



Title: Elimination of Multidrug-resistant *Acinetobacter baumannii* Transmission in Healthcare Settings

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1. Introduction

- In past *Acinetobacter* has been increasingly recognized as a significant healthcare-associated, opportunistic, multidrug-resistant (MDR) pathogen causing outbreaks.
- *Acinetobacter baumannii* (Ab) is known to be recoverable from the skin, throat and rectum of humans, and has been reported to be a healthcare-acquired colonizer of the respiratory tract.
- Environment has a recognized role in the transmission of Ab infections, as it can persist in either moist or dry hospital environment up to five months that can lead to an endemic situation.
- According to the Centers for Disease Control and Prevention (CDC), the species Ab accounts for nearly 80% of reported *Acinetobacter* infections.
- Pinpointing an outbreak source may require extensive “detective” work when the source is not obvious.
- Colonized and infected residents may become reservoirs and vehicles for MDR Ab transmission to other residents in a facility. The residents can also be a source of transmission when transferred to or from other healthcare settings, including acute care facilities.
- The initial recommendation is to make MDR Ab prevention in the center a priority by implementing systems to communicate information to administration and the health authorities as required. If a patient is infected or colonized with MDR Ab, the facility should communicate this to any facility receiving a patient from the center. The staff should be educated about MDR Ab, proper hand hygiene, environmental cleaning, and their role in prevention and control within the ambulatory care facility.
- *Acinetobacter* can cause outbreaks among high-risk, critically ill paediatric patients; it varies by host and setting, and is not exclusive to the paediatric intensive care unit (PICU) and neonate intensive care unit (NICU).

2. Purpose

Provide the healthcare workers (HCWs) with an evidence-based applicable guidance, outbreak experiences to manage and eliminate transmission of multidrug-resistant *Acinetobacter baumannii* (MDR Ab) in healthcare settings.

3. Scope

The policy applies to all healthcare settings in Kuwait.

4. Definitions

- 4.1 MDR *Acinetobacter baumannii* (MDR Ab):** *Acinetobacter baumannii* with multidrug resistance to more than two of the following five drug classes: antipseudomonal cephalosporins (ceftazidime or cefepime), antipseudomonal carbapenems (imipenem or meropenem), ampicillin/sulbactam, fluoroquinolones (ciprofloxacin or levofloxacin), and aminoglycosides (gentamicin, tobramycin, or amikacin).
- 4.2 Pan-drug resistant *Acinetobacter baumannii*:** Ab with additional antimicrobial resistance in all drug classes, plus resistance to polymyxin and/or colistin
- 4.3 Cohort for MDR Ab:** Placement of residents/patients colonized or infected with MDR Ab in rooms (cohorted) with other MDR Ab residents/patients.
- 4.4 Cohort staffing related to MDR Ab:** Assignment of personnel to care only for residents/patients known to be colonized or infected with MDR Ab.
- 4.5 Colonization with MDR Ab:** Presence of MDR Ab in or on body without signs or symptoms of active infection.
- 4.6 Standard Precautions:** Precautions taken to protect against exposure to blood and potentially infectious body fluids when caring for patients/residents. These precautions are always taken without regard for the diagnosis or perceived diagnosis and are never discontinued.
- 4.7 Contact Precautions:** Transmission-based Precautions method recommended by the Centers for Disease Control and Prevention (CDC). This method requires barrier precautions and personal protective equipment for direct contact with residents/patients or contaminated equipment.
- 4.8 Contamination:** Presence of a potentially infectious agent on a surface, on a material, or in a fluid.
- 4.9 Outbreak of MDR Ab:** An increase in the incidence of MDR Ab cases in a healthcare setting above the endemic level, or a cluster of new MDR Ab cases that are epidemiologically linked.
- 4.10 Long-term care facility (LTCF):** A healthcare setting that provides rehabilitative, restorative, and/or ongoing skilled nursing care to patients or residents in need of assistance with activities of daily living. Long-term care facilities include nursing homes, rehabilitation facilities, inpatient behavioral health facilities, and long-term chronic care hospitals
- 4.11 Ambulatory care:** Healthcare rendered for acute or chronic diseases and for surgical interventions where a patient's length of stay is less than 24 hours.

5.1 Risk Assessment**5.1.1 Identify and prepare the following for risk assessment**

- Administrative technical support.
- Resources such as laboratory and pharmacy capabilities.
- Infection prevention and control staffing.
- Public health support as applicable.
- Current infection prevention and control interventions (e.g., hand hygiene, contact precautions, etc.).
- Measurement parameters for the current interventions.
- Comprehensive list of identified colonized and infected patients.

5.1.2 Taking actions based on findings

- Once the data is collected and evaluated, results of outcomes and process measures must be shared with key stakeholders.
- Involve key stakeholders in identifying and implementing interventions when the results indicate a need to improve rates or stop an outbreak.
- Once the interventions have been implemented, reanalyze to determine the success of the interventions.
- If needed, implement additional interventions to improve the process as necessary.

5.1.3 Recommendations

- Establish baseline prevalence and, when applicable, incidence rates for the whole facility or for a specific unit using available data (clinical culture, history, screening culture).
- Identify high-risk populations and/or units based on incidence rates, local demographic risk data, or known risk factors from scientifically based evidence.
- Evaluate data over time for the facility and/or specific units to characterize prevalence or transmission rates.
- Identify clusters in transmission in risk populations and/or units to determine if enhanced interventions may be appropriate.
- Based on surveillance and risk assessment, finalize, implement, and reanalyze based on an intervention plan developed with key stakeholders.

5.2 Patient Screening/ Surveillance Cultures

5.2.1 In outbreak situations, surveillance cultures of patients involved in the outbreak or who are deemed at risk for colonization/infection with the outbreak organism are recommended to be carried out by the nursing staff under the direction of the laboratory staff in case this was part of the planned interventions by the Outbreak Management Committee.

5.2.2 When screening cultures are recommended by the committee, apply the following components:

- Use a pre-determined standardized collection protocol, including sites to be cultured.
- Collaborate with laboratory regarding supplies, optimal delivery, appropriate test order, test result(s), comment(s), or immediate notifications.
- Include protocol specific actions when target organism is found (private room, cohorting of patients and/or staff, roommate considerations, precautions/isolation, others)
- Implement protocols with appropriate communication and staff training as necessary.

5.3 Environmental Specimens

- Call the Occupational Health Department Staff for environment or equipment culturing if recommended by Outbreak Management Committee to identify an ongoing source of the outbreak organism.
- Obtain environmental cultures (e.g., surfaces, shared medical equipment) when there is epidemiologic evidence that an environmental source is associated with ongoing transmission.

5.4 Standard and Transmission-based Precautions

The main goal of MDR Ab infection prevention and management program is the prevention of the transmission of MDR Ab in healthcare settings. Using transmission-based (contact) precautions in addition to standard precautions is an important component of the infection prevention intervention to reduce the risk of MDR Ab transmission within the healthcare setting.

5.4.1 Major components of a hand hygiene program

- The 5 moments of hand hygiene
- Implement the program for all healthcare providers and other patient contact workers.
- Educate visitors to wash their hands, or use an alcohol-based hand rub on entering

and leaving the room.

- Gloves are not worn outside the patient's zone.

5.4.2 Patient placement and contact precautions

A patient with MDR Ab should be:

- Placed in a private room. If this option is not available, the patient should be cohorted with another patient infected with the same organism.
- If neither of these options is available, the patient should be placed in a room with another patient who is considered low risk for acquisition of MDR Ab (eg with no open wounds, no invasive devices, not immunocompromised)
- In hospitals and LTCFs, contact precautions are used for all patients identified as having MDR Ab infection or colonization.
- In LTCFs, the individual patient's clinical situation and the incidence of MDR Ab in the facility should be considered when deciding to implement or modify contact precautions.
- In ambulatory care settings and home care, use standard precautions.

5.4.3 Basics of contact precautions

- Don gloves and gowns before or immediately upon entry to room/cubicle.
- Remove gloves and decontaminate hands before leaving the patient's zone.

5.4.4 Mouth, nose, eye protection

- Wear masks, eye shields and/or goggles when performing procedures involving respiratory droplets and secretions, and in any situation where the potential for splashes or spray is present.
- Perform hand hygiene.

5.4.5 Considerations when patients on contact precautions leave their rooms

- When an MDR Ab colonized or infected patient has uncontained drainage or body secretions, limit movement or transport of the patient from the room to essential purposes only.
- If patient must leave his or her room, ensure that precautions are maintained.
- Notify receiving department, unit, or common area of patient's isolation status prior to transporting the patient.
- Instruct patient to perform hand hygiene and wear gown.
- Adequately contain wounds or non-intact skin.
- For incontinent patients, ensure containment of urine or stool.
- After performing patient care activities, dispose of contaminated personal protective equipment (PPE) and perform hand hygiene prior to transporting resident from the

room.

- Ensure that clothing and skin do not contact potentially contaminated environmental surfaces in the patient's room.
- Notify transport destination staff of arrival of patient on contact precautions.
- Don clean, appropriate PPE when directly assisting the patient at the transport destination.
- Ensure that transport destination staff members comply with the elements of contact precautions and environmental/equipment cleaning.

5.4.6 Linen and laundry

- Take care when handling linen so as not to aerosolize potential infective material.
- Bag linen at the bedside.

5.5 Environmental Cleaning

All personnel directly or indirectly involved in patient care including environmental services must follow the proper cleaning and disinfection protocols as effective tools for consistent management of environmental contamination with MDR Ab.

An environmental cleaning and disinfection plan includes the followings:

- Daily cleaning of patient rooms by trained dedicated environmental staff to target patient care areas and provide consistency of appropriate cleaning and disinfection.
- Staff, education and reinforcement of training is required.
- Protocols that specify appropriate use of ministry approved cleaning and disinfecting products with the proper dilution and amount and contact times of the approved disinfecting agents.
- Using separate wipe between areas to prevent cross-transmission.
- Protocols for patients in isolation, with daily, terminal and enhanced cleaning during outbreak situations.
- More attention to high-touch areas eg, bed rails, light switches, over-bed tables, bedside commodes, bathroom fixtures in the resident's room, doorknobs, any equipment in the immediate area of the resident, and any equipment that is multi-use between residents).
- Proper cleaning and/or disinfection of electronic equipment, including personal care electronic equipment and multi-use electronic items according to the manufacturer instructions.
- Disinfection protocols with a defined schedule.
- Increased frequency of cleaning and disinfection for specific units in the facility that experience increasing infection rates.
- Complete floor cleaning after moving of equipment to allow access to all surfaces.
- Clear delegation of equipment cleaning that is not performed by environmental services

staff to the appropriate healthcare staff as per facility protocols. (For instance, respiratory therapists may be responsible for cleaning respiratory equipment).

- Disinfection protocol that addresses the specific patient care staff responsibility for disinfection of equipment between residents.

5.6 Critical Elements in the Control of MDR Ab Outbreaks

5.6.1 Administrative support

- Ensure that key hospital administrative risk management, financial, clinical and support service leaders are informed of an apparent outbreak MDR Ab as soon as possible and that all are suitably impressed with the potential scope, duration and clinical impact of such an outbreak.
- The infection preventionist (IP) should secure an organizational commitment to support the agreed upon interventions and provide the needed resources.
- Resource commitment and administrative support must be in place to successfully control an outbreak of MDR Ab.

5.6.2 Public relations

- Seek the involvement of the organization's public/media relations (PR) department, as a sustained outbreak (especially one that involves unit closures and diversion of admissions) will likely come to the attention of the local media.

5.6.3 Clinical components in the control of MDR Ab outbreaks

5.6.3.1 Communication

- The referring entity should clearly identify the known MDR Ab patient to the receiving entity at the time of transfer in order to facilitate the timely implementation of control measures upon admission.
- Standardized “handoff” protocol and documentation that explicitly addresses the patient's overall MDRO history is recommended to be prepared by the nursing staff.
- Flag both the MDR Ab patient's hard copy medical record as well as their electronic medical record so that it is obvious to the next care team in the event of subsequent readmission to the facility to allow institution of precautionary measures without delay.

5.6.3.2 Education

- Infection control team should schedule MDR Ab-specific education for care givers as a part of the outbreak control process.
- Visitors and family should also be educated verbally and by distributing printed educational material by nursing staff and treating physicians.

- HCWs should be reminded of the importance of hand hygiene, proper PPE use, the characteristics of MDR Ab transmission, environmental cleaning, equipment reprocessing, etc.
- All shifts should be included and attendance should be documented.

5.6.3.3 Reservoir identification and elimination

- This is a basic tenet of outbreak control.
- An outbreak strain of MDR Ab can be in ventilators and other medical equipment.
- Cross- transmission from infected patients leads to a higher incidence of newer cases.
- Patient and environmental surveillance cultures may be used to identify reservoirs such as colonized patients or items in the care environment.
- The infection preventionist should work closely with the microbiology laboratory to coordinate the collection and processing of HCWs screening samples as well as with occupational health directorate for the environmental samples.

5.6.3.4 Active screening cultures (ASC)

- It is recommended to implement a program of ASC on admission in outbreak unit.
- Screening cultures include stool samples, swab samples from the rectum or perirectal area, throat, samples from the inguinal area and manipulated sites, e.g. catheters and areas of broken skin such as wounds.
- Endotracheal tube aspirates or sputum should be cultured if a respiratory tract reservoir is suspected.
- The frequency of screening should be based on the local prevalence of the microorganism, patient colonization risk and the case mix of the unit.
- Despite the fact that no consensus exists on the optimal timing and interval, it is strongly recommended to perform ASC at the time of hospital admission for high risk patients in high risk units such as ICU, burn, bone marrow/stem cell transplant, oncology units and patients transferred from facilities known to have high prevalence rates.
- Admission, discharge and weekly patient screening might also be considered to provide feedback to HCWs and to assess the effectiveness of interventions.
- Periodic ASC (e.g. weekly) might be performed for patients remaining in the hospital at high risk for carriage because of ward type (ICU), prolonged antibiotic(s) therapy, underlying disease, long duration of stay, presence of devices and surgery.
- ASC should be continued weekly until no cases of colonization or infection- suggesting ongoing cross-transmission- are identified.
- Patients with positive screening results should be under contact isolation precautions.

5.6.3.5 Cohorting of patients

- Place several patients with MDR Ab in the same geographical area, possibly one

Semi-private room or several rooms designated for that purpose.

- The purpose would be to geographically separate patients with MDR Ab from others, and, combined with caregiver cohorting (described below), would physically and operationally segregate infected from non-infected patients.

5.6.3.6 Cohorting of caregivers

- Assigning certain caregivers to care only for those patients in the MDR Ab cohort during any given shift.
- A person assigned to the cohort would not be assigned to non-cohort patients.

5.6.3.7 Deferring admissions and unit closure

- An affected unit can be closed or defer admissions for a period of time as per recommendation of Outbreak Management Committee in order to control an outbreak of MDR-Ab.
- When the unit closed, equipment should be removed for cleaning and reprocessing, extensive environmental cleaning takes place, and thorough culling of potentially contaminated supplies is accomplished.

5.7 “Hyperaggressive” Room/Environment Cleaning

- Ab is known to persist in the environment; it is desiccation-tolerant and has often been recovered from the environment after routine discharge room cleaning.
- Use hypochlorite solutions since it have been reported as effective in controlling outbreak situations.
- Leave surfaces being disinfected wet for up to ten minutes.
- Because of the strong environmental component of MDR Ab, all aspects of room cleaning should be carefully scrutinized, with a determination of how each item be cleaned under supervision of nursing staff that are responsible for cleaning of patients' direct environment.
- Existing cleaning protocols should be reviewed, put into practice and should be observed by the infection preventionist .
- Several emerging technologies under investigation that show promise for effective room decontamination can be used. These include room fogging with hydrogen peroxide vapor (HPV), room fogging with activated hydroxyl radicals (OH⁻) derived from hydrogen peroxide, room fogging with a low-concentration mixture of hydrogen peroxide and peroxyacetic acid, and surface exposure to intense ultraviolet light.

5.7.1 Review of respiratory care equipment reprocessing

- The infection preventionist should carefully review all aspects related to respiratory care

equipment processing and handling if the investigation reveals that several affected patients are found to have received respiratory care treatments of any kind.

- This review should include care of bronchoscopes, nebulizers, ventilator circuits, ventilators, incentive breathing devices and liquids used in the treatments. All reprocessing processes should be reviewed to verify standards for cleaning and disinfection of this equipment are being met.

5.7.2 Hand hygiene improvement

- Hand carriage of MDR Ab, most likely of a transient nature and certain healthcare worker hands must be considered as a possible mode of transmission for outbreak strains.
- HCWs hand hygiene must be heavily stressed on as a part of any outbreak control effort.
- Either an antimicrobial soap and water or an alcohol-based hand cleanser can be used for this purpose.
- HCWs should be reminded that gloves are not a substitute for effective hand hygiene.
- Verification by direct observation of hand hygiene compliance may be necessary to influence caregivers to comply with hand hygiene protocols without exception.

5.7.3 Contact precautions and compliance improvement

- Contact precautions should be used as control strategy for all patients in addition to standard precautions in cases of MDRO, including MDR Ab.
- The purpose of contact precautions are to prevent the actual transfer of infectious agents from the patient or the environment to the caregiver, who may in turn either acquire the agent or more likely, serve as a vector for the transport of the agent to a susceptible patient .
- The key elements of contact precautions involve placing the patient in a private room (except when cohorting is unavoidable) and the use of gowns and gloves, by caregivers when entering the room and contact with the patient and/ or items potentially contaminated by the patient is anticipated.
- The nursing staff should arrange to make sure there are sufficient PPE supplies available at the point of need in instances where a cluster of infections may increase usage levels well above the normal.
- There should be no exceptions to PPE use according to the established protocol: Physicians, nurses, therapists, dietary, social services, pastoral care, etc .

5.8 Judicious Use of Antimicrobial Agents

- The goal of this is to ensure that systems are in place to promote optimal treatment of infections and appropriate antimicrobial use.

- Review antimicrobial therapy of the healthcare settings particularly the outbreak area/unit.
- In hospitals and LTCFs, ensure that a multidisciplinary process is in place to review antimicrobial utilization, local susceptibility patterns (antibiograms), and antimicrobial agents included in the formulary to foster appropriate antimicrobial use.
- Implement systems (e.g., computerized physician order entry, comment in microbiology susceptibility report, notification from a clinical pharmacist or unit director) to prompt clinicians to use the appropriate antimicrobial agent and regimen for the given clinical situation.
- Provide clinicians with antimicrobial susceptibility reports and analysis of current trends, updated at least annually, to guide antimicrobial prescribing practices.

5.8 Ambulatory Care

- The infection prevention program should include the surveillance for, and monitoring of, MDR Ab in the center. Cultures of a site potentially infected should be done pre-procedure and results communicated to the physician and staff. Positive culture patients can be scheduled as the last case of the day.
- Ambulatory care staff will use standard precautions at all times. If the patient or the physician reports MDR Ab prior to the patient arriving at the facility, or a wound is identified during initial assessment, a decision will be made as to whether additional precautions are necessary.
- The staff is required to use gowns and gloves for contact with all blood or body fluids, including uncontrolled drainage, draining wounds, faecal or urinary incontinence, and contents of drainage bags.
- In addition, masks should be donned for potential exposure to splash-generating procedures. If the patient cannot control his or her secretions, the procedure may be rescheduled, or the patient should be separated from the other patients, and contact precautions implemented.
- After discharge, the environment and equipment in contact with the patient should be cleaned and disinfected or sterilized according to recommended guidelines.
- Intensified interventions should be taken if an outbreak is identified.

5.9 Long- Term Care Facility (LTCF)

- The IP must be aware of MDR Ab reservoirs and populations in the community. This data should be part of the facility risk assessment. MDR Ab-positive patients can be identified from information provided on transfer forms and/or from laboratory results. This information will assist with resident placement, identifying risk factors and calculation of rates.
- The facility should be alert for outbreaks or increased transmission of MDR Ab. If transmission is occurring in the facility, the IP must review the infection prevention interventions, assess staff compliance, and intensify education and compliance monitoring as appropriate.
- The medical director should be kept informed of MDR Ab prevalence and of any possible transmission of MDR Ab among residents in the facility. MDR Ab incidence rates should be reported at Infection Prevention Committee meetings and, during periods of possible transmission or outbreak, the need for enhanced interventions must be communicated.
- Place MDR Ab-positive resident in a private room at time of admission and after a positive culture result on a current resident. If not possible, it may be necessary to cohort the resident with another resident known to have the same organism, or place the resident with a low-risk resident who is not currently on antibiotic medication, has no invasive devices, and has no wounds or other major skin disruptions.
- The LTCF must have policies and procedures addressing MDROs. The policy should deal with placement, surveillance, isolation precautions, specimen collection and any other issues that may impact transmission of the organism.
- Contact precautions are used to prevent transmission in hospital and LTCF settings and it is based on the resident's clinical situation and facility resources. Many facilities use contact precautions if the resident has an infection with MDR Ab. If the resident is colonized and the clinical situation allows - and the resident can maintain good hygiene, and can follow instructions to prevent transmission - standard precautions may be used.
- The quality of life of LTCF residents is associated with socialization and participation in group activities; therefore, modifying the type of precautions that can be safely used with MDR Ab residents is an important consideration.

- Hand hygiene is extremely important. Hand hygiene and standard precautions or contact precautions information/education must be provided for residents and their visitors. Residents should be instructed to perform hand hygiene at appropriate times, and residents who cannot discern when to perform hand hygiene should be assisted in hand hygiene by staff and/or by their families.
- It is not uncommon for visitors to assist LTCF residents in care activities, accompany residents to common areas, and visit other residents' rooms. It can be expected; therefore, that LTCF visitors may have frequent opportunities to acquire infectious agents from either residents or their environments. It can also be expected that visitors may be a source of transmission of acquired "contamination". Education of families and other visitors is the first step in ensuring that visitors of MDR Ab-positive residents do not contribute to MDR Ab transmission in the LTCF.
- **Environmental cleaning** is of great importance in preventing the transmission of organisms. Cleaning should be monitored, with special attention to high-touch areas, in the resident's room, halls and activities areas. Staff should have access to cleaning supplies, if needed, at all times. Cleaning of medical equipment should follow all manufacturers' instructions to prevent harm to the equipment.

5.10 Paediatric and Neonate Settings

- Vulnerabilities of the paediatric patient are the result of extrinsic and host factors in the midst of developmental care needs, the care needs of paediatric patients require frequent and very close contact with HCWs and other caregivers, including parents who may also fulfil the role of care provider, and family members such as siblings.
- Unfortunately, the availability of appropriate paediatric antibiotics is jeopardized by emerging strains of *Acinetobacter* that are resistant to many commercially available antibiotics.

5.10.1 Paediatric risk factors for colonization and infection by MDR Ab

- admission to a unit with endemic MDR Ab
- non-single patient rooms which may become crowded with family, HCWs and visitors.
- prolonged exposure to antimicrobial agents
- invasive procedures
- underlying conditions and diseases
- indwelling and invasive medical devices

- medically complex populations in the outpatient and ambulatory setting should also be assessed for risk of colonization and infection.

5.10.2 Neonatal risk factors for colonization and infection by MDR Ab

- low birth weight and preterm neonates are the primarily affected in MDR Ab outbreaks.
- patients with limited vascular access, and catheters remain in place for extended periods
- intense contact with care providers and the environment
- multiple hosts with immature immune systems,
- under-developed skin
- congenital anomalies
- Prolonged hospitalizations

5.10.3 Management of MDR Ab outbreak in paediatrics and neonates units

- The prudent practice of infection prevention and control measures mitigate colonization of HCW staff and contamination of the environment.
- A plan for controlling the spread and preventing the establishment of an endemic MDR Ab strain should be developed, outbreaks of MDR Ab are difficult to control, because patients may become colonized or infected, and environmental contamination can persist.

5.10.3.1 Surveillance

- Methods should be identified and implemented for early recognition of the presence of MDR Ab.
- Collect surveillance cultures at regular intervals from perianal areas, neck-skin folds and tracheal or nasopharyngeal culture

5.10.3.2 Cohorting

- Rapid cohorting is essential, because MDR Ab can spread rapidly in the NICU setting due to the environmental persistence of MDR Ab
- Cohorting patients in NICU to 3 separated cohorts: colonized or infected patients, exposed patients, and non-exposed patients. Assign equipment and care providers to each cohort is recommended.

5.10.3.3 Education

- Educate all personnel providing services; including other patients' care providers such as teachers, physical therapists and social services, to prevent any opportunities for contamination and acquisition during out-of-room therapies and

services such as spending time in shared rooms and activity centers, attending group functions, school, visiting gym areas and lactation rooms; aiming to enhance sustained mitigations necessary to prevent and control an outbreak.

- Establishing partnerships with patient families, in conjunction with providing audience-appropriate health education.
- Document education on the institution's prevention measures, for staff such as moonlighters, specialists and students.

5.10.3.4 Environment

- Work with the families and the patient to coordinate room re-organization to clean and reduce clutter; resulting from toys and "get-well" gifts, making thorough cleaning difficult and creating fomites and reservoirs via contamination by MDR Ab. In order to facilitate this, it may be necessary to transfer a patient to another room.
- Develop procedures for cleaning and disinfection of: floors, toys and other toy-like items such as floor mats, laptops, mobiles, etc.
- Develop and implement a system for monitoring the effectiveness of cleaning.

5.10.3.5 Equipment

- Develop procedures to disinfect lactation equipment and rooms, baby scales and other equipment.
- Implement plans to identify, clean and disinfect equipment from outside hospitals.

5.10.3.6 Contact isolation precautions

- As in the adult setting, contact isolation precautions are used to interrupt transmission.

5.10.3.7 Communication

- Establish referral hospital communications to prepare for transfer of a known MDR Ab colonized or infected patient. Interfacility patient transfer is a recognized method of introducing MDR Ab into an institution; patients, equipment and staff that move between facilities can spread MDR Ab.

6. References

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7. Appendices

Appendix A: Surveillance line listing

Multidrug-resistant *Acinetobacter baumannii* (MDR Ab) surveillance line listing

Patient name	Date of birth	Male / Female	Unit/Room	Admitted from	Date of admission	Date of first positive MDR Ab culture	Site of infection/ colonization with MDR Ab	Date of transfer to another facility/ Name	Risk factors Invasive devices/ dates