

Diagnostic Imaging Services

Guide to Conduct Hand Hygiene Reviews



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If you have questions about this guide or about hand hygiene reviews in general, you can email hand.hygiene@ahs.ca or contact your zone [Project Manager](#).



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Diagnostic Imaging (DI) Services can be encountered both in the DI department (an outpatient department) and on inpatient units. DI personnel perform a diverse range of procedures and all 4 Moments for Hand Hygiene can be observed.

The services provided by DI personnel (in the DI department or on a medical inpatient unit) include, but not limited to and may vary by site:

- Computed Tomography (CT)
- Magnetic Resonance Imaging (MRI)
- Ultrasound
- General Radiography (X-ray)
- Nuclear Medicine
- Fluoroscopy
- Angiography
- Interventional Radiography

Some commonly observed DI Services disciplines include, but are not limited to:

- Diagnostic Medical Sonographer (Ultrasound tech)
- Magnetic Resonance Imaging (MRI) Technologist
- Radiology Technologist (Medical Radiation Technologist (X-ray tech))
- Nuclear Medicine Technologist
- Combined Laboratory and X-ray Technologist (CLXT)

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Observation point: CLXTs are more commonly employed in rural areas. If a CLXT is observed performing a phlebotomy and an X-ray during a single patient interaction (e.g. phlebotomy and chest X-ray) the CLXT will be recorded using the Lab Services provider group in the Clean Hands System. If the CLXT is only performing an X-ray, the CLXT should be recorded under the Diagnostic Therapeutic Technologists provider group. Please refer to Laboratory Services section for further information.

Other healthcare providers that a reviewer may see in a DI department are:

- physicians (Radiologists, Residents)
- nurses (DI nurse (RN, LPN), Healthcare Aide, Nursing Attendant)
- rehabilitation staff (Speech Language Pathologists)
- porters
- service aides
- student - other

Please refer to Section 4.1 Healthcare Provider Groups to help correctly categorize healthcare providers into their appropriate healthcare provider group.

The 4 Moments for Hand Hygiene can be observed within the DI department, medical inpatient units, and outpatient settings. The following are some examples that reviewers may observe; **the list is not intended to be all-inclusive:**

Moment 1 (BEF-PAT/ENV)

- before direct patient contact
- before positioning a patient
- before contact with a patient's equipment such as a wheelchair, walker, crutches, or stretcher
- after contacting a door handle or curtain, before contacting a patient

Moment 2 (BEF-ASP)

- before donning PPE (i.e. gloves)
- before accessing clean linens and supplies
- before starting an IV
- before injecting imaging dye or contrast
- before an ultrasound guided biopsy
- before feeding a patient

Moment 3 (AFT-BFL)

- After doffing gloves used to contact blood and/or body fluids

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- after starting an IV
- after injecting imaging dye or contrast
- after contact with linens soiled with blood and/or body fluids

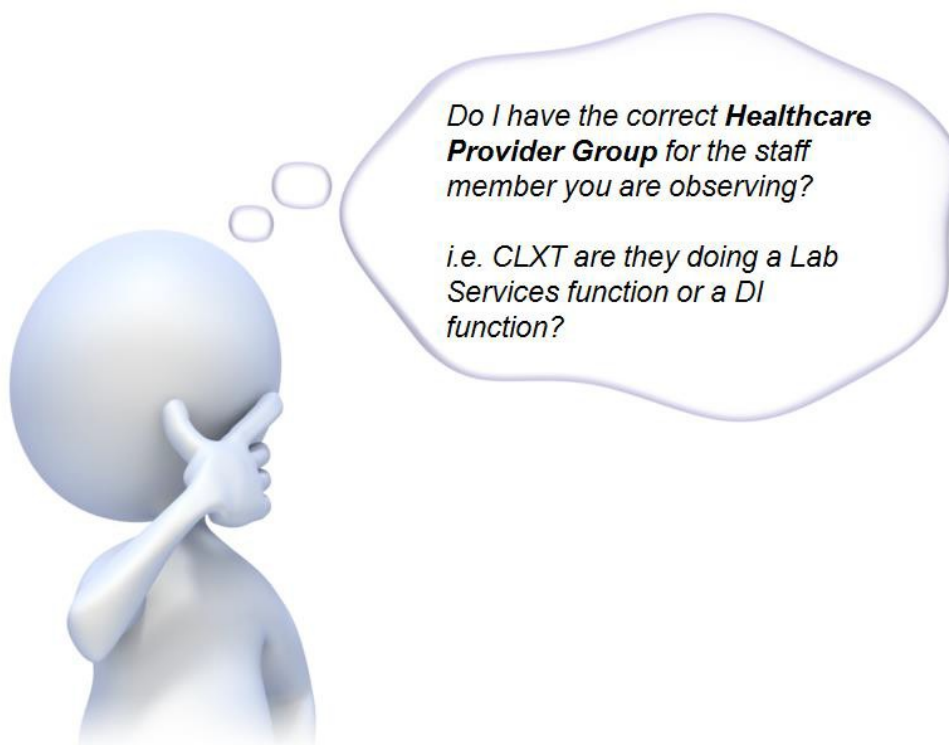
Moment 4 (AFT-PAT/ENV)

These examples only apply if they are the last point of contact with the patient/patient environment.

- after direct patient contact
- after positioning or transferring a patient
- after contact with a patient and before contacting a door handle or curtain
- after doffing gloves used for patient care

Observation point: DI equipment is considered part of the patient environment until the procedure is completed for that patient. DI equipment is cleaned and low-level disinfected between patients. X-ray equipment such as consoles and cassettes are cleaned and low-level disinfected after each patient use. This does not include exposure buttons and computer keyboards unless cleaned between patients.

Observation point: Exposure buttons and computer keyboards are not part of the patient environment. Often during an X-ray the X-ray tech may need to move rapidly between the exposure button and keyboard to collect multiple images. If the exposure button is cleaned and disinfected between patients, the exposure button and keyboard would be considered part of the patient environment. This process reduces the amount of hand hygiene required during a patient interaction. It is important for reviewers to check with the DI department staff to understand what the routine process is at the facility.



Original date:
Revised date:

Diagnostic Imaging Services – Scenario 1 (X-ray)

An x-ray technologist performs hand hygiene, dons gloves and helps position the patient onto the table. The x-ray tech leaves the room to capture the image by pressing the exposure button. The x-ray tech returns to re-position the patient and then leaves the room once again to capture another image. The x-ray tech announces the patient can leave. The x-ray tech doffs their gloves, performs hand hygiene with ABHR and opens the door to go for a break.



HCP – Diagnostic & Therapeutic Technologists (X-ray Tech)

Moment 2 (wash/ABHR), gloves; Moment 1 (wash/ABHR), gloves; Moment 4 (miss), gloves;
Moment 1 (miss), gloves; Moment 4 (miss), gloves

Rationale:

- Moment 2 (BEF-ASP) is recorded as compliant when the x-ray tech performs hand hygiene before donning gloves. Gloves are considered clean supplies.
- Moment 1 (BEF-PAT/ENV) is recorded as compliant when the x-ray tech contacts the patient to position them. This is a combined moment with Moment 2 above (see Section 3.4 Combined Moments).
- Moment 4 (AFT-PAT/ENV) is recorded as a miss because the x-ray tech contacted the exposure button with the same gloves used to contact the patient (patient environment).
- Moment 1 (BEF-PAT/ENV) is recorded as a miss because the x-ray tech contacted the patient with the same gloves used to contact the exposure button (healthcare environment).
- Moment 4 (AFT-PAT/ENV) is recorded as a miss because the x-ray tech contacted the exposure button with the same gloves used to contact the patient.
- No moment can be recorded when the x-ray tech doffs their gloves and opens the door. The x-ray tech had no further contact with the patient or the patient environment.

Exploring Possibilities:

- If the exposure button was cleaned and not touched between patients it can become part of the patient environment. The x-ray tech would not be required to perform hand hygiene between positioning the patient and contacting the exposure button after initial hand hygiene before the first contact with the patient.

Diagnostic Imaging Services - Scenario 2 (Portable Image)

An x-ray technologist comes to an inpatient unit to perform a portable image on a patient. The x-ray tech performs hand hygiene, opens the curtain and positions the patient. The x-ray tech steps outside the room without touching the curtain or door and presses the exposure button. The x-ray tech performs hand hygiene, dons gloves, and cleans the portable imaging unit in the hallway.



HCP – Diagnostic & Therapeutic Technologists (X-ray Tech)

Moment 1 (miss); Moment 4 (wash/ABHR); Moment 2 (wash/ABHR), gloves

Rationale:

- Moment 1 (BEF-PAT/ENV) is recorded as a miss because the x-ray tech contacted the curtain (healthcare environment) and then positioned the patient.
- Moment 4 (AFT-PAT/ENV) and Moment 2 (BEF-ASP) are recorded as compliant. This is as a combined moment; however, they should be recorded separately. The x-ray tech performed hand hygiene after contacting the patient and completing the portable x-ray and prior to accessing clean gloves.

Exploring Possibilities:

- If the x-ray tech had not contacted the curtain prior to contacting the patient Moment 1(BEF-PAT/ENV) would be recorded as compliant.

Diagnostic Imaging Services - Scenario 3 (Computed Tomography - CT)

A registered nurse (RN) performs hand hygiene, dons gloves and accesses IV supplies. The RN enters the room (without touching anything) and starts the patient's IV. Once the IV has been started, the RN doffs gloves, performs hand hygiene and exits the room to return to the charting area.



HCP – Nurses (RN)

Moment 2 (wash/ABHR), gloves; Moment 1 (wash/ABHR), gloves;
Moment 3 (wash/ABHR), gloves; Moment 4 (wash/ABHR), gloves

Rationale:

- Moment 2 (BEF-ASP) is recorded as compliant when the RN performed hand hygiene before accessing clean supplies, donning gloves and contacting the patient to start the IV.
- Moment 1 (BEF-PAT/ENV) is recorded as compliant as the RN's first point of contact with the patient is to start the IV. This is a combined moment with Moment 2 above (see Section 3.4 Combined Moments).
- Moment 3 (AFT-BFL) is recorded as compliant when the RN performed hand hygiene after doffing gloves used to start the IV.
- Moment 4 (AFT-PAT/ENV) is recorded as compliant when the RN performed hand hygiene before leaving the room. The RN's last point of contact with the patient was the IV. This is a combined moment with Moment 3 above.

Exploring Possibilities:

- If the RN contacted the patient environment with the same gloves used for starting the IV (i.e. pump used for contrast injection) this would be recorded as a missed opportunity for Moment 3 (AFT-BFL) because there is a potential of contaminating the patient environment with bodily fluids.

Diagnostic Imaging Services - Scenario 4 (Fluoroscopy with Speech Language Pathologist)

A patient has been seated in the x-ray room by an x-ray technologist, no contact was made. A speech language pathologist (SLP) performs hand hygiene and dons gloves. The SLP prepares food of varying consistencies and feeds the patient the first item. The x-ray tech takes the images with no patient contact. The SLP continues the process with the remaining food items and once completed wipes the patient's mouth. The SLP doffs gloves, performs hand hygiene and goes back to the desk to chart.



HCP – Rehabilitation (SLP)

Moment 2 (wash/ABHR), gloves; Moment 1 (wash/ABHR), gloves;
Moment 3 (wash/ABHR), gloves; Moment 4 (wash/ABHR), gloves

HCP – Diagnostic & Therapeutic Technologists (X-ray Tech)

No recordable moments

Rationale:

Speech Language Pathologist (SLP)

- Moment 2 (BEF-ASP) is recorded as compliant as the SLP performed hand hygiene before donning gloves, prepares the food and begins feeding the patient. This is recorded as a single Moment 2.
- Moment 1 (BEF-PAT/ENV) is recorded as compliant as the SLP's first point of contact with the patient is to wipe the mouth. This is a combined moment with Moment 2 above (see Section 3.4 Combine Moments).
- Moment 3 (AFT-BFL) is recorded as compliant when the SLP performed hand hygiene after doffing gloves used to wipe the patient's mouth (body fluids).
- Moment 4 (AFT-PAT/ENV) is recorded as compliant as wiping the patient's mouth was the SLP's last point of contact with the patient before contacting the desk (healthcare environment). This is a combined moment; with Moment 3 above.

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X-ray Tech

- Since no contact was made there were no moments to be recorded.

Exploring Possibilities:

- If the x-ray tech had made contact with the patient/patient environment during the encounter there would be recordable moments.

Diagnostic Imaging Services - Scenario 5 (Ultrasound Guided Liver Biopsy)

A radiologist enters an exam room, performs hand hygiene and performs an ultrasound to locate a biopsy site. Once the site has been identified, the radiologist performs hand hygiene and dons sterile gloves. The registered nurse (RN), who is charting, dons gloves, preps the patient's skin and after prepping the skin remains standing at the bedside. The radiologist drapes the patient and proceeds to puncture the tissue and take the biopsy. Once the biopsy has been completed, the RN doffs gloves, performs hand hygiene, accesses a dressing and presents it to the radiologist. The radiologist covers the site, doffs gloves, performs hand hygiene and opens the door to exit the room. The nurse remains in the room with the patient.



HCP – Nurses (RN)

Moment 2 (miss), gloves; Moment 1 (miss), gloves; Moment 2 (wash/ABHR)

HCP – Physicians (Radiologist)

Moment 1 (wash/ABHR); Moment 2 (wash/ABHR), gloves; Moment 3 (wash/ABHR), gloves;
Moment 4 (wash/ABHR)

Rationale:

Nurse

- Moment 2 (BEF-ASP) is recorded as a miss when the RN donned gloves without performing hand hygiene.
- Moment 1 (BEF-PAT/ENV) is recorded as a miss when the RN did not perform hand hygiene before patient contact (i.e. skin prep). This is a combined moment with Moment 2 above (see Section 3.4 Combined Moments).
- Moment 2 (BEF-ASP) is recorded as compliant when the RN performed hand hygiene before accessing the dressing (clean supplies).

Radiologist

- Moment 1 (BEF-PAT/ENV) is recorded as compliant when the radiologist performed hand hygiene before contacting the patient.
- Moment 2 (BEF-ASP) is recorded as compliant when the radiologist performed hand hygiene before donning gloves and performing a biopsy (aseptic procedure).
- Moment 3 (AFT-BFL) is recorded as compliant when the radiologist performed hand hygiene after completing the biopsy which is a procedure with a body fluid exposure risk.
- Moment 4 (AFT-PAT/ENV) is recorded as compliant when the radiologist performed hand hygiene after performing the biopsy and before opening the door to exit the room. This is a combined moment with Moment 3 above.

Exploring Possibilities:

- If the RN had contact with the healthcare environment after cleansing the skin Moment 4 (AFT-PAT/ENV) could be observed.

Diagnostic Imaging Services - Scenario 6 (Magnetic Resonance Imaging - MRI)

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A magnetic resonance imaging (MRI) technologist is positioning a patient in the MRI suite and performs hand hygiene upon exiting the room. The MRI tech sits at the control station and begins the procedure. Once the procedure is complete, the MRI tech enters the room, performs hand hygiene and assists the patient off the table and out of the room without touching anything. The MRI tech returns to the room and dons gloves to clean the patient space to prepare for a new patient.



HCP – Diagnostic & Therapeutic Technologists (MRI Tech)

Moment 4 (wash/ABHR); Moment 1 (wash/ABHR); Moment 2 (miss), gloves

Rationale:

- As the procedure was in process (i.e. positioning the patient) when the review started and the reviewer does not know if the MRI tech performed hand hygiene before the procedure, therefore, no Moment 1 (BEF-PAT/ENV) can be recorded.
- Moment 4 (AFT-PAT/ENV) is recorded as compliant when the MRI tech performed hand hygiene after contacting patient and before exiting the room and contacting the control station.
- Moment 1 (BEF-PAT/ENV) is recorded as compliant when the MRI tech performed hand hygiene before contacting patient to assist them off of the MRI table and walking them out of the room.
- Moment 2 (BEF-ASP) is recorded as a miss. The MRI tech did not perform hand hygiene before accessing clean gloves after having patient contact.
- Although there would be more hand hygiene observations associated with the cleaning of patient equipment, it is not within the scope of the hand hygiene reviewer and therefore no recordable moments.

Exploring Possibilities:

- If the MRI tech had made contact with the control station (healthcare environment) after assisting the patient out of the MRI suite a Moment 4 (AFT-PAT/ENV) would be observed.

Take away message:

- The reviewer must be certain a moment has occurred in order to record it.