

**Background**

Manitoba Health, Seniors and Active Living (MHSAL) Quality and Patient Safety Council has identified hand hygiene compliance as a patient safety indicator as part of the larger new five year framework to enhance patient safety. One of the key objectives of the framework is reporting publicly on patient safety indicators such as health care hand hygiene compliance.

In order to achieve this objective, a working group was formed to develop standards and tools for hand hygiene compliance monitoring data collection and reporting. A charter was developed and supported by the MHSAL Quality and Patient Safety Council identifying the following goals:

- Create/adopt provincially standardized definitions to audit for hand hygiene compliance.
- Identify program specific standardized data collection methodology according to the 4 Moments for Hand Hygiene.
- To align with existing national resources/data bases and validated tools.
- Determine a provincial reporting structure of hand hygiene compliance indicators
- Identify informational resources to improve hand hygiene compliance rates.

Scope of the project was identified to include acute care, long-term care and select long-term geriatric mental health facilities. This would include all regional health authorities (RHAs) and provincial health organizations (PHSOs).

Out of scope for the project included:

- Organizations that do not fit into the above descriptions (i.e. community care).
- Develop a communication strategy to inform relevant stakeholders, including the public, of the short and long term goals.
- Developing a stage implementation plan.
- Developing a reporting process for the RHAs and PHSOs.
- Data collection tool standardization.

The following is the best practice document developed by the working group. Content was reviewed and endorsed by the Quality and Patient Safety Council on April 5, 2017. This document is to provide information and guidance for the RHAs/PHOs on the best practices to perform hand hygiene compliance monitoring in the facilities/organizations.

**Introduction**

The single most common way of transferring the microorganisms that cause healthcare-associated infections (HAIs) is on the hands of health care workers (HCWs). While working in the health care environment, HCWs move from patient to patient and room to room while providing care. This movement provides many opportunities for the transmission of microorganisms on hands if hand hygiene is not performed. Monitoring hand hygiene practices is necessary to improve hand hygiene adherence rates and, in turn, reduce HAIs.

Following effective hand hygiene practices has long been recognized as the most important way to reduce the transmission of pathogens in health care settings. Many studies, however, have shown adherence to hand hygiene recommendations remains poor, and improvement efforts frequently lack sustainability. World Health Organization (WHO) hand hygiene guidelines, Canadian Patient Safety

Institute (CPSI), Accreditation Canada recommend all health care organizations and settings monitor health care workers' adherence to hand hygiene recommendations.

Monitoring hand hygiene adherence may assist facilities/organizations in evaluating effectiveness of their infection prevention and control interventions and making further improvements based on this information. Results are intended to improve patient safety, health care worker understanding and compliance with established policies and procedures. Audits are not intended to determine specific individual performance, rather attempt to determine facility and health care worker category performance.

This is a best practice document for RHAs/PHSOs to perform hand hygiene compliance monitoring and subsequently report in a consistent manner across the province in accordance with these recommendations.

This document is intended to guide RHAs/PHSOs in the practice of hand hygiene compliance monitoring and reporting:

- Understand and apply the 4 Moments for Hand Hygiene in health care settings.
- Learn and understand the terms and definitions commonly used in hand hygiene practice and auditing.
- Train auditors on the auditing process.
- Provide informational resources for improvement of hand hygiene practices.
- Outline the reporting requirements at the provincial level including.
  - Providing recommendations for additional reporting abilities at the RHA/PHSO level.

### **Definitions:**

#### **Alcohol-Based Hand Rub:**

An alcohol-containing (60-90%) preparation (liquid, gel or foam) designed for application to the hands to kill or reduce the growth of microorganisms. Such preparations contain one or more types of alcohol with emollients and other active ingredients.

#### **Asepsis:**

The absence of pathogenic (disease-producing) microorganisms.

#### **Aseptic Technique:**

The purposeful prevention of transfer of microorganisms from the patient's body surface to a normally sterile body site or from one person to another by keeping the microbe count to an irreducible minimum. Also referred to as sterile technique.

#### **Body Fluids:**

Any blood or body fluid/tissue, vaginal secretion, seminal secretions, cerebral spinal fluid, synovial fluid, pleural fluids, peritoneal fluids, pericardial fluid, amniotic fluid, non-bloody saliva; and tears, nasal secretions, sputum, sweat, vomitus and urine and feces.

#### **Hand Hygiene:**

A comprehensive term that applies to hand washing, hand antisepsis and to actions taken to maintain healthy hands and fingernails.

Hand Hygiene Moment (or Indication):

The 4 Moments for Hand Hygiene are based on the risk of microorganism transmission when a health care worker is interacting with a patient. A hand hygiene indication is the reason **why** hand hygiene is necessary at a given moment. It is justified by a **risk of organism transmission** from one surface to another.

Hand Hygiene Opportunity:

The need to perform hand hygiene, whether there are single or multiple indications (moments). Hand hygiene action must correspond to each opportunity. One hand hygiene opportunity can also arise from multiple moments (combined moments) resulting in one single act of hand hygiene being compliant for multiple hand hygiene moments.

Hand Hygiene Review/Audit:

A process using standardized methodology (e.g. direct observation) to observe and record the hand hygiene practices of health care providers according to the 4 Moments for Hand Hygiene. This process is completed by trained hand hygiene reviewers. The goal is to provide consistent and statistically significant data regarding hand hygiene compliance to inform hand hygiene improvement initiatives.

Handwashing:

A process for the removal of visible soil/organic material and transient microorganisms from the hands by washing with soap and water; also referred to as hand cleansing.

Health Care Organizations:

The organizational entity that is responsible for establishing and maintaining health care services provided by HCWs and other staff in one or more health care settings throughout the health care continuum.

Health Care Workers (HCWs):

Individuals who provide health care or support services such as nurses, physicians, dentists, nurse practitioners, paramedics and sometimes emergency first responders, allied health professionals, unregulated health care providers, students, volunteers and housekeeping staff

Patient:

For the purposes of this document, the term “patient” will include those receiving health care, including patients, clients or residents.

Personal Protective Equipment (PPE):

One element in the Hierarchy of Controls. Personal protective equipment consists of gowns, gloves, masks, facial protection (i.e. masks and eye protection, face shields or masks with visor attachment) or respirators that can be used by a HCW or other staff to provide a barrier that will prevent potential exposure to infectious microorganisms.

**Plain Soap:**

Basic detergent products that do not contain antimicrobial agents, or contain very low concentrations of antimicrobial agents which are effective solely as preservatives.

**Point of Care:**

Refers to place where a patient receives health care from a HCW or other staff. Point of care incorporates three elements being present at the same time: the patient, the HCW and an interaction that could result in transmission of an infectious agent.

**Sterile Technique:**

See aseptic technique.

**Hand Hygiene Adherence**

Hand Hygiene is the action of cleaning hands. Hand hygiene adherence is the performance of hand hygiene when indicated. There are three main methods of determining hand hygiene adherence, each with its own advantages and disadvantages:

- Direct observation
- Measuring product use
- Conducting surveys

Direct observation of hand hygiene behavior of health care workers is considered the “gold standard” of measurement methods. Measuring product use and conducting surveys are not considered as reliable for measuring hand hygiene compliance but can be used as an additional component in certain circumstances. Since these alternatives are not as robust as direct observation, if used, they should be combined (two or more) to give a more accurate picture of organizational compliance with accepted hand hygiene practices.

Direct observation involves directly watching and recording the hand hygiene behavior of health care workers in the physical environment. It allows you to see which hand hygiene products are used, the thoroughness of cleansing, the tools and techniques used for drying, the use of gloves and whether health care workers are performing hand hygiene whenever there is an opportunity to do so. This method allows observers to see who is/isn't adhering to guidelines and provide feedback according to organization's processes. Additionally, direct observation allows health care workers to evaluate facility-specific factors that may influence hand hygiene guideline adherence.

Direct observation can be labor intensive and expensive, requiring the careful selection and training of those who will observe and record data. Perhaps the biggest disadvantage of this method is that it can influence the behavior of those who know they are being observed. This is sometimes referred to as the Hawthorne Effect.

Accreditation Canada recommends when measuring hand hygiene adherence using the direct observation method, it is necessary to first decide who will be observed; who will conduct the observations; and when, where and how often to observe. The success of this method depends on the accurate calculations of adherence rates, the careful training of data collectors, and the data collector's use of clear, easy-to-understand forms. Direct observation should be used by all organizations working out of a fixed location (i.e. patients come to them).

#### **4 Moments for Hand Hygiene**

There are many times health care workers need to perform hand hygiene throughout the course of their work day (see Appendix A). Direct observation as described above and included in Public Health Ontario Just Clean Your Hands Program and Canadian Patient Safety Institute (CPSI) Hand Hygiene Challenge, outlines the four indications or “moments” when hand hygiene should be performed.

**Moment 1** - Before initial patient/patient environment contact

Clean your hands before touching a patient or his/her immediate surroundings.

**Moment 2** – Before clean or aseptic procedure

Clean your hands immediately before any clean or aseptic procedure or donning gloves.

**Moment 3** - After body fluid exposure procedure

Clean your hands immediately after an exposure risk to body fluids and after glove removal.

**Moment 4** - After patient/patient environment contact

Clean your hands after touching a patient and their immediate surroundings when leaving the patients bed side.

**Reminder:** The terminology of indications and moments are used interchangeably to refer to the four times it is essential that hand hygiene be performed by health care workers. Indications are the reason why hand hygiene is necessary at a given moment. Opportunities are the need to perform hand hygiene whether there are single or multiple indications. Hand hygiene action must correspond to each opportunity. Multiple indications may come together to create a single opportunity

**Combined Moments:**

Hand hygiene moments may be combined ONLY WHEN the health care worker’s hands do not become contaminated after completing a task requiring hand hygiene and immediately before beginning the next task requiring hand hygiene.

For example, if the health care worker performs hand hygiene after contact with a patient and does not touch anything to contaminate their hands before contact with the next patient, this would be 1 opportunity compliant with Moment 4 and Moment 1 even though the actual act of performing hand hygiene was only completed once.

***The health care provider must not touch anything, including themselves between the tasks.***

## Methodology

Each organization needs to use an observation tool to collect the data. This can be done through either manual or electronic collection. For data collection purposes, both indications (moments) and opportunities need to be collected.

*Note: Electronic surveillance if used, may improve the viability of hand hygiene auditing programs, particularly for large, geographically vast health service areas with limited resources.*

Guidelines for conducting hand hygiene observations include the following:

- Observers are trained. Training is conducted by individuals experienced in hand hygiene observation methodology through theoretical and practical training methods.
- Observations will occur overtly (with transparency) in 20 minute (+/- 10 minutes) sessions of direct observation of HCW hand hygiene.
- Observations will not interfere with HCWs ongoing work (unless a critical safety issue presents).
- Observations are applicable to routine care and not emergent situations aimed at sustaining life, limb and/or vital organ (e.g. Code Blue) or isolation situations.
- Methods to track multiple staff in 1 observation session (multiple of same health care worker category-e.g. 1A, 1B, etc.). Data collection does not identify the individual HCW.
- Data collection includes observations that vary across time and place (e.g. day of the week, time of day).
- Hand hygiene observation will be reflective of the types of HCWs, rather than only repeated or prolonged observations on a small number or single type of HCWs.
- Optional according to RHA/PHSO processes:
  - Apply the actionable feedback model which provides feedback and interactions related to HH in a timely, non-punitive, individualized, and customizable manner. This may include providing feedback to staff at the end of the auditing session or at end of the day of auditing.
- Adding 1 or 2 other continuous monitoring tools that complement direct observation results (e.g. volume of product use, electronic handwash counter for ABHR, PDSAs).

## Minimum data collection elements

4 Moments for Hand Hygiene as outlined above (clarification of what will be included-acute, LTC)

Opportunities and indications (including missed).

- Use health care worker categories common across the continuum of healthcare in the province.
  - This would allow the specific health care worker categories to improve their hand hygiene compliance.
  - RHAs/PHSOs should continue to audit other staff not highlighted in this section however, for provincial reporting purposes these are the categories to be reported.

Categories:

- All the categories include the students of these HCWs.

Physicians (includes but not limited)

- Dentist
- Medical Fellow
- Medical Resident
- Physician includes all specialties (e.g. Ophthalmologist, Psychiatrist, Radiologist, etc.).

Health Care Aide (HCA), Psychiatric Nursing Assistant (NA)

Nurses (includes but not limited)

- Clinical Nurse Educator
- Clinical Nurse Specialist
- Nurse Practitioner
- Registered Nurse
- Registered Psychiatric Nurse
- Licensed Practical Nurse
- Undergraduate Nurse

Blood collection/lab/IV team (includes but not limited)

- Laboratory personnel
- Medical Laboratory Assistant/Phlebotomist
- Medical Laboratory Technologist

Housekeeping/Environmental services (includes but not limited)

- Environmental Services Personnel
- Housekeeper

Other

- Wash/Rub indication
- Day/month/year
- Start time/End Time/Duration
- Name of auditor (or auditor code)
- Location/Organization

Optional

- Gloves
- Minutes of direct observation
- Time of day (day/evening/night)
- Barriers to hand hygiene
- Nails/rings/bracelets/wrist watch(wearing more than 1 plain ring)

- Sleeves to wrist
- Nail polish/shellac present
- False nails present

### **Auditor Training**

- Standardized hand hygiene audit training tools and processes determined by the Regional Health Authority/PHSO are recommended and should include practice scenarios for newly trained staff to familiarize themselves with the process.
- Training sessions (approximately 3 hr.) must include:
  - All the background/theoretical information (e.g. 4 moments)
  - Review of data collection methodology;
  - In-depth review of the audit tool
  - Consistent data collection elements
  - An opportunity to practice
  - A means to determine compliance/inter-rater reliability

### **Inter rater Reliability Testing:**

Assessing reliability among observers is required if more than one observer will be collecting data to determine whether training has been effective and whether there is consistency in data collection. Reliability among observers is often referred to as inter-rate reliability or inter-observer reliability. After two or more observers observe and document the same event, inter-rater reliability is determined by comparing the amount of agreement or disagreement in their assessments or measurements.

Conduct inter-rater reliability testing annually for each auditor. Inter-rater reliability is measured against an identified trainer. Compare overall hand hygiene rates (raw percentage) between 2 observers (one observer being a trainer), recording observed opportunities in the same location and subjects at the same time. If agreement for the overall hand hygiene rate is within 10% the observers are considered interchangeable (i.e. there is inter-rater reliability). Any observer whose overall hand hygiene rate is greater than 10% different from the trainer will participate in retraining.

### *Concerns:*

- *Resources required to complete annual inter-rater reliability testing for all observers*
- *Challenges for RHAs with larger geographic areas*



**Sample size – Statistical Significance**

Data on hand hygiene compliance will be used for comparison at the RHA, PHSO and provincial level. When data is used for comparison, it is important to note that a higher number of observed opportunities will generate a more reliable and representative hand hygiene compliance rate. Small sample sizes are not reliable as a change in hand hygiene compliance could be due to chance alone rather than the effect of a hand hygiene improvement initiative. Since it is not possible to observe hand hygiene compliance in all areas of the health care system at all times, a sample is taken to represent the hand hygiene compliance in a particular area over a time period. The greater the sample size, the better the confidence in the result to permit meaningful comparison between areas and between time periods.

To minimize inaccurate measures due to small sample sizes and improve reliability and representativeness, the following guidelines will help organizations set targets for the minimum number of observed opportunities needed per fiscal quarter. Ideally, the observed opportunities are collected regularly throughout the fiscal quarter to add to the reliability and the representativeness of the information.

**Number of Observed Opportunities to Achieve Best Practice**

Number of Beds	Minimum Number of Observed Opportunities
≤25	50 per quarter
26-50 beds	100 per quarter
51-100 beds	200 per quarter
101-150 beds	300 per quarter
151-200 beds	400 per quarter
201-250 beds	500 per quarter
251-300 beds	700 per quarter
351-400 beds	800 per quarter
401-450 beds	900 per quarter
451-500 beds	1000 per quarter
500+beds	1000 per quarter

Note: A minimum of 200 observed opportunities per RHA/PHSO per year is required for reporting a hand hygiene compliance rate to MHSAL. RHAs/PHSOs will over time work towards achieving and reporting the number of observed opportunities for best practice listed in the table above.

**Hand Hygiene Compliance Indicators:**

## Overall Hand Hygiene Compliance

To report overall hand hygiene rate compliance with 4 Moments for Hand Hygiene, the following indicator will be used. The rate will be reported as a percentage.

$$\frac{\text{Number of Compliant Observed Opportunities} \times 100}{\text{Total Number of Observed Opportunities (Compliant and Noncompliant)}} = \text{Overall Hand Hygiene Compliance (Percentage)}$$

## Hand Hygiene Compliance by Moment:

The following indicator will be used to calculate the compliance by moment. The rate will be reported as a percentage for each moment.

$$\frac{\text{\# of times hand hygiene is performed for specific moment (compliant)}}{\text{\# observed hand hygiene indications for specific moment (compliant and noncompliant)}} \times 100$$

**Reporting to Manitoba Health Seniors and Active Living**

Reporting of hand hygiene compliance rates will ensure there is public accountability and transparency of the RHAs/PHSOs to MHSAL. Public reporting of hand hygiene adherence rates is one of many interventions that may help shape and change HCW behavior. Public reporting of adherence rates allows for heightened public awareness and education on the importance of hand hygiene in the prevention of infections.

A national environmental scan was done to determine public reporting of hand hygiene compliance monitoring in other provinces. Moment 1 and Moment 4 are the most commonly reported moments. Rationale: Moment 1 and Moment 4 are required every time health care is provided, whereas Moment 2 and Moment 3 are not necessarily required every time care is provided. Therefore, it is more likely the number of hand hygiene observed opportunities required for statistical significance will be captured more for Moment 1 and Moment 4. The monitoring of Moment 1 and Moment 4 to MHSAL will provide the largest volume of data for increased reliability and statistical significance. The data from all health care worker categories needs to be collected for individual unit reporting in the RHA/PHSO, however less than 20 observed opportunities/category will be suppressed for overall provincial reporting.

RHAs/PHSOs are encouraged to conduct observations and collect data for the 4 Moments for Hand Hygiene, however only two of the moments are required for public reporting:

Moment 1: Before initial contact with the patient/patient's environment **AND**

Moment 4: After contact with the patient/patient's environment.

This reporting process document has been developed to provide RHA/PHSO information and guidance on the best practice to perform hand hygiene compliance monitoring. At the time of the completion of this document, each of the RHA/PHSO required to report to MHSAL are in different stages of development regarding the processes to meet this best practice document.

It is recommended that each RHA/PHSO develop a staged implementation plan with dates for completion developed to ensure they will eventually meet the requirements in this document. This will be reported to Quality and Patient Safety Council on a regular basis to determine when they can begin reporting. The following are the steps to be considered in this implementation plan.

#### Audit Data Collection

- Determine method and process of data collection (e.g. manually, electronic)
  - Determine sample size and schedule for organization to meet statistical significance as well as provincial reporting requirements
- Revise and/or develop audit tool and instructions
- Trial use of audit tool, data entry and report generation

#### Auditor Training Program

- Review and revise auditor training program as required
- Identify auditors to be trained or retrained
- Provide revised training to auditors
- Determine inter-rate reliability of auditors

#### Analysis

- Revise and/or develop analysis to interpret data collected

#### Reporting

- Revise and/or develop specific calculation for reporting
- Revise and/or develop internal reporting processes if needed
- Set targets and dates to meet provincial reporting
- Participate in provincial trial

#### Evaluation

- Ongoing evaluation during each stage of implementation to determine issues to be addressed

#### Reporting Requirements

The following guidelines should be followed by RHAs/PHSOs to report statistical significant data to MHSAL. These have been adapted from Hand Hygiene Australia and British Columbia.

- Using targeted auditing, the rates should include a minimum of observed opportunities for identified areas within the RHA/PHSO. Refer to the 'Number of Observed Opportunities Recommended to Attain Statistical Significance for Reporting Purposes Table' (p. 9) to determine what is needed according to the number of beds.

- Each RHA/PHSO will select targeted inpatient units/areas which will include high risk units such as:
  - Intensive Care Units
  - Hematology/Oncology
  - Transplant
  - Renal Dialysis
  - Other high risk units with immunocompromised patients
  - Units with low hand hygiene compliance
  - Units with high rates of Health Care Associated Infections (HAIs)
  - Units with high prevalence of patients with antimicrobial-resistant organisms
- Units with high infection and/or transmission rates or low hand hygiene compliance should be targeted as improvements in these units will have the greatest impact on the prevention and control of HAIs as well as provide a safer environment for health care workers and patients. Generally, these units also have the greatest health care worker to patient interaction resulting in a higher number of opportunities being reviewed.
- Each RHA/PHSO must report a statistically significant rate to MHSAL each quarter which needs to be a minimum of 200 observed opportunities; while working towards a long term goal to reach the minimum number of observed opportunities for all inpatient areas in the RHA/PHSO, as recommended in the table 'Number of Observed Opportunities Recommended to Attain Statistical Significance for Reporting Purposes Table' (p.9)
- At a minimum, there should be two high risk units observed every quarter which would be determined by the RHA/PHSO.
- Each unit chosen should collect data in accordance with the bed numbers identified for the unit.
- Ongoing audit for hand hygiene compliance in other units should continue according to RHA/PHSO process

**Reminder:** Beyond the formal MHSAL reporting process it is important to encourage regular (a minimum of annually) hand hygiene audits/reviews and reporting to each unit so that health care workers can take ownership of their hand hygiene and hand hygiene improvement initiatives.

A staged pilot project of data collection by the RHAs/PHSOs may also be considered in discussion at Quality and Patient Safety Council. If this is considered, the processes for developing standardized reporting templates, submitting data to MHSAL as well as the dates for public reporting will be determined. A small working group of members from the Hand Hygiene Compliance Monitoring Working Group will work with MHSAL Information Management and Analytics to develop the reporting process.

RHAs/PHSOs within the province are encouraged to also report at health authority or facility level. MHSAL will post hand hygiene adherence rates on its public website. This will include a narrative that will allow public to interpret rates and measurements. The narrative will be developed and reviewed collaboratively by the individuals involved in the reporting process to ensure consistent and meaningful

messaging. Organizations may choose their own methods to display their hand hygiene adherence results (e.g. graphs, charts).

**Limitations:**

The compliance percentages may not be comparable directly between RHAs/PHSOs due to minor differences in the methodology for hand hygiene auditing in each organization.

The rates presented on the MHSAL websites are best used to measure individual regional/facility performance over time. They can be used to ask informed questions to healthcare organizations about their infection prevention and control program. They are not intended to be a source for making decisions about health care nor should they be used to make generalizations about the quality of care provided by the organization.

Each RHA/PHSO is tasked to work towards standardization within their current resources. This may be difficult to achieve in some of their organizations.

In order to achieve consistent hand hygiene measurement processes for all personnel and practice settings, RHAs/PHSOs should work toward;

- Resources and trained personnel to monitor and measure, collect and enter data on hand hygiene practices for care providers in all care settings
- Inter-rater reliability testing between 2 reviewers
- Standard electronic data collection instrument and a secure site for data collection and management
- The understanding that compliance rates also have a tendency to be influenced by seasonal trends as well as nursing workload
- The understanding that observations are not conducted in the evening or weekends, limited to specific types of sites such as acute care or continuing care
- Understanding the Hawthorne Effect
- Inadequate training of observers will influence the validity of results
- Compliance rates are compiled through an annual audit and results therefore only available once per calendar/fiscal year.

**Goals for Compliance:**

Increased compliance over time both within each program and within the site as a whole.

The goal for hand hygiene compliance is 80%, with an overall target of 100% compliance. Positive improvement should be recognized. To be considered a consistent standing rate, this goal (i.e. greater than 80%) must be reached for at least 2 consecutive audits.

**What will the health care system(s) do with this information?**

Monitoring hand hygiene adherence rates is about overall performance improvement. When considered in combination with other outcome measures, the information gathered may assist facilities/organizations in evaluating the effectiveness of their hand hygiene interventions. They would then make further improvements based on this information.

**Appendix A – 4 Moments for Hand Hygiene Examples**

**Moment 1:** The health care provider must perform hand hygiene before making direct physical contact with the patient or patient's environment. This prevents the transmission of microorganisms from the health care environment, other patient environments, and/or from the health care provider to the patient or the patient's space.

Examples include (but not limited to):

- Prior to entering patient room and touching patient's environment (e.g. bed, bedside table, over-bed table, windowsill, patient lockers, patient's chair(s), etc.)
- Prior to entering patient room and touching patient
- Prior to touching patient or their environment, if they have touched a curtain in a multi-patient room
- Prior to touching the patient or their environment, if they have touching the door/door handle
- Prior to touching the patient or their environment, if they have touched their face/uniform/lab coat
- Prior to touching patient's equipment
- Prior to transferring a patient
- prior to helping position patient
- Prior to shaking hands or stroking arm
- Prior to taking any vital signs (temperature, blood pressure, pulse,)
- Prior to using a stethoscope on a patient's body and/or abdominal palpation
- Prior to making patient comfortable in bed
- Prior to patient's morning hygiene
- Prior to contact with patient's wheelchair or walker
- Prior to bringing patient a project or exercise equipment in Physiotherapy/Occupational Therapy
- Prior to touching a patient while assisting with their Physiotherapy/Occupational Therapy
- Prior to putting on gloves and/or other PPE
- Prior to touching an IV pump or IV rate
- Prior to adjusting oxygen tubing

**Moment 2:** The health care provider must perform hand hygiene immediately before performing a clean or aseptic procedure. This prevents microorganisms - including the patient's own - from entering the patient's body. It also ensures the integrity of clean and sterile supplies.

Examples include (but not limited to):

Prior to:

- dressing change
- skin lesion care
- preparing/handling medications
- changing TPN
- starting a peripheral IV
- changing an IV
- giving patient an IV medication
- giving an injection/vaccination
- opening a vascular access system or draining system
- taking blood specimen from a patient
- taking a blood glucose test
- giving a patient an oral medication
- subcutaneous/intramuscular injections
- instilling eye/ear drops
- oral care
- setting up a patient's food tray
- preparing food
- feeding a patient
- giving a patient a drink of water
- inserting an NH tube
- endotracheal tube insertion
- secretion aspiration
- putting on sterile gloves to perform any aseptic procedure



**Moment 3:** The health care provider must perform hand hygiene immediately after performing care that involves blood or body fluids or when there is a risk to blood or body fluid exposure. Performing hand hygiene after blood or body fluid exposure protects the health care provider and the environment from patient microorganisms.

Examples include (but not limited to):

After:

- a dressing change
- skin lesion care
- inserting an IV
- taking/handling a blood specimen
- taking/handling a urine specimen
- cleaning up a body fluid spill
- inserting a catheter
- providing oral and/or dental care to a patient
- contact with non-intact skin
- handling garbage used for bandages, incontinent products
- cleaning of contaminated and/or visibly soiled areas or equipment such as commodes or medical instruments
- removing a peripheral IV
- after a blood glucose test
- inserting a NG tube
- endotracheal tube insertion and removal
- secretion aspiration after oral/dental care
- opening a vascular access system or drainage system

**Moment 4:** The health care provider must perform hand hygiene **after** having direct physical contact with the patient or patient's environment before making direct physical contact with the health care environment or another patient/patient environment. This prevents the patient's microorganisms from being transmitted to the health care environment, to another patient, or to the health care provider.

*\*\*\*Note: These examples only apply if they are the last point of contact the HCW has with the patient during the interaction.*

Examples include (but not limited to):

After:

- Exiting patient room and touching patient's environment (e.g. bed, bedside table, over-bed table, windowsill, patient lockers, patient's chair)
- Touching patient upon exiting patient room
- Touching patient's equipment upon exiting patient room
- after touching a patient's equipment (e.g. wheelchair or walker)
- Transferring patient
- Shaking hands and/or touching an arm
- Assessment of patient
- Taking any vital signs (temperature, blood pressure, pulse,)
- Using a stethoscope on a patient's body
- Palpating an abdomen
- Making a patient comfortable in bed
- Patient's morning hygiene
- Contact with patient's wheelchair or walker
- Monitoring an alarm
- Holding a bedrail
- Clearing or tidying a bedside table or chair
- Giving a massage
- Bringing patient a project or exercise equipment in Physiotherapy/Occupational Therapy
- Touching a patient while assisting with their Physiotherapy/Occupational Therapy
- Taking off gloves

Between:

- Patients while assisting with their Physiotherapy/Occupational Therapy
- Shaking hands
- Touching an arm
- Helping a patient to move around
- Get washed
- Taking vital signs
- Listening to a chest
- Palpating an abdomen

- Changing bed linen
- Monitoring an alarm on the patient
- Holding a bed rail
- Clearing the bed or chair side furniture

**Appendix B Resources to Improve Hand Hygiene Compliance:**

- Hand Hygiene Improvement  
There are several modalities to consider when looking at planning Hand Hygiene Compliance Improvement (HHCI) initiatives:

<p><b>INFRASTRUCTURE ELEMENTS</b></p> <p><i>ABHR is available / accessible at point of care (e.g., ABHR installed in every room, pocket bottles provided where risk of theft/consumption prevents the use of ABHR). The selection of HH product includes consideration for chemistries that promote skin integrity and are perceived as acceptable by the end user(s) (e.g., product trials can be integral to buy in). HH accessibility includes the provision of compatible lotions to maintain / promote skin integrity.</i></p>
<p><b>EDUCATION/TRAINING</b></p> <p><i>4 Moments for hand hygiene education is recommended for all new hires at orientation and for direct care providers on a routine and as needed basis using a variety of materials (paper exercise, in class training, PPTs, self-study using computerized systems of instruction etc., demonstration etc.)</i></p>
<p><b>AUDITING AND FEEDBACK</b></p> <p><i>Sites/programs/areas to collect at least 200 observed opportunities per unit/area/program as outlined in the Hand Hygiene Charter Action Item Review: Hand Hygiene Observed Opportunities. Various methodologies can be employed including but not limited to direct observation, and the addition of covert auditing, CCTV audits, electronic volume monitoring, and product consumption volumes. Some studies suggest that providing live real-time feedback changes behavior only in the short term whereas providing feedback in a group setting that is not tied to individual performance allows the staff to engage in improvement plans that address systemic barriers and needs instead of focusing solely on their own performance. Regardless of the feedback mechanism chosen sites must be careful that HHC auditing is never tied to performance appraisal if the desired outcome is sustained behavior change and a change of culture toward one of patient/resident safety.</i></p>
<p><b>REMINDERS IN THE WORKPLACE</b></p> <p><i>Posters, screen savers and other reminders in the workplace that reinforce the key messaging in the HHCI should be used and refreshed often to prevent message fatigue.</i></p>
<p><b>SOCIAL MARKETING</b></p> <p><i>Social marketing is a behavior science informed approach to promote social change. Social marketing aims to bring about voluntary behavior change that is sufficiently scalable to bring about wider social or cultural change using marketing techniques and principles. Social marketing differs from commercial marketing in that the goal is to improve individual and societal wellbeing rather than to increase profitability, with the ultimate beneficiary being society or the individual, rather than the organization carrying out the social marketing activity. Social marketing interventions contain a number of key elements: a consumer orientation, a mutually beneficial exchange and a long-term planning outlook. The social marketer seeks to build a relationship with target ‘consumers’ or ‘audiences’ over time. Social marketing draws on, and supports, communications for public health, but also employs other tools. The consumers’ input is sought throughout the intervention via formative, process and evaluative research. The framework puts a key emphasis on voluntary behavior. To facilitate voluntary exchanges, social marketers have to offer people something that they really want and highlight the benefits of change. Marketing techniques such as consumer oriented market research, segmentation and targeting, and the marketing mix are used. Social marketing seeks to influence the behavior not only of individuals, but also of groups, organizations and societies. It is</i></p>

concerned with broader social, cultural, structural and policy influences on health and social behavior, and can be applied ‘upstream’ or ‘downstream’.

Benchmark	Explanation
1. Behavior change	Intervention seeks to change behavior and has specific measurable behavioral objectives.
2. Consumer orientation	Intervention is based on an understanding of consumer experiences, values and needs. Formative research is conducted to identify these. Intervention elements are pre-tested with the target group.
3. Segmentation and targeting	Different segmentation variables are considered when selecting the intervention target group. Intervention strategy is tailored for the selected segment/s.
4. Marketing mix	Intervention considers the best strategic application of the ‘marketing mix’. This consists of the four P’s of ‘product’, ‘price’, ‘place’, and ‘promotion’. Other P’s might include ‘policy change’ or ‘people’ (e.g. training is provided to intervention delivery agents). Interventions which use only the ‘promotion’ P are social advertising, not social marketing.
5. Exchange	Intervention considers what will motivate people to engage voluntarily with the intervention and offers them something beneficial in return. The offered benefit may be intangible (e.g. personal satisfaction) or tangible (e.g. rewards for participating in the program and making behavioral changes).
6. Competition	Competing forces to the proposed behavior change are identified, and the intervention uses strategies that seek to remove or minimize this competition.

#### **POSITIVE DEVIANCE/ENGAGING STAFF IN CHANGE**

Positive deviance in hand hygiene links what HCWs know to what they really do during work shifts. The positive deviance approach focuses on promoting compliance with hand hygiene at all opportunities by everyone who comes in contact with patients and their environment. Every frontline HCW has countless opportunities for hand hygiene when caring for patients. They also are the very best on-site experts on what is needed in their workplace to improve hand hygiene compliance (e.g., changing the position of the alcohol gel dispenser in the patient room or saying that it is necessary to control the pressure of the tap water).

#### **INCENTIVES/REWARD**

Incentives such as candy, chocolate, gift certificates, etc. have been used to encourage promote and recognize appropriate hand hygiene behavior. One study cited the use of a Dalmatian printed card that was given to HCWs observed performing HH at the appropriate moment with a message that positively reinforced their behavior and the same print was also distributed to HCWs who missed opportunities to perform hand hygiene, both with the theme of “you’ve been spotted” and both were indistinguishable from one another so that peers would not be aware of the nature of the card given.

**Appendix C-Members of MHSAL Hand Hygiene Compliance Monitoring Working Group**

<b>Role</b>	<b>Name</b>	<b>Title</b>
Project Sponsor	Davenna Conrod	IP&C IERHA
Project Manager	Brenda Dyck	MHSAL IP&C
Team Member	Molly Blake	IP&C WRHA
Team Member	Myrna Dyck	WRHA IP&C Epidemiologist
Team Member	Monique Liarakos	WRHA LTC IP&C Manager
Team Member	Laurel Biluk	IP&C IERHA
Team Member	Breann Zelenitsky	IERHA - Manager – Planning & Evaluation Quality, Risk and Patient Safety
Team Member	Carla Elliott	IP&C PMH
Team Member	Kristi Chorney	Other PMHA designated individual
Team Member	Ginette Lafreniere	IP&C Southern Santé Sud Health Authority
Team Member	Debbie Williamson	Regional Manager IPAC/MDRD- NRHA
Team Member	Michelle Taylor	Northern - Director, Quality & Risk, Northern Health Region
Team Member	Ayla Slessor	Acute-Tertiary MHSAL

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