both sonographers and patients [6].

Recommendations regarding PPE use in all hospital areas have evolved over time from 'optional' to now 'required'. In the midst of this change, a number of sonographers became exposed to COVID-19 through scanning patients whose infection status was unknown or negative at the time of the study but subsequently became positive. Under strict testing criteria, only three sonographers at the University of Washington (UW) have been tested, while the remaining sonographers who were exposed were advised to continue working while closely monitoring for symptoms of COVID-19. Fortunately, to our knowledge, there has not yet been reports of infection among sonographers at UW.

To further reduce transmission risk for patients and staff, changes in examination protocol have been made, as well. All outpatient studies have been reviewed and studies that were considered nonurgent have been postponed. As such, study volume has significantly decreased in the previous few months.

During this pandemic, taking steps to reduce the risk of infection among sonographers and patients is of utmost

This comment refers to the article available at <https://doi.org/10.1007/s12574-019-00430-3>.

✉ Gary Huang
garysh@uw.edu

¹ Division of Cardiology, Department of Medicine, Harborview Medical Center, University of Washington, 325 9th Avenue, Box 359748, Seattle, WA 98104, USA

importance. Ensuring an adequate supply of PPE by the hospital administration should be top priority. Additionally, because PPE is a limited resource, echocardiograms should only be performed when deemed essential. Limited images should also be obtained when possible to reduce transmission risk. Sonographers should be tested for COVID-19 infection whenever they are exposed, as well. Request for echocardiography should be thoroughly reviewed for appropriateness during this time to reduce transmission risk. Lastly, we recommend that sonographers wear surgical masks at a minimum when scanning patients with unknown COVID-19 status, as is the case in the majority of outpatient settings. As we will likely continue to see the effects of the COVID-19 pandemic for the foreseeable future, it is imperative that we continue to find ways to produce high quality echocardiograms and provide high quality patient care while ensuring the safety of sonographers.

Funding This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Compliance with ethical standards

Conflict of interest Nikki Brewer, Gary Huang, and Younghoon Kwon declare that we have no conflicts of interest.

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