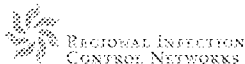


Best Practices for Antibiotic Resistant Organisms



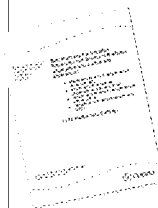
PROVINCIAL INFECTIOUS DISEASE CONTROL NETWORKS

Giving Health a Helping Hand

Acknowledgements



Giving Health a Helping Hand



This document was developed by the Provincial Infectious Diseases Advisory Committee (PIDAC). PIDAC is a multidisciplinary scientific advisory body who provide to the Chief Medical Officer of Health evidence-based advice regarding multiple aspects of infectious disease identification, prevention and control.

Cleaning, disinfection and sterilization of reusable medical devices/items and Environmental Cleaning processes discussed in this presentation are based on the *Provincial Infectious Diseases Advisory Committee (PIDAC) Best Practices For Cleaning, Disinfection and Sterilization In All Health Care Settings, April 30, 2006* and

- *Best Practices for Environmental Cleaning for Prevention and Control of Infections, December 8, 2009*
http://www.health.gov.on.ca/english/providers/program/infectious/diseases/ic_cds.html

Outline

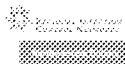


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What are Antibiotic Resistant Organisms (AROs)?

Transmission
Why they are important
IPAC Program
Screening
Prevention and Control
Hand Hygiene
Routine Practices
Additional Precautions
Placement
Education Strategies
Education
Antibiotic Stewardship
Program Evaluation

What are AROs?



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Antibiotic Resistant Organisms (AROs)

- A microorganism that has developed resistance to the action of several antimicrobial agents and that is of special clinical or epidemiological significance

What are AROs?

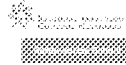


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Colonization

- Asymptomatic carriage
- Microorganisms are present in or on the body
- Microorganisms may grow and multiply
- No tissue invasion or cellular injury

What are AROs?



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Infection

- The entry and multiplication of an infectious agent in the tissue of the host
- May be asymptomatic or symptomatic

What are AROs?



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Staphylococcus aureus

- A common skin bacteria
- Lives on the skin and mucous membranes of healthy adults
- May cause skin and soft tissue infections or invasive disease
- Most common cause of healthcare associated infections in acute care

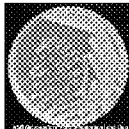
What are AROs?



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Methicillin Resistant *Staphylococcus aureus* (MRSA)

- A resistant form of the common skin bacteria, *Staphylococcus aureus*
- Many people carry it in their nasal passages or on their skin
- Can be either health care associated (CA-MRSA) or community associated (CA-MRSA)
- Can cause serious infections



What are AROs?

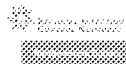


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MRSA Risk Factors

- Invasive procedures
- Prior treatment with antibiotics
- Prolonged hospital stay
- Stay in ICU or burn unit
- Surgical wound infection
- Close proximity to colonized/infected individual

What are AROs?



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Enterococci

- A common gut bacteria
- May colonize wounds, ulcers and medical device sites in hospitalized patients
- A common cause of health care-associated infection

What are AROs?



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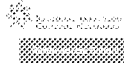
Vancomycin Resistant Enterococci (VRE)

- Strains of the common gut bacteria, Enterococci
- Has become resistant to high levels of the very powerful antibiotic- Vancomycin
- Majority of individuals who have VRE are colonized



<http://dx.doi.org/10.1016/j.annep.2014.02.004>

What are AROs?



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VRE Risk Factors

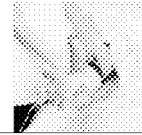
- Severity of underlying illness
- Presence of invasive devices
- Prior colonization with VRE
- Antibiotic use
- Length of hospital stay

Transmission



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- Most commonly spread by the hands of healthcare workers
- Contaminated surfaces and equipment
 - Survival on surfaces:
 - MRSA – 7 days to 7 months*
 - VRE – 5 days to 4 months*
- Providing direct care



* Kramer et al. BMC Infectious Diseases 2006, 6:130

Why are AROs Important?

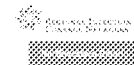


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Impact on Individuals:

- Increased length of stay
- Decreased quality of life
- Stigma
- May cause serious complications
 - Including death

Why are AROs Important?

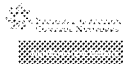


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Impact on Healthcare System:

- Increased cost
- Ability to provide quality care
- Slows the health system

IPAC Program



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IPAC Program Goals:

- To protect the health and to improve outcomes of clients/patients/residents
- To prevent and control the spread of these microorganisms by instituting a set of practices and procedures
- Lessen the impact of MRSA and VRE on health care system

IPAC Program

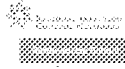


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IPAC Program

- Healthcare is based on overall care needs not ARO status
- Components of an Infection Control Program include:
 - Surveillance
 - Infection Prevention and Control Practices
 - Education
 - Evaluation

Screening



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Screening Tool for ARO's

- Applies to all admissions
- A questionnaire used to determine who is at risk:
 - Previous colonization/infection
 - Health care facility (HCF) exposure in past 12 months
 - Transfers between HCF
 - Recent exposure to an outbreak
 - High risk medical conditions



Screening



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Swabbing applies to anyone at risk

- Done on admission or as part of a Point Prevalence
- Sites for swabbing (MRSA) include nares, perianal, perineal, skin, wounds
- Sites for specimen collection (VRE) stool or a swab from the rectum or anus with feces



Prevention & Control



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Hand Hygiene as per Routine Practices

Additional/Contact Precautions

- Instituted as soon as indicated
- Placement
- Isolation
- Transfers/Mobility
- Personal Protective Equipment (PPE)
- Environment and Equipment
- Visitors

Hand Hygiene



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- Is the most important measure for controlling transmission of MRSA and VRE
- Observe the 4 Moments
- Encourage use by clts/residents/pts and their visitors
- If hands are not visibly contaminated then alcohol-based hand rub is preferred



Routine Practices



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- Minimum set of IPAC practices to prevent transmission of germs
 - From patient to patient and to staff
- To be used with *all* clt/resident/pts for *all* care activities
- Requires the use of a risk assessment

Routine Practices



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- Hand hygiene
- Barrier precautions
- Single room with dedicated toilet
- Safe use of sharps
- Careful handling of linen and waste
- Cleaning & disinfection of equipment and the environment

Additional Precautions



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- Additional precautions are used in addition to routine practices
 - They are NEVER a substitute for routine practices
- Additional precautions are required for MRSA and VRE

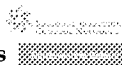
Additional Precautions



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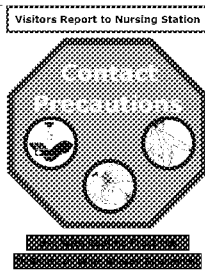
- Additional Precautions must be started immediately when MRSA/VRE is identified or suspected based on:
 - Diagnosis
 - Symptoms of infection
 - Lab results
 - Risk factors
- *The risk of transmitting MRSA/VRE must be balanced against the risk of placing a client/patient/resident on Additional Precautions*

Additional Precautions

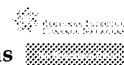


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- Additional precautions for MRSA/VRE include:
 - Contact Precautions
 - Client/patient/resident placement and movement
 - Safe management of equipment and the environment
 - The use of Personal Protective Equipment (PPE)
 - Communication strategies
 - Staff, client/patient/resident and family education



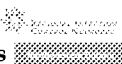
Additional Precautions



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- Contact Precautions
 - Used when there is a risk of transmission by contact with an infectious person or potentially contaminated surfaces or equipment in the environment
 - Vary slightly between acute and non-acute care settings

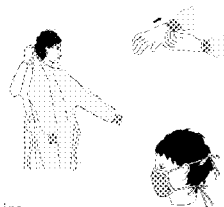
Additional Precautions



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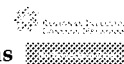
Personal Protective Equipment (PPE)

- Gloves
- Gown
- Mask



Individuals in Contact Precautions do not require PPE when leaving their room

Additional Precautions



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- Contact Precautions for MRSA/VRE in Acute Care:
 - Single room placement (or cohorting of patients)
 - Gloves and long-sleeved gown when entering patient's room or bed space (staff & visitors)
 - Hand hygiene by patient before leaving room
 - Dedicated equipment (or adequate cleaning & disinfection between uses)
 - *Patient's do not require PPE when leaving room*
 - Appropriate signage

Additional Precautions



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- Contact Precautions for MRSA/VRE in Non-Acute Care:
 - Appropriate placement (single-room or cohort) on a case-by-case basis
 - Gloves for direct care
 - Long-sleeved gown for direct care
 - Hand hygiene by resident/client before leaving room
 - Dedicated equipment (or adequate cleaning & disinfection between uses)
 - *Residents/clients do not require PPE when leaving room*
 - Appropriate signage

Additional Precautions



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Visitors

- Visitors should wear the same personal protective equipment as healthcare workers
- Visitors must receive education regarding hand hygiene and the appropriate use of PPE

Additional Precautions



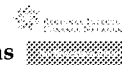
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Environment and Equipment

- Dedicated equipment
- Review cleaning and disinfection methods
- Routine management of linens
- Curtains should be removed and laundered when soiled and after discharge of individual with VRE (consideration of above when individual with MRSA)



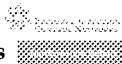
Additional Precautions



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- Duration of Additional Precautions:
 - Requires consultation with Infection Control Professional
 - Requires a policy addressing when additional precautions will be discontinued
 - After treatment of infection?
 - After successful decolonization?
 - Other times?

Additional Precautions



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- Discontinuing Additional Precautions:
 - After treatment
 - Follow-up specimen required
 - after completion of treatment
 - Before precautions are lifted

Additional Precautions



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- Discontinuing Additional Precautions:
 - Following decolonization attempt
 - Follow-up specimens required
 - Three sets of negative specimens
 - Taken at least one week apart

Additional Precautions



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- Discontinuing Additional Precautions:
 - In acute care:
 - Following discontinuation of precautions weekly specimens should be taken
 - For duration of hospitalization

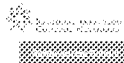
Additional Precautions



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- Discontinuing Additional Precautions:
 - In non-acute care:
 - Following discontinuation of precautions monthly specimens should be taken
 - For six months

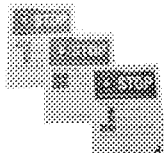
Placement



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Placement/Isolation

- Single room with own toileting facilities is preferred
 - Cohorting may be used – consult IPAC
- Door may remain open
- Signage posted
- Contact precautions must be considered



Placement

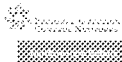


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Transfers

- Notify receiving department, agency or transfer service
- Staff involved (if physical contact) should wear appropriate PPE
- Equipment used must be cleaned and disinfected immediately following transfer

Placement



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Mobility

Acute Care

- Decisions to be made with input from health care team and IPAC professional

Long Term Care

- Individuals with MRSA or VRE should not be required to stay in room unless:
 - Unable to comply with hygienic measures
 - Uncontained draining wounds or feces
 - Uncontained cough (for MRSA)

Education Strategies



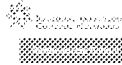
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Staff

- Routine practices, additional precautions
- Epidemiology, prevention and control of MRSA and VRE
- PPE
- Colonization vs. Infection



Education Strategies



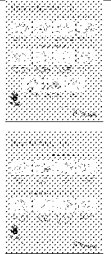
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Patients/Clients/Residents

- Hand hygiene, basic hygiene practices (not sharing personal items, cough etiquette,...)

Visitors

- Control measures in place, hand hygiene



Antibiotic Stewardship



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- Policies and procedures that promote the judicious use of antibiotics
- Formulary control of antibiotics
- Regular reviews of antibiotic utilization

Program Evaluation



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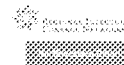
Evaluation

Multi-disciplinary audits followed by feedback and an action plan to improve practices :

- Screening tools
- Hand Hygiene, Routine Practices, Additional Precautions
- Disinfecting of equipment
- Cleaning of rooms



References & Resources



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- PIDAC
http://www.health.gov.on.ca/english/providers/program/infectious/diseases/bes_L_prac/bp_staff.pdf
- CCAR
<http://www.ccar-ccra.com/english/pdfs/IPC-BestPractices-June2007.pdf>
- PHAC
<http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/99pdf/cdr25s4e.pdf>

*Contact your local RICN
for further information*



REGIONAL INFECTION
CONTROL NETWORKS



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