

Handling, Cleaning and Disinfecting Mobile Devices such as Ultrasound Scanners, X-Ray and Electrocardiogram (ECG) Equipment Used for Patients on Contact and Droplet Precautions including COVID-19 Patients

Note: These best practice recommendations were developed from materials provided by Dr. I Ma, Dr. E. Rennert-May, Dr. R. Somayaji, Dr. A. Lam, Dr. M. Haager and the University of Alberta.

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Best practice recommendations

Refer to [Spaulding Classification](#) for reprocessing details about non-critical, semi-critical and critical devices.

These infection prevention and control (IPC) recommendations are for handling, cleaning and disinfecting non-critical mobile devices used on intact skin of patients on [contact and droplet](#) precautions including COVID-19 patients. This document **does not** cover semi-critical devices which require use of sterile sheaths and high-level disinfection.

This document is divided into the following topics:

1. Recommendations about handling mobile devices in the room
2. Instructions for cleaning and disinfecting:
 - a) Steps for cleaning and disinfecting a hand-held device;
 - b) Steps for cleaning and disinfecting a mobile device.
3. [Appendix A](#): Summary of hand-held and mobile devices, disinfectant wipes and contact times

To learn more about donning and doffing PPE refer to the AHS IPC [Contact and Droplet Personal Protective Equipment \(PPE\) for COVID-19 \(module\)](#). The University of Calgary also provides a course on [module specific to handling portable ultrasound devices](#).

1. Recommendations for handling mobile devices in the room

1.1 Considerations

- Limit evaluations to those that will benefit the patient, e.g., inform diagnosis or treatment.
- Limit the number of staff entering the room, e.g., integrate ultrasound evaluation with concurrent patient care tasks.
- Limit supplies taken into the patient room:

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- Take only the equipment needed for the procedure into the patient room. Remove all unnecessary equipment from the mobile device such as transducers, trays, baskets and brackets prior to use.
- Consider using a hand-held device as these devices are easier to clean and disinfect. Refer to [Section 2](#) for cleaning and disinfection instructions and [Appendix A](#).

1.2 Before entering the room

- Assemble necessary supplies:
 - Take only clean devices into the room. If the device may be contaminated, e.g., not stored in a clean location, clean and disinfect the device before taking it into the room. Once the device is clean, maintain it as clean, e.g., do not allow it to touch contaminated surfaces. Specific questions can be addressed by local IPC.
 - Obtain a protective cover if it will be needed, i.e., device may come into direct contact with blood and body fluids and non-intact skin.
 - If medical gel is required for the procedure, select a single-use gel or the smallest suitable size multi-use gel. If a multi-use gel is used, leave it in the room until the patient is discharged. Refer to [IPC medical gels](#) for more details.
 - Check that compatible [ready-to-use \(RTU\) disinfectant wipes](#) are available upon entry and exit from the room.
 - Obtain clean hand towels, if required.
 - If specimen collection is required, have sufficient patient labels ready to put on specimen containers.
- Do not bring documentation materials into the room.
- [Hand hygiene](#) and [donning PPE](#) personal protective equipment (PPE) required for [contact and droplet](#) precautions, i.e., gown, mask, face shield/eye protection, and gloves.
- Bring the hand-held or mobile device into the patient room.

1.3 While in patient room

- Perform the procedure.

1.4 After procedure is completed

Note: IPC protocols for [doffing PPE](#) and cleaning and disinfecting devices within the patient room or outside of the patient room vary depending on unit, e.g., anteroom or no anteroom, main corridor, outside patient area etc. Follow established IPC protocol for the site. Examples of cleaning protocols include:

- Remove and discard disposable supplies e.g., ECG electrode patches, protective covers.
- Wipe off all gel and visible soil such as blood and body fluids from the device with an [RTU disinfectant wipe](#) or towel.
- If a specimen has been obtained, place labelled specimen container into a specimen bag and place this bag into another specimen bag outside the room, e.g., ask helper or nurse outside the room to assist with holding the second specimen bag.
- Move the device at least 2m away from the patient in an area where cleaning and disinfection can be performed. Place soiled hand-held devices on a solid surface to prevent damage, e.g., on a tray, in a basin or directly onto a countertop.
- Clean the hand-held or mobile device following instructions on [Section 2](#).
- Place the clean device on a clean surface or pass to a helper/nurse.
- Exit room with the device.

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- Store the device in a clean location.

2. Instructions for cleaning and disinfecting

2.1 Steps for cleaning and disinfecting a hand-held device

- Use an [RTU disinfectant wipe](#) to clean and disinfect the device.

Note: some RTU disinfectant wipes may not require the use of gloves while others do. Refer to and follow label instructions. Refer to [Appendix A](#).

- Inspect the device for damage such as cracks.
- Clean the device with special attention to the probe head.
- Wipe all device surfaces from the least-soiled to the most-soiled areas.
- Keep the surfaces wet for the contact time recommended by the manufacturer, i.e., the minimum time that the disinfectant must remain wet on the surface for it to be effective.
- Put the hand-held device on a clean surface.
- Allow the device to dry completely.
- Remove gloves and perform hand hygiene.
- Store the device in a clean area according to the manufacturer's instructions for the device.

2.2 Steps for cleaning and disinfecting a mobile device

- Use an [RTU disinfectant wipe](#) to clean and disinfect the device.

Note: some RTU disinfectant wipes may not require use of gloves while others do. Refer to and follow label instructions. Refer to [Appendix A](#).

- Inspect the device for damage such as cracks.
- Wipe all surfaces from the least-soiled to the most-soiled areas including:
 - power cord;
 - stand;
 - lid;
 - screen, keyboard and control panel, e.g., exposure switches etc.;
 - components such as transducer cord, holder, and head;
 - ECG components such as trunk cables, leads and electrodes or imaging receptors.
- Keep the surfaces wet for the contact time recommended by the manufacturer, i.e., the minimum time that the disinfectant must remain wet on the surface for it to be effective.
- Allow the device and surfaces to dry.
- Remove gloves and perform hand hygiene.
- Store the device in a clean area and according to manufacturer's instructions for the device
- Refer to [IPC Storage of Clean and Sterile Supplies in Clinical Areas](#) for more details.

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3. Appendix A: Summary of hand-held and mobile devices, disinfectant wipes and contact times

Notes: This is a reference table only. Follow manufacturer’s instructions and labels as product contact time vary. AHS is experiencing disinfectant supply challenges during the COVID-19 pandemic. Check with unit manager about product substitutions if usual disinfectant products are not available.

Device Company, Model		Recommended Ready-to-Use Disinfectant wipe (company)	Active Ingredient	Contact Time (minutes)
Full-sized	Sonix Touch	Oxivir TB™	Hydrogen Peroxide	1
	Sonosite X-Porte	Caviwipes (Metrex Research)	Quaternary Ammonium; EtOH; Isopropanol	3
		Sani-Cloth® Plus Germicidal Disposable Wipe (Professional Disposables International Inc, PDI)	Quaternary Ammonium	3
	Sonosite Edge II	Caviwipes™ (Metrex Research)	Quaternary Ammonium; EtOH; Isopropanol	3
		Sani-Cloth® Bleach Germicidal Disposable Wipe (Professional Disposables International Inc, PDI)	Sodium Hypochlorite	1
		Sani-Cloth® Plus Germicidal Disposable Wipe (Professional Disposables International Inc, PDI)	Quaternary Ammonium	3
		Oxivir TB™ is approved for use on the Edge II but not the X-Porte.	Hydrogen Peroxide	1
For Diagnostic Imaging (DI) owned ultrasound scanners consult with department regarding disinfectant products				
Hand-Held Full size	GE V-Scan	Caviwipes™ (Metrex Research)	Quaternary Ammonium; EtOH; Isopropanol	3
	Biocon Cubescan Bladder Scanner	Kimtech Wipe™ 70% Alcohol or any other disinfectant wipe	Isopropyl alcohol 70%	
	Sonosite: iViz MTurbo Sonoheart Titan	Oxivir TB™ (Virox Technologies Inc.)	Hydrogen Peroxide	1
		Sani-Cloth® Plus Germicidal Disposable Wipe (Professional Disposables International Inc, PDI)	Quaternary Ammonium	3
	Butterfly iQ	Oxivir TB™ (Virox Technologies Inc.)	Hydrogen Peroxide	1
		Caviwipes™ (Metrex Research)	Quaternary Ammonium; EtOH; Isopropanol	3
		Sani-Cloth® Plus Germicidal Disposable Wipe (Professional Disposables International Inc, PDI)	Quaternary Ammonium	3
	Philips	Oxivir TB™	Hydrogen Peroxide	1

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Device Company, Model		Recommended Ready-to-Use Disinfectant wipe (company)	Active Ingredient	Contact Time (minutes)
	Lumify	Caviwipes™ (Metrex Research)	Quaternary Ammonium; EtOH; Isopropanol	3
		Sani-Cloth® Plus Germicidal Disposable Wipe (Professional Disposables International Inc, PDI)	Quaternary Ammonium	3
		Oxivir TB™	Hydrogen Peroxide	1
	Verithon BVI Bladder Scanner	Any AHS RTU disinfectant wipe	Sodium Hypochlorite or Alcohol 70%	3
	Nicolet Biomedical Elite 200	Kimtech Wipe™ 70% Alcohol	Isopropyl alcohol 70%	3
ECG	Monitors and touch screens, keyboards, and control panel	Kimtech Wipe™ 70% Alcohol – no bleach	Isopropyl alcohol 70%	3
Portable X-Ray devices	Carestream DRX mobile, cassettes and detectors	Cavi Wipe™	70% alcohol	3
		Oxivir Tb™ (excluding cassettes), or	Hydrogen peroxide	1
		Sani Cloth™	Sodium hypochlorite	1
	Fuji cassettes / detectors	CaviWipe™	70% alcohol	3
	Shimadzu mobile (all models)	CaviWipe™	70% alcohol	3
			Maximum 6% sodium hypochlorite	1
	GE AMX 4/4+ Optima XR 200	Sani Cloth™	Sodium hypochlorite	1
Drive handles and hand switch	Isopropyl alcohol or accelerated hydrogen peroxide	Isopropyl alcohol 70% or Hydrogen peroxide 15-40%	3	

*SonoSite has issued a statement that given the urgency of the COVID-19 pandemic: SonoSite will support our North American customers in this state of emergency if they decide to use a cleaner or disinfectant currently not listed, or not approved on the SonoSite Cleaners and Disinfectants Tool, as long as the disinfectants are hospital grade and Health Canada approved.

The full statement is available at: https://www.sonosite.com/sites/default/files/M08011_Rev_A_COVID-19_North_America.pdf?elqTrackId=0e314754e9c24a1a9ea4aa756e6baccb&elqaid=3961&elqat=2

For a list of compatible wipes with SonoSite systems, see: <https://www.sonosite.com/ca/support/cleaners-disinfectants>

Additional notes

- Based on the above statement, Oxivir TB™ RTU liquid with dry wipes may be an acceptable alternative for the Edge II and X Porte, and Caviwipes™ an acceptable alternative for the iViz™.
- [Interim Disinfectant Substitution Products during COVID-19 Pandemic](#) provides more information about AHS disinfectant substitutions in use during the pandemic.
- Do not use alcohol-based hand rub (ABHR) to disinfect medical devices. ABHR is not an equipment disinfectant and may cause damage to the device.
- If the recommended disinfectant product is not available, consult with your area leader for further direction.

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