Healthcare Associated Infections (HCAI) and Hand Hygiene

Healthcare-associated infections (HCAI) are infections that are acquired in healthcare facilities or as a result of healthcare interventions and are a major problem for patient safety. HCAIs can lead to serious illness, prolonged hospital stays, long term disability and patient deaths. Hand hygiene is recognized globally as one of the most important methods of preventing health-care associated infections (HCAI). This article attempts to answer the following questions:

1. How might a patient acquire an infection while in the general practice environment?
2. When should you perform hand hygiene in the general practice setting?
3. How can you perform hand hygiene in the general practice setting?
4. Hand hygiene facilities for general practice – What is recommended?
5. What might happen in the future in general practice? What might HIQA look for?

Public confidence relies on the general practice being seen as a safe place for patients to be treated. We need to reassure our patients that we are following best practice in order to minimise the risk of HCAI in Irish general practice.
In general practice, we are increasingly seeing patients who are immunocompromised and therefore at greater risk of contracting HCAI's and developing more serious forms of illness from HCAI.

So how might a patient acquire an infection while in the general practice environment?

Direct contact:

Direct spread of infection occurs when one person infects the next; by person-to-person contact, e.g. chickenpox, RSV, influenza. The mode of transmission for this in the general practice environment would usually be airborne particles. Pathogens exhaled into the atmosphere by an infected person can be inhaled by and infect another person.

Indirect:

Indirect spread of infection is said to occur when an intermediate carrier is involved in the spread of pathogens, e.g. the hands of a healthcare worker can become contaminated with infectious organisms from contact with a contaminated item of equipment or patients skin, these may then be spread to a patient, e.g. MRSA on HCW hands, hepatitis B from contaminated surgical instruments.

An additional concern is that many patients in the community are now colonised with multi-resistant bacteria such as:

- MRSA – Methicillin-resistant Staphylococcus aureus, increasing evidence of community onset MRSA.
- Clostridium difficile – > 20% of new cases arise in the community rather than hospital so any elderly patient with diarrhea and recent antibiotic use may have c.diff infection.
- EBSL (extended spectrum beta lactamases) enterobacteriaie.
  VRE Vancomycin-resistant enterococci.
  CRE Carbapenemase-producing Enterobacteriaceae.
  (These three bacteria are carried in the gut in large numbers, which facilitates spread in healthcare and residential settings via the environment and via the hands of staff. Carriage of these bacteria is strongly linked to antibiotic consumption.) Increasing evidence of community onset of theses bacteria especially in LTCHF.

  So when you start to think about the many varied patients we see, nursing homes or patient homes we visit, it is easy to see if we or our staff, including cleaning staff, are

not careful about infection prevention and control measures, then we may put ourselves or our patients at risk of acquiring a HCAI.

Hand hygiene is one of the most effective means of preventing HCAIs. Hand hygiene is one of the set of practices known as “standard precautions” that should be used in the care and treatment of all patients, regardless of whether they are known or suspected to be infected with a transmissible organism.

Standard Precautions

- ✓ Hand hygiene
- ✓ Use of personal protective equipment (PPE)
- ✓ Respiratory hygiene and cough etiquette
- ✓ Appropriate patient placement
- ✓ Safe injection practices
- ✓ Management of sharps
- ✓ Management of needle stick injuries/contamination incident
- ✓ Decontamination of reusable medical equipment
- ✓ Decontamination of the environment
- ✓ Management of spillages of blood and body fluids
- ✓ Management of laundry
- ✓ Management of waste

In 2005, SARI (Strategy for the Control of Antimicrobial Resistance in Ireland) published “Guidelines for Hand Hygiene in Irish Health Care Settings”. These guidelines are applicable to **all** health care settings within the Republic of Ireland. Click here for the document.

The hands of HCWs may become contaminated during contact with the wounds, mucous membranes or secretions of a patient, and also following contact with intact skin and during ‘clean activities’, e.g. taking a patient’s pulse. Increased frequency of hand hygiene has been associated with decreased transmission of pathogens.

The WHO 4 & 5 Moments for Hand Hygiene (2009 and 2012) recommends that hand hygiene is carried out when there is a perceived or actual risk of a micro-organism transmission from one surface to another on the hands. Click here for more information.

For the interested reader, this document walks you through the moments of hand hygiene for multiple types of interactions in general practice/a community setting.

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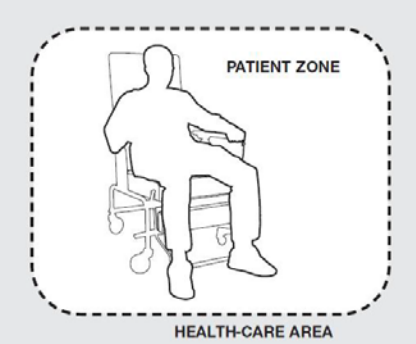
Definitions for Moments for Hand Hygiene in GP Settings	
Patient Zone  	In the acute setting, the patient zone is defined as including the patient and some surfaces/items in his/her surrounds that are temporarily and exclusively dedicated to him/her. This area becomes contaminated by the patient's own microbiological flora. In the GP setting, the patient him/herself is considered the patient zone as the space and equipment used is not exclusively dedicated to the patient for any prolonged time.
Healthcare Zone	All surfaces outside the patient zone. This area is expected to be contaminated by a wider variety of microorganisms.
Critical Sites	Sites within the patient zone which are associated with a higher risk of infection, e.g. medical devices or risk of exposure to body fluids (i.e. taking a blood sample).
Point of Care	Exactly where the care action takes place and is defined as the place where three elements come together – the patient, the healthcare worker, and the care or treatment involving the patient.

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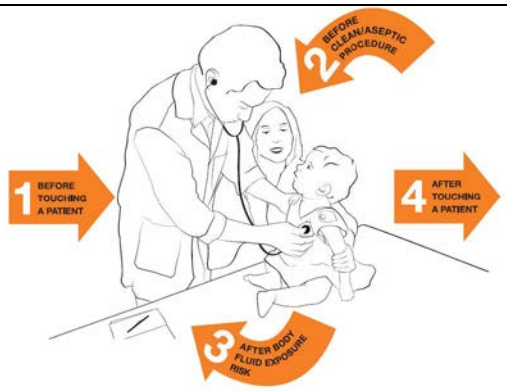
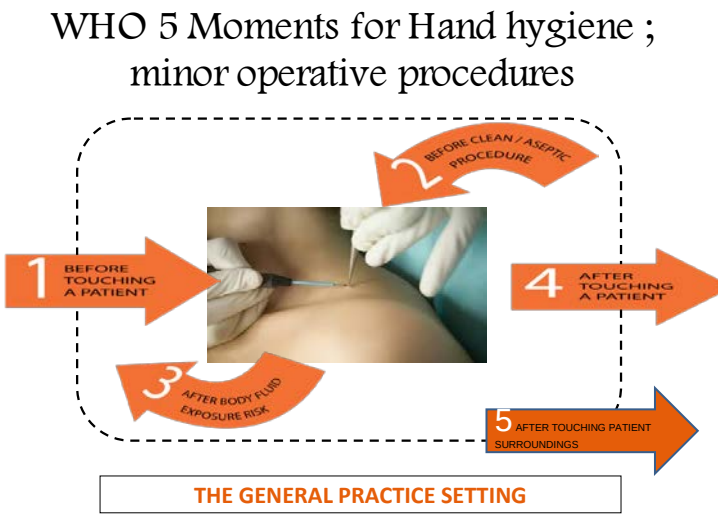
When should you perform hand hygiene in the general practice setting?

<table>
<tr><th colspan="2">Moments for hand hygiene</th></tr>
<tr><td>4 moments for hand hygiene
1. Before touching a patient
2. Before clean/aseptic procedure
3. After contact with body fluids
4. After touching a patient</td><td> 
</td></tr>
<tr><td colspan="2">In outpatient settings, moment five after touching the patients, surrounds only apply where the patient is placed for a certain amount of time in a dedicated space with dedicated equipment, e.g. when carrying out wound care/minor procedure. In this case, the surfaces and items in the patients surrounds will become contaminated.</td></tr>
<tr><td>5 moments for hand hygiene
1. Before touching a patient
2. Before clean/aseptic procedure
3. After contact with body fluids
4. After touching a patient
5. After touching the patients surrounds</td><td> 
</td></tr>
</table>

Hand hygiene should also be performed in a range of other situations, e.g:

- Before and after each work shift
- When the hands are visibly contaminated
- Before putting on and after removing PPE
- Before eating and drinking food
- After handling waste
- After cleaning clinical areas

How can you perform hand hygiene in the general practice setting?

Hand Hygiene can be carried out in three ways:

1. Use an alcohol hand rub foam/gel
2. Wash with plain liquid soap
3. Wash with an antiseptic hand wash

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Alcohol based hand rub gel/foams are the preferred method for hand hygiene when the hands are not soiled and are physically clean.

There are 2 situations where alcohol hand rub alone is not sufficient:

- After contact with a patient with known or suspected diarrhea (e.g.Clostridium Difficile or Norovirus.)
- Where hands are visibly soiled.

In these instances hand wash with antiseptic soap or plain soap followed by use of an alcohol rub is recommended.

Alcohol–based hand rub, gels/foam

Alcohol-based hand rubs are very effective antimicrobial agents. They are the preferred method for hand hygiene when the hands are **not** soiled and are physically clean. They should be applied to hands for a minimum of 15 seconds-20-30 seconds WHO, using an adequate volume to completely wet the hands. Alcohol based products containing 70%-60-75% alcohol and an emollient, are less damaging to the skin than soaps or antimicrobial detergents. Repeated use of an alcohol hand rub can lead to an excessive build of emollient on the hands; this should be removed by periodic washing with soap and water. Alcohol hand rubs can be used for hand decontamination where accesses to hand wash facilities are not adequate.

Alcohol–based hand rubs should not be used after caring for patients known or suspected to have infection with C. difficile or norovirus. In these instances, handwashing with antiseptic soap or with plain soap followed by use of an alcohol rub is recommended.

Click here for posters and videos for hand washing/alcohol rub techniques to view or print.

Hand hygiene facilities for general practice – What is recommended?

Compliance with hand hygiene is influenced by the availability of good hand hygiene facilities.

- Clinical hand wash sinks are required in all areas where clinical activities are performed.
- Clinical hand wash sinks should be dedicated for hand hygiene only.
- The hand hygiene sink(s) should meet the standard HTM 64 Sanitary assemblies (2006) * i.e. no plugs or overflows, the water jet should not flow directly into the plughole, taps should be hands free and sinks should employ mixer taps to allow regulation of water temperature.
  (Clearly these types of sinks are not readily available in many GP, /community or even hospital settings but should be considered for the future. In the interim, when performing hand hygiene, it is recommended that you use paper towels to turn off the taps after hand washing.)
- All sinks should be fitted with a washable back splash with all joints completely sealed.
- Adequate amounts of liquid soap, alcohol hand rub and antiseptic hand wash (if/when required) should be available.
- Alcohol hand rub should be available at the point of care. Optimal concentration of alcohol (60-75%) and products with emollients are recognized as superior.

- Liquid hand hygiene products should be stored in closed containers and never topped up.
- The use of good quality disposable paper towels and hand lotions are recommended.
- Air dryers are not recommended.
- Inappropriate items should not be stored at hand wash sinks.
- Waste bins should be hands free (e.g. foot operated).
- Hand hygiene posters should be available at each sink and in close proximity to alcohol hand rub dispensers.
- Access to hand wash sink should **not** be obstructed.
- Promote hand hygiene for all staff and patients using signage in all areas of the practice.

Click here for more information on this.

Hand hygiene preparation

- Nails should be kept short and cut smoothly.
- Nail varnish, and/or false nails should not be worn.
- All wrist and hand jewellery/watches (except plain wedding bands) should be removed.
- Sleeves should be rolled up to the elbow.
- Cover any abrasions with a waterproof dressing.
- Healthcare workers with damaged skin on the hands, e.g. weeping dermatitis should not carry out direct patient care and should seek occupational health advice.

General care of hands

- Cover cuts with an impermeable waterproof dressing.
- Wet hands before applying soap.
- Use preparations containing emollients.
- Always rinse hands and pat dry thoroughly.
- Apply emollient hand cream or barrier cream regularly.
- Communal jars/tubes of hand cream should not be used as the contents may become contaminated.
- Seek professional advice for sensitivity/allergy to disposable gloves and skin problems.

Hand Hygiene for Patients

Patients should clean their hands regularly. Click here for posters and patient information leaflets on the HPSC website.

What might happen in the future in general practice? What might HIQA look for?

The 2005 “Guidelines for Hand Hygiene in Irish Health Care Settings” apply to all healthcare facilities including the community setting.
They state that:

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Mandatory attendance (at least two yearly) at hand hygiene education and practice is required for all HCWs involved in clinical areas. Audit of compliance with hand hygiene guidelines and hand hygiene facilities is required in all healthcare settings.

This requirement is not currently enforced in the general practice setting but there are two HIQA documents which pertain to general practice that emphasise the importance of compliance with hand hygiene recommendations.

1. http://www.hiqa.ie/standards/health/safer-better-healthcare

2. http://www.hiqa.ie/system/files/National_Standards_Prevention_Control_Infections.pdf

It is likely that the audit of hand hygiene facilities, and evidence of compliance with hand hygiene by GPs and their staff, will form part of HIQA standards for safer and better health care inspections.

Minimum HIQA requirements will probably include dedicated clinical hand wash sinks, liquid soap and alcohol rub availability, disposable paper towels, hands free bins and hand hygiene posters displayed.

We need to reassure our patients that we are following best practice in order to minimise the risk of HCAI in Irish general practice.

Contact and other information
For feedback or suggestions for future newsletters, please email drnualaoconnor@me.com

For recent updates, see: www.antibioticprescribing.ie

Other useful websites:

Antibiotic use in the community in Ireland
http://www.hpsc.ie/hpsc/A-Z/MicrobiologyAntimicrobialResistance/EuropeanSurveillanceofAntimicrobialConsumptionESAC/SurveillanceReports/

Public information campaign on antibiotics, including campaign materials
http://www.hse.ie/go/antibiotics

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