

	POLICIES & PROCEDURES Number: 40-117 Title: Methicillin-Resistant Staphylococcus aureus (MRSA) – In the Community
Authorization: [X] SHR Regional Infection Prevention & Control Committee	Source: Infection Prevention & Control Date Initiated: August 15, 2010 Date Approved: October 5, 2010 Date Reaffirmed: February 2014 Date Revised: February 2015 Scope: SHR

Any PRINTED version of this document is only accurate up to the date of printing. Saskatoon Health Region, (SHR) Infection Prevention & Control (IP&C) cannot guarantee the currency or accuracy of any printed policy. Always refer to the IP&C internal website for the most current versions of documents in effect. SHR IP&C accepts no responsibility for use of this material by any person or organization not associated with SHR. No part of this document may be reproduced in any form for publication without permission of SHR IP&C.

Introduction

Staphylococcus aureus is a gram-positive bacteria, which forms a part of the normal flora found on skin and mucous membranes. Methicillin-resistant *Staphylococcus aureus* (MRSA) is a strain that has developed resistance to some antibiotics. A person who is colonized or infected with this organism may serve as a reservoir for MRSA, which could then be the source for colonization or infection transmitted to other persons. Infection can occur when MRSA is associated with tissue invasion. Common sites of infection are urine, surgical wounds, invasive devices and soft tissue wounds. Less common infections are bacteremia and pneumonia. Refer to Infection Prevention and Control Manual, [MRSA Fact Sheet](#) for more information.

Definition

Health Care Facilities: Are those facilities and community services in Saskatoon Health Region that prevent, treat, and manage illness and the preservation of mental and physical well-being through the services offered by the medical and allied health professionals in Saskatoon Health Region.

Policy

1. Routine Practices are to be used on all clients receiving care.
2. In addition to Routine Practices, use Contact Precautions when giving direct care to clients, known to be infected or colonized with MRSA, especially those at high risk for transmission of MRSA (i.e., clients who have draining skin lesions or wounds not covered by dressings, incontinent of stool, and/or poor compliance with hygienic practices).
3. In addition to Routine Practices, use Contact and Droplet Precautions for clients known to have MRSA and in whom MRSA may be dispersed during care. See Procedure #5.

4. Clients identified as MRSA positive, when available, will have their health records flagged by Infection Prevention & Control Professionals so that at each admission/visit to any health care facility, appropriate precautions are initiated.

Purpose

1. To prevent or minimize the transmission of MRSA in the community and in the home through appropriate management of all clients with MRSA whether colonized or infected.
2. To prevent the transfer of genetic traits of vancomycin resistance to MRSA and avoid the development of vancomycin-resistant *Staphylococcus aureus*.

Procedure

1. Identification of MRSA positive status in Clients
 - Microbiology notifies Infection Prevention and Control of newly identified clients with MRSA.
 - Infection Prevention and Control notifies the family physician of newly identified clients with MRSA.
 - Infection Prevention and Control flags the client's health record so that on each admission to the health care continuum, appropriate measures are taken by health care staff.
 - Infection Prevention and Control provides client and family with a [MRSA Fact Sheet](#) from the Section 70-10 Teaching Handouts.
 - If client is being discharged from an urban acute care facility, Client Patient Access Services (CPAS) will advise the receiving agency the client has MRSA and the site it was cultured from. This information is to be noted on the assessment form given to the receiving agency. In the rural area, when client is discharged from a rural acute care facility, the home care assessor will communicate via telephone and/or note this information on the discharge planning/assessment form so that the receiving agency will be advised.
2. Client Placement
 - If possible, the client should have their own room and their own private bathroom. This is especially important if the client has a condition likely to increase dissemination of organisms into the environment, i.e., diarrhea or fecal incontinence not contained by incontinence briefs, wound or stoma not covered with a dressing or appliance to contain drainage, desquamating skin condition, colonized tracheostomy or pneumonia with uncontrolled respiratory secretions. If there are two bathrooms in the home, it is recommended that one bathroom should be dedicated for the client to use.
 - If a single room is not available, do not place MRSA clients in rooms with family members who are at high risk for acquisition of MRSA (i.e., open wounds, poor immune system, on chemotherapy, or poor hygiene).

3. Gloves and Hand Cleaning

- Proper hand washing is the most important way to decrease transmission of MRSA.
- Hands should be cleansed before and after each client and again before leaving the home.
- Wash hands using antibacterial liquid soap and warm water, rinse well, and dry with a paper towel. Do not use the client's bar soap and/or their towel.
- An alcohol-based hand rub (ABHR) can be used if the hands are not visibly soiled.
- Glove for all direct contact with the client.
- Remove gloves and clean hands before leaving the room and again before leaving the home. Avoid touching environmental surfaces as you are leaving the home. If you do, clean hands again with an ABHR.
- Gloves are not to be washed and reused. They are to be discarded into a plastic bag, tied closed and placed into the garbage container where children and pets cannot get into.

4. Gowns/Aprons

- Gowns/aprons used for routine direct contact client care must adequately cover clothing and protect the skin of the health care provider from exposures to blood and body substances (i.e., be long enough to cover the front of the clothing that may come into contact with the client or with contaminated surfaces).
- Gowns are to have long sleeves with elasticized cuffs that fit snugly at the wrist and have closures at the neck and waist at the back of the gown.
- Impervious disposable gowns/aprons are to be worn for all direct contact with the client that may result in a splash or contact with any body excretions or secretions (this would include bathing the client).
- Gowns/aprons are single use only.
- Remove the gown after gloves are removed by untying at the back, pull forward and turn inside on itself, roll up and discard into a plastic garbage bag. Tie garbage bag tight and place into a garbage container where children and pets cannot get into. Cleanse hands.

5. Masks/Eye Protection

Wear a procedure mask and eye protection when:

- The client has pneumonia or signs of respiratory tract illness.
- Client is positive for MRSA nasal carriage and an upper respiratory illness is present.
- There is the likelihood of a spray/splash from wounds positive for MRSA (i.e., during vigorous wound cleansing or irrigation).
- Suctioning and care of clients with a tracheostomy colonized or infected with MRSA.
- Multi-use eye protection must be cleaned and disinfected with disinfectant wipes or alcohol swabs prior to reuse with another client.
- Single use mask and eye protection is to be discarded into plastic bag and placed into a garbage container where children and pets cannot get into.

6. Client Transport

- If the client can confine and contain any body fluid positive for MRSA, there is no need to restrict client's participation in any activities.
- When leaving the home the client must wash their hands using alcohol hand sanitizer or liquid antibacterial soap.

- Assist client with hand cleaning if client is unable to do so on their own.

7. Client-Care Equipment

- Limit the amount of supplies taken into the home to avoid unnecessary waste.
- Store supplies in a clean dry place protected from environmental contamination.
- Dedicate non-critical client-care equipment to a single client (i.e., stethoscope, blood pressure cuff, tourniquet, vacutainer, walker and commode).
- All equipment taken in the client's home must be cleaned and disinfected before use in another client's home.
- All equipment should be cleaned and disinfected prior to leaving the home and placed into care giver's vehicle. If this is not possible, bag the equipment before it is placed into the vehicle and bring back to the facility where the equipment can be cleaned and disinfected.
- Any equipment being returned to the supplier has to be cleaned and disinfected prior to sending back to the supplier. Some specialized equipment may have to be cleaned and disinfected/sterilized by the supplier. Store equipment in a safe manner (i.e., plastic bag) until pickup and/or delivery.
- Hospital grade disinfect is to be used on the equipment (i.e., quaternary ammonium compound or accelerated hydrogen peroxide).

8. Visitors/Family

- Instruct visitors and family regarding hand cleaning before and after client contact.
- Provide [MRSA Fact Sheet](#) found in Infection Prevention and Control Manual Section 70-10 Teaching Handouts.

9. Client and Family Teaching

- Explain the nature of their infectious process and the precautions being used, as well as the prevention of transmission of MRSA to other family members and friends.
- Explain the importance of hand hygiene, personal hygiene, and good sanitation in the home.
- Provide Information Handout on MRSA found in Section 70-10.

10. Environmental Cleaning

- Frequent cleaning with a cleaner that has a disinfectant in it to all hand contact surfaces and any environmental surfaces touched by the client will reduce the risk of transmission in the home.
- Hand contact surfaces include door knobs, light switches, sink taps, toilet handle, chair arms, computer keys, stereo knobs, etc.

11. Cultures

- The type and frequency of cultures should be assessed on an individual basis. See [Appendix A](#) for Retesting Process to Determine MRSA Negative Status.
- Client must be off chlorhexidine gluconate 2% soap and antibiotics to which the MRSA is susceptible for at least 48 hours prior to swabbing. The usual antibiotics are Clindamycin, Vancomycin, Trimethoprim/Sulfamethoxazole (TMP/SMX), Linezolid, Synercid, Daptomycin, Tigecycline, Mupirocin, Fusidic acid. The use of antibacterial soaps and

ointments should be avoided during the entire period of retesting so as not to interfere with culture results.

- Cultures are to be taken from each previously positive site as well as the nares and groin, any wounds, any device sites (excluding peripheral IV – swab opening surrounding device) and sputum from coughing residents. When urine was the original positive site, obtain a perianal swab.

12. Decolonization

- Decolonization may be considered for clients who meet the criteria using [Appendix C](#).
- Any licensed nurse or physician can initiate review of the decolonization criteria for any client who is MRSA positive.
 - If the criteria are met the nursing unit will have the physician order MRSA surveillance swabs to have the MRSA tested for sensitivities to antibiotics.
 - The physician is responsible for ordering the antimicrobial nasal cream that the MRSA is sensitive to.
- Clients with the following criteria are **excluded**:
 - sputum positive
 - open wounds greater than 1cm
 - indwelling devices
 - living with family or close contacts who are MRSA positive
 - cognitively impaired
 - inadequate resources
 - Mupirocin and Fusidic Acid resistance
 - continued use of antibiotics
- If the client qualifies using [Appendix C](#), use [Appendix D MRSA Decolonization Protocol](#).

References:

Barton M, Hawkes M, Moore D, et al. *Guidelines for the prevention and management of community-associated Methicillin-resistant Staphylococcus aureus: A perspective for Canadian health care practitioners*. Canadian Journal Infectious Diseases Vol 17 Suppl C, October 2006.

Canadian Committee on Antibiotic Resistance (CCAR). *Infection Prevention and Control Best Practices for Long Term Care, Home and Community Care including Health Care Offices and Ambulatory Clinics*. 2007.

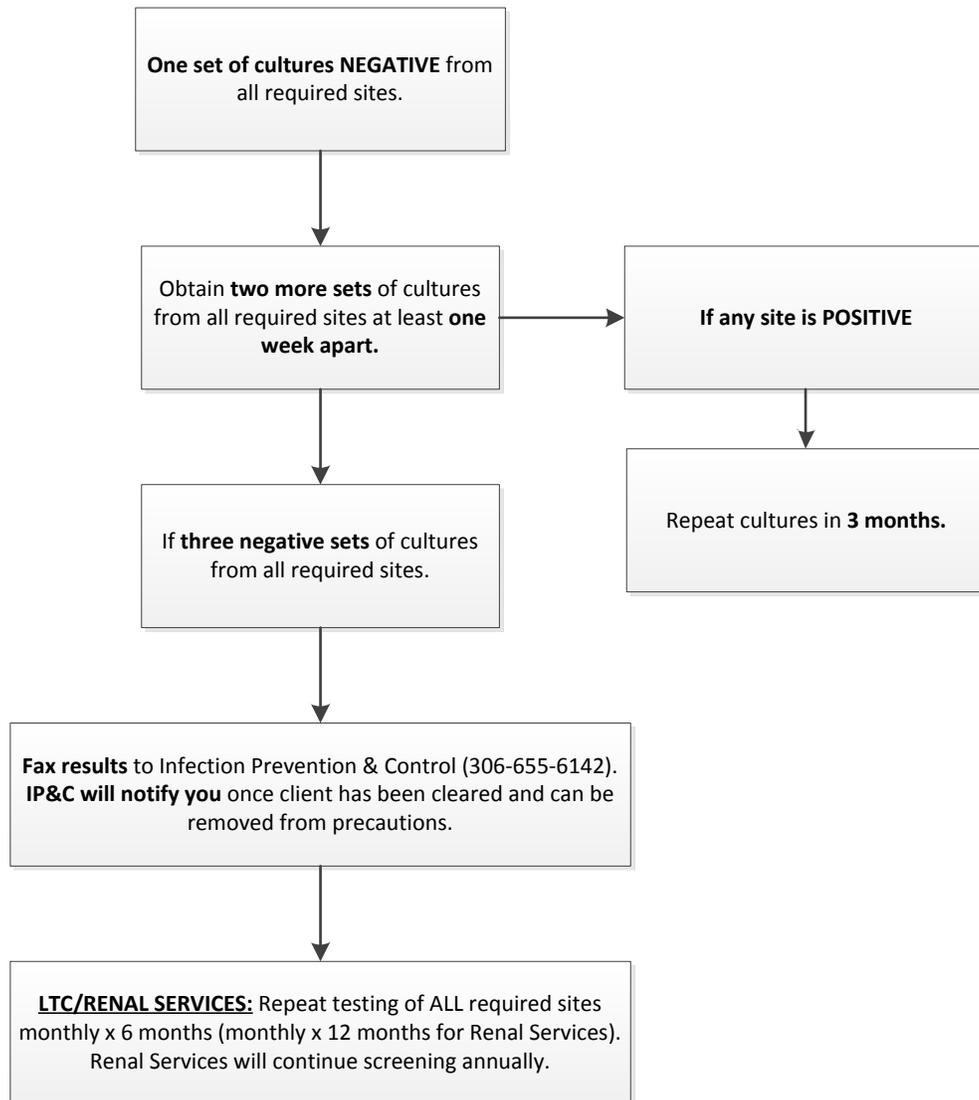
Center for Disease Control and Prevention (CDC). *Management of Multidrug-resistant organisms in healthcare settings*. Healthcare Infection Control Practices Advisory Committee (HICPAC). 2006.

Health Canada. *Infection control guidelines. Routine practices and additional precautions for preventing the transmission of infection in health care*. CCDR 1999; 25S4;14,50,51

Safer Healthcare Now! Campaign. *How-to Guide: Reduce Methicillin-Resistant Staphylococcus aureus*. October 2008.

60-30 Appendix D - ARO Retesting Process to Clear Positive Status

- Contact your Infection Control Practitioner (ICP) to determine when the retesting process can begin. Certain conditions may lead to delayed testing for clearance as they present a risk for continued colonization of the antibiotic resistant organism (ARO).
- **Wait at least 3 months (from the last positive date)** before retesting for MRSA, VRE or ESBL.
 - Ensure all treatment for infection (i.e., Urinary tract infection, pneumonia, etc.) is complete at least 48 hours before resting process begins.
- Ensure the client is taking **no IV or oral antibiotics, or using antibacterial soaps (i.e., Chlorhexadine soap) 48 hours before each set of cultures**, so as to not interfere with culture results.
- Required Testing Sites (See the [Specimen Collection Guide](#) for appropriate method of collection):
 - **Three sets** of cultures from **all documented positive sites** as well as the **usual screening sites** for the organism are required.
 - If testing for **MRSA, also swab ANY** wound* or device site**, even if it has not been positive in the past.



*Wound sites – include draining or open wounds/incisions

**Device sites – swab opening surrounding device

60-30 Appendix C – Specimen Collection Guide

Specimen Collection Guide*

*Use ESwab™ for ALL ARO Screens

Equipment	ESwab™ - Addressograph label - Bacteriology requisition - Specimen bag for transport
Method of Collection	<ol style="list-style-type: none"> 1. Perform hand hygiene and put on gloves. 2. Position client on their back or side for VRE Screen and ESBL Screen. 3. Remove the white swab from the pouch. Use ONE swab for EACH SCREEN: <ul style="list-style-type: none"> • For MRSA Screen (Nose <u>and</u> groin* swab): <ul style="list-style-type: none"> ○ Place the swab into one of the client’s nostrils. Rotate 5 times, pressing lightly against the inside of the nose to collect the nasal sample. Repeat in second nostril with the same swab. ○ Using the same swab, collect sample from each side of the groin Exception: *Axilla swab only if it will be detrimental to a client’s physical or psychological wellbeing to have a groin swab performed • For VRE Screen (Rectal*/Stoma** swab): <ul style="list-style-type: none"> ○ Gently insert the swab approximately 2 cm beyond the anal sphincter. Rotate swab and withdraw from anus. Exceptions: *Perianal swab for neutropenic clients (see IP&C Policy 40-60: <i>Immune Compromised Clients</i> for definition of neutropenic). For perianal swab: <ul style="list-style-type: none"> ▪ Expose perineum and rotate the swab as you run the tip firmly on the surface of the perineum and the anal areas **Stoma opening swab, <u>instead of rectal swab</u>, if client has a colostomy/ileostomy. • For ESBL Screen (Rectal*/Stoma** swab): <ul style="list-style-type: none"> ○ See instructions for VRE Screen • If “Testing for Clearance” is ordered on the ARO Surveillance Orders Medical Directive (MD-022), also swab all “Other” sites* (i.e. wounds, indwelling devices) previously found positive. <i>If clearing for MRSA, also include swabs of all current “Other” sites, regardless of whether they have been positive. Use a new swab for each “Other” site:</i> <ul style="list-style-type: none"> ○ Cleanse the wound/indwelling device with sterile normal saline from cleanest to dirtiest. Ensure the wound/indwelling device is dry before swabbing. ○ Rotate the swab while moving from one edge of the wound/indwelling device to the other. Ensure the entire wound/indwelling device has been swabbed. <ul style="list-style-type: none"> ▪ *If a urine culture or blood culture was a positive site, swab for MRSA/VRE/ESBL as above. 4. Open the ESwab™ tube and place the swab into the liquid. 5. Break the swab shaft off at the pre-molded break point (the indented, pink mark). Leave bottom half of swab applicator in the tube. Dispose of the top of the swab stick in trash can. Recap the ESwab™ tube and turn the cap securely tight. 6. Label tube with client’s identification sticker (ensure there is no overlap) and label with appropriate collection site. For example: <ul style="list-style-type: none"> • For MRSA Screen: Label as “Nose and groin” • For VRE Screen: Label as “Rectal/Stoma” • For ESBL Screen: Label as “Rectal/Stoma” 7. Place labelled tube into a clean bag, ensuring the outside of the bag remains clean. 8. Remove gloves and perform hand hygiene. 9. Complete requisition with client’s identification sticker and label with appropriate screen and site swab was collected from. For example: <ul style="list-style-type: none"> • For MRSA Screen: Label as “Nose and groin swab for MRSA Screen” • For VRE Screen: Label as “Rectal/Stoma swab for VRE Screen” • For ESBL Screen: Label as “Rectal/Stoma swab for ESBL Screen” 10. Send the bagged specimen with requisition to the lab.

MRSA Decolonization Criteria Checklist

Any licensed nurse or physician can initiate a review of the criteria for any client who is MRSA positive.

Nursing Unit: Answer qualifiers in step one.

Step 1: Exclusion Criteria

Client is excluded if any of the following are checked off

- are sputum positive,
- open wounds greater than 1 cm,
- indwelling devices,
- living with family or close contacts who are MRSA positive
- inadequate resources to carry out decolonization process,
- Mupirocin or Fusidic acid resistant
- continued use of antibiotics.

Nursing Unit: If there are no checked squares in step 1; go to Step 2.

Step 2: Wandering Behaviour

Decolonization may be considered for clients with wandering behavior if staff can ensure hand hygiene with only liquid soap or alcohol hand sanitizer 48 hours prior to screening swabs being collected.

Qualifies: No (continue) Yes (stop)

Nursing Unit: If yes is checked go to Step 3.

Step 3: Compliance

Clients must also be compliant with daily bathing routine, which may include the use of CHG wipes.

Qualifies Yes (continue) No (stop)

Nursing Unit:

- 1) If "yes" is checked, have the physician order nares/groin surveillance for MRSA. Send the specimen to the lab.

Important: Specify "decolonization" on the laboratory requisition.

The lab will test for sensitivity to Mupirocin or Fusidic acid.

- 2) When sensitivity result is back, have the physician order the appropriate nasal ointment/cream from pharmacy. Then continue to Appendix D: Decolonization Protocol

40-117 – MRSA – Community
 Appendix D: MRSA Decolonization Protocol

*Any licensed nurse or physician can initiate a review of the criteria for any patient who is MRSA positive.

Seven Day Protocol

Time	Product	Details	Additional Information	Completed	
				AM	PM
Day 1 to 7 Start date: _____ End date: _____	Antimicrobial nasal cream applied to each nostril (Mupirocin 2% or Fucidic Acid 2%)	<ul style="list-style-type: none"> - Obtain physician order - Apply ointment twice daily for 7 days <ul style="list-style-type: none"> o Place a small amount of ointment (size of a match head) onto a cotton tipped swab o Massage gently around the inside of the nostril, making sure not to insert it too deeply (no more than 2-3 cm). o Repeat on other side. 		Day 1__	Day 1__
				Day 2__	Day 2__
				Day 3__	Day 3__
				Day 4__	Day 4__
				Day 5__	Day 5__
				Day 6__	Day 6__
				Day 7__	Day 7__
				CARE	<ul style="list-style-type: none"> - Daily changes of clean clothes, pyjamas and linens (bed linens as often as possible) including towels. Daily cleaning of room.
Day 2__					
Day 3__					
Day 4__					
Day 5__					
Day 6__					
Day 7__					
Day 1 & 7 <u>Mornings</u> Day 1: _____ (date) Day 7: _____ (date)	MORNING Shower or bath Chlorhexidine 2% liquid soap solution	<ul style="list-style-type: none"> - Wet hair and body. - Apply CHG 2% liquid soap solution to all body surfaces. - Pay special attention to skin folds at armpits, under breasts, groin and perineum areas. - Ensure the CHG product is left on skin and hair for <u>one minute</u>, then rinse well to remove all soap residues. - Body lotions may be used to prevent excessive drying of the skin. - Regular shampoo may be used in addition to CHG product if preferred. 	<i>(continued on next page)</i>	Day 1__	
				Day 7__	

Time	Product	Details	Additional Information	Completed							
<u>Evenings</u> Day 1 to 7 Start date: _____ End date: _____	<p style="text-align: center;"><u>EVENING</u></p> <p>2% Chlorhexidine gluconate (pre-moistened) cloths are to be used to wipe down the client's body once a day</p>	<p>- Do not allow this product to come in contact with your eyes, ears, mouth and mucous membranes</p> <p><u>CHG Cloth Protocol:</u></p> <p>- Use 1 clean cloth to prep each area of the body in order as shown in steps 1 to 6. (See diagram). Complete the top part of body, cover lightly then move to lower part of body. Wipe each area in a back-and-forth motion. Be sure to wipe each area thoroughly.</p> <ol style="list-style-type: none"> 1. Wipe the chin, neck, chest and stomach 2. Wipe both arms, starting each with the shoulder ending at the fingertips. <i>Be sure to thoroughly wipe the arm pit areas</i> 3. Wipe the first leg starting at the thigh and ending at the toes 4. Wipe the other leg, starting at the thigh ending at the toes. 5. Wipe the back starting at the base of the neck and ending at the waist. Cover as much area as possible 6. Wipe your right and left hips, then groin and buttocks <p>- Do not rinse, apply lotions, moisturizers or makeup after application.</p> <p>- Discard wipes <u>in the garbage</u> (do not flush CHG cloth/wipe)</p> <p>- Allow client's skin to air dry.</p> <p>- Dress in clean sleepwear.</p>	<p style="text-align: center;">FRONT BACK</p>	<table border="1" style="width: 100%;"> <tr><td>Day 1____</td></tr> <tr><td>Day 2____</td></tr> <tr><td>Day 3____</td></tr> <tr><td>Day 4____</td></tr> <tr><td>Day 5____</td></tr> <tr><td>Day 6____</td></tr> <tr><td>Day 7____</td></tr> </table>	Day 1____	Day 2____	Day 3____	Day 4____	Day 5____	Day 6____	Day 7____
Day 1____											
Day 2____											
Day 3____											
Day 4____											
Day 5____											
Day 6____											
Day 7____											

Retest to determine success of process

Wait 48 hours after decolonization protocol is completed *i.e. the client must be treatment-free (i.e. no anti-staphylococcal antibiotics (see policy), CHG 2% products or ointment in use)* before collecting screening swabs.

- 3 consecutive negative sets of swabs from the **nares and groin**, each one week apart, without intervening antibiotics or CHG soaps/ointments, are required for a decolonization to be declared successful.

Culture #1 _____ *Date* Culture #2 _____ *Date* Culture #3 _____ *Date*

Two decolonization attempts can be tried if necessary. Clients who still test positive after two attempts will be considered chronic carriers.

How to collect a nares swab:

1. Moisten star swab with culture media in the tube.	3. Insert swab into tube
2. Insert swab about 2 cm into nares	4. Push in pink plug and label specimen (tube) with date, site and client's name.
-Gently rotate around the inner surface, clockwise x2, then counter-clockwise x2.	5. Ensure that swab is sent to lab with requisition for MRSA follow-up.
- <u>Using the same swab</u> , repeat for other nares	