Australasian College
for Emergency Medicine

Ultrasound Machine Use and Transducer Cleaning on Suspected or Confirmed COVID-19 Patients

Guideline G774

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acem.org.au

Document Review

Timeframe for review:	Every three years, or earlier if required
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Document maintenance:	Department of Policy and Strategic Partnerships

Revision History

Version	Date	Pages revised / Brief Explanation of Revision
01	June 2020	Approved by CAPP

Related documents

ACEM Position Statement on Ultrasound Transducer Cleaning and Disinfection

Related links

ACEP *Guideline on COVID-19: Ultrasound Machine and Transducer Cleaning*

1. Purpose

The ACEM Emergency Department Ultrasound Committee wishes to provide guidance for the cleaning and disinfection of ultrasound equipment in the context of the COVID-19 pandemic.

2. Practice

The following principles should be applied for all use of Ultrasound on potential or confirmed COVID-19 patients.

1. The use of Focused Ultrasound in ED should be limited in this group of patients to necessary procedural guidance, and to cases where Ultrasound is thought highly likely to change management or disposition decisions.

The use of ultrasound on potential or confirmed COVID-19 patients should only be performed after discussion with a FACEM on shift (or the most senior physician at night) and should only be performed by clinicians who are suitably qualified in ultrasound. These patients are NOT appropriate to be learning/practising on. Clinicians should aim to limit their time scanning the patient to the bare minimum for the relevant study or procedure.

2. Suitable PPE should be worn by all clinicians, including the sonologist, as per local guidelines for the relevant risk of the procedure that the patient is undergoing.

It is recommended that, as well as comply with other PPE requirements, the sonologist "double-glove" to minimize the risk of cross-contamination when cleaning the machine after use.

3. If possible, there should be a dedicated machine that is the only machine to be used on potential/confirmed COVID-19 patients.

This machine should have all non-essential items removed from it (including accessories such as consumable holder, consumables, instruction books, etc.). As much of the machine preparation as possible should be carried out before entering the patient's room (gel on the probe, probe cover on, patient's details and machine settings entered). Only the equipment that is necessary should be taken into the room (cannulas, wipes to remove gel, single use sterile gel sachets, or for non-sterile gel - put gel into 20ml syringes rather than take a bottle into the room which then requires the whole bottle to be discarded). A daily log should enable documentation of machine cleaning.

4. Probe covers should be used for all probes for this group of patients.

Sterile probe covers should be used for any ultrasound guided procedures, or non-sterile covers for any ultrasound use on intact skin. The probes, cords and machine (including handle, touchscreen, probe holders, etc.) should undergo Low Level Disinfection (LLD) with appropriate wipes, both before and after every use. After use, all gel should be removed from the probe, cords, screen, etc. prior to LLD being carried out.

5. For potential aerosolisation generating procedures, the use of ultrasound should be limited even further

If it is deemed necessary to have the ultrasound machine in the room, attempts at covering the machine as well as the probes, as much as practicable, should be made. This may include draping the machine in translucent bags or dedicated machine covers. These covers must be removed prior to exiting the patient's room and disposed of in the appropriate clinical waste bin. If no such cover for the machine is available, then after probe cover removal, cleaning and LLD of the probes and cords, ALL surfaces on the Ultrasound machine must be disinfected with appropriate LLD wipes, as per manufacturer's instructions.

6. High-level disinfection (HLD) is not required when using ultrasound probes on intact skin.

Please refer to ACEM's position statement on Ultrasound Cleaning and Disinfection. There is currently no evidence that HLD offers benefit for disinfection from COVID-19.

- For ultrasound use during procedures, as stated previously, a sterile probe cover should be used followed by removal of any gel, then LLD as per manufacturer's instructions.

7. Handheld devices must be covered with translucent plastic covers for the touchscreen, cords and probe as much as is practicable.

After these covers are removed (within the patient's room) and disposed of in the appropriate clinical waste bin, the probe must have any gel removed, and then all components must undergo LLD.

Protection and disinfection of ultrasound machines during COVID-19

Outside patient room	Inside patient room	Outside patient room
Put gloves on	Scan patient	Discard gloves
Remove ALL extraneous materials from system (unused probes/cords)	When finished scanning move more than two metres away from the patient.	Perform hand hygiene
Clean system with wipes *	Remove/discard probe cover and any equipment used. If used, remove system cover. Do not touch uncovered system or probe with gloved hands	Discard gown, keep mask and eye shield on
Apply gel to probe face	Remove outer pair of gloves	Perform hand hygiene
Apply protective cover(s) to probe(s). Secure with elastic bands.	Remove gel with tissues or paper towels. Clean entire system and probes with LLD wipes and discard.	Wipe down entire system and probes with LLD wipes and allow to air dry
If available, apply protective cover to system. Place any necessary tissues/paper towels, and LLD wipes under the cover	Open door and remove system from room	Perform hand hygiene
Don PPE with two pairs of gloves		Doff remaining PPE
Bring system and gel into the room **		Perform hand hygiene

* Wipes should be appropriate low-level disinfection wipes that meet local guidelines for cleaning as well as ultrasound manufacturer's guidelines. These should not be alcohol-based wipes (including isopropyl alcohol) as these can damage the probes.)

** Sterile gel packs, or if non-sterile gel only needed, can be taken in pre-filled 10 or 20ml syringes, so that gel bottles don't come into the room and then need to be discarded. Don't bring any excess equipment as it will need to be discarded.

Notes

a Focused ultrasound in ED may cause harm if strict infection control protocols are not followed and if ultrasound is used when it is not absolutely necessary. The ultrasound machine, user and gel can all act as potential fomites.

b If probe covers are not available (for non-sterile procedures) small clear garbage bags, sandwich bags or similar can be used with elastic bands. Sterile probe covers (and sterile gel) MUST be used for all sterile procedures.

c If system covers are not available, can use large clear garbage bags (definitely worth trying if using ultrasound during potential aerosol generating procedures).

d If system covers not used, you must ensure that cleaning of ALL non-covered ultrasound surfaces is carried out meticulously with LLD wipes- ideally being wiped over twice.

e If handheld devices are used, same principles apply. Appropriate covers for both the probes and the touchscreen must be used. Same preparation outside the room and removal of covers and cleaning process to be followed. Handheld devices, if available, may be preferred over cart-based systems, as they are easier to ensure full coverage is applied.

Adapted from: *Protection and disinfection of a cart-based ultrasound system during COVID-19 pandemic*
Canadian Point Of Care Ultrasound Society March 27 2020

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