HAND HYGIENE NEW ZEALAND

EDUCATION TOOLKIT

CLEAN HANDS SAVE LIVES

www.handhygiene.org.nz

hand hygiene NZ
ringa horoia,aotearoa

Health Quality & Safety Commission New Zealand
Kupu Taurangi Hauora o Aotearoa

INFECTION PREVENTION & CONTROL

PUBLISHED IN MAY 2014:

Hand Hygiene New Zealand
Ringa Horoia Aotearoa
Quality Department
Auckland District Health Board
Private Bag 92189
Victoria Street West
Auckland 1142
New Zealand

This document is also available on the Hand Hygiene New Zealand website:

www.handhygiene.org.nz

DISCLAIMER

CONTENTS

BACKGROUND

Hand Hygiene New Zealand (HHNZ) is a national quality improvement programme that aims to improve the quality and safety of patient care by reducing healthcare associated infections through improved hand hygiene practice by healthcare workers in New Zealand's public hospitals.

It is one component of the Health Quality & Safety Commission's Infection Prevention and Control programme. Auckland District Health Board delivers the HHNZ programme in partnership with the Commission.

INTRODUCTION

The HHNZ education toolkit has been developed to provide district health board (DHB) hand hygiene coordinators, champions and others, with a range of ideas and activities for delivering hand hygiene education to healthcare workers.

The toolkit draws upon the principles of Frontline Ownership (FLO) so that the reader can devise their own education strategy depending upon the unique needs of their hospital, service or ward.

The toolkit is intended to be practical and easily utilised. It has been developed with the input of hand hygiene coordinators throughout New Zealand. It includes:

- The FLO framework.
- A flow chart of different activities that follow progress from standard through to expert levels of hand hygiene implementation.
- The Plan, Do, Study, Act (PDSA) Model for Improvement.
- Examples of teaching tools that individuals can use to drive change or trigger improvement activities among healthcare workers.
- How to use a UV light to maximise hand hygiene technique, and reduce inappropriate glove use.
- Educational tools: PowerPoints, how-to information and educational guidance.

HAND HYGIENE IMPROVEMENT: A NEW ZEALAND PERSPECTIVE

DHBs in New Zealand are at various stages in their cycle of hand hygiene improvement. Within each DHB, wards and units are also in various stages of improvement.

The following table is a guide for DHBs to gauge where implementation of their hand hygiene programme currently sits. It describes the activities that support a culture of hand hygiene excellence. By utilising tools from HHNZ we anticipate that all DHBs can develop and maintain an advanced to expert level of hand hygiene practice.

STANDARD	INTERMEDIATE	ADVANCED	EXPERT
• Standard operational requirements as per WHO guidelines and HHNZ Implementation Guidelines pages 20-30. • Product at the point of care. • HHNZ trained and certified gold auditors and gold auditor trainer. • Reporting hand hygiene performance audit data to HHNZ.	All of **STANDARD** plus: • Recruit hand hygiene champions (see page 12 of the HHNZ Auditing Manual). • Supportive management structures with clear lines of accountability. • Effective feedback mechanisms. • Increased engagement of the quality, patient safety and improvement specialist teams within the DHB. • Start the FLO ideas. • Educational programme for hand hygiene that meets the needs of new and existing staff including education about appropriate glove use.	All of **INTERMEDIATE** plus: • Start to develop strategy for patient engagement programme according to local needs. • Implementation of FLO model across clinical areas with improvement as a result of the FLO process.	All of **ADVANCED** plus: • Implementation of an appropriate patient engagement programme. • Integration of FLO model across a range of clinical services to sustain improvement based on new cultural norms. • Sustained hand hygiene compliance across the DHB with all areas meeting the Quality and Safety Markers and self-imposed (higher) targets. • Full reporting schedule visible in all clinical areas and cascaded through all clinical areas. • Utilisation of existing networks and the HHNZ programme to share successful FLO based approaches to improvement between similar services and units at a national or regional level.

STANDARD LEVEL OPERATIONAL REQUIREMENTS

It is anticipated that all DHBs have established a local hand hygiene programme, including:

- A multidisciplinary steering group.
- A hand hygiene coordinator.
- A gold auditor trainer.
- Trained and certified gold auditors.
- Alcohol based hand rub (ABHR) product at the point of care.
- A basic hand hygiene 5 Moment education programme.
- A strategic hand hygiene improvement plan.
- The ability to monitor barriers to hand hygiene improvement.
- Capability to report Staphylococcus aureus bacteraemia data to HHNZ.
- Capability to submit national hand hygiene performance data to HHNZ.

INTERMEDIATE LEVEL OPERATIONAL REQUIREMENTS

All of Standard plus:

- A supportive management structure with a clear line of accountability, established through the steering committee. The organisational leadership prioritises quality of care, paying attention to it regularly, creating accountability systems and recognising success.
- Recruited hand hygiene champions (see page 12 of the HHNZ Auditing Manual and page 16 of the HHNZ Implementation Manual) who are provided with a position description (see example in Appendix One).
- Effective feedback mechanisms. For example, do your DHB's performance results trigger improvement and PDSA cycles?
- Initiated a FLO model with support from the quality team, improvement and educational staff and the infection prevention and control team.
- An educational programme for 5 Moments that meets the needs of new and existing staff including education about appropriate glove use.
- Hand hygiene 5 Moments education is included in orientation manuals and demonstrated to new clinical staff.
- Established local ward auditing in non-national reporting wards.
- Improved performance to national standards across national wards (at least 75% performance).
- Reviewing barriers to hand hygiene and implementing local PDSA cycles for improvement.

ADVANCED LEVEL OPERATIONAL REQUIREMENTS

All of Intermediate plus:

- Initiated planning for patient engagement programme according to local needs.
- Educational programme for 5 Moments that directly targets areas for improvement and is used in conjunction with PDSA cycles.
- Implementation of FLO model across clinical areas with measurement of improvement as a result of the FLO process (can use PDSA cycles or other improvement tools and measurement).
- Improved performance across all wards and units to national standard (of at least 75% performance).
- Implementing hand hygiene programmes across atypical non-auditing areas. For example, operating rooms, mental health and maternity.
- Sharing ideas and successes with other DHBs.
- Development of a sustainability plan.

EXPERT LEVEL OPERATIONAL REQUIREMENTS

All of Advanced plus:

- Implementation of a patient engagement programme.
- Integration of FLO model across a range of clinical services to sustain improvement based on new cultural norms.
- Sustained hand hygiene performance across the DHB with all areas meeting the Quality and Safety Markers and DHB specific aspirational goals.
- Full reporting schedule visible in all clinical areas and cascaded through all clinical areas.
- Utilisation of existing networks and the HHNZ programme to share successful FLO based approaches to improvement between similar services and units at a national or regional level.
- An embedded plan for sustainability that is not person dependent but operationally viable.
- Demonstrates a sustained organisational culture of hand hygiene excellence.

THE WORLD HEALTH ORGANIZATION 5 MOMENTS APPROACH AND MULTI-MODAL FRAMEWORK

The HHNZ programme utilises the World Health Organization's (WHO) 5 Moments for hand hygiene approach, which has also been adopted successfully by Hand Hygiene Australia. This approach accounts for the fact that hand hygiene with ABHR is not only useful to prevent transmission of pathogens between patients, but also to prevent transfer of pathogens from contaminated to clean sites within the individual patient. Thus hand hygiene should not only be performed before and after patient contact, but also before and after a procedure, and after contact with patient surroundings.

The WHO multi-modal approach is the broad overarching framework used by HHNZ and DHBs to implement the national hand hygiene programme. This high-level approach has been adopted with great success internationally[1].

IT CONSISTS OF FOUR CORE COMPONENTS:

1. **System change:** The placement of ABHR at the point of care.
2. **Education:** Hand hygiene education plus reminders and promotion in the workplace.
3. **Measurement and feedback of hand hygiene performance.**
4. **Leadership, engagement and community organising.**

Measurement and feedback of each of these components can be accompanied by improvement cycles and initiatives. For example the PDSA cycle[2] can be used as an improvement tool by DHBs (see next page).

This process can be applied to each idea that is piloted to see if it leads to improvement on a small scale. Successful ideas can then be rolled out more widely by wards, services or organisations, continuing to test as they go.

PLAN, DO, STUDY, ACT

The Plan, Do, Study, Act (PDSA) cycle is a way to test a change that is implemented. By going through the prescribed four steps, it guides the thinking process to break down the task into steps, evaluate the outcome, improve on it, and then test again.

Most of us go through some or all of these steps when we implement change in our lives, and we don't even think about it. Having them written down often helps people focus and learn more and can provide a case for change for an improvement activity.

The PDSA Worksheet is a useful tool for documenting a test of change. The PDSA cycle is shorthand for testing a change by developing a plan to test the change (Plan), carrying out the test (Do), observing and learning from the consequences (Study), and determining what modifications should be made to the test (Act).

HANDY TIP:

The Institute of Healthcare Improvement has a range of useful information and resources to help you with each step of the improvement cycle, including a PDSA worksheet. Visit www.ihi.org/resources/Pages/HowtoImprove/default.aspx and www.ihi.org/resources/Pages/Tools/PlanDoStudyActWorksheet.aspx.
See also the hyperlinks in the PDSA cycle diagram on the following page.

The Model for Improvement: Developed by Associates in Process Improvement[2]

WHAT ARE WE TRYING TO ACCOMPLISH?

HOW WILL WE KNOW THAT A CHANGE IS AN IMPROVEMENT?

WHAT CHANGES CAN WE MAKE THAT WILL RESULT IN IMPROVEMENT?

AIMS: To make improvements you must first set aims. What do you want to achieve? Aims must be succinct but specific, time oriented, include numerical goals where possible (which assists with measurement planning) and send a clear message that the status quo must change. Aims should be carefully tracked (IHI, 2013). www.ihi.org/knowledge/Pages/HowtoImprove/ScienceofImprovementSettingAims.aspx.

Example: We will improve the performance of hand hygiene at the right time to achieve 10% increase on baseline for moments 1 and 2 in our preoperative areas by the end of <state your date>.

MEASUREMENT: To know whether your change is leading to the desired improvement you need to measure. The three key measures you need to consider are outcome measures, process measures and balancing measures. Measurement is a vital component of the improvement process. If you don't measure you won't know what impact your improvements are having on stakeholders, whether the stages of the process are working properly, whether the improvements are affecting another part of the process (IHI, 2013). www.ihi.org/knowledge/Pages/HowtoImprove/ScienceofImprovementEstablishingMeasures.aspx.

Example:

- We will audit 5 moment compliance using the gold auditor tool for 100 moments during the last two weeks of <insert your date>.
- We will audit ABHR availability at the point of care (count each bed that has one).
- We will audit and report inappropriate glove use.

CHANGE CONCEPTS can help to inspire specific ideas for change that will lead to improvement. Change concepts are usually broad and should be combined with specific subject knowledge to determine whether they are applicable. The first Do No Harm website provides a useful list of change concepts on their website under 'resources'. www.firstdonoharm.org.nz.

THE FRONTLINE OWNERSHIP (FLO) MODEL

The FLO model is based on the principle that solutions to problems will be more effective and resilient if frontline staff devise their own specific solutions rather than having standardised solutions imposed on them externally[3].

This approach can be particularly useful when you are seeking to educate healthcare workers about hand hygiene and improve hand hygiene performance. By involving members of the specific service or ward you are seeking to improve behaviour among, you can work with them to determine an approach to education that suits their needs.

A system or mode of education delivery that works well in one clinical setting or in one particular service may not necessarily work equally well in others. FLO encourages frontline healthcare workers to come up with solutions so that they resonate more strongly and the effects are therefore more likely to be successful and sustainable.

For example, in terms of practice change, although it is clear that ABHR must be present at the point of care to achieve good hand hygiene practice, the optimal location of the product may differ depending on the setting. Staff in some intensive care units, for example, found that good hand hygiene practice is facilitated by placing ABHR at both ends of the patient bed. Another critical care department has it available at all four sides of the bed plus a hand basin within the patient bed space.

Following some disappointing performance results a day stay oncology team determined that staff required greater accessibility to ABHR to enable them to perform good hand hygiene at the appropriate times.

Because of the tight space in between patient zones and inability to attach an ABHR dispenser to the chair, they found ABHR was more accessible when it was attached to a drip pole. They also placed additional ABHR in the middle of the room on a trolley and each portable trolley held a bottle of ABHR in a bracket.

A key principle of FLO is to use "positive deviance"[4]. An aspect of positive deviance is to identify staff, who despite the barriers and obstacles, still carry out a high degree of compliance with the action or behaviour you wish to replicate. Observe how they manage to do this. This information can then be passed onto to others as tips and actions that help them to recreate this positive deviant behaviour in their own practice.

The PDSA improvement tool is useful when used in association with the FLO model. It can assist 'frontliners' to guide and document their improvement ideas and can demonstrate whether an idea is useful and worth pursuing. One of the issues that we have sometimes is that we keep doing the same improvement activity and we expect a change to occur and are surprised when it doesn't.

Another aspect of this principle is to start by working with the willing. The idea is to begin by working with the early adopters and to work with those who come on board to reach the early and late majorities. Eventually you work with those that are slower to adopt. Successes among the early adopters are then shared more widely among similar services or units that are slower to embrace change. Research has revealed that early adopters are usually people more centrally placed within their social networks. It was suggested that by engaging people who were more centrally placed within their social and professional networks, f/aster adoption and spread of ideas, behaviour and altruism could be achieved.

PRINCIPLES FOR TEACHING ADULTS

There are a variety of principles and theories that can guide the way you approach teaching hand hygiene education among healthcare workers. Some useful principles are highlighted below as a starting point for you to consider.

PRINCIPLES FOR GOOD PRACTICE WITH ADULT LEARNERS[5]

Malcolm Knowles established seven principles to help adults learn. The term adult covers a wide age range and level of maturity; however, the common denominator is that we expect to see a greater degree of independence and self-direction in adult learners. Our job as a teacher is to facilitate this. Knowles suggested that this can be achieved by:

1. Establishing an effective learning climate, where learners feel safe and comfortable expressing themselves.
2. Involving learners in mutual planning of relevant methods and curricular content.
3. Involving learners in diagnosing their own needs - this will help to trigger internal motivation.
4. Encouraging learners to formulate their own learning objectives - this gives them more control of their learning.
5. Encouraging learners to identify resources and devise strategies for using the resources to achieve their objectives.
6. Supporting learners in carrying out their learning plans.
7. Involving learners in evaluating their own learning - this can develop their skills of critical reflection.

Your approach to teaching healthcare workers might be guided by these seven principles.

WHY ISN'T REACHING 100% A NATIONAL HAND HYGIENE PERFORMANCE GOAL?

The WHO 5 Moments of hand hygiene model teaches healthcare workers the exact moment to complete the action of hand hygiene before, during and after patient contact.

For example, if a healthcare worker cleans his or her hands outside a curtained patient space and then touches the curtains as they go in, they should then clean their hands again before touching the patient. This is because curtains are considered to be contaminated. If hand hygiene is not performed again prior to touching the patient, the opportunity to reduce the potential spread of germs from the curtain to the patient via the healthcare worker's hands has been missed.

As part of observing healthcare workers' patient contact, this very robust hand hygiene auditing approach gives no leeway for missed hand hygiene opportunities. Wards or units that are audited using the 5 Moments approach and who consistently achieve higher than 80 per cent are understandably in the minority.

The more acute the area is and the higher number of procedures or complex patient interactions there are, the harder it is to achieve a higher result.

Countries that claim to be consistently in the high 90 to 100 per cent performance range would almost certainly not be auditing using the same 5 Moments approach as described here, or be training auditors to observe healthcare worker practice in the same way.

The best way to compare results is noting improvement within your own institution and monitoring for sustainability.

TEACHING TOOLS

The following section of the education toolkit highlights a variety of resources and ideas to help you deliver hand hygiene education to healthcare workers in your DHB, service or ward.

PATIENT STORIES AND ONLINE VIDEOS

As a topic hand hygiene improvement can be quite dry. Being innovative, relevant and breaking through hand hygiene fatigue or perceptions of 'having been here before' can be challenging.

The use of stories and in particular patient stories, are valuable when educating staff about hand hygiene. Patients' experiences can be the catalyst that helps healthcare workers to become motivated to improve their own hand hygiene practice. They can also provide the impetus to challenge or remind their colleagues about their hand hygiene practice.

WHY DO PATIENT STORIES HELP CHANGE PRACTICE?

A really worthwhile online article by Peter Guber in Psychology Today describes how stories can help shape our beliefs and behaviours.

"Stories connect us to others. They provide emotional transportation, moving people to take action on your cause because they can very quickly come to identify with the characters in the narrative or share their experience—courtesy of the images evoked in the telling," says Peter[6].

Stories allow us to simulate and learn from events without having to live through the experience and can involve us in personal, emotional ways. This is different from how we respond to facts and statistics and allows us to learn from events.

HHNZ has two patient stories that are available for use during your education sessions. These feature New Zealand patients sharing their healthcare and hand hygiene related experiences.

Paul and Rachel's story

Paul and Rachel's story follows Paul's experience of undergoing ankle surgery after falling off a ladder. Paul became critically ill with a Staphylococcus aureus bacteraemia during his hospital stay. Rachel and Paul both talk about the effect that this had on them. In the video Dr Sally Roberts, Clinical Head of Microbiology at Auckland DHB, contributes by giving some background around why hand hygiene is so important in stopping such infections. Visit the homepage of www.handhygiene.org.nz to watch Paul's story.

Amelia's Story

This is a written patient story and photo of Amelia who is a teenage patient undergoing chemotherapy at Starship Children's Hospital. Amelia knows an infection could be life threatening. Amelia and her mum Kim reveal how much good hand hygiene and cleanliness means to them during her visits to hospital.
Visit **http://bit.ly/Amelias_story** to read Amelia's story.

Glen's Story - You tube

Hand Hygiene Australia also has a very moving video called "Glen's story". This video is about a young Australian medical student with leukemia and his life threatening struggles when he acquires a healthcare associated infection. Visit **https://www.youtube.com/watch?v=RIsBB6TmZvA** to watch Glen's story.

You could also think about creating your own local patient story. See the Health Quality & Safety Commission's patient story toolkit for information on how to develop patient story resources.

www.hqsc.govt.nz/assets/Other-Topics/QS-challenge-reports/Patient-Stories-Toolkit.pdf

OTHER STORIES

Ignaz Semmelweiss

The story of Ignaz Semmelweiss is a great way to open up a hand hygiene education session. There is a lot of online information about Ignaz Semmelweiss. It is worth familiarising yourself with his history and the link he discovered between the high rate of mortality in newly delivered mothers and poor hand hygiene, while he was working as an obstetrician in the mid to late 1840s. To find out more about Ignaz Semmelweiss Google his name or visit **www.semmelweissociety.org/Biography.aspx**

When you tell the Semmelweiss story it often produces a sense of disbelief amongst the audience. They cannot believe that doctors couldn't see the link between poor hand hygiene and the high rates of mortality. One of the purposes of telling this story is to talk about the fact that despite the evidence that Semmelweiss had, his colleagues did not want to believe it. In fact they ridiculed it. Accordingly, they did not want to change their practice. Years after his death when science and proof was able to catch up to his theory of the source of infection, he was vindicated and is now hailed as the 'father' of infection control.

Advance 150 years and the WHO have refined hand hygiene much further and have demonstrated that if the 5 Moments of hand hygiene are adhered to, the outcome for patients is much improved and their chance of receiving a life threatening healthcare associated infection is greatly reduced. Yet healthcare workers are generally not convinced enough by this information and evidence to actively change their hand hygiene behaviour and to make it their habit to routinely practice the 5 Moments of hand hygiene.

VIDEOS

There are several great videos available online which have a variety of uses. Some are serious and some are very funny. Most of these will require YouTube access, however, if you are unable to access YouTube at your work place you may need to ask your IT people to download these videos for you and put them in a format that you can access.

Semmelweiss and Lister Blood and guts video

The UK Blood and Guts video is very good and captures the Semmelweiss story very well, however, it is fairly long at 14 minutes. Watch the video here: **www.youtube.com/watch?v=wUp9mUyVIGA.**

Healthcare worker hand hygiene educational video

This is an older American video but puts the point across very well about the chain of infection in a busy hospital ward. Watch the video here: **www.youtube.com/watch?v=LvRP3c5n3P8.**

The following two are similar but with different music and visual effects:

- UK chain of infection video: **www.youtube.com/watch?v=_o9SxDFPUiA.**
- Wash your hands it just makes sense: **www.youtube.com/watch?v=M8AKTACyiB0.**

HHNZ also has a series of competition videos, mainly musical, which are great to put up at the beginning of a session while people are coming in or if you are doing a longer session they can be useful to put up in a break. They also demonstrate how doing something like this puts a focus on hand hygiene and acts as a useful reminder and engagement activity. You can access the videos here: **http://bit.ly/HHvideos.**

HHNZ gold auditor training video

On the gold auditor training video there are some good video segments that explain the patient zone, healthcare zone, what is a patient and what is a procedure. They also have visual scenarios that help people understand when they should perform hand hygiene. Your hand hygiene coordinator will have a copy of the video or you can request one from the HHNZ national coordinator.

EDUCATING VIA A POWERPOINT PRESENTATION

There is an art to making PowerPoints interesting and relevant. 'Death by power point' is no fun for anyone, particularly when talking about hand hygiene. PowerPoint slides should be a support for your education session and use innovative or creative imagery which helps focus the audience and engage them with your presentation.

For example, when presenting a PowerPoint and referring to the barriers of hand hygiene you could state that 'sometimes you hit a brick wall' and you will need to find innovative ways to get around barriers. Find images that support this analogy.

You can also theme your hand hygiene session so that it does not have to be bland. For example, it could be likened to playing a game of snakes and ladders with the ups and downs. Here you can talk about the barriers as the snakes and the ladders as the improvement strategies or ideas. You could also use images of dice to talk about change (see www.rgbstock.com/photo/mgylFfy/dices+in+hand).

Please remember that some images on the internet may be subject to copyright but there are free stock images available via websites such as:

- www.stockvault.net
- www.stockfreeimages.com
- www.rgbstock.com.

Please make sure that you read the terms ad condition prior to using any images.

When delivering a presentation the main thing is to think about your audience. A slide show for phlebotomists will be different from one you may deliver doctors or to students. One size does not fit all.

There are many tips and pointers available online on how to create and deliver effective PowerPoints. Google "PowerPoint presentation tips".

QUICK TIPS FOR DELIVERING EFFECTIVE POWERPOINT PRESENTATIONS[7]

Remember that your PowerPoint slides are there to support, not to replace your talk. Make sure you tell a story, describe your data or explain circumstances, and only provide keyword/key messages through your slides.

Here are some tips that may be useful:

- **Keep the design very basic and simple. It should not distract.**
- **Pick an easy to read font face.**
- **Carefully select font sizes for headers and text.**
- **Leave room for highlights, such as images or take home messages. Decorate scarcely but well.**
- **Consistently use the same font face and sizes on all slides. Match colours.**
- **Express a 'take home' message.**

IMAGES

Images are key elements of every presentation. Your audience has ears and eyes – they'll want to see what you're talking about, and a good visual cue will help them to understand your message much better.

- Have more images in your slides than text.
- But do not use images to decorate!
- Images can reinforce or complement your message.
- Use images to visualise and explain.
- A picture can say more than a thousand words.

REMEMBER YOUR AUDIENCE

- What do they know?
- What do you need to tell them?
- What do they expect?
- What will be interesting to them?
- What can you teach them?
- What will keep them focused?
- Answer these questions and boil your slides down to the very essentials.

The World Health Organization has some useful PowerPoint presentations about hand hygiene. Visit **www.who.int/gpsc/5may/tools/training_education/slides/en/** for more information. Similarly, **www.slideshare.net** is a useful resource for hand hygiene PowerPoints too.

The Hand Hygiene Australia website has a series of PowerPoint slides that you could explore. Visit **www.hha.org.au/ForHealthcareWorkers/education.aspx.**

Under the Resource Library tab on the HHNZ website and then the **'Presentations'** sub tab, there is a series of PowerPoints that HHNZ and Auckland District Health Board has delivered. You are free to use these or select ideas from them to form your own PowerPoints.

HAND HYGIENE
UV LIGHT DEMONSTRATION

The following information highlights how you can use a UV light box to demonstrate good hand hygiene technique and also to demonstrate why gloves are not a substitute for hand hygiene.

The equipment that is required for a light box demonstration is:

- **Box of non-sterile disposable gloves**
- **Alcohol based hand rub (ABHR)**
- **Glitter bug potion (glow cream)**
- **UV light box and/or UV torch**
- **HHNZ posters: how-to hand rub and how-to hand wash.**

STEP 1. DONNING THE GLOVES

1. Assemble a box of non-sterile disposable gloves and ABHR and invite staff to don gloves.
2. Once participants have put gloves on use ABHR and don gloves yourself.
3. Ask: "Who has the cleanest hands now to touch patients?" Answer: "Me, because I have gelled my hands before donning gloves, and anybody else who gelled their hands."
4. Talk about the study conducted at University of Otago[8] which showed glove boxes progressively getting more contaminated because of non sanitised hands going into boxes.
5. Staff that did not gel their hands have put potentially contaminated and non-sanitised hands into boxes. They could have contaminated both the glove box and gloves inside. Gloves colonised with their flora will be transferred to other patients and other healthcare workers when they put contaminated gloves on.

STEP 2. GLOW CREAM APPLICATION TO GLOVES

1. Ask staff to apply glow cream to gloved hands and rub into the gloves. Glow cream mimics germs. You, as the presenter, do the same.
2. Ask them to quickly remove gloves from hands in their normal manner, and you do this too.
3. Place hands in the light box. Alternatively you can use UV torch. Where gloves were removed the glow cream (aka bacteria) can be seen on hands and small spots where the gloves failed and also where removal of gloves contaminated hands. Look carefully at the finger tips, around the thumbs and wrists and sleeves.
4. Ask those people that are 'contaminated' even with one tiny spot to now to stand to one side, anyone clear of 'contamination' to stand another side. There are usually approx 90% + of people on the contaminated side. So not only do gloves have holes, but the action of taking gloves off contaminates hands as well.
5. Provide the following practice example: You have helped transfer/examine a patient or assisted in care and your gloves are contaminated with that patient's bacteria.

   Discuss:

   - Gloves are not a substitute for hand hygiene

- Gloves have minute holes and are, therefore, semi-permeable
- The Dirty Hand in the Latex Glove[9] study found that glove use was strongly associated with lower rates of hand hygiene compliance (58.5% failure rate in performing correct hand hygiene with gloves versus. 50% without glove use).

STEP 3: GLOW CREAM APPLICATION TO HANDS

1. Ask the entire group to apply cream directly to their hands. Lightly apply and don't rub in. Then ask them to don gloves again over creamed hands.

2. Place gloved hands in the light box or use UV torch. You can see that gloved hands are contaminated. Remind participants that hands need to be sanitised first before donning gloves.

3. Place glove box in the light box or use an UV light. The glove box is also contaminated.

4. Provide the following practice example: Back from lunch someone calls for assistance and a staff member gets gloves out of a box thereby contaminating the box. Ask: "Who can don non-sterile gloves without contaminating the outside of their gloves?" No one can. The patient is now unprotected from germs on the healthcare worker's hands and also from other healthcare workers who have not sanitised their hands before taking gloves out of the glove box.

STEP 4. REMOVE GLOVES AND WASH HANDS WITH SOAP AND WARM WATER

1. Ask staff to remove gloves and wash hands with soap and warm water (glow cream doesn't come off with ABHR or easily with cold water).

2. Light box hands again after hand washing. This indicates where the washing technique may have failed.

3. Demonstrate and discuss correct hand hygiene methods using soap and water and then using hand gel, according to HHNZ posters or video clips.

4. This is also a good opportunity to point out why 'bare below the elbows' is a good idea. Remind people that nail polish, false fingernails, raised rings and other hand/wrist jewellery is not suitable for anyone with patient contact.

STEP 5. ENVIRONMENTAL CONTAMINATION

If there is time, discuss the splash back of bacteria and how easily it is spread. If you have a torch, shine on clothes to see particles spread.

- Use torch if available. Check clothes, faces, table in front of light box and door handles.

Notes

- Always use ABHR before and after glove usage (prior to reaching into glove box). This applies even when you are not using gloves for direct patient care. This will ensure the integrity of the gloves for the next healthcare worker.
- Gloves should only be worn by healthcare workers as an extra barrier to protect against body fluid exposure and toxic chemical protection. Or when directed for contact precautions.
- Gloves should never be worn away from the patient unless carrying body fluids to the sluice room or blood gas machine, or when transferring a patient known to have a multi-resistant organism.
- Gloves are of minimal use to patients, only useful for the healthcare worker as an extra barrier.

HAND HYGIENE AND GLOVE USE

There are many times when wearing gloves during patient care is important for self-protection. But wearing gloves does not remove the need for hand hygiene. Hand hygiene must be performed when appropriate regardless of glove use.

Incorrect glove use is a barrier to good hand hygiene practice. Gloves should only be used by healthcare workers to protect themselves against blood, body fluids, and toxic agents, or for contact precautions and where indicated by policy.

When providing healthcare workers with glove use education be sure to highlight the following points:

- Using sterile or non-sterile gloves **does not** replace the need for cleaning your hands.
- Hand hygiene must be performed when appropriate regardless of the indications for glove use.
- Evidence shows that microorganism transmission can occur from and to the wearer's hands via tiny holes in gloves.
- Gloves should only be worn when indicated according to standard and contact precautions; otherwise they become a risk for microorganism transmission and therefore a potential risk for patient harm.

You might also like to highlight the following tips for performing great hand hygiene when gloves are required:

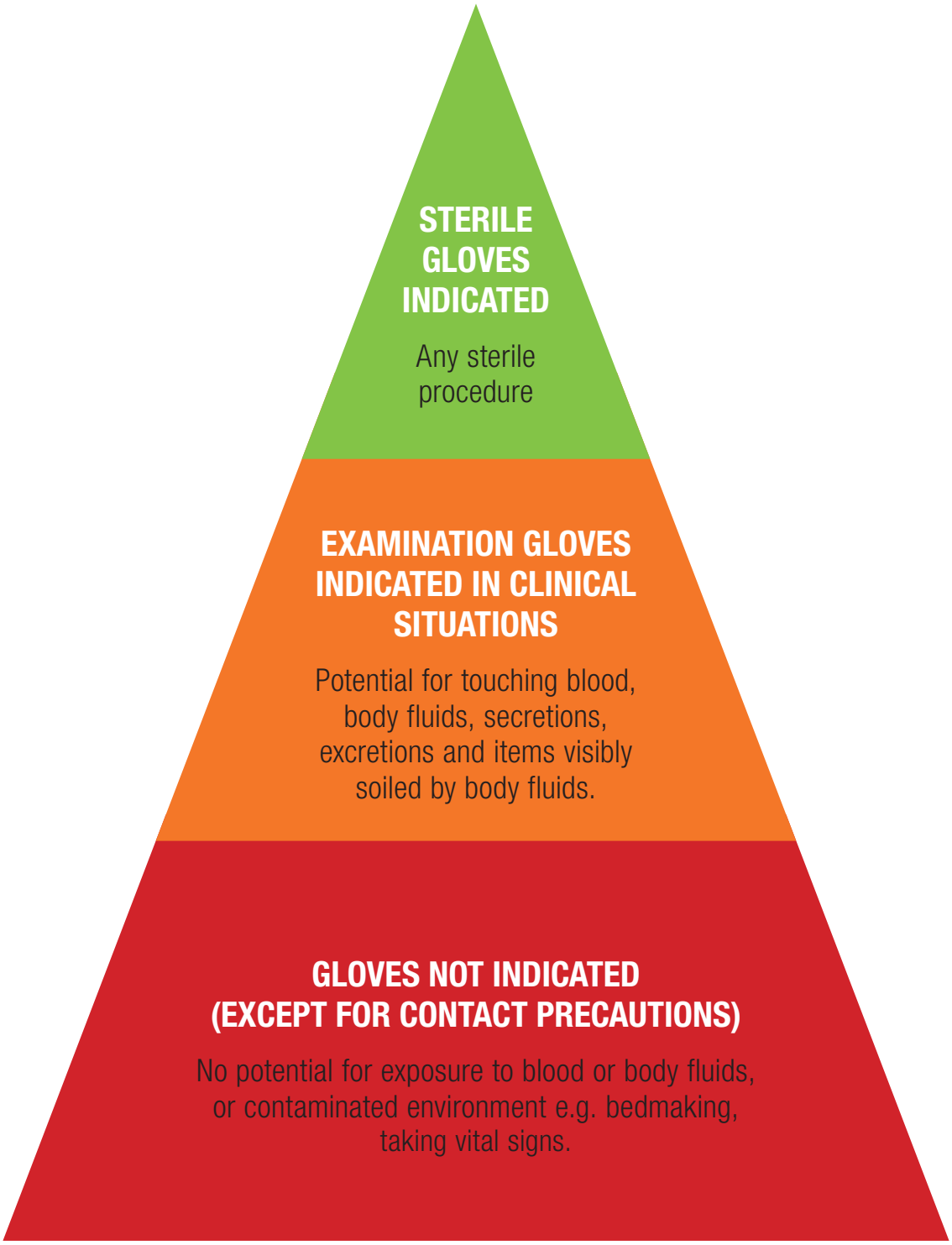
- **Clean your hands before getting gloves out of a glove box.** Putting unsanitised hands into a glove box may contaminate remaining gloves.
- **Always clean hands before putting gloves on.** When donning gloves unsanitised hands can contaminate the outside of the gloves (even with gloves from 'cuff first' boxes).
- **Always clean hands when removing gloves.** Removing gloves may contaminate your hands with 'splash back'. It is very difficult to remove gloves without some residual hand, finger, or wrist contamination.
- **Always remove gloves to perform hand hygiene when an indication occurs while wearing gloves.** Many moments are missed through inappropriate continuous glove wearing.
- **Gloves should be removed for hand cleaning.** Alcohol based hand rub should not be applied to the outside of gloves.
- **Actively consider whether gloves are required for the task,** rather than routinely wearing them if they are not indicated.

This information can be found in two places on the HHNZ website. Under the Resource Library tab and then 'HHNZ Guidance' you will also find a 'one pager' education sheet on glove use. The HHNZ promotional materials also include a glove use poster that you can use to highlight this important issue. You can find this under the resource library tab and then 'Promotional Materials'.

You may also find the glove use pyramid below a useful resource to provide to staff. The pyramid is a modification from the WHO glove usage pyramid **www.who.int/gpsc/5may/Glove_Use_Information_Leaflet.pdf**

GLOVES

DO YOU REALLY NEED THEM?



APPENDIX ONE: EXAMPLE HAND HYGIENE CHAMPION POSITION DESCRIPTION

HAND HYGIENE CHAMPIONS

This role is important for safeguarding patient safety by assisting in the reduction of healthcare associated infections acquired by patients in our care.

What is my role?

- To use your knowledge and skills to support and guide your colleagues to uphold best practice for hand hygiene.
- Champion and lead a change in hand hygiene practice, so teams can achieve high standards.
- Have sound knowledge of the 5 Moments and the hand hygiene compliance auditing process.
- Be the 'go to person' if a member of the team has any questions/troubleshooting.
- Elevate any concerns or possible changes required for improvement to a charge nurse and senior management.
- Feedback successes regarding hand hygiene to relevant departments.
- Conduct hand hygiene performance auditing.
- Facilitate hand hygiene promotional activities in your clinical area.

How can I do this?

- Become a HHNZ gold auditor and carry out hand hygiene performance audits.
- Regularly assist in the presentation of hand hygiene performance data to all ward or department staff e.g. disseminating performance results in your clinical area, such as updating hand hygiene performance posters, highlighting areas where hand hygiene practice has improved or needs to improve.
- Facilitate and encourage the involvement and ownership of the excellent hand hygiene practice within your team.
- Identify product placement, monitor replenishment and the availability of product at point of care. Discuss with your charge nurse what action is required.
- Provide or facilitate education and orientation to all new staff regarding hand hygiene products that are used and encourage team members to complete the online learning package.
- Advise patients and caregivers about hand hygiene, explaining why hand hygiene is so important.

How are you supported to be a hand hygiene champion?

- You will be trained as a gold auditor and will have allocated time to conduct the duties as per this position description.
- Your charge nurse will allocate the time required to conduct the activities as per this position description.
- You will directly report to your charge nurse on your activities.

The DHB hand hygiene coordinator will answer any queries and provide up to date hand hygiene information.

APPENDIX TWO:
PDSA CYCLE EXAMPLE

Although the following example is not specifically about hand hygiene, it demonstrates how the PDSA cycle can help you to make improvements through focused planning and action relating to a specific task.

A nurse had been trying for five to six years to get medical staff to change their disposable aprons between endoscope procedures, as per the hospital policy. When asked what it was she was currently doing to get them to change their aprons, she said that she felt every time she had to verbally remind medical staff that an apron change was indicated and if she was not there at the appropriate time then she was not sure that they would change their apron, also she did not want to take responsibility for their actions anymore.

A suggestion was to implement an alternative idea to that of verbally reminding the doctors because clearly it was not working and was reliant on a reminder person being there. This was not a sustainable or reliable process or what the reminder person wanted to keep doing.

After some brain storming the following is an example of what she felt she could try, using the PDSA cycle.

Tool: Improving doctors' apron change compliance between patients.

Step: Change in apron wearing behaviour - cycle 1st try.

I hope this produces: All doctors performing endoscopies routinely change their aprons in between cases without verbal reminders.

DO: STEPS TO EXECUTE:

1. Talk to department manager re approval to do an email/letter activity.
2. Draft the email/letter, which is then approved and signed by department manager.
3. Email and/or send out a letter to remind doctors that the hospital policy requires them to wear clean aprons for each endoscope case by the end of the week.
4. Will try this for one month.

WHAT DID YOU OBSERVE?

- All emails and letters went out the following week.
- There was minimal improvement. None of the doctors mentioned the emails/letters.
- When asked, some doctors said they had not read the email or the letter because they were too busy.
- One doctor said he would still rely on the nurse to tell him when to change his apron.

STUDY: DID YOU MEET YOUR MEASUREMENT GOAL?

No, the email and letters did not work well. No doctors were seen to change their behaviour.

ACT: WHAT DID YOU LEARN/ CONCLUDE FROM THIS CYCLE?

- The emails and letters had no effect did not change behaviour.

After further discussion with the endoscopy team including a doctor representative, the following was put forward:

PLAN:

Tool: Improving doctors' apron change compliance.

Step: Change in apron wearing behaviour - cycle 2nd try.

I hope this produces: All doctors performing endoscopies routinely change their aprons in between cases without verbal reminder.

STEPS TO EXECUTE:

1. Do two designs for desktop image – have doctors vote on the one they like best and reminds them to change their apron in between cases.
2. Place sign by the hand hygiene product and glove boxes to remind doctor's to change aprons.
3. During the set up for each procedure implement placement of a clean apron on the endoscopy trolley.
4. Add this step to the procedure information.
5. Add the process to the set up list in the set up room and make sure all endoscopy staff are aware of the new set up.
6. Advise the doctors of new process to enable them to easily achieve apron change.
7. Place bins near to trolley for apron disposal.
8. Do this for one month.

DO: WHAT DID YOU OBSERVE?

- Only one doctor was verbally reminded to change their apron and this was because they had been on leave and not aware the process to put a clean apron on the trolley during set up had changed.
- All other doctors routinely changed their apron when they were moving to the next case.
- Although staff were ok with the procedure some of the processes to help achieve this were missing and some barriers needed addressing:
  - No rubbish bin for all the used aprons routinely placed near the trollies.
  - No hook was available to hang the apron dispenser in the procedure room.
  - Procedure list was re-written but not put in the communications book or info circulated to staff that had been away so they had not reason to look at the set up list.
  - Running out of aprons.

- Unsure whether desktop had an impact because the image was not seen very much as patient notes were up on the screen.
- Doctors said the reason they changed their apron was because it was right in front of them as a reminder.
- The bins got full quite quickly.

STUDY:

What did you conclude from this cycle?

The change in process of having an apron on the trolley for each set up was effective. A few more operational interventions were required to make the change sustainable:

- ✓ Acquire extra rubbish bins to be near endoscope trolley for apron disposal.
- ✓ Ask for a hook to be installed in the set up room to hang aprons dispenser.
- ✓ Write the changes in the comms email to all staff not just verbalise at staff meeting.
- ✓ Have the change written on bright paper with an arrow pointing to the new step.
- ✓ Increase the impress order for aprons.
- ✓ The cleaner was advised of the new bin position and the increase in emptying that was required.
- ✓ Reassess in one month to make sure the extra interventions are completed.
- ✓ Because of so many interventions it was difficult to assess which ones worked well.
- ✓ For next PDSA aim for smaller set of interventions to test them more easily.

ACT: DID YOU MEET YOUR MEASUREMENT GOAL?

Yes.

REFERENCES

1. Allegranzi B, Gayet-Ageron A, Damani N, Bengaly L, McLaws ML, Moro ML, Memish Z, Urroz O, Richet H, Storr J, Donaldson L, Pittet D. (2013). **Global implementation of WHO's multimodal strategy for improvement of hand hygiene: a quasi-experimental study**. *Lancet Infectious Diseases*, 13: 843-51.

2. Langley GL, Nolan KM, Nolan TW, Norman CL, Provost LP. (2009). The Improvement Guide: A Practical Approach to Enhancing Organizational Performance (2nd edition). San Francisco: Jossey-Bass Publishers.

3. Zimmerman B, Reason P, Rykert L, Gitterman L, Christian J, and Gardam M. 2013. (2013). Front-Line Ownership: Generating a Cure Mindset for Patient Safety. *Health care papers*, 13:6-22.

4. Marra A, et al. (2013). A multicenter study using positive deviance for improving hand hygiene compliance. *American Journal Infection Control*, 41: 984-8.

5. University of Auckland, Faculty of Medical and Health Sciences. (2010). What is the best teaching approach? **www.fmhshub.auckland.ac.nz/1_6.html?t=1367984523.34**. *Accessed on 26 May 2014.*

6. Guber P. (2011). The Inside Story. Psychology Today. **www.psychologytoday.com/articles/201103/the-inside-story**. *Accessed on 26 May 2014.*

7. **MakeUseOf.com** 10 PowerPoint Tips: **www.makeuseof.com/tag/10-tips-for-preparing-a-professional-presentation/.** *Accessed on 26 May 2014.*

8. Hughes KA, Cornwall J, Theis JC, Brooks HJ. (2013). Bacterial contamination of unused, disposable non-sterile gloves on a hospital orthopaedic ward. *Australasian Medical Journal,* 6: 331-8.

9. Fuller C, Savage J, Besser S, Hayward A, Cookson B, Cooper B, Stone S. (2011). **"The dirty hand in the latex glove": A study of hand hygiene compliance when gloves are worn.** Infection Control Hospital Epidemiology, 32: 1194-9.

10. Institute for Healthcare Improvement. (2014). **www.ihi.org/resources/Pages/Tools/PlanDoStudyActWorksheet.aspx** *Accessed 26 May 2014.*

NOTES

www.handhygiene.org.nz