

# Chapter 6

## The 5 Moments of Hand Hygiene

### 6.1 Aim

To ensure all staff involved in the HHA 5 Moments program clearly understand the 5 Moments

### 6.2 What are the 5 Moments for HH?

**Moment 1:** Before touching a patient

**Moment 2:** Before a procedure

**Moment 3:** After a procedure or body fluid exposure risk

**Moment 4:** After touching a patient

**Moment 5:** After touching a patient's surroundings

#### 6.2.1 The Levels of Evidence to Support the 5 Moments

(See Appendix 10 for definition of levels of evidence)

#### **Moment 1**

Before and after touching patients (1B)

#### **Moment 2**

Before handling an invasive medical device for patient care, regardless of whether or not gloves are used (1B)

If moving from a contaminated body site to a clean body site during patient care (1B)

#### **Moment 3**

After removing gloves (1B)

After contact with body fluids or excretions, mucous membranes, non-intact skin, or wound dressings (1A)

If moving from a contaminated body site to a clean body site during patient care (1B)

#### **Moment 4**

Before and after touching patients (1B)

#### **Moment 5**

After contact with inanimate surfaces and objects (including medical equipment) in the immediate vicinity of the patient (1B)



## 6.2.2 Key terms

### Patient

Refers to any part of the patient, their clothes, or any medical device that is connected to the patient.

### Procedure

Is an act of care for a patient where there is a risk of direct introduction of a pathogen into the patient's body.

### Body Fluid Exposure Risk

Any situation where contact with body fluids may occur. Such contact may pose a contamination risk to either HCW or the environment.

### Patient Zone

Includes the patient and the patient's immediate surroundings.

## 6.3 The 5 Moments in Detail

### Moment 1 – Before Touching a Patient

#### WHY:

To protect the patient against acquiring harmful germs from the hands of the HCW

#### WHEN:

Touching a patient in any way	Shaking hands, Assisting a patient to move, Allied health interventions, Touching any invasive medical device connected to the patient (e.g. IV pump, IDC)
Any personal care activities	Bathing, Dressing, Brushing hair, Putting on personal aids such as glasses
Any non-invasive observations	Taking a pulse, Blood pressure, Oxygen saturation, Temperature, Chest auscultation, Abdominal palpation, Applying ECG electrodes, CTG
Any non-invasive treatment	Applying an oxygen mask or nasal cannulae, Fitting slings/braces, Application of incontinence aids (including condom drainage)
Preparation and administration of oral medications	Oral medications, Nebulised medications
Oral care and feeding	Feeding a patient, Brushing teeth or dentures
Contacts with a patient's surroundings before, during & after any of the above	Bedside table, Medical chart



## Moment 2 – Before a Procedure

### WHY:

To protect the patient from harmful germs (including their own) from entering their body during a procedure

### WHEN:

Insertion of a needle into a patient's skin, or into an invasive medical device	Venipuncture, Blood glucose level, Arterial blood gas, Subcutaneous or Intramuscular injections, IV flush
Preparation and administration of any medications given via an invasive medical device, or preparation of a sterile field	IV medication, NGT feeds, PEG feeds, Baby feeds, Dressing trolley set up
Administration of medications where there is direct contact with mucous membranes	Eye drop instillation, Suppository insertion, Vaginal pessary
Insertion of, or disruption to, the circuit of an invasive medical device	Procedures involving the following: ETT, Tracheostomy, Nasopharyngeal airways, Suctioning of airways, Urinary catheter, Colostomy/ileostomy, Vascular access systems, Invasive monitoring devices, Wound drains, PEG tubes, NGT, Secretion aspiration
Any assessment, treatment and patient care where contact is made with non-intact skin or mucous membranes.	Wound dressings, Burns dressings, Surgical procedures, Digital rectal examination, Invasive obstetric and gynaecological examinations and procedures, Digital assessment of newborn palate

## Moment 3 – After a Procedure or Body Fluid Exposure Risk

### WHY:

To protect yourself and the healthcare surroundings from harmful patient germs

### WHEN:

After any Moment 2	See Moment 2
After any potential body fluid exposure	<p>Contact with a used urinary bottle / bedpan, Contact with sputum either directly or indirectly via a cup or tissue, Contact with used specimen jars / pathology samples, Cleaning dentures, Cleaning spills of urine, faeces or vomit from patient surroundings, After touching the outside of a drain</p> <p>Contact with any of the following: Blood, Saliva, Mucous, Semen, Tears, Wax, Breast milk, Colostrum Urine, Faeces, Vomitus, Pleural fluid, Cerebrospinal fluid, Ascites fluid, Organic body samples e.g. Biopsy samples, Cell samples, Lochia, Meconium, Pus, Bone Marrow, Bile</p>



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## Moment 4 – After Touching a Patient

### WHY:

To protect yourself and the healthcare surroundings from harmful patient germs

### WHEN:

After any Moment 1 except where there has been a potential body fluids exposure      See Moment 1 and 2

## Moment 5 – After Touching a Patient’s Surroundings

### WHY:

To protect yourself and the healthcare surroundings from harmful patient germs

### WHEN:

After touching the patient’s immediate surroundings when the patient has not been touched      Patient surroundings include: Bed, Bedrails, Linen, Table, Bedside chart, Bedside locker, Call bell/TV remote control, Light switches, Personal belongings (including books, Mobility aids), Chair, Foot stool, Monkey bar

## 6.4 Two Patients within the Same Patient Zone

Two or more patients may be in such close contact that they occupy the same physical space and touch each other frequently. For example, a mother and her newborn child, or twins occupying the same cot. The two close patients may be viewed as occupying a single patient zone. Hand hygiene is still required when entering or leaving the common patient zone, and before and after procedures, but the indication for hand hygiene when moving between the two patients is probably of little preventative value because they are likely to share the same microbial flora <sup>(1)</sup>.

See Appendix 19 for detailed examples of the 5 Moments.



# Chapter 7

## Hand Hygiene Measures:

### Auditing Hand Hygiene Compliance

#### 7.1 Aim

To accurately assess HH compliance (HHC) in accordance with published guidelines using a standardised HH observation assessment tool <sup>(1, 35)</sup>.

To achieve a high rate of HH compliance, HCWs need education, clear guidelines, some understanding of infectious disease risk, and acceptable hand hygiene products <sup>(1)</sup>.

#### 7.2 Training

The approach to accurately assessing HHC according to the “5 Moments” is described below. In addition, training in the HHC assessment tool, data entry and data analysis will be provided at training workshops conducted by *Hand Hygiene Australia*. Further support is available to all hospitals by contacting the *Hand Hygiene Australia* representative for your state or territory (see website for contact details [www.hha.org.au](http://www.hha.org.au) ).

#### 7.3 Methodology

Direct observation by trained observers is the gold standard to monitor compliance with optimal hand hygiene practice <sup>(1)</sup>.

Any ‘unsafe’ practices that are observed during hand hygiene auditing should be addressed immediately or reported to the appropriate manager for follow-up; otherwise reporting of compliance rates should be reported on after an audit has been fully completed <sup>(63)</sup>.

Observation does not justify infringing the principle of patient privacy. This means that auditors should show discretion regarding where they place themselves and their movements whilst conducting audits <sup>(64)</sup>. It is recommended that patients be informed on admission that hand hygiene audits are regularly conducted as a quality improvement activity. Patients or their family may request they not be involved in an audit.

In order to conduct HH Compliance audits the following needs to be decided and to be available:



### 7.3.1 Hand Hygiene Auditors

Careful thought and planning needs to be put into choosing the right person to conduct the HHC audits. The appropriate person will vary between facilities. Points to consider include:

- Availability to attend HHA Auditor training
- Have time available to conduct audits
- Have a good understanding of auditing/feedback/education processes
- Have a background as a clinical health professional
- Acknowledge and understand safety and privacy concerns of patients and staff

#### 7.3.1.1 Infection Control Practitioners (ICPs) as Auditors

In many organisations ICPs observe hand hygiene and collect information about performance.

Advantages:

- ICPs have a knowledge of hand hygiene guidelines
- Can intervene and educate on the spot to correct unacceptable performance
- Can provide immediate feedback to staff for good hand hygiene practices
- Are usually already involved in teaching and training of all staff in correct hand hygiene principles
- Raises profile of ICPs by increased time spent on the wards

Disadvantages

- Prevents ownership of ward/department staff in monitoring hand hygiene
- May promote HH as an infection control problem rather than a hospital wide issue

#### 7.3.1.2 Other personnel

Instead of ICPs, other clinical staff could conduct audits. For example, ward nurses, allied health staff, students, return to work program participants.

Advantages:

- Could promote widespread acceptance/ownership/participation in activities to improve hand hygiene within their area
- Auditor training would increase knowledge of hand hygiene guidelines and highlight that HHC is an organisational concern

Disadvantages:

- Would need to take time out of their usual position to conduct audits
- May need longer training time
- May not feel comfortable giving feedback or correcting unacceptable performance
- ICPs would still need to have a full understanding of the auditing process as they would likely still be doing the education component of the program

### 7.3.2 Training Auditors

There are two types of training proposed by the HHA team: 'Gold standard' auditing and general auditing. A gold standard auditor has the ability to train further staff at their own facility in the skills of auditing. The general auditor is enabled to audit only.



### 7.3.2.1 Gold standard auditor training

Participants should attend a workshop run by a HHA coordinator which results in them being awarded a 'Gold Standard' status. During this workshop the following topics will be covered:

- History of Hand Hygiene
- Hand Hygiene Program Implementation
- 5 Moments in Detail
- How to use the audit tool
- How to enter data on the computer
- Written Quiz
- Auditing time on the wards
- DVD Quiz
- Reporting requirements to HHA
- Promotion of the Hand Hygiene Program
- Education requirements for training staff in Hand Hygiene
  - General hospital staff
  - Other auditors

### 7.3.2.2 General auditor training

Participants can either attend a workshop run by a HHA coordinator, or be trained in their own facility by a Gold standard auditor. Regardless of trainer the following topics should be covered:

- 5 Moments in Detail
- How to use the audit tool
- How to enter data on the computer
- Written Quiz
- Auditing time on the wards
- DVD Quiz

### 7.3.2.3 Inter-rater and Intra-rater Reliability and Validation

Inter-rater reliability should be addressed in the auditor training programs by pairing HH observers for observations of the same session and then comparing observations recorded, using the HHA trained and validated person as the "gold standard". Each HH observer should be paired with each of the other validated observers (if more than 2 observers). Until there is >90% inter-rater agreement in all recordings (e.g. type of HCW, HCW activity, HH *Moment*, HH performance), the official data collection process should not begin.

Intra-rater reliability should be addressed through use of the HHA 5 Moments Program DVD. This DVD should be observed on at least two occasions, a few days apart. Data should be recorded on the standard data collection form. The rate of agreement for all recordings is then calculated. If there is less than 90 % agreement, HH observers should seek further training (see Appendix 13).

Practice sessions may be necessary for HH observers prior to each data collection period to ensure reliable results. Careful attention is required to ensure that observations are recorded correctly and there is consistent reporting, not only by the individual auditors (intra-rater reliability) but also between the various auditors (inter-rater reliability). The HH team should discuss issues as they arise and reach a consensus opinion/approach.



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### 7.3.2.4 Overcoming Bias in Auditing

Observer bias is introduced by inter-observer variation in the observation. The HHA training schedule of validation of auditors has been created to minimise this bias.

Selection bias is introduced by selecting HCWs, care settings, and observation times with specific hand hygiene behaviour. In practical terms, this bias can be minimised by randomly choosing locations (from your set reporting wards) and times of the day to audit.

When HCWs know HH compliance is being measured, they often initially attempt to behave correctly. This is known as the “Hawthorn Effect”<sup>(36)</sup>. Recent evidence suggests that the Hawthorn effect may only increase compliance in areas that already have good compliance rates, but there will be no noticed effect on wards starting with low compliance<sup>(48)</sup>. However, with repeated observations, HCWs generally grow accustomed to the observer and are less affected by their presence<sup>(2)</sup>, particularly if they know the auditor and are comfortable being observed.

### 7.3.3 Equipment Required to Conduct a Hand Hygiene Audit

The following equipment is required to conduct an audit:

- Clipboard and pen
- Copies of HHA Audit sheets (see Appendix 14)
- HHA coding sheet (see Appendix 15)
- HHA audit ward summary sheet (see Appendix 18)

### 7.3.4 HCW Definitions Required for Auditing

HCW Code	Type of HCW	Extended Definition
RN	Registered Nurse	All nurses – RN, Div 1, Div 2/EN, Midwives, Agency staff, Domiciliary nurses, Psychiatric, Nurse assistants
DR	Medical Doctor	All doctors – Consultants, Registrars, Residents, Interns, Visiting Consultants, GPs, Dentists
PSA	Patient Service Attendant	Orderlies, Cleaners
AH	Allied Health	Physiotherapists, Occupational therapists, Dietitians, Speech Pathologists, Radiographers, Pharmacists, P&O, Allied Health Assistants, Podiatrists, Music/Play therapists, Audiologists, Plaster technicians, ECG technician
BL	Blood collecting staff	Phlebotomists
SRN, SAH, SDR	Students	Students of RN, DR, AH
O	Other	Volunteers, Food service staff, Ward receptionists, Engineers, Trades people, Chaplaincy, Flower people, all other non-clinical HCWs



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### 7.3.5 How to Conduct a HHA Hand Hygiene Compliance Audit

- Select wards for HH Compliance audits as per Chapter 2
- Allocate time to conduct audits
  - Aim is to start auditing 6-8 weeks prior to the due date for data submission
  - Try to ensure you audit at many different times of the day to avoid selection bias. Sessions should be undertaken in an ad hoc manner during both morning and afternoon shifts
  - Busy periods are the best time for HH observations
  - Day-to-day variation in HH compliance may occur – therefore, observation sessions are best run over several days/weeks
- Information regarding when the observation sessions will be occurring should be provided to ward Unit Managers prior to commencing compliance auditing
- Wards / departments should be asked to ensure ABHR products are in all the appropriate places before auditing commences
- If there are barriers to HH e.g. No available ABHR, soap or paper towels this should be recorded in the notes section of the audit tool, then reported to the shift or unit manager prior to leaving the area
- Arrive at target ward / department and introduce self to the shift manager and inform them of your role
- Always perform HH yourself upon entering a ward to audit. It is very important to lead by example
- HH auditors are encouraged to be open and honest about what you are doing, and show the audit tool and how deidentified the data collected is. This may be for staff, patients or visitors
- There needs to be at least one patient and a HCW present in a room to start auditing. If neither are present, move to another room
- Observers need to position themselves to view the patient bed, sink, and ABHR area
- Start the audit on the ward /department
- When patients' bed curtains are drawn, permission should be sought from the relevant HCW and patient to allow auditors to continue to view activities in the area. Although there may be some occasions when this is not appropriate, these are rare. Observing HCW activities behind closed curtains in the ICU is often necessary
- HH compliance should be assessed on all types of HCWs who enter observed ward bays. The presence or absence of a convenient location from which to observe patient beds and HH facilities may impact on which patient bays are selected for observation
- The number of HCWs observed at one time depends on their level of activity and the competency of the auditor. More than one HCW can be observed at the same time, provided their HH *Moments* can be accurately observed and recorded. If this is not possible, then the compliance of additional HCWs should not be recorded until the index HCW has left the bay, or has ceased activity
- It is better to record fewer Moments accurately than many Moments inaccurately. If no activity occurs, HH observers should proceed to another room. Reasons for no activity may include:
  - No HCW present in the room
  - HCW activities were performed unobserved behind closed curtains
  - All patients leave the bay during the observation session
  - The HCW may continue with one Moment for a long time i.e. Allied health assessment – Moment 1 may take 20 minutes, Nursing procedure may take 15 minutes



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- Try not to observe the same HCW for the entire audit session. The aim is to audit a cross section of all HCW categories that work on that ward
- Moments should not be recorded before they have been undertaken. If you are unsure if a HCW performed any HH then do not record it
- A HH Moment is only documented when the field observer can accurately observe the HCW and the *Moment* that has been completed. If an auditor is unsure whether the observed HCW performed HH, then such *Moments* should not be recorded. The only exception is when a HCW is observed to enter a room and go directly to the patient. As per Note 3 of The Rules: The HCW must be observed to perform HH as they approach the patient. If hand hygiene is not observed it should be recorded as a missed action
- A Moment finishes when a HCW:
  - Moves from one patient to another
  - Leaves the room on completion of patient care
  - Touches the curtain partition in a multi-patient room
  - HCW moves from touching a patient to doing a procedure or vice versa
- A Moment can finish in another area outside a patient room if patient care is not yet completed e.g. transporting a bedpan to the pan room
- The HHC audit session has no specific time frame, it can be conducted for as long or as little as the auditor has time for
- At the conclusion of an audit session the following needs to be completed:
  - Thank the shift manager and highlight any problems that need addressing immediately e.g. No HH product available
  - Complete the audit form by filling in the finish time and duration of session, and by tallying up the total Moments collected and the total correct Moments collected
  - Do HH yourself prior to leaving the ward
- There can be circumstances where it is not appropriate to conduct a HH observation session; these include:
  - Emergency situations where HH is secondary to patient safety (e.g. when any hospital 'code' is called)
  - In palliative care situations
  - If the patient, or patient's family object
  - During private discussions between medical staff and patient/ patient's family

### 7.3.6 How to Use the HH Audit Tool

- The HHA HHC audits should only be conducted by trained and validated staff
- For each session fill in the demographic details on the top of the form on arrival at target ward
  - Health Service = Hospital or Network name
  - Session number = The audit number for that particular ward which is then transferred to the HH ward summary sheet (see Appendix 18)
    - The first audit on a specific ward will be session no. 1
    - The second audit on the same ward will be session no.2
    - The first audit on a different ward will be session no. 1 on that ward
  - Start and Finish times are for your own personal statistics to enable you to calculate the amount of time it takes to conduct each audit
  - Database record number = unique number generated by the MS Access database when audit data is entered onto database. It is only filled in once the data has been entered into the computer and is used for validation of data
  - Notes = space to write any information about HHC audit or infection control issues to address after the audit session is complete



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- Commence observation on ward
- For each Moment observed the following should be recorded on the audit form:
  - HCW – needs to be filled in every time a Moment is observed (see codes above)
  - Moment – fill in the Moment observed. Only one Moment should be filled in per box. If multiple Moments are observed then multiple boxes need to be filled in (see Appendix 16)
  - Action – needs to be filled in for every Moment observed
    - If no HH action is observed then it is recorded as a missed action
    - If the HCW performs HH then proceeds to touch their face/nose/mouth or touches items in the healthcare environment prior to touching the patient then this should be recorded as a missed HH action
    - If a HCW is observed to do HH incorrectly (e.g. one handed, minimal volume ABHR or no soap) this should be recorded as a missed action
  - Gloves – are only recorded if the HCW puts gloves on in a before Moment, takes gloves off in an after Moment, or continues from one Moment to another with the same pair of gloves
    - Even if gloves are worn for patient care HH still needs to be performed and recorded before and after glove use
    - If no gloves are worn then the “gloves” box is left blank

## 7.4 Two Moments for Hand Hygiene “Bonus or Penalty Moments”

Two moments for hand hygiene may sometimes fall together. Typically, this occurs when moving directly from one patient to another without touching anything in between. In this situation a single hand hygiene action will cover the two moments for hand hygiene, as Moments 4 and 1 coincide. Another example of simultaneous moments is when moving from touching a patient to performing a procedure on that same patient; Moment 4 and Moment 2 coincide. However, when auditing in either situation, both Moments are recorded as individual Moments on the audit tool.

## 7.5 When NOT to record a Moment

HHC is audited by Moments; it is not audited by HH action.

It is important to understand that HH actions not corresponding to an opportunity (or reason for HH) and therefore “additional” and not required should not be taken into account by the observer. For example, HCW walks into a patient’s room, does HH then walks out without touching anything – No Moment is recorded.



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## 7.6 Rules for Auditing the 5 Moments

Rules	
Moment 1	<ul style="list-style-type: none"> <li>• HH Moment 1 should be performed prior to touching the patient</li> <li>• Only record Moment 1 once the HCW touches the patient</li> </ul>
Moment 2	<ul style="list-style-type: none"> <li>• HH Moment 2 must be performed <u>immediately</u> prior to any procedure</li> </ul>
Moment 3	<ul style="list-style-type: none"> <li>• HH Moment 3 must be performed <u>immediately</u> after a procedure or body fluid exposure risk</li> <li>• Touching the outside of a drain or drainage bag (e.g. urinary catheter, wound drain, chest tube drain, CSF drain), even when the circuit is not broken, is considered a Moment 3 since there is a risk of body fluid exposure</li> <li>• Moment 3 will usually be paired with a Moment 2 except that:</li> <li>• Moment 3 may be recorded as a stand alone HH Moment when there is a body fluid exposure risk, but the HCW has not touched the patient - e.g. cleaning a spill of vomit, urine or faeces</li> </ul>
Moment 4	<ul style="list-style-type: none"> <li>• HH Moment 4 should be performed after touching the patient</li> <li>• Moment 4 will usually be preceded by a Moment 1</li> <li>• Touching the patient surroundings after touching the patient is recorded as a single Moment 4.</li> <li>• If after a Moment 3 there is touching of patient surroundings this is recorded as a Moment 4</li> </ul>
Moment 5	<ul style="list-style-type: none"> <li>• HH Moment 5 is performed when there has been <u>no touching</u> of the patient, but there has been touching of the patient's immediate surroundings.</li> <li>• When multiple items in the patient surroundings are touched, only one Moment 5 is recorded</li> </ul>
Notes	
Note 1	<p>Generally for every "before" Moment there should be an "after" Moment recorded, unless the auditor does not witness the action.</p> <p><b>Moment 1</b> is generally followed by a <b>Moment 4</b></p> <p><b>Moment 2</b> is generally followed by a <b>Moment 3</b></p> <p><b>Moment 5</b> is not paired with other Moments</p> <p>There are very few situations when two "afters" may be recorded sequentially</p>
Note 2	<p>For every procedure (see Glossary) there should be a <b>Moment 2</b> and <b>Moment 3</b> recorded where the auditor witnesses both the start and finish of that procedure</p>
Note 3	<p>The HCW must be observed to perform HH as they approach the patient. If HH is not observed it should be recorded as a "missed" action (i.e. HH not performed).</p>
Note 4	<p>No "before" Moment can be recorded if auditing commences after a HCW is already touching a patient, or in the process of performing a procedure.</p> <p>No "after" Moment can be recorded unless the Moment is observed</p>
Note 5	<p>Patient bed curtains are outside the patient zone as they are frequently contaminated. Touching the curtains is leaving the patient zone. HH should be performed between touching the curtains and touching the patient</p>



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## 7.7 Auditing Requirements

### 7.7.1 Required Number of Observations

#### 7.7.1.1 HH Compliance data required by HHA

To achieve appropriately valid results, HH compliance should be assessed on a defined minimum number of HH observations (Moments). The time taken to complete the required number of observations will vary depending on the level of clinical activity in the observed area, the experience of the auditor, and the time of day the audit is conducted. Nevertheless, the key determinate of adequate HH compliance assessment is the use of HH Moments, not the time taken.

The data collection schedule will be influenced by the number of acute beds in each facility (see Table below) and the number of trained staff available to undertake HH observations. HH compliance rates should be reflective of a cross-section of the institutions' HCWs, rather than just repeated or prolonged observations on a small number of HCWs.

The time taken to complete all the observation sessions will depend upon the number of HH Moments observed for each session, the number of observation sessions completed each day and the number of field observers available.

Number of acute inpatient beds at the hospital	Required number of HH audits per year	Required number of wards/areas per HH audit	Required number of HH observations per ward area
>400	3	7	350
300-400	3	6	350
200-300	3	5	350
100-200	3	4	200
50-100	3	2	100
25-50	3	1	100
< 25	3	1	50

#### 7.7.1.2 Due dates for data submission

	Commence HH compliance audit	Complete HH compliance audit	Submission deadline to State Co-ordinator	Hand Hygiene Australia Reports Due:
Audit 1	February	Mid March	April	May
Audit 2	June	End July	August	September
Audit 3	September	Mid November	November	January

### 7.7.2 Further Logistics of HHC Auditing

The HH observer team should remain alert to reliability problems and devise strategies to reduce them. During the first few days of data collection, the HH Program Officer should review data collection forms for consistency and query inconsistencies or illegible recordings. HH observers should discuss and resolve observational process or recording difficulties either with other Gold Standard auditors, or contact the state representative.



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### 7.7.3 Documentation

Points to consider:

- Data sheets should be stored in a safe and secure place
- Following each observation session, forms should be secured together and numbered (e.g. “page 1 of 2”)
- A cumulative tally of the number of HH Moments observed should be recorded on the HH Ward Summary Sheet (see Appendix 18) to ensure that the target number of observations has been achieved - this can be analysed by the HH Program Officer at the end of each day
- Before commencing data entry, each data collection form should be accounted for by cross-checking with the HH Ward Summary Sheet

### 7.8 Data Entry and Management

Data collection form

- All HH compliance data should be recorded for each of the *5 Moments* (see Chapter 6) on the standard HHA paper data collection form (see Appendices 14 and 16) and later entered into the HHA MS Access database for analysis. Alternative data collection methods and forms may be used as long as the data fields are identical to those required by HHA, and these data fields are submitted to HHA in the prescribed format (see Appendices 21 - 22)
- Each session on each wards should be recorded on a new data collection form
- Each session on the wards should be entered as a new session in the database, and the database number then written on the data collection form for easy cross referencing
- To ensure accuracy of data entry, each session entered should be double-checked to verify that the total correct HH actions and total Moments correspond to the data collection form

### 7.9 Data analysis

To calculate the overall rate of HH compliance for each area, the following data are required:

$Y = \text{total number of Moments observed}$

$X = \text{Total number of appropriately performed HH Moments}$

$\text{Rate of overall HH compliance} = X/Y \times 100 = \% \text{ rate of overall HH compliance}$

If a sub-analysis of only certain specific Moments is required, then a similar calculation is performed, but where Y = the number of specified Moments and X = number of appropriately performed HH actions for that particular *Moment*.

### 7.10 Data Validation

#### 7.10.1 At the conclusion of audit on ward:

- Check that all demographic fields on each HHA 5 Moments audit sheet are correct and legible
- Check that there is a HCW / Moment / Action (+/- Gloves) in each box, if one item is missing that Moment needs to be crossed out as it is incomplete and it cannot be used
- Add up total number of Moments collected and write the total on the bottom right corner of audit sheet (see Appendix 16)



- Add up number of correct Moments (rub or wash) collected and write on bottom right corner of audit sheet (see Appendix 16)
- Fill in HHA ward summary sheet for each session on each ward ensuring that all fields are filled in (see Appendix 18)

### 7.10.2 Data Entry

- Check each field as you enter data as mistakes can easily be made and are easier to correct at time of entering data
- Enter data from paper audit sheets as per fields on HHA database for each session
- Check total number of moments for each session entered into database equal numbers recorded on summary sheet

### 7.10.3 Common mistakes for data entry

- Date entered incorrectly e.g. should be date recorded on audit sheet (dd/mm/yyyy) not the date the data is entered
- Incorrect ward e.g. ensure you select correct ward from drop down box

## 7.11 Reporting Results

Feedback of results to those concerned is a very powerful promotional tool and should firstly address groups with a strong internal identity. A short delay between observation and reporting of results may increase the effect of the feedback given. Continual feedback of unchanging bad results without any intervention should be avoided, as it may lead to loss of interest <sup>(1)</sup>.

### 7.11.1 How to generate reports from the database

HH compliance should be reported in a defined manner:

- Overall HH compliance
- Overall HH compliance according to:
  - Each of the 5 Moments
  - HCW type

See Appendices 21 - 22 for sample reports.

The HHA database allows easy calculation of all these rates (at both a ward and hospital level), and reporting of HH compliance according to the above criteria.

For step by step instructions on how to use the HHA database please refer to the HHA website.

### 7.11.2 Report submissions to Hand Hygiene Australia

HH compliance data should be submitted to HHA three times per year. The HHA Coordinator for your jurisdiction will be responsible for ensuring you are aware when data is due. Refer to table 7.7.1.2.



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### **7.11.3 Using reports for further education about HH compliance**

HH compliance rates are both a useful outcome measure for the HH culture-change program, and a very useful educational tool for HCWs. Reporting results of hand hygiene observation to HCWs is an essential element of multi-modal strategies to improve hand hygiene practices <sup>(25)</sup>. Early feedback of HH compliance rates to audited HCWs is a crucial and effective component to achieving improvements in HH compliance and to engaging HCWs in effective cultural-change. The HH Program team should oversee such education and feedback.

The overall ward reports should be given to the managers of the wards in a timely manner, with subsequent reporting to all ward staff followed by further training as required from the audits.

The overall hospital reports should be presented to the hospital management at regular intervals, and should become a standard agenda point on hospital meetings.

### **7.11.4 Hospital, State/Territory, National Reporting of HH Compliance**

Overall rates of HH compliance (including 95% confidence intervals) will be reported for each healthcare institution, each state/territory and nationally three times per year. All data submitted is analysed by HHA and reported to the ACSQHC, and fed back to each jurisdiction.

## **7.12 Other available audit tools**

In the HHA tool neither the duration of the HH action, nor other quality aspects of HH such as the quantity of product used, technique of HH, donning/doffing of gloves, type of gloves used, length of fingernails, or presence of jewellery are assessed. Once the HH program has been well established in your facility these are items you may wish to address whilst conducting the HHC audit, but they will not be reportable to HHA.

HHA has a number of extra audit tools available for each healthcare facility on the HHA website; also see Appendix 26.



## 7.13 Overview of Approaches to Measuring Compliance to Hand Hygiene Guidelines

	Observation	Product Measurement	Surveys
<b>Brief Description</b>	People observe hand hygiene behavior and record the number of hand hygiene episodes in relation to recommended practices.	Measuring the amounts of liquid soap, alcohol-based hand rub (ABHR), paper towels, and gloves used in a particular area over a specified period of time.	<p>Surveying health care workers about their own hand hygiene practices, knowledge, attitudes, and product satisfaction.</p> <p>Surveying patients and families about their attitudes and perceptions of the hand hygiene practices of health care workers.</p>
<b>Strengths</b>	<p>Can pinpoint the hand hygiene behavior of individuals.<sup>1,2</sup></p> <p>Can assess hand hygiene technique.<sup>1</sup></p> <p>Most reliable method for assessing adherence rates.<sup>2</sup></p>	<p>Allows efficient monitoring of hand hygiene per patient day over time in a given unit.<sup>1</sup></p> <p>Is not subject to selection or recall bias.<sup>1</sup></p> <p>Is less time-consuming and less costly than other methods.<sup>2</sup></p>	<p>Inexpensive.<sup>1</sup></p> <p>Not resource intensive.<sup>2</sup></p> <p>Can provide some information on compliance.<sup>2</sup></p> <p>Focuses health care workers' attention on their own hand hygiene practices.<sup>1</sup></p>
<b>Limitations</b>	<p>Awareness of observation can influence staff behavior.<sup>1,3</sup></p> <p>Labor intensive and costly.<sup>1,2</sup></p> <p>Requires training.<sup>1-3</sup></p> <p>Captures only a sample of all hand hygiene opportunities.<sup>1</sup></p> <p>Can compromise patient privacy.<sup>1,3</sup></p>	<p>Does not reveal who is performing hand hygiene.<sup>1</sup></p> <p>Does not assess technique.<sup>1,3</sup></p> <p>Does not capture hand hygiene opportunities.<sup>1,3</sup></p> <p>Cannot account for spillage, use of product for purposes other than hand hygiene, and "borrowing" between wards.<sup>3</sup></p> <p>Can be affected by a product use by patients and families.<sup>1</sup></p> <p>Can be difficult to correlate with observation.<sup>2</sup></p> <p>Validity has not been well-established.<sup>2</sup></p>	<p>Inadequate reliability or validity for self-report of adherence.<sup>1,2,4</sup></p> <p>Health care workers tend to overestimate compliance.<sup>2</sup></p> <p>Validity depends on the quality of the survey's development and testing.</p>

1. Haas J.P., Larson E.L.: Measurement of compliance with hand hygiene. *J Hosp Infect* 66:6–14, May 2007.
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3. Gould D.J., et al.: Measuring handwashing performance in health service audits and research studies. *J Hosp Infect* 66:109–115, 2007.
4. Harrington L., et al.: Reliability and validity of hand hygiene measures. *J Healthc Qual* 29(4):20–29, 2007.

From: The Joint Commission. *Measuring Hand Hygiene Adherence: Overcoming the challenges*. Illinois. 2009.



“Hand Hygiene Before and After Every Patient Contact”

