

Quick Guide on COVID-19 Protections — Patient and Ultrasound Provider Protection¹

OVERVIEW: With the unprecedented Covid-19 pandemic, new challenges in caring for patients have arisen. There is considerable variability in the prevalence of the virus as well as the availability of personal protective equipment around the world. To help provide guidance to ultrasound practitioners on how to handle this crisis, AIUM would like to provide suggestions gathered from various sources. Note that each ultrasound practice should also follow guidelines recommended by their local governments and/or the Centers for Disease Control (CDC).

SCHEDULING OF PATIENTS (GENERAL RECOMMENDATIONS)

Non-urgent/non-emergent ultrasound examinations and ultrasound-guided procedures should be postponed or cancelled to minimize spread of COVID-19. The definition of urgent or emergent will have to be determined for each practice, although some societies are developing guidelines.³ All patients and, if necessary, one accompanying care giver should be screened using standardized checklists for symptoms including but not limited to fever, shortness of breath, and symptoms of an acute respiratory infection. Alert the patient and accompanying person that only the patient should be allowed into the examination/procedure room unless they require assistance (e.g. language, mobility) from a care giver.

STANDARD AND TRANSMISSION-BASED PRECAUTIONS FOR COVID-19

When planning an ultrasound examination in the context of COVID-19, the following are important steps:

- Where possible, call patients before they arrive to the ultrasound facility to make sure that only urgent or emergent cases remain on the ultrasound schedule, and routine appointments are postponed.
- Prepare and clean the ultrasound room and equipment prior to each examination.²
- During the examination, protect the patient and ultrasound providers (physicians, sonographers, allied professionals).

NOTE: Some of these recommendations may not be applicable and/or achievable in all practices, depending on resources and the supply chain, or reassignment of personnel.

PROTECTING THE PATIENT AND ULTRASOUND PRACTITIONER

Preventing transmission of infection requires all healthcare practitioners to implement both standard and transmission-based precautions, regardless of suspected or confirmed COVID-19. Standard precautions for COVID-19 as outlined by the Centers for Disease Control and Prevention⁴ include:

1. Ultrasound practitioners with specific health problems that place them at greater risk (as detailed by local occupational health guidelines) should have their exposure to patients limited where possible.

2. Ultrasound practitioners should undergo infection control training and fit testing for respirators, if required (for example N95 and FFP3).
3. In order to reduce the risk of transmission, important considerations include: (i) respecting appointed times of scheduled visits, (ii) lengthening the appointment intervals in order to prevent crowding in the waiting room and (iii) minimizing the number of patients in the waiting area, and (iv) spacing the seats to at least 6 feet (2 meters) apart. (v) Patients and caregivers may be given a mask on their arrival to the facility if supply is available.
4. There should be no visitors in the room with the patient during the ultrasound examination unless they are essential to patient care. During the pandemic, it is also reasonable not to allow trainees or students to participate.
5. Every patient should be considered as possibly COVID-19 infected. At the end of the clinic the equipment and room should undergo appropriate cleaning and disinfection.²
6. Hand hygiene: All ultrasound practitioners should perform hand hygiene before and after all patient contact, contact with potentially infectious material (e.g. linen from patient room), and before and after removing personal protective equipment (PPE) including gloves. Hand hygiene should be performed using an alcohol-based hand rub (60-95% alcohol) or washing hands with soap and water for at least 20 seconds. If hands are visibly soiled, use soap and water before the alcohol-based hand rub. Latex-free disposable gloves should be used during the ultrasound examination and changed after each patient.
7. Scanning should, as much as possible, be performed with one hand on the transducer and with the other hand in contact with the keyboard and machine controls. Since aerosols and particulate matter may adhere to crevices in keyboards, the hand contacting the machine would be considered semi-clean. Gel application would be with the semi-clean hand dispensing clean gel.² After the scan, thorough cleaning of the gel bottle² and all touched surfaces should be performed using a low-level disinfectant (LLD).
8. If required to scan a patient in an isolation room, ultrasound practitioners should don personal protective equipment (respirator, goggle or face protective shield, surgical gown and gloves) prior to entry of isolation room, where the level of PPE is set by institutional guidelines.
9. Personal protective equipment (PPE): Any reusable PPE (e.g. gowns) must be properly cleaned and decontaminated. Follow institutional guidelines or guidelines issued by local authorities regarding PPE. Specific PPE recommendations when caring for a patient with suspected or confirmed COVID-19 include:
 - a. Respirator or facemask: As ultrasound practitioners are in close contact with patients, surgical facemasks are essential to offer protection. These must be put on before entry into the patient room or care area. When available, N95 respirators or respirators that offer a higher level of protection should be used instead of a facemask when performing or present for an aerosol-generating procedure, particularly for use in the intensive care unit. It is important to perform hand hygiene before and after removal of the respirator or facemask.
 - b. Eye protection must be put on when entering the patient room or care area. Reusable eye protection (e.g., goggles) must be cleaned and disinfected according to manufacturer's reprocessing instructions prior to re-use. Disposable eye protection should be discarded after

use. An individual risk assessment should be carried out prior to/at the time of providing care to the patient.

- c. **Gloves:** Wearing clean, non-sterile gloves upon entry into the patient room or care area is essential for all ultrasound practitioners. Once the ultrasound examination is complete, remove and discard gloves when leaving the patient room or care area and immediately perform hand hygiene.
- d. **Gowns:** Wearing a clean isolation gown upon entry into the patient room or care area is essential. Reusable gowns should be put in a dedicated container for linen and laundered. Disposable gowns should be discarded after use. If there are shortages of gowns, they need to be prioritized for aerosol-generating procedures and high contact patient care activities that provide opportunities for transfer of pathogens to the hands and clothing.

The AIUM strongly encourages cooperation among employers, sonographers, and manufacturers to promote a safe work environment. The employee should follow institutional protocols. Workflow strategies should allow rest and recovery times during a shift, and sonographers and others who perform ultrasound examinations should implement ergonomically correct scan techniques.⁵

The AIUM also encourages practitioners to use workflow strategies that minimize PPE turnover.

References

¹Adapted from the WFUMB Position Statement: How to perform a safe ultrasound examination and clean equipment in the context of COVID-19

²Guidance on these subjects is available in the AIUM Quick Guide on COVID-19 Protections—Ultrasound Transducers, Equipment, and Gel as well as the previously referenced WFUMB Position Statement.

³Boelig R, Saccone G, Bellussi F, et al. MFM Guidance for COVID-19. Am J Obstet Gynecol MFM 2020.

⁴CDC. Center for Disease Control Interim Infection Prevention and Control Recommendations for Patients with Suspected or Confirmed Coronavirus Disease 2019 (COVID-19) in Healthcare Settings. 2020.

⁵Taken from the AIUM Statement on Preventing Work-related Musculoskeletal Disorders