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MSF

# INFECTION PREVENTION AND CONTROL

*POLICY AND STRATEGIC FRAMEWORK*

INTERSECTION DOCUMENT



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## *INTERSECTIONAL MSF POLICY AND STRATEGIC FRAMEWORK*

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## 1. INTRODUCTION

**Safe delivery of care** is a right of every patient and a key responsibility for any health program/organization. MSF strives towards ensuring patient and healthcare worker safety and in particular comply with the duty to provide care while minimizing harm to individuals or groups.(2) Successful infection prevention and control (IPC) measures are important tools in the management of diseases, and good IPC practices must be equally available to all.

**Health Care Associated Infections (HAIs)** are the most frequent and most severe complications in healthcare structures and a great concern for patient safety. HAI rates range from 5-7% in high income countries in Europe(3) to an estimated 10-20% in low-resource settings.(4-6) HAI are responsible for death, prolonged hospital stays, creation of long-term disability and increase of the antimicrobial resistance (AMR) burden. The most frequent HAI are(7):

- Surgical Site Infections (SSI)
- Catheter-Related Bloodstream Infections (CR-BSI)
- Hospital-Associated pneumonia (HAP), including tuberculosis
- Catheter-Associated Urinary Tract Infections (CAUTI)
- Gastro-enteritis

**IPC** is a practical, evidence-based approach preventing patients and health care workers from being harmed by avoidable infections and hospital outbreaks.(7) **Effective IPC programs** can lead to more than a 30 % reduction in HAI rates, surveillance contributes to a 25-57% reduction in HAI and a safety culture and prevention program reduced surgical site infections risk in African hospitals by 44%.(7)

**The global increase of microbial multi-drug resistance** urges all healthcare facilities to improve on infection prevention and control practices to reduce preventable morbidity, mortality and financial expenditure.(8) An era where patients are colonized or infected with bacteria resistant to all antibiotics is approaching fast and is already present in certain facilities.(9, 10)

## 2. POLICY STATEMENT

Infection prevention and control (IPC) measures aim to ensure the protection of those who might be vulnerable to acquiring an infection both in the general community and while receiving care due to health problems, in a range of settings.(1) MSF will re inforce IPC in ALL health structures and activities based on the 3 priority pillars and with additional attention in hospital settings.

### *THE 3 PRIORITY IPC PILLARS TO BE IMPLEMENTED EVERYWHERE:*

MSF basic IPC program in health structures will focus on 3 pillars. The first 2 pillars are focused on standard precautions. (see annex 1). Pillar 1 consists of **hand hygiene**; Pillar 2 **cleaning and disinfection** of the environment and reprocessing of reusable medical devices and Pillar 3 consist of **transmission-based precautions** (see Annex 1) including appropriate isolation and ventilation facilities when indicated.

### *THE MAIN HOSPITAL-ASSOCIATED INFECTION (HAI) TARGETED:*

In the MSF healthcare facilities IPC interventions will specifically focus on those infections with most clinical impact for which successful implementation is most feasible in MSF contexts. Thus, **surgical site infections (SSI) and catheter related bloodstream infections (CR-BSI)** will be first targeted by the implementation of specific **intervention bundles and multimodal strategies**. Preventing hospital-associated pneumonia (HAP), catheter-related urinary tract infection (CAUTI) and nosocomial gastro-enteritis will be the next hospital-acquired infections that will be targeted by specific interventions.

This IPC policy outlines the main priorities for IPC in the health structures for MSF and the main components for good IPC practices in order to set a minimum standard to be followed in the field.

## 3. STRATEGIC FRAMEWORK

### *A IPC MULTIMODAL STRATEGY*

Evidence shows that implementing IPC activities in the health structure using multimodal strategies is effective to improve IPC practices, improve outcome and behavior changes and reduce HAI.(8). It is therefore recommended by WHO for implementing IPC and best practices. The multimodal components are the following:

- **System change:** availability of the appropriate infrastructure (including WaSH) and supplies to enable and enhance good IPC practices. Basic structural requirements includes **organizational aspects, hospital built environment (infrastructure and hospital design), material and equipment and ancillary services** (Annex 2).

A classical and crucial example is the patient per bed ratio that should not exceed one per bed

irrespective of whether it is an infant or an adult. Another example is adequate ventilation must be maintained in health care facilities at all times irrespective of type of clinical area.

- **Sensitization, education and training:** all healthcare workers should be sensitized to the risks and impact of HAI and the importance of IPC in preventing them. Trainings have to be organized to ensure good understanding of the needed IPC measures and the precautions and to enhance behavioral changes.
- **Monitoring** infrastructures, practices, processes, outcomes and **feedback provision.** The effect of the interventions will be measured using structural, process and outcome indicators. Feedback of IPC audits and indicators to healthcare workers is an essential part of improvement strategies. A monitoring system to capture IPC related structural and process indicators should be in place in all health facilities and discussed in the IPC committee. A surveillance program (outcome indicator) to evaluate incidence of infection needs to be developed and put into practice in all health-care facilities. Point prevalence surveys to evaluate the endemic level of AMR within the health-care facilities if performed periodically (once yearly) has added value in order to adopt IPC measures and to adjust empirical antibiotic treatment regimens to the local context.
- **Communication** improvements and **reminders** in the workplace (e.g. Hand hygiene posters)
- Strengthening of a **safety climate. Strong leadership** for the successful implementation of the multimodal strategies is pivotal. Ideally, **role models** in IPC and informal leaders in clinical wards are part of the strategy.

## 4. HOW TO IMPLEMENT IN MSF PROJECTS?

### *PROMOTION OF A STEPWISE IPC IMPROVEMENT APPROACH*

The introduction of a stepwise IPC improvement approach will enable us to define and benchmark the level of progress for IPC within the projects in a standardized manner. By doing so, the resources can be allocated to those projects with the highest needs.

Facilities that contain intensive care units (ICU), neonatology intensive care units (NICU), operation theatre (OT), surgical wards and/or a burns unit will have the highest needs and priority for implementation of IPC programs.

### *STRATEGIES TAILORED TO LOCAL CONTEXT*

A large variation in context, setting, infrastructure, human resources and materials available exist within MSF projects. Furthermore differences in culture, socio-economic and educational background of staff play an important role in the implementation of IPC measures. Consequently, IPC measures have to be adapted to the specific local context.

### *MULTIDISCIPLINARY APPROACH*

IPC measures will always be discussed in a multidisciplinary team within the project (including medical, WaSH, logistic, human resources and management staff). Health structures should have an **IPC committee** and an **IPC coordinator/ responsible** should be integrated in the hospital management team.

A multidisciplinary approach at headquarters should be guaranteed by integration of IPC policy in all relevant guidelines, protocols and tools within MSF.

MSF will integrate IPC interventions as part of any medical program irrespective of site or location, where they can assist in improving the effectiveness of the medical care MSF provides. In the projects IPC should be integrated in the competing priorities and aims.

### *SUPPORT FOR IMPLEMENTATION*

Standardized **toolkits** for frontline workers should be available to **support implementation** – including:

- MSF IPC Policy and guidelines
- Implementation toolkits for the 3 IPC pillars and bundles for SSI and CR-BSI
- Training courses and material for field projects
- Feedback and observation tools for surveillance and monitoring

## REFERENCES

1. WHO. Infection Control. [http://www.who.int/topics/infection\\_control/en/](http://www.who.int/topics/infection_control/en/). 2017.
2. Médecins SansFrontières. MSF Charter and principles. <http://www.msfg.org/en/msf-charter-and-principles>. 2017.
3. van der Kooij TI, Mannien J, Wille JC, van Benthem BH. Prevalence of nosocomial infections in The Netherlands, 2007-2008: results of the first four national studies. *The Journal of hospital infection*. 2010;75(3):168-72.
4. Rosenthal VD, Al-Abdely HM, El-Kholy AA, AlKhawaja SA, Lelebicioglu H, Mehta Y, et al. International Nosocomial Infection Control Consortium report, data summary of 50 countries for 2010-2015: Device-associated module. *American journal of infection control*. 2016;44(12):1495-504.
5. Allegranzi B, Bagheri Nejad S, Combescure C, Graafmans W, Attar H, Donaldson L, et al. Burden of endemic health-care-associated infection in developing countries: systematic review and meta-analysis. *Lancet*. 2011;377(9761):228-41.
6. Bagheri Nejad S, Allegranzi B, Syed SB, Ellis B, Pittet D. Health-care-associated infection in Africa: a systematic review. *Bulletin of the World Health Organization*. 2011;89(10):757-65.
7. WHO. Health care without avoidable infections. The critical role of infection prevention and control. <http://www.who.int/infection-prevention/publications/ipc-role/en/>
8. Zingg W, Holmes A, Dettenkofer M, Goetting T, Secci F, Clack L, et al. Hospital organisation, management, and structure for prevention of health-care-associated infection: a systematic review and expert consensus. *The Lancet Infectious diseases*. 2015;15(2):212-24.
9. Liu YY, Wang Y, Walsh TR, Yi LX, Zhang R, Spencer J, et al. Emergence of plasmid-mediated colistin resistance mechanism MCR-1 in animals and human beings in China: a microbiological and molecular biological study. *The Lancet Infectious diseases*. 2016;16(2):161-8.
10. Walsh TR, Weeks J, Livermore DM, Toleman MA. Dissemination of NDM-1 positive bacteria in the New Delhi environment and its implications for human health: an environmental point prevalence study. *The Lancet Infectious diseases*. 2011;11(5):355-62.

## ANNEXES

### ANNEX 1

#### **Standard and transmission-based precautions**

##### ***Standard precautions***

- Hand hygiene
- Cleaning and disinfection of surfaces
- Safe reprocessing of reusable medical devices and equipment
- Prevention of accidental exposure to bodily fluids (including needle stick injuries)
- Use of personal protective equipment (PPE)
- Handling of patient care equipment and linen
- Waste management
- Respiratory hygiene
- Injection safety

##### ***Transmission-based precautions***

- Contact isolation
- Droplet isolation
- Airborne isolation
- Strict isolation

## **Basic structural requirements for IPC in a Healthcare Facility**

### ***Organizational aspects***

- IPC supervisor or IPC manager
- IPC committee
- IPC facility based action plan
- Guidelines, protocols and tools
- Training programs
- Patient per bed ratio < or =1
- Policy for visitors and caretakers
- Policy for staff health

### ***Hospital built environment (infrastructure and hospital design), material and equipment***

- Essential WaSH requirements (health structure including disposal of bodily fluids)
- Ward layout and bed spacing
- Design of the flow of material, patient, waste and staff
- Dedicated space for clean storage
- Dedicated space for dirty room and sluice area
- Capacity to isolate patients with communicable diseases
- Materials should be able to be cleaned and disinfected
- Sufficient supply and quality of material and equipment (ABHR, PPE, detergents, cleaning material)
- Dedicated patient equipment for high risk wards
- Hospital area clearly bounded

### ***Ancillary services***

- Sterilization
- Laundry
- Kitchen