
Implementation manual to prevent and control the spread of carbapenem-resistant organisms at the national and health care facility level

Interim practical manual supporting implementation of the Guidelines for the prevention and control of carbapenem-resistant Enterobacteriaceae, *Acinetobacter baumannii* and *Pseudomonas aeruginosa* in health care facilities



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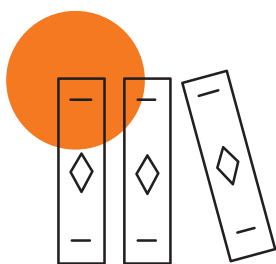
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ABBREVIATIONS AND ACRONYMS

AMR	antimicrobial resistance
CDC	Centers for Disease Control and Prevention (Atlanta, USA)
CLED	cysteine-, lactose-, and electrolyte-deficient (medium)
CLSI	Clinical and Laboratory Standards Institute
CP	carbapenemase-producing
CPE	carbapenemase-producing Enterobacteriaceae
CRAB	carbapenem-resistant <i>Acinetobacter baumannii</i>
CRE	carbapenem-resistant Enterobacteriaceae
CRs	carbapenem-resistant organisms
CRPsA	carbapenem-resistant <i>Pseudomonas aeruginosa</i>
ECDC	European Centre for Disease Prevention and Control
EUCAST	European Committee on Antimicrobial Susceptibility Testing
GLASS	Global Antimicrobial Resistance Surveillance System
HAI	health care-associated infection
HHSAF	Hand Hygiene Self-Assessment Framework
IHR	International Health Regulations
IPC	infection prevention and control
IPCAF	Infection Prevention and Control Assessment Framework
KPC	<i>Klebsiella pneumoniae</i> carbapenemase
LMICs	low- and middle-income countries
MICs	minimum inhibitory concentrations
NDM	New Delhi metallo-beta-lactamases
OXA	oxacillinases
PCR	polymerase chain reaction
PPE	personal protective equipment
SDG	Sustainable Development Goals
SOP	standard operating protocols
USA	United States of America
VIM	Verona integrin-encoded metallo-beta-lactamase
WASH	water, sanitation and hygiene
WHO	World Health Organization



GLOSSARY OF KEY TERMS & DEFINITIONS

Alcohol-based handrub refers to an alcohol-based preparation designed for application to the hands to inactivate microorganisms and/or temporarily suppress their growth. Such preparations may contain one or more types of alcohol, other active ingredients with excipients, and humectants.

Basic sanitation facilities ensure the hygienic separation of human excreta and human contact and include flush/pour flush to sewers, septic tanks or pit latrines, ventilated pit latrines, pit latrines with slab or composting toilets. They are also usable and provide for the needs of all users (that is, staff and patients, women and people with limited mobility). To be considered usable, a facility should have a door that is unlocked when not in use (or for which a key is available at any time) and can be locked from the inside during use. There should be no major holes in the structure, the hole or pit should not be blocked, water should be available for flush/pour flush toilets, and there should be no cracks or leaks in the toilet structure. In addition, there should be at least one separate toilet for use by women/girls only, and a bin with a lid and/or water and soap available in a private space for washing.

Basic water supply is a supply that comes from an improved source (for example, a safely managed piped water, standpipe, tubewell/borehole, protected dug well or protected spring or rainwater) located at the health care facility and regularly provides water.

Biofilm refers to a community of microorganisms growing as a slimy layer on surfaces immersed in [or covered in] a liquid.

Bioburden is the number and types of viable microorganisms that contaminate the equipment/device.

Cleaning refers to the important first step of physically removing contamination by foreign materials from a surface or equipment, for example, dust, soil and organic material.

Cleaning agent refers to any product used to clean surfaces or equipment.

Detergent refers to a cleaning agent that increases the ability of water to penetrate organic material and break down grease and dirt. Detergents are needed to allow effective cleaning to take place.

Diagnostic stewardship consists of coordinated guidance and interventions to improve the appropriate use of microbiological diagnostics to guide therapeutic decisions. It should promote appropriate, timely diagnostic testing, including specimen collection, and pathogen identification to allow the accurate, timely reporting of results to guide patient treatment.

Dirty utility refers to the area in a ward where bodily fluids are disposed of. Other terms may be more familiar in different contexts, including 'sluice area'.

Disinfectant refers to a chemical agent that is capable of killing most pathogenic microorganisms under defined conditions, but not necessarily bacterial spores. It is a substance that is recommended for application to inanimate surfaces to kill a range of microorganisms.

Disinfection refers to a process that reduces the number of viable

microorganisms to a less harmful level. This process may not inactivate bacterial spores, prions and some viruses.

Hand hygiene refers to a general term related to any action of hand cleansing.

Hand hygiene station is a dedicated location with the necessary resources to enable hand hygiene to take place.

Health care-associated infection, also referred to as "nosocomial" or "hospital" infection, is an infection occurring in a patient during the process of care in a hospital or other health care facility, which was not present or incubating at the time of admission. Health care-associated infections can also appear after discharge. They represent the most frequent adverse event during care.

Health care facilities include all facilities caring for patients.

Health care worker refers to doctors, nurses and technical staff.

High-, low- and middle-income countries: WHO Member States are grouped into four income groups (low, lower-middle, upper middle and high) based on the World Bank list of analytical income classification of economies for the fiscal year, calculated using the World Bank Atlas method. For the current 2019 fiscal year, low-income economies are defined as those with a gross national income (GNI) per capita of US\$ 995 or less in 2017; lower middle-income economies as those with a GNI per capita between US\$ 996 and US\$ 3895; upper-middle-income economies as those with a GNI per capita of between US\$ 3896 and US\$ 12 005; and high-income economies as those with a GNI per capita of US\$ 12 056 or more.

Hospital cleaning staff refers to any member of the health workforce whose primary responsibility is to ensure a safe

hygienic environment through cleaning. In some countries, the following terms may be used: housekeeping staff; environmental services staff; hygiene and cleaning team; domestic staff; cleaning staff; cleaners; and hygienists.

Multimodal strategy: A multimodal strategy comprises several components or elements (three or more, usually five) implemented in an integrated way with the aim of improving an outcome and changing behaviour. It includes tools, such as bundles and checklists, developed by multidisciplinary teams that take into account local conditions. The five most common elements include: (i) system change (availability of the appropriate infrastructure and supplies to enable infection prevention and control good practices); (ii) education and training of health care workers and key players (for example, managers); (iii) monitoring infrastructures, practices, processes, outcomes and providing data feedback; (iv) reminders in the workplace/communications; and (v) culture change within the establishment or the strengthening of a safety climate.

Neutral detergent refers to a pH neutral (that is, pH 6-8) cleaning agent (see 'detergent') that increases the ability of water to penetrate organic material and break down grease and dirt. Detergents are needed to allow effective cleaning to take place.

Point of care refers to the place where three elements come together: the patient, the health care worker and care or treatment involving contact with the patient or his/her surroundings (within the patient zone).

Sufficient water includes water for drinking, food preparation, personal hygiene, medical activities, cleaning and laundry. Water quantity needs depend on the type of facility and services provided.

Terminal clean refers to a procedure required to ensure that an area has been cleaned/decontaminated following discharge of a patient with an infection (that is, alert organism or communicable disease) in order to ensure a safe environment for the next patient.

Wastewater refers to used water from any combination of domestic, industrial, commercial or agricultural activities, surface runoff or storm water, and any sewer inflow or sewer infiltration.

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