

Policy Applies to:

All staff employed by Mercy Hospital. Credentialed Specialists, Allied Health Professionals, students, patients and visitors will be supported to meet policy requirements.

Related Standards:

- Infection and Prevention and Control Standards NZS 8134.3:2008
- EQuIP Standard Criterion 1.5.2

Definitions:

Multidrug Resistant Organisms (MDRO) can be defined in two ways - organisms that are resistant to:

- Several antimicrobial classes to which they would normally be susceptible, or
- All but one or two antimicrobial classes, regardless of the mechanism of resistance (and often susceptible to only one or two commercially available antibiotics).

Such organisms include MRSA (Methicillin resistant *Staphylococcus aureus*, ESBL (Extended-spectrum beta-lactamase) producing enterobacteriaceae, VRE (Vancomycin-resistant enterococci) and other Gram negative MDRO (multi drug resistant organisms); all of which are covered in these guidelines.

Rationale:

General Background

Controlling MDRO's is important because they:

- Are resistant to usual antimicrobial therapy
- Increase patient morbidity and mortality and add to the cost of treatment
- Have the potential to spread
- Act as a reservoir of resistant genes for the transmission to other organisms

Successful control of MDRO is based on a combination of interventions:

- Screening of patients at high risk of MDRO carriage
- Rigorous adherence to hand hygiene
- Appropriate use of personal protective equipment (PPE)
- Implementation of transmission-based precautions
- Cleaning and disinfection of shared patient equipment

Modes of transmission:

Contact transmission is the primary mode of spread for MDRO:

- Transient carriage on the hands of health care workers is a significant risk for transmission.
- Surfaces and equipment can also become reservoirs and contribute to spread within the healthcare environment.
- Droplet transmission may also be implicated in the spread of MDRO when the patient has a respiratory tract infection where the MDRO is causative organism.

Objectives:

To prevent and control the spread of Multidrug-resistant Organisms

To minimise the risk of cross infection to other patients, staff and visitors.

Implementation:

Screening patients for MDRO

Screening patients for MDRO is an important measure in the control of spread of these resistant organisms.

Patients are screened on admission for MRSA, VRE and ESBL according to the Multidrug Resistant Organisms Risk Assessment Flow Chart. (Page 5)

This chart is used in conjunction with the monthly 'MDRO high risk hospital list' circulated to credentialed specialists, clinical and booking staff by the Infection Prevention and Control Nurse (IPC Nurse) and available on SharePoint (under Health & Safety)

Communication of MDRO status

An 'ALERT' will be entered on the TrakCare System by the Bookings staff or Clinical coordinator following notification to them of a MDRO positive result (this may be MRSA, ESBL, VRE or MDRO). MDRO alerts may only be removed by the Bookings staff or Clinical Coordinator

Care of the MDRO Positive Patient - General Points

Restrictions on patient movements

The purpose of isolation is to prevent the spread of MDRO to other patients and the environment.

Visitors

Visitors may be required to wear PPE (dependant on the type of MDRO). They must be instructed to wash their hands or use alcohol-based hand rub (ABHR) after

visiting the patient. Visitors should be advised to undertake any other patient visits prior to visiting a patient in isolation.

Surgery

Clearance is not possible prior to elective surgery for patients with ESBL or VRE. However, suppression of MRSA is possible and treatment should be initiated at least 24 hours before surgery (refer MRSA decolonisation treatment for patients).

- If antibiotic prophylaxis is required, a Clinical Microbiologist should be consulted.
- There is no need to place patients with an MDRO last on the list as standard operating theatre precautions and cleaning procedures are sufficient.
- Operating Theatre staff must be informed of the patient's MDRO status.
- Appropriate infection prevention and control practices and decontamination (cleaning & disinfection) procedures should be maintained by all persons in direct contact with the patient.

Transfer of MDRO Positive Patients

Colonisation or infection with an MDRO should not prevent the transfer of patients.

- MDRO infection or colonisation should not be a barrier to appropriate clinical care. Consequently hospital transfer for clinical reasons should not be prevented.
- Some MRSA patients may be transferred on topical clearance treatments. Ensure clearance treatment plans are clearly documented and any topical treatment accompanies the patient on transfer
- Prior to transfer, liaise with the receiving health care facility regarding the MDRO status of the patient.
- MDRO status should be indicated on any transfer documentation.

Discharge to the Community

- A MDRO patient's medical discharge letter should inform the GP of the MDRO colonisation/infection and any treatment which has been given.
- Other health care agencies involved in the patient's care should be informed, e.g. District Nurse Services.
- If the patient is discharged to a long term care facility, the nursing staff must be informed in advance. MDRO colonisation or infection is not a contraindication to the transfer of a patient to a long term care facility.

Transportation to other Departments within the Hospital

When transporting patients to other areas, e.g. Otago Radiology, the ward orderly should be advised by clinical staff of any isolation requirements before collecting the

patient. The receiving department must also be advised of the diagnosis and the need for precautions.

- Encourage the patient to perform hand hygiene prior to leaving the room.
- Wheelchairs used for transporting the MDRO patients must be covered with a clean sheet or disinfected after use by the ward assistant or nurse with Oxiver or alcohol-based disinfectant wipes

Prevention of psychological effects of isolation

Isolated patients may suffer from negative psychological effects. The following interventions may help to prevent this:

- Provide patients with information about their MDRO and explain the requirements and rationale for this.
- Ensure the patient is able to communicate effectively with staff e.g. can access a call bell.
- Encourage visits from family and friends.
- The door may remain open for Contact Precautions.

Evaluation:

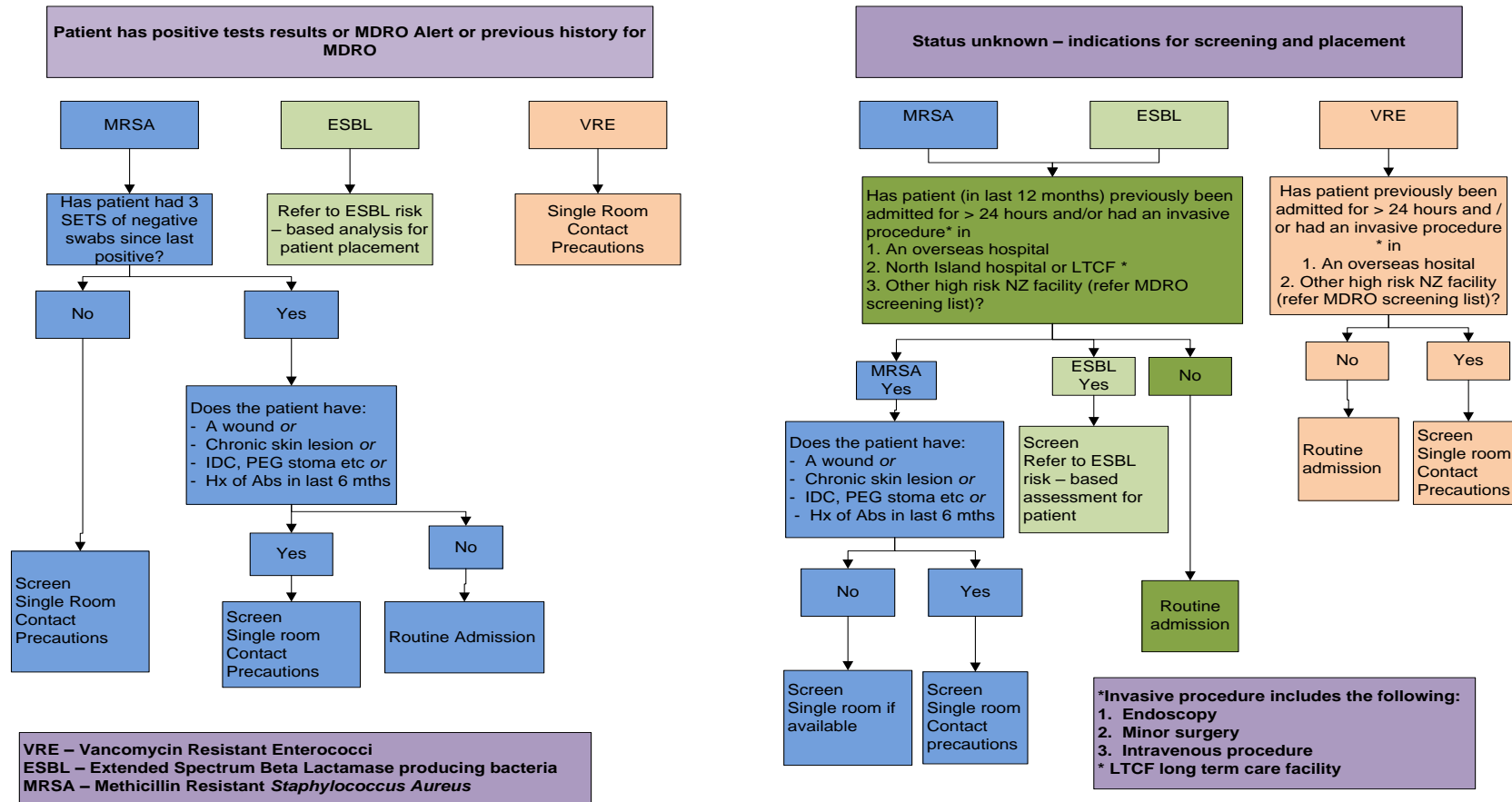
Staff

- Staff health records
- Incident forms

Patient

- Patient Admission Information Questionnaire
- Patient Assessment form - MDRO high risk status documentation
- Discharge Summary MDRO documentation ;
- Positive MDRO patient Trak alert status recorded;
- Contact isolation management forms completed;
- High Risk Hospitals report circulated to relevant Mercy staff;
- Clinical notes
- Complaints
- Patient feedback

Risk assessment flow chart for Multi Drug Resistant Organisms (MDRO)



Methicillin Resistant *Staphylococcus aureus* (MRSA)

What is MRSA

MRSA stands for Methicillin Resistant *Staphylococcus aureus*. The term is used to describe a number of strains of the bacterium *Staphylococcus aureus* which have developed resistance to antibiotics commonly used to treat staphylococcal infections. MRSA is an opportunistic bacterium which may colonise and grow readily on the skin and mucous membranes of a person, without harm to that person. It is commonly isolated from warm, moist body sites such as the nose, groin and perineum. MRSA colonisation can lead to infection such as infected skin lesions.

MRSA Risk Assessment - Staff

All staff employed in direct patient contact roles are informed of MRSA screening requirements and the process as part of their employment and must return a negative MRSA screen before commencing duties.

Note: The employment start date must allow sufficient time for MRSA test results to be processed and received by Mercy Hospital.

Positive staff MRSA screening result

Staff who have tested positive and then have had negative screens must continue to be screened for a three month period or as determined by the Infection Prevention and Control Nurse as re-colonisation may occur.

Returning staff

Prior to recommencing employment, all personnel involved in direct patient care must present a negative MRSA result prior to commencing work, if they have;

- Worked in an overseas hospital in the last six months;
- Worked in a North Island hospital in the last six months;
- Worked in any hospital or residential facility that has had an MRSA outbreak in the last six months;
- Previously tested MRSA positive

Nursing staff and Credentialed Specialists who regularly work in other hospitals where MRSA cross infection is occurring must consult with the Infection Prevention and Control Nurse to determine a screening regime.

Students

All students must have a negative MRSA screen within the last 6 months. If students are employed in a MDRO high risk category healthcare facility e.g. residential care, a negative MRSA result must be presented prior to commencing placement.

MRSA Risk Assessment – Patients

All patient admissions must be assessed in accordance with the MDRO Risk Assessment Flowchart during the admission process.

It is the responsibility of the admitting Credentialed Specialists to indicate the patient's MRSA screening status on the admission letter.

Booked patients who meet the screening high risk criteria must be informed that they are required to be screened for MRSA prior to admission and given information on the screening protocol.

Note: It takes a minimum of 3 days for laboratory results to be received so surgery admission dates must allow sufficient time for MRSA test results to be processed and received by Mercy Hospital.

Procedure for patients whose MRSA status is unknown and who meet the High Risk Screening Criteria

Where a patient has been admitted and it is subsequently determined they meet the MRSA screening criteria, the following steps should be taken:

- An MDRO pending alert (flashing green/yellow star) must be placed on the Trak patient record by Booking Coordinator / Assistant
- The Infection Prevention and Control Nurse and the Patient Services Manager must be informed;
- If the patient is an inpatient, he/she should be domiciled if possible in a single room;
- The patient should continue to be managed in standard precautions.

Booked patients who test MRSA positive prior to admission

- If a patient returns a positive MRSA laboratory result, the admitting Credentialed Specialists and Bookings Coordinator must contact one of the following, prior to admission, to discuss treatment, admission and associated costs (as per Schedule of Fees):
- Director of Clinical Services,
- Patient Services Manager, or
- The Infection Prevention and Control Nurse

Each case will be individually assessed for admission to Mercy Hospital by the Director of Clinical Services or Patient Services Manager and/or Infection Prevention and Control Nurse in consultation with the relevant Credentialed Specialists and where necessary, microbiologist, to determine:

- Any delay in admission
- Appropriateness of decolonisation
- Type of surgery and length of stay
- Availability of single room for contact isolation management.
- Urgency of surgery

It is the responsibility of the admitting Credentialed Specialists to inform the patient of their positive MRSA result and the additional costs incurred for isolation management should admission be approved.

MRSA Testing

MRSA screening may be undertaken for the following reasons:

1. Screening requirements determined from the Multidrug Resistant Organisms (MDRO) Risk Assessment Flow Chart
2. If found to be positive for MRSA post admission from a pre admission clinical sample
3. As part of outbreak management

MRSA Specimens

A bacterial swab is used to sample the following sites:

- Nasal Swab (one swab for both nostrils)
- Groin Swab (one swab for both sides)
- Perineum Swab (natal cleft)
- **Wound** swab - including decubitus ulcer (pressure sore) or surgical wound and device insertion sites, e.g. IV, drains, suprapubic catheter

Additional sites:

- Catheter urine specimen if patient for screening has an indwelling urinary catheter
- Sputum from patient with recent MRSA respiratory tract infection (not nasal colonisation)

Specimen Collection Technique

Take swabs as follows:

- Take one swab and rub over the anterior part of the inside of the nostrils several times.
- Take another swab, moisten with medium or sterile saline and rub over the perineum several times;
 - Males - the area between the anus and scrotum
 - Females - the areas between the anus and vagina

Take another swab to obtain sample from any possible sites of infection.

MRSA Decolonisation / Suppression Treatment for Patients

A pharmacological regime for decolonisation or suppression of MRSA colonisation may be undertaken. Decolonisation or suppression treatment is usually prescribed for 7 days unless otherwise advised. Treatment for longer than seven days may be considered e.g. for patients with chronic wounds. This should be discussed with a Microbiologist. The following regime is recommended

Treatment of the anterior nares (nose)	<p>Mupirocin 2% ointment (Bactroban)</p> <ul style="list-style-type: none"> • Apply to nose (both sides) 3 times daily • Ointment must only be applied to the skin covered area of the anterior nares just inside the nostrils • Please use clean cotton buds for each application
Body wash and Shampoo	<p>Adults and Children</p> <ul style="list-style-type: none"> • 2% Triclosan Skin Cleanser or Chlorhexidine gluconate 4% • Use daily as a body wash for showering • Use twice weekly as a shampoo for hair washing

Note: If the MRSA strain demonstrates resistance to Mupirocin 2% (Bactroban) alternative treatment options are available e.g. Bacitracin. Discuss with the Microbiologist.

Clearance Screening

- Collection of swabs should commence 48 hours after completing decolonisation treatment regime or cessation of antimicrobial therapy.
- Three consecutive sets of negative swabs are required before the individual is considered 'clear' * (each separated by at least 24 hours).
- The patient remains in isolation whilst waiting for results from all three sets of swabs.
- When all three sets of swabs are negative for MRSA, Contact Precautions can be discontinued.

- If the patient is discharged before three sets are obtained, the remaining sets of swabs MUST be obtained on future admissions before the patient is considered clear. The patient will require MRSA precautions until evidence of three clear sets of swabs.

*Due to the possibility of re-colonisation, the patient must be advised that their national health identification number will be flagged with a MDRO alert and they will be required to be rescreened if readmitted to inpatient healthcare facilities.

Care of the patient with MRSA

Following identification, the following steps should be implemented.

- Inform patient and commence contact precautions isolation in single room
- Complete the Isolation Check Sheet (Appendix 2, Patient Contact Isolation Check sheet, Isolation Policy –Transmission Based Precautions)
- Provide patient with information sheets -Methicillin Resistant *Staphylococcus aureus*, *Information for Patients, Family and Whanau* and Contact Isolation, *Information for Patients, Family and Whanau*
- Undertake terminal clean if moved from a multi-room
- Have prescribed and ensure commencement of topical MRSA treatment for the positive patient
- Obtain full MRSA screen of patients who have shared the same room and any other high risk patients on the ward (where applicable and as directed by the Infection Prevention and Control Nurse)
NB: contacts who have been screened do NOT require contact precautions OR decolonisation/suppression treatment while awaiting results
- Requirement for staff screening will be assessed and undertaken by the Infection prevention and Control Nurse
- Document MRSA status in the patient's notes. A MRSA 'Alert' will be placed on the TrakCare database by Bookings staff or Clinical Coordinator

Extended-Spectrum Beta-Lactamase (ESBL) Producing Organisms

What is an ESBL

An ESBL is an enzyme produced by certain bacteria that inactivates penicillin and related β -lactam resulting in resistance to that antibiotic. . These antibiotic-resistant bacteria have infection prevention and control implications. ESBL's occur in Gram negative bacteria, e.g. *E. coli*, *Klebsiella sp.* Source reservoirs are;

- The gastrointestinal tract is the major reservoir of ESBLs.
- Contaminated environment and equipment (particularly faecally contaminated equipment).

ESBL risk assessment for screening

Assess the patient for screening using the for Multidrug Resistant Organisms (MDRO) Risk Assessment Flow Chart.

Do **NOT** screen patients previously positive for ESBL unless clinically indicated. The following samples should be taken and 'ESBL Screen' written on the request form:

- Rectal swab / faeces sample
- Indwelling urinary catheter specimen of urine (CSU)
- Wound swab / abdominal drain sample

Care of the Patient with ESBL

Assess patient for risk of ESBL transmission to determine appropriate placement and required precautions. The following factors put patients at high risk of spreading ESBL-producing bacteria:

- Diarrhoea, urinary or faecal incontinence
- Abdominal drainage/stoma
- Indwelling urinary catheters/intermittent clean catheterisation
- Large wounds that need dressing
- Non-compliance with basic hygiene
- High dependency for cares

Use the flow chart below to implement appropriate infection prevention and control procedures.

For high risk ESBL patients:

- Refer also to Transmission-Based Precautions
- Single room
- Contact Precautions with own toilet facilities
- Hand hygiene with antimicrobial liquid soap or alcohol-based hand rub
- Dedicated patient-care equipment or disinfect between use if shared with other patients e.g. blood pressure and oximetry equipment

- Remove unnecessary equipment from room and ensure supplies are not overstocked within the room
- If no ensuite shower is available the patient showers last in the communal shower and the shower is disinfected after use
- Visitors do not wear PPE but are encouraged to perform hand hygiene after visiting the patient
- Seek advice from the Microbiologist or Infectious Diseases for appropriate antimicrobial therapy

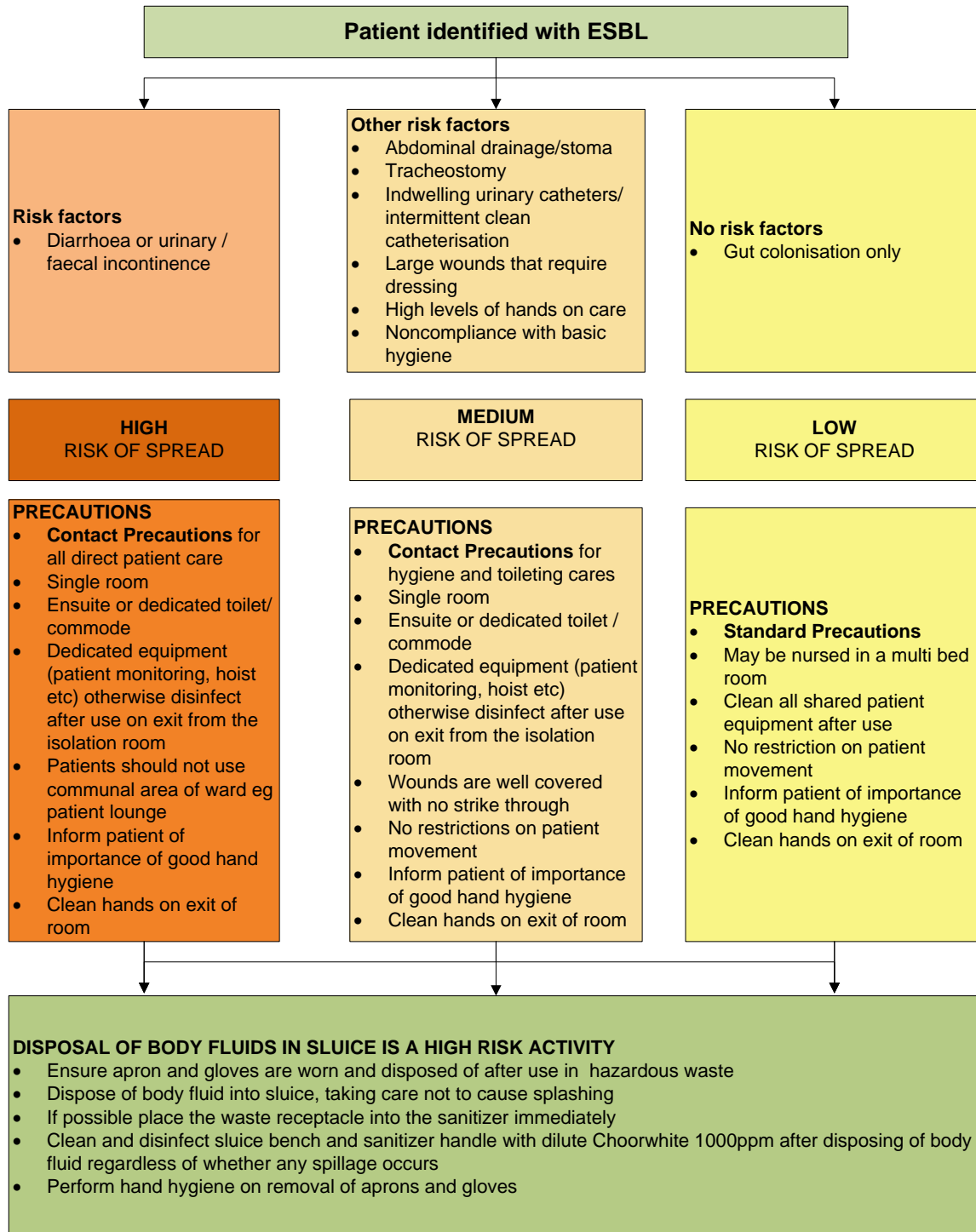
Care when handling/disposing of body fluids is essential.

- Disposal in sluice is very high risk for environmental contamination
- Ensure apron and gloves are worn and disposed of after use in infectious waste in sluice room
- Dispose of waste into sluice, taking care not to cause splashing
- If possible, place the waste receptacle into the sanitiser immediately
- Clean and disinfect sluice bench and sanitiser handle with Divercleanse after disposing of body fluid regardless of whether any spillage occurs
- Perform hand hygiene using an antimicrobial liquid soap or alcohol based hand rub on removal of aprons and gloves
- Seek advice from the Microbiologist for appropriate antimicrobial therapy

Previously Positive Patients

- Decolonisation of patients with ESBL is not recommended so it is likely that a previously positive patient will remain positive during subsequent admissions.
- If previously positive patients are readmitted to hospital, obtain only those samples that are clinically indicated, e.g. if symptoms of urinary tract infection are present obtain a urine specimen.
- Care of previously positive patient will be the same as above if readmitted, that is based on a risk assessment on admission (see Care of the Patient with ESBL).

ESBL Risk-based Assessment for Patient Placement



Risk refers to the spread to other patients in the healthcare setting

Vancomycin-resistant Enterococci (VRE)

What is a VRE?

Enterococci are Gram-positive bacteria that are naturally present in the intestinal tract of all people. Vancomycin is an antibiotic to which some strains of enterococci have become resistant e.g. *Enterococcus faecalis* and *Enterococcus. Faecium*.

These resistant strains are referred to as VRE and are frequently resistant to other antibiotics generally used to treat enterococcal infections.

These antibiotic-resistant bacteria have infection prevention & control implications.

Source Reservoirs are;

- The gastrointestinal tract is the major reservoir of VRE's.
- Contaminated environment and equipment (particularly faecally contaminated equipment).

VRE risk assessment

Assess the patient for screening using the for Multidrug Resistant Organisms (MDRO) Risk Assessment Flow Chart.

Do **NOT** screen patients previously positive for VRE unless clinically indicated. The following samples should be taken and 'VRE Screen' written on the request form:

- Rectal swab or faeces sample
- Indwelling urinary catheter specimen of urine (CSU)
- Wound swab / abdominal drain sample

Care of the Patient with VRE

- Refer also to Transmission-Based Precautions
- Single room
- Contact Precautions with own toilet facilities (if ensuite not available, allocate own commode chair in room or dedicated toilet)
- Hand hygiene with alcohol-based hand rub
- Dedicated patient-care equipment or disinfect between use if shared with other patients e.g. blood pressure and oximetry equipment
- Remove unnecessary equipment from room and ensure supplies are not overstocked within the room
- If no ensuite shower is available the patient showers last in the communal shower and the shower is disinfected after use
- Visitors do not wear PPE but are encouraged to perform hand hygiene after visiting the patient
- Seek advice from the Microbiologist for appropriate antimicrobial therapy

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- Clean and disinfect sluice bench with Divercleanse after disposing of body fluid regardless of whether any spillage occurs
- Perform hand hygiene using antimicrobial liquid soap or alcohol based hand rub on removal of aprons and gloves
- Seek advice from the Microbiologist for appropriate antimicrobial therapy

Previously Positive Patients

- Decolonisation of patients with VRE is not recommended so it is likely that a previously positive patient will remain positive during subsequent admissions.
- If previously positive patients are readmitted to hospital, obtain only those samples that are clinically indicated, e.g. if symptoms of urinary tract infection are present obtain a urine specimen.
- Care of previously positive patient will be the same as above if readmitted (see Care of the Patient with VRE).

Appendices

- MRSA Patient Methicillin Resistant *Staphylococcus aureus*, *Information for Patients, Family and Whanau*
- Contact Isolation, *Information for Patients, Family and Whanau*

References

Associated Documents

Internal

- Standard Precautions Policy
- Disease Specific Isolation Precautions Patient Management Policy
- Management of Staff with Communicable Disease Policy
- Outbreak Management Policy
- Isolation Policy- transmission based precautions
- Antimicrobial Policy
- Waste Management Policy
- Environmental Cleaning Policy
- Laundry Policy
- Transfer of Patients Policy
- Discharge Policy

- Clinical Records Policy
- Personal Protective Equipment - Infection Control Policy
- PACU Contact Precautions Isolation Contact Precautions Patients, Food Services Work Manual
- Isolation Room Cleaning Guidelines, Housekeeping Work Manual
- MHC Clinical Nurse Co-coordinator Administrative Duties
- Pre admission - Trak Electronic Alert System
- Pre admission- Telephone calls assessment process
- PD Bookings Coordinator
- By-Laws for Credentialed Specialists
- Application for Employment, Human Resources
- Schedule of Fees
- New Zealand Formulary

External

Guidelines for the Control of Multi-drug Resistant Organisms in New Zealand (2007), Ministry of Health, Wellington

Guidelines for the Control of Methicillin-resistant Staphylococcus aureus in New Zealand. August 2002, Ministry of Health, Wellington

Australian Commission on Safety and Quality in Health Care. *Recommendations for the control of Multi-drug resistant Gram-negatives: carbapenem resistant Enterobacteriaceae* (October 2013). Sydney. ACSQHC, 2013.

Lippincott Clinical Procedures, Guidelines for the Control of Multi-drug Resistant Organisms, revised 4 June, 2012

Acknowledgement

Southern District Health Board, Control of Multi-resistant Organisms Guidelines (District), Document No 81752 V1 13/5/2015

Canterbury District Health Board, Guidelines for the Control of Multi-resistant Organisms Guidelines, Document No 4815, June 2012