

Minimum requirements for starting the implementation of the WHO core components

Prof. Benedetta Allegranzi, World Health Organization

Sponsored by the WHO Infection Prevention and Control Global Unit





World Health Organization



Minimum requirements for starting the implementation of the WHO core components of infection prevention and control programmes: a new approach.

Prof. Benedetta Allegranzi (IPC/WHO HQ)
Host: Dr. Hanan Balkhy (ADG AMR/WHO HQ)

www.webbertraining.com November 18, 2019



World Antibiotic Awareness Week 2019

November 18-24, 2019

Aims to increase global awareness of antibiotic resistance and to encourage best practices among the general public, health workers and policy makers to avoid the further emergence and spread of antibiotic resistance.

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WAAW 2019 Key Public Theme:
The future of antibiotics depends on all of us

- Public messages focus on **prevention of infections** with interventions that are applicable in all settings: safe sex, hand washing, vaccination.
- Posters, Infographics, social media stills and GIFs
- Extension of the 2018 campaign depicting a variety of point of care scenes/interactions
- Available in all UN languages
- Plus: multi-day social media messaging. Each day's messaging corresponds to an objective of the Global action plan on AMR.

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THE ROLE OF INFECTION PREVENTION AND CONTROL IN PREVENTING ANTIBIOTIC RESISTANCE IN HEALTH CARE

On average, 1 in every 10 patients is affected by health care-associated infections (HAIs)
 • Antibiotic-resistant HAIs can double or more, the likelihood of death
 • Over 50% of surgical site infections can be resistant to antibiotics

Effective infection prevention and control (IPC) and water, sanitation and hygiene (WASH) stops the spread of antibiotic-resistant organisms

IPC and WASH in health care protects patients and health workers from avoidable infections

The building blocks of IPC and WASH in health care facilities are:
 • effective hygiene practices, including hand hygiene
 • core components of IPC programmes
 • a clean, well-functioning environment and equipment

This leads to:
 • less spread of antibiotic-resistant organisms
 • a reduced need for antibiotics

Every infection prevented is an antibiotic treatment avoided
 • Play your role in controlling antibiotic resistance!
 • Ensure IPC programmes are in place and champion IPC practices

IPC saves millions of lives every year

HANDLE ANTIBIOTICS WITH CARE

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<http://www.who.int/infection-prevention/en/>

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Acknowledgements: contributing experts

Fahmi Ahmed (WHO Country Office for Ethiopia); Romella Abovyan (National Center for Disease Prevention and Control, Armenia); Anucha Apisarnthanarak (Thammasat University Hospital, Thailand); Balyrbek Aslanov (North-Western State Medical University, Russia); Sofonias Asrat (WHO Country Office for Ethiopia); Mekdim Ayana (WHO Regional Office for Africa); Gertrude Avortri (WHO Regional Office for Africa); Anjana Bhushan (WHO Regional Office for South-East Asia); Roderick Chen Camano (Caja Seguro Social Hospital, Panama); Christiana Agnes Conteh (Ministry of Health and Sanitation, Sierra Leone); Ana Paula Coutinho-Rehse (WHO Regional Office for Europe); Nizam Damani (IPC consultant, United Kingdom); Nino Dayanghirang (WHO Regional Office for Africa); Lamine Dhihah (Sahloul University Hospital, Tunisia); Molla Godif Fisehatsion (Ministry of Health, Ethiopia); Corey Forde (Queen Elizabeth Hospital, Barbados); Ghada Abdelwahed Ismail (Supreme Council of University Hospitals, Egypt); Nordiah Awang Jalli (Hospital Universiti Kebangsaan, Malaysia); Kushlani Jayatileke (Sri Jayewardenapura General Hospital, Sri Lanka); Ejaz Khan (Shifa International Hospital, Pakistan); Amy Kolwaite (CDC international IPC team, USA); Thabang Masangane (Ministry of Health, Eswatini); Guy Mboyo (WHO Regional Office for Africa); Huynh Tuan Minh (University Medical Center, Viet Nam); Awa Ndir (WHO Regional Office for Africa); Babacar Ndoeye (WHO Regional Office for Africa); Fernando Otaiza (Ministry of Health, Chile); Atika Swar (Federal Ministry of Health, Sudan); Maha Taleat (WHO Regional Office for the Eastern Mediterranean); Shaheen Mehtar (Infection Control Network Africa, South Africa); Benjamin Park (CDC international IPC team, USA); Molly Patrick (CDC international IPC team, USA); Lul Raka (University of Prishtina, Kosovo); Julie Storr (IPC consultant, United Kingdom); Lekilay G. Tehneh (Ministry of Health, Liberia); Le Thi Anh Thu (Infection Control Society, Viet Nam); Roselyne M.E. Toby (Hôpital Central de Yaoundé, Cameroon); Sarah Tomczyk (Robert Koch Institute, Germany); Winifrey Ukpouu (Nigeria Centre for Disease Control, Nigeria); Jay Varma (Africa CDC, Ethiopia); Daiva Yee (CDC international IPC team, USA).

Acknowledgements: external reviewers



Emine Alp (Ministry of Health, Turkey); April Baller (World Health Emergencies, WHO); Richard Gelting (CDC, USA); Margaret Montgomery (Water, Sanitation, Hygiene and Health Unit, WHO); Rob Quick (CDC, USA); Wing Hong Seto (University of Hong Kong, Hong Kong SAR, China); Nalini Singh (George Washington University Schools of Medicine and Health Sciences and Public Health and Children's National, USA); João Toledo (Pan American Health Organization).

Special thanks

US CDC and Africa CDC

Anthony Twyman, Alessandro Cassini, Molly Patrick, Joost Hopman, Julie Storr and Alice Simniceanu

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The importance of IPC



- Preventing harm to patients, health workers and visitors due to infection in health care facilities is fundamental to achieve **quality care, patient safety, health security** and the reduction of health care-associated infections (HAIs) and antimicrobial resistance (AMR).
- Similarly, preventing and reducing the transmission of infectious diseases that pose **global threats**, (e.g., pandemic influenza, Ebola virus disease and other viral haemorrhagic fevers), is paramount.
- Clean, safe care is a **patient right** and should also be the duty and pride of all those working in the health care sector.

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Indicators of IPC in human health



Global Database for Antimicrobial Resistance Country Self Assessment



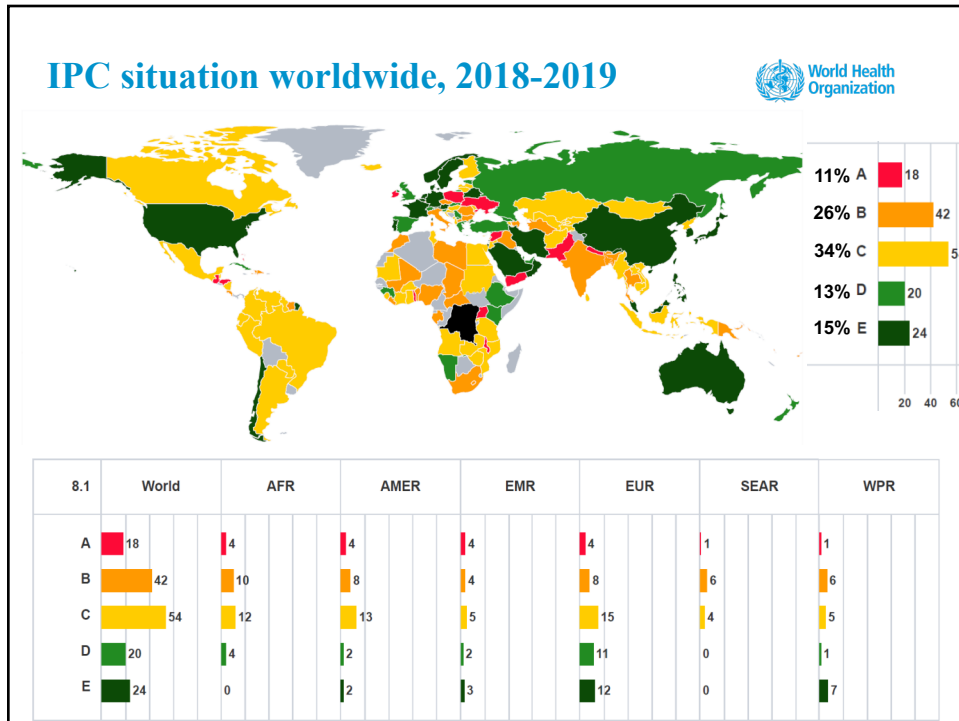
Global Database for Antimicrobial Resistance Country Self Assessment

- A** - No national IPC programme or operational plan is available.
- B** - A national IPC programme or operational plan is available. National IPC and water, sanitation and hygiene (WASH) and environmental health standards exist but are not fully implemented.
- C** - A national IPC programme and operational plan are available and national guidelines for health care IPC are available and disseminated. Selected health facilities are implementing the guidelines, with monitoring and feedback in place.
- D** - National IPC programme available according to the WHO IPC core components guidelines and IPC plans and guidelines implemented nationwide. All health care facilities have a functional built environment (including water and sanitation), and necessary materials and equipment to perform IPC, per national standards.
- E** - IPC programmes are in place and functioning at national and health facility levels according to the WHO IPC core components guidelines. Compliance and effectiveness are regularly evaluated and published. Plans and guidance are updated in response to monitoring.

<https://amrcountryprogress.org/>

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WHO 2019 Global Survey on IPC at the facility level

World Health Organization

Box 8. IPCAF scoring interpretation

Score	Interpretation
0-200	Inadequate IPC core components' implementation is deficient. Significant improvement is required.
201-400	Basic Some aspects of the IPC core components are in place, but not sufficiently implemented. Further improvement is required.
401-600	Intermediate Most aspects of IPC core components are appropriately implemented. Continue to improve the scope and quality of implementation and focus on the development of long-term plans to sustain and further promote the existing IPC programme.
601-800	Advanced The IPC core components are fully implemented according to the WHO recommendations and appropriate to the needs of your facility.

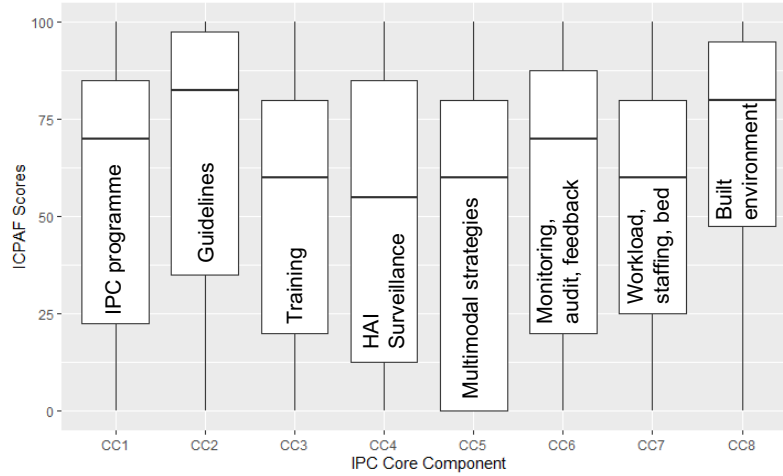
<https://www.who.int/infection-prevention/campaigns/ipc-global-survey-2019/en/>

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Snapshot of interim results (1)



IPCAF scores by IPC Core Component (CC) from submitting hospitals



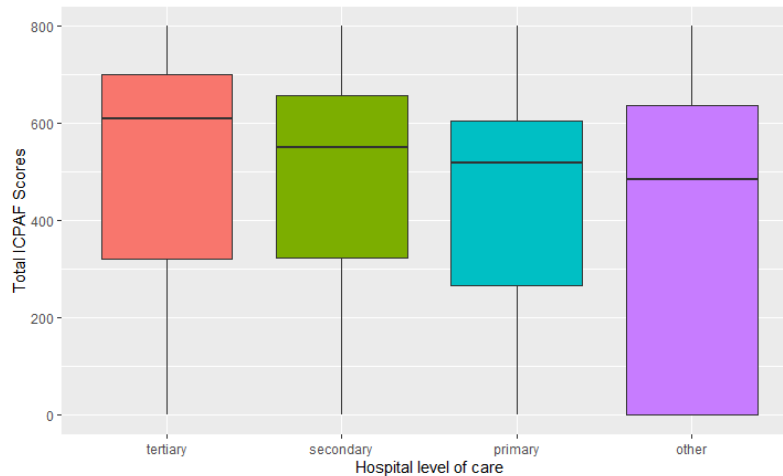
* Box-whisker plot displays median, interquartile range and range of each score

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Snapshot of interim results (2)




Total IPCAF scores by level of submitting hospitals



* Box-whisker plot displays median, interquartile range and range of each score

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The diagram illustrates the WHO core components for effective IPC programmes. It is structured as follows:

- Top Level:** IPC PROGRAMMES and all relevant programme linkages.
- Second Level:** Four interconnected boxes: GUIDELINES, EDUCATION AND TRAINING, SURVEILLANCE, and MONITORING, AUDIT AND FEEDBACK.
- Third Level:** ENABLING ENVIRONMENT, which includes WORKLOAD, STAFFING, AND BED OCCUPANCY, and BUILT ENVIRONMENT, MATERIALS AND EQUIPMENT.
- Bottom Level:** MULTIMODAL STRATEGIES.

Arrows indicate a flow from the enabling environment up to the programmes, and from the programmes down to the enabling environment. The multimodal strategies are shown as a base supporting the entire structure.

- 8 Core components
 - 8 Facility level
 - 6 National level
- 11 evidence*-based recommendations
- 3 good practice statements

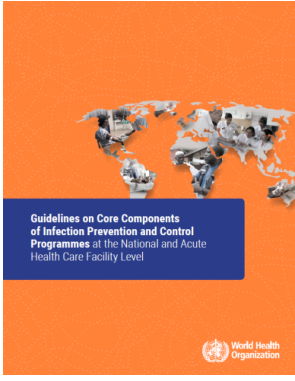
* Evidence from LMICs:

- 7 high-quality studies
- 22 lower quality

R = recommendation; GPS: good practice statement

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WHO Core Components of IPC Programmes - the evidence basis



The document cover features a world map and the title "Guidelines on Core Components of Infection Prevention and Control Programmes at the National and Acute Health Care Facility Level".

Review

Hospital organisation, management, and structure for prevention of health-care-associated infection: a systematic review and expert consensus

Effectiveness of national and subnational infection prevention and control interventions in high-income and upper-middle-income countries: a systematic review

Guidelines Article

Core components for effective infection prevention and control programmes: new WHO evidence-based recommendations

Abstract

Key messages

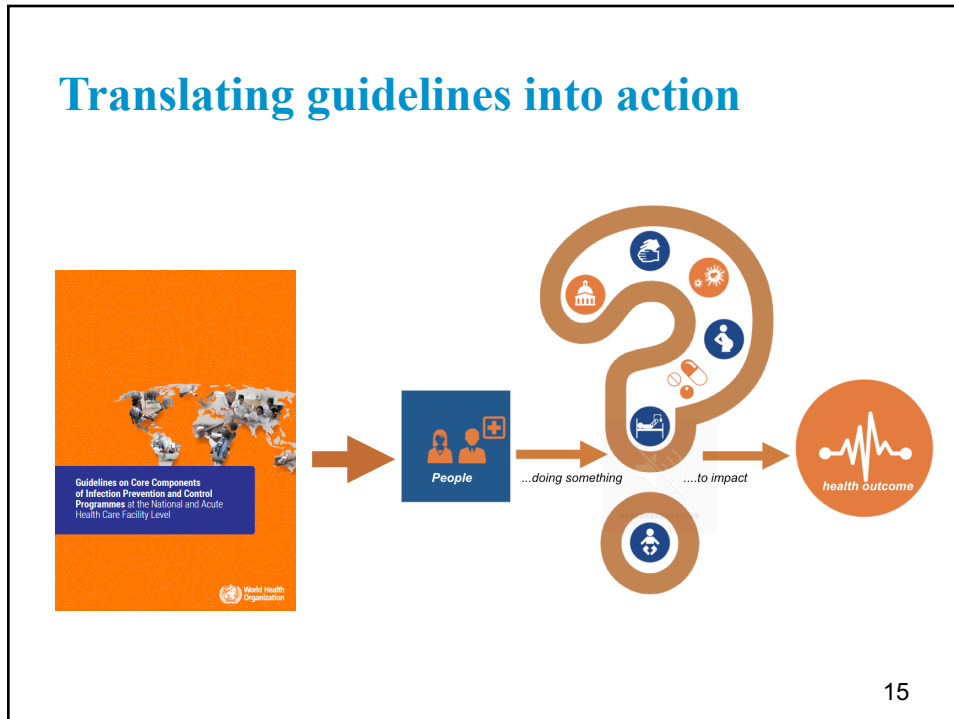
Introduction

Conclusion

- <http://www.who.int/infection-prevention/publications/ipc-components-guidelines/en/>
- Zingg W et al. *TLID* 2015
- Storr J et al. *ARIC* 2017
- Presley L et al. *TLID* 2017

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Implementation resources and assessment tools for national and facility level

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Interim Practical Manual supporting national implementation of the WHO Guidelines on Core Components of Infection Prevention and Control Programmes

IMPROVING INFECTION PREVENTION AND CONTROL AT THE HEALTH FACILITY

PREVENT INFECTIONS SAVE LIVES IN HEALTH CARE

INFECTION PREVENTION AND CONTROL ASSESSMENT FRAMEWORK AT THE FACILITY LEVEL DRAFT 2017

<http://www.who.int/infection-prevention/tools/core-components/en/>

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Ultimate goal



- For all countries: to achieve implementation/improvement of the **full** requirements of **all** core components to effectively reduce HAIs and AMR.
- The 8 core components of IPC are the 'wheels of the cart' that will ensure patients a safe journey while in a health care facility.
- Especially for countries where IPC is limited or does not exist, it is critical to start this journey by ensuring that at least **minimum requirements for IPC** are in place.

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So, what are the *minimum requirements* ?

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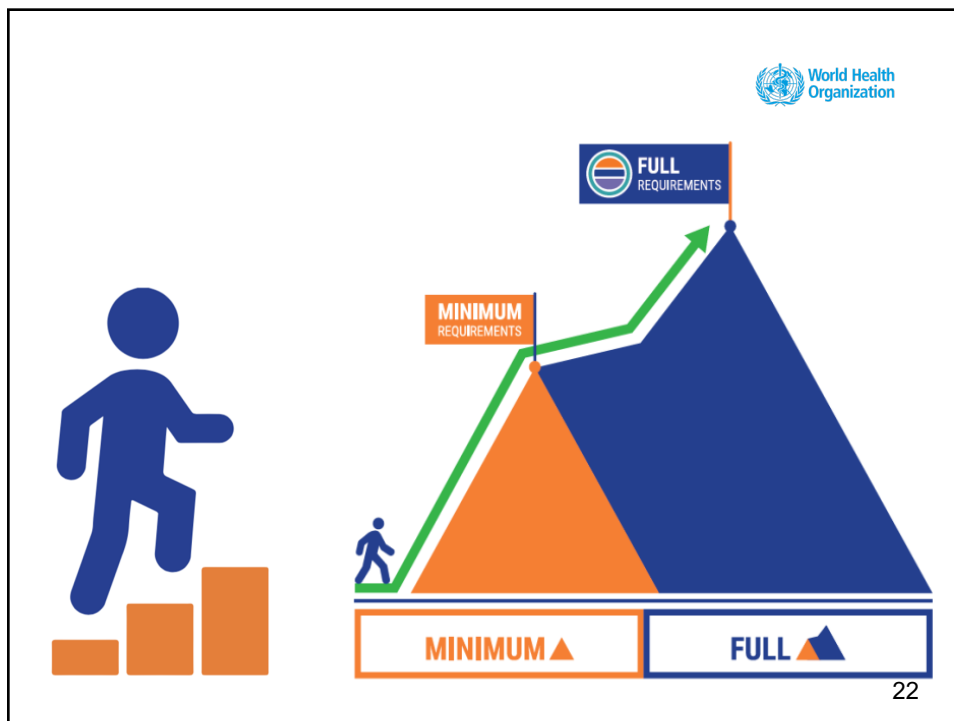
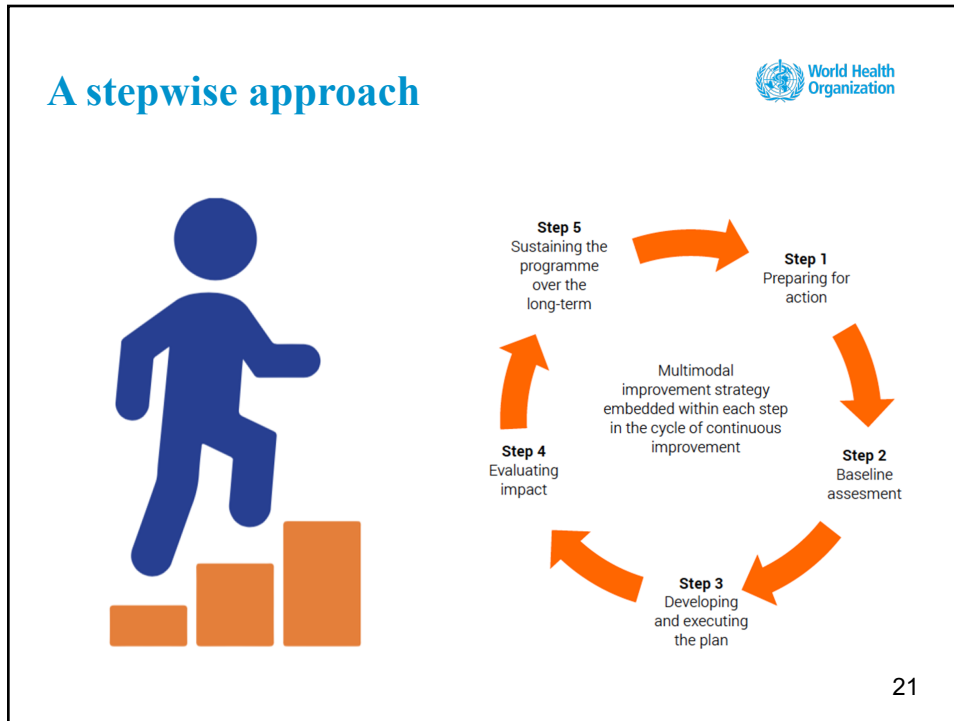
- Thus, the minimum requirements represent the starting point for undertaking the journey to build strong and effective IPC programmes at the national and facility level (Fig. 2) and SHOULD be in place for all countries and healthcare facilities to support further progress towards full implementation of all core components.

- The *minimum requirements* are defined as:

- IPC standards that should be in place at the national and facility level to provide minimum protection and safety to patients, HCWs and visitors, based on the WHO core components for IPC programmes.

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Our approach to minimum requirements development



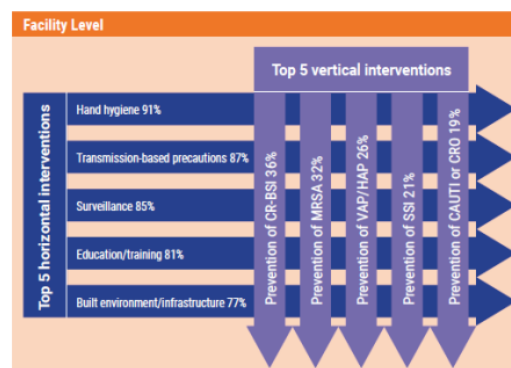
- Aim: Identify minimum IPC requirements according to the national and facility levels (tertiary, secondary and primary).
- Foundational material = CC guidelines
- **3-pronged approach:**
 1. **Global inventory** of available standards on IPC minimum standards
 - a. 21 country specific, 1 pan-regional (PAHO) & 1 regional initiative
 2. **Systematic review** of the scientific and gray literature
 - a. 7871 titles screened, 164 full manuscripts, 47 included
 3. International expert consensus on the identification of the

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Systematic review on IPC minimum standards



- IPC programs/measures stated as basic, minimum, minimal, core, essential, vital, crucial, fundamental, consensus, “success”, “best practices”, necessary
- national or facility based
- > 1 IPC specific measure is regarded as minimum
- **47 papers included**




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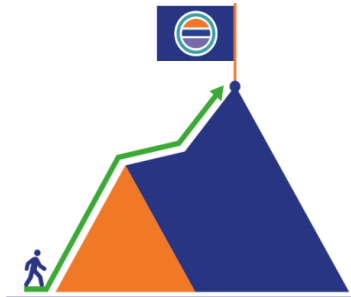
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New, launching today!



MINIMUM REQUIREMENTS for infection prevention and control programmes



The starting point for implementing the World Health Organization core components of infection prevention and control programmes at the national and health care facility level




- Anyone interested in understanding and implementing the *minimum requirements* should read the WHO Guidelines on core components of IPC programmes (1) and the manuals supporting their implementation at the national and facility levels (2, 3).
- The main target audience of this document are IPC and AMR focal points/leads, policy makers, senior managers and other professionals with the mandate of or interested in developing or strengthening IPC programmes at the national, sub-national and facility level.

<https://www.who.int/infection-prevention/publications/core-components/en/>

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BOX 1 STRUCTURE OF THE MINIMUM REQUIREMENTS (PART 3)



WHAT	HOW	WHO	WHY	FULL REQUIREMENTS
<i>Minimum requirements</i>	To measure progress	Is responsible for action	Rationale and additional details on the <i>minimum requirements</i>	Full core component requirements
Text of the <i>minimum requirements</i> for each IPC core component identified by expert consensus according to national and health care facility level and based on existing IPC and WASH recommendations and standards.	Indicators to be used to track implementation and progress for each <i>minimum requirement</i> are available from different WHO monitoring tools.	Identification of those who have the mandate to ensure that the <i>minimum requirements</i> are put in place and sustained or can play a role.	Explanations about the reasons for selecting the agreed <i>minimum requirements</i> (rationale) and additional details explaining their content and importance.	Comprehensive list of the actions and requirements* to achieve full implementation of each IPC core component. Note that these exist only for acute care hospitals because the WHO recommendations on IPC core components apply mainly to these facilities and not specifically to primary care facilities.

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Classification of health care facilities used in the document



Primary health care facilities: Facilities that provide outpatient services, family planning, antenatal care, maternal, newborn and child health services (including delivery), for example, health centres, health posts and small district hospitals.

Source: WHO. Water and sanitation for health facility improvement tool (WASH FIT). 2017 (<https://apps.who.int/iris/bitstream/handle/10665/254910/9789241511698-eng.pdf;jsessionid=0A60107AA8F5A27C5FD16B0823D3F4FA?sequence=1>)

Secondary health care facilities included:

- **Primary-level hospital:** Few specialties—mainly internal medicine, obstetrics and gynaecology, paediatrics and general surgery, or just general practice; limited laboratory services available for general, but not specialized, pathological analysis.
- **Secondary-level hospital:** Highly differentiated by its function with 5 to 10 clinical specialties; size ranges from 200 to 800 beds; often referred to as a *provincial or district hospital*.

Tertiary health care facilities: Highly specialized staff and technical equipment, for example, cardiology, intensive care unit and specialized imaging units; clinical services highly differentiated by function; may have teaching activities; size ranges from 300 to 1500 beds; often referred to as a *teaching or university or regional hospital*.

Source: WHO. Disease control priorities in developing countries. 2008 (<https://www.who.int/management/facility/ReferralDefinitions.pdf>).

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Core component 1: IPC programmes



Facility level: An IPC programme with a dedicated, trained team should be in place in each acute health care facility (strong)

National level: Stand-alone, active national IPC programme with clearly defined objectives, functions and activities as well as linked with relevant national programmes (GPS)

- Clearly defined objectives, functions and annual action plans
- Dedicated, trained IPC professionals (1 IP/250 beds) & multidisciplinary team & linkages to other programmes
- Budget & support from the senior management leadership
- Good quality microbiological laboratory

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Minimum requirements: CC1



MINIMUM REQUIREMENTS

NATIONAL LEVEL

A functional IPC programme should be in place, including at least:

- one full-time focal point trained in IPC
- a dedicated budget for implementing IPC strategies/plans.

FACILITY LEVEL

PRIMARY CARE: IPC trained health care officer

- Trained IPC link person, with dedicated (part-) time in each primary health care facility.
- One IPC-trained health care officer at the next administrative level (for example, district) to supervise the IPC link professionals in primary health care facilities.

SECONDARY CARE: functional IPC programme


- Trained IPC focal point (one full-time trained IPC Officer (nurse or doctor)) as per the recommended ratio of 1:250 beds with dedicated time to carry out IPC activities in all facilities (for example, if the facility has 120 beds, one 50% full-time equivalent dedicated officer).
- Dedicated budget for IPC implementation.

TERTIARY CARE: functional IPC programme

- At least one full-time trained IPC officer (nurse or doctor) with dedicated time per 250 beds.
- IPC programme aligned with the national programme and with a dedicated budget.
- Multidisciplinary committee/team.
- Access to microbiology laboratory.

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Core component 2: IPC guidelines



Evidence-based guidelines should be developed and implemented for the purpose of reducing HAI and AMR. Education & training of relevant HCW on guideline recommendations and monitoring of adherence should be undertaken.

- Strong recommendation (combined national & facility)
- Expertise required
- Local prioritization
- Providing resources for implementation
- HCWs education on recommended practices
- Monitoring implementation

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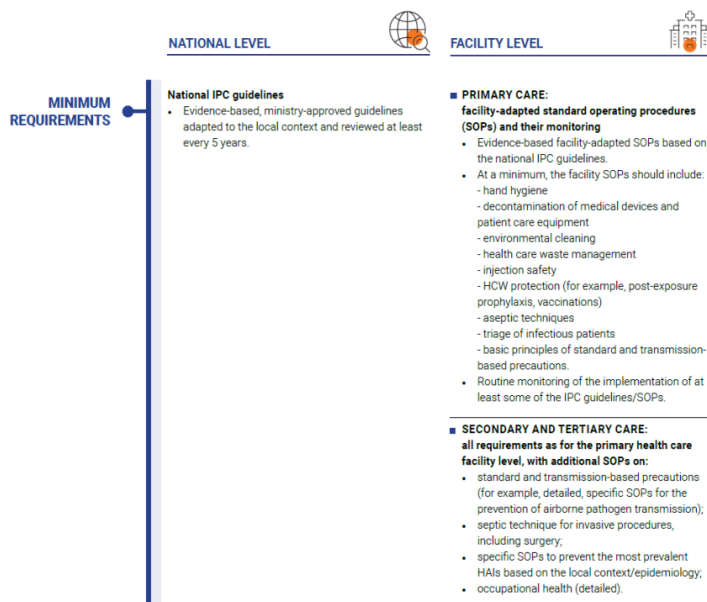
IPC Guidelines



- The **basic set of IPC guidelines** should include the following:
 - **Standard precautions** (see core component 1)
 - **Transmission-based precautions**, including patient identification, placement and the use of personal protective equipment.
 - **Aseptic technique** for invasive procedures (including surgery) and device management for clinical procedures, according to the scope and type of care delivered at the facility level.
 - **Specific guidelines to prevent the most prevalent HAIs** (for example, catheter-associated urinary tract infection, SSI, central line-associated bloodstream infection, ventilator-associated pneumonia) depending on the context and complexity of care.

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Minimum requirements: CC2



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Core component 3: IPC education & training



Facility level: IPC education should be in place for all health care workers by utilizing team- and task-based strategies that are participatory and include bedside and simulation training to reduce the risk of HAI and AMR. (strong)

National level: The national IPC programme should support education and training of the health workforce as one of its core functions (GPS)

- **Pre-graduate, post-graduate, in-service training**
- **Evaluations** of training impact
- **Collaboration** with local academic institutions and professional organizations

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Minimum requirements: CC3



MINIMUM REQUIREMENTS

NATIONAL LEVEL



National training policy and curriculum

- National policy that all HCWs are trained in IPC (in-service training).
- An approved IPC national curriculum aligned with national guidelines and endorsed by the appropriate body.
- National system and schedule of monitoring and evaluation to check on the effectiveness of IPC training and education (at least annually).

FACILITY LEVEL



PRIMARY CARE:

IPC training for all front-line clinical staff and cleaners upon hire

- All front-line clinical staff and cleaners must receive education and training on the facility IPC guidelines/SOPs upon employment.
- All IPC link persons in primary care facilities and IPC officers at the district level (or other administrative level) need to receive specific IPC training.

SECONDARY CARE:

IPC training for all front-line clinical staff and cleaners upon hire

- All front-line clinical staff and cleaners must receive education and training on the facility IPC guidelines/SOPs upon employment.
- All IPC staff need to receive specific IPC training.

TERTIARY CARE:

IPC training for all front-line clinical staff and cleaners upon hire and annually

- All front-line clinical staff and cleaners must receive education and training on the facility IPC guidelines/SOPs upon employment and annually.
- All IPC staff need to receive specific IPC training.

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Core component 4: HAI surveillance



Facility level: Facility-based HAI surveillance should be performed to guide IPC interventions and detect outbreaks with timely feedback of results (strong)

National level: National HAI surveillance programmes and networks that include mechanisms for timely data feedback and with the potential to be used for benchmarking (strong)

- **Budget, leadership support and linkages** to other surveillances and health information systems needed
- **Standardized definitions**, appropriate methods, **good quality laboratory support**, quality control needed
- **Training and expertise** needed
- **Timely reporting** and feedback

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Minimum requirements: CC4



MINIMUM REQUIREMENTS

NATIONAL LEVEL



IPC surveillance and a monitoring technical group

- Establishment by the national IPC focal point of a technical group for HAI surveillance and IPC monitoring that:
 - is multidisciplinary;
 - develops a national strategic plan for HAI surveillance (with a focus on priority infections based on the local context) and IPC monitoring.

FACILITY LEVEL



PRIMARY CARE

- HAI surveillance is not required as a minimum requirement at the primary facility level, but should follow national or sub-national plans, if available (for example, detection and reporting of outbreaks affecting the community is usually included in national plans).

SECONDARY CARE

- HAI surveillance should follow national or sub-national plans.

TERTIARY CARE: functional HAI surveillance

- Active HAI surveillance should be conducted and include information on AMR:
 - enabling structures and supporting resources need to be in place (for example, dependable laboratories, medical records, trained staff), directed by an appropriate method of surveillance;
 - the method of surveillance should be directed by the priorities/plans of the facility and/or country.
- Timely and regular feedback needs to be provided to key stakeholders in order to lead to appropriate action, in particular to the hospital administration.

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Core component 5: Multimodal strategies



Facility level: At the facility level IPC activities should be implemented using multimodal strategies to improve practices and reduce HAI & AMR. (strong)

National level: National IPC programmes should coordinate and facilitate the implementation of IPC activities through multimodal strategies on a nationwide or sub-national level. (strong)

A **multimodal strategy** comprises **several elements or components** (3 or more; usually 5) **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**.

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What is a multimodal strategy?



- **It is “THE” modern way to implement IPC interventions**
 - ✓ to achieve the change of system, climate and behaviour supporting IPC progress and, ultimately, the measurable impact that benefits patients and health care workers (outcome)
- **Multimodal thinking** means that IPC practitioners do not focus only on single strategies to change practices (for example, training and education), but consider a range of strategies that target different influencers of human behaviour, e.g. procurement, monitoring and feedback, infrastructures or organizational culture.
- All (five) elements should be considered and necessary action taken, based on the local context and situation informed by periodic assessments. “Unimodal” strategies are less likely to result in improvements and are short-lived and not sustainable.

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IPC improvement strategy: multimodal thinking

Figure 5.1 The five components of the WHO multimodal hand hygiene improvement strategy

1a. System change – alcohol-based handrub at point of care
+

1b. System change – access to safe, continuous water supply, soap and towels
+

2. Training and education
+

3. Evaluation and feedback
+

4. Reminders in the workplace
+

5. Institutional safety climate

In other words, the WHO multimodal improvement strategy addresses these five areas:

- 1. Build it (system change)**
 What infrastructures, equipment, supplies and other resources (including human) are required to implement the intervention?
 Does the physical environment influence health worker behaviour? How can ergonomics and human factors approaches facilitate adoption of the intervention?
 Are certain types of health workers needed to implement the intervention?
 Practical example: when implementing hand hygiene interventions, ease of access to handrubs at the point of care and the availability of critical infrastructures. Are these available, affordable and easily accessible in the workplace? If not, action is needed.
- 2. Teach it (training & education)**
 Who needs to be trained? What type of training should be used to ensure that the intervention will be implemented in line with evidence-based policies and how frequently?
 Does the facility have trainers, training aids, and the necessary equipment?
 Practical example: when implementing injection safety interventions, timely training of those responsible for administering safe injections, including carers and community workers, are important considerations, as well as adequate disposal methods.
- 3. Check it (monitoring & feedback)**
 How can you identify the gaps in IPC practices or other indicators in your setting to allow you to prioritize your intervention?
 How can you be sure that the intervention is being implemented correctly and safely, including at the bedside? For example, are there methods in place to monitor or track practices?
 How and when will feedback be given to the target audience and managers? How can patients also be informed?
 Practical example: when implementing critical site infection interventions, the use of key tools like important considerations, such as inter-observer calibration forms and the WHO checklist (adapted to local conditions).
- 4. Sell it (reminders & communications)**
 How are you promoting an intervention to ensure that there are cues to action at the point of care and messages are reinforced to health workers and patients?
 Do you have capacity/funding to develop promotional messages and materials?
 Practical example: when implementing interventions to reduce catheter-associated bloodstream infection, the use of visual cues to action, promotional/reminder messages, and planning for periodic campaigns are important considerations.
- 5. Live it (culture change)**
 Is there demonstrable support for the intervention at every level of the health system? For example, do senior managers provide funding for equipment and other resources? Are they willing to be champions and role models for IPC improvement?
 Are teams involved in co-developing or adapting the intervention? Are they empowered and do they feel ownership and the need for accountability?
 Practical example: when implementing hand hygiene interventions, the way that a health facility approaches this as part of safety and quality improvement and the value placed on hand hygiene improvement as part of the clinical workflow are important considerations.

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Source: <http://www.who.int/infection-prevention/tools/core-components/cc-implementation-guideline.pdf?ua=1>

Minimum requirements: CC5

MINIMUM REQUIREMENTS

NATIONAL LEVEL

Multimodal improvement strategies for IPC interventions

- Use of multimodal strategies to implement IPC interventions according to national guidelines/SOPs under the coordination of the national IPC focal point (or team, if existing).

FACILITY LEVEL

PRIMARY CARE: multimodal strategies for priority IPC interventions

- Use of multimodal strategies – at the very least to implement interventions to improve hand hygiene, safe injection practices, decontamination of medical instruments, devices and environmental cleaning.

SECONDARY CARE: multimodal strategies for priority IPC interventions

- Use of multimodal strategies – at the very least to implement interventions to improve each one of the standard and transmission-based precautions, and triage.

TERTIARY CARE: multimodal strategies for all IPC interventions

- Use of multimodal strategies to implement interventions to improve each one of the standard and transmission-based precautions, triage, and those targeted at the reduction of specific infections (for example, surgical site infections or catheter-associated infections) in high-risk areas/patient groups, in line with local priorities.

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Core component 6: Monitoring/audit of IPC indicators & feedback



Facility level: Regular monitoring/audit and timely feedback of health care practices should be undertaken according to IPC standards. Feedback should be provided to all audited persons and staff. (strong)

National level: A national IPC monitoring and evaluation programme should be established to assess the extent to which standards are being met and activities performed. Hand hygiene monitoring with feedback should be a key performance indicator. (strong)

- To achieve behaviour change or other improvements
- To document progress and impact
- Essential: timely feedback and data
- Interpretation for action
- Integration/alignment with other monitoring systems needed
- Hand hygiene: national KPI

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Minimum requirements: CC6



MINIMUM REQUIREMENTS

NATIONAL LEVEL



IPC surveillance and a monitoring technical group

- Establishment by the national IPC focal point of a technical group for HAI surveillance and IPC monitoring that:
 - is multidisciplinary;
 - develops a national strategic plan for HAI surveillance and IPC monitoring;
 - develops an integrated system for the collection and analysis of data (for example, protocols, tools)
 - provides training at the facility level to collect and analyse these data;
 - develops recommendations for minimum indicators (for example, hand hygiene).

FACILITY LEVEL



PRIMARY CARE

- Monitoring of IPC structural and process indicators should be put in place at primary care level, based on IPC priorities identified in the other components. This requires decisions at the national level and implementation support at the sub-national level.

SECONDARY AND TERTIARY CARE

- A person responsible for the conduct of the periodic or continuous monitoring of selected indicators for process and structure, informed by the priorities of the facility or the country.
- Hand hygiene is an essential process indicator to be monitored.
- Timely and regular feedback needs to be provided to key stakeholders in order to lead to appropriate action, particularly to the hospital administration.

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Core Component 7: Workload, staffing & bed occupancy (facility level)



Facility level only: In order to reduce the risk of HA and the spread of AMR the following should be addressed: (1) bed occupancy should not exceed the standard capacity; (2) health care worker staffing levels should be adequately assigned according to patient workload. (strong)

- **Overcrowding** recognized as being a **public health issue** that can lead to disease transmission
- Standards for bed occupancy should be **one patient per bed with adequate spacing between beds** (at least 1 metre)
- **HCWs staffing** levels should be adequately assigned according to patient workload

WHO Workload Indicators of Staffing Need (WISN) method
http://www.who.int/hrh/resources/wisn_user_manual/en/

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Minimum requirements: CC7 (facility level)



MINIMUM REQUIREMENTS

■ PRIMARY CARE

- **To reduce overcrowding:** a system for patient flow, a triage system (including referral system) and a system for the management of consultations should be established according to existing guidelines, if available.
- **To optimize staffing levels:** assessment of appropriate staffing levels, depending on the categories identified when using WHO/national tools (national norms on patient/staff ratio), and development of an appropriate plan.

■ SECONDARY CARE AND TERTIARY CARE

- **To standardize bed occupancy:**
 - establish a system to manage the use of space in the facility and to establish the standard bed capacity for the facility;
 - hospital administration enforcement of the system developed;
 - no more than one patient per bed;
 - spacing of at least one metre between the edges of beds;
 - overall occupancy should not exceed the designed total bed capacity of the facility.
- **To reduce overcrowding and optimizing staffing levels:** same *minimum requirements* as for primary health care.

* The national health system, IPC programme and any other relevant body should coordinate and support the implementation of this core component at the facility level.

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Core Component 8: Built environment, materials & equipment for IPC (facility level)



At the facility level patient care activities should be undertaken in a clean and/or hygienic environment that facilitates practices related to the prevention and control of HAI, as well as AMR, including all elements around the WASH infrastructure and services and the availability of appropriate IPC materials and equipment. (GPS)

At the facility level, materials and equipment to perform appropriate hand hygiene should be readily available at the point of care. (strong)

- All requirements to achieve **appropriate clean and hygienic environment, WASH services, and materials and equipment for IPC**, in particular for HH

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Minimum requirements: CC8 (facility level*)



FACILITY LEVEL

MINIMUM REQUIREMENTS

■ PRIMARY CARE:

- Water should always be available from a source on the premises (such as a deep borehole or a treated, safely managed piped water supply) to perform basic IPC measures, including hand hygiene, environmental cleaning, laundry, decontamination of medical devices and healthcare waste management according to national guidelines.
- A minimum of two functional, improved sanitation facilities should be available on-site, one for patients and the other for staff; both should be equipped with menstrual hygiene facilities.
- Functional hand hygiene facilities should always be available at points of care/toilets and include soap, water and single-use towels (or if unavailable, clean reusable towels) or alcohol-based handrub (ABHR) at points of care and soap, water and single-use towels (or if unavailable, clean reusable towels) within 5 metres of toilets.
- Sufficient and appropriately labelled bins to allow for health care waste segregation should be available and used (less than 5 metres from point of generation); waste should be treated and disposed of safely via autoclaving, high temperature incineration, and/or buried in a lined, protected pit.
- The facility layout should allow adequate natural ventilation, decontamination of reusable medical devices, triage and space for temporary cohorting/isolation/physical separation if necessary.
- Sufficient and appropriate IPC supplies and equipment (for example, mops, detergent, disinfectant, personal protective equipment (PPE) and sterilization) and power/energy (for example, fuel) should be available for performing all basic IPC measures according to *minimum requirements/SOPs*, including all standard precautions, as applicable; lighting should be available during working hours for providing care.

* The national health system, IPC programme and any other relevant body should coordinate and support the implementation of this core component at the facility level.

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Minimum requirements: CC8
(facility level*)



FACILITY LEVEL

■ SECONDARY CARE:

- A safe and sufficient quantity of water should be available for all required IPC measures and specific medical activities, including for drinking, and piped inside the facility at all times - at a minimum to high-risk wards (for example, maternity ward, operating room/s, intensive care unit).
- A minimum of two functional, improved sanitation facilities that safely contain waste available for outpatient wards should be available and one per 20 beds for inpatient wards; all should be equipped with menstrual hygiene facilities.
- Functional hand hygiene facilities should always be available at points of care, toilets and service areas (for example, the decontamination unit), which include ABHR and soap, water and single-use towels (or if unavailable, clean reusable towels) at points of care and service areas, and soap, water and single-use towels (or if unavailable, clean reusable towels) within 5 metres of toilets.
- Sufficient and appropriately labelled bins to allow for health care waste segregation should be available and used (less than 5 metres from point of generation) and waste should be treated and disposed of safely via autoclaving, incineration (850° to 1100°C), and/or buried in a lined, protected pit.
- The facility should be designed to allow adequate ventilation (natural or mechanical, as needed) to prevent transmission of pathogens.
- Sufficient and appropriate supplies and equipment and reliable power/energy should be available for performing all IPC practices, including standard and transmission-based precautions, according to *minimum requirements/SOPs*; reliable electricity should be available to provide lighting to clinical areas for providing continuous and safe care, at a minimum to high-risk wards (for example, maternity ward, operating room/s, intensive care unit).
- The facility should have a dedicated space/area for performing the decontamination and reprocessing of medical devices (that is, a decontamination unit) according to *minimum requirements/SOPs*.
- The facility should have adequate single isolation rooms or at least one room for cohorting patients with similar pathogens or syndromes, if the number of isolation rooms is insufficient.

* The national health system, IPC programme and any other relevant body should coordinate and support the implementation of this core component at the facility level.

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Infection prevention and antibiotic use in surgical services



EML document on surgical antibiotic prophylaxis – 2019

HANDLE ANTIBIOTICS WITH CARE IN SURGERY
 Misuse of antibiotics puts all surgical patients at risk

HANDLE ANTIBIOTICS WITH CARE

Up to 33% of surgical patients get a postoperative infection, of which 51% can be antibiotic resistant

Up to 15% of women around the world get an infection after a caesarean section

43% of patients have surgical antibiotic prophylaxis (SAP) inappropriately continued after the operation

REDUCE the risk of surgical site infection (SSI) by improving SAP and infection prevention and control practices

IMPROVE the quality of care and patient safety and reduce antibiotic resistance (AMR) through SSI reduction

WHAT SHOULD HEALTH WORKERS DO TO PREVENT AMR IN SURGERY?

Give intravenous SAP when recommended, depending on the type of operation
 - within 120 minutes preceding surgical incision

For effective SAP, adequate antibiotic concentrations should be present at the time of surgical incision. This, in conjunction with a short half-life, should be maintained closer to incision time.

Improvement of antibiotic use in surgical services should be part of the antimicrobial stewardship programme

WHO SHOULD BE INVOLVED IN ENSURING APPROPRIATE ANTIBIOTIC USE IN SURGERY?

Surgeons, Anaesthetists, Infection Prevention and Control (IPC) Specialists, Pharmacists, Microbiology, Antimicrobial Stewardship (AMS) Teams, and Patients.

WHAT SHOULD YOU NOT DO?

Avoid prolonging SAP postoperatively

Avoid antibiotic reword irrigation

Avoid continuing antibiotic prophylaxis because there is a drain (indicate each level)

Avoid giving antibiotic treatment unless there is a proven or suspected SSI or other infection


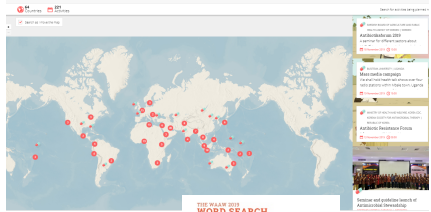

These recommendations are based on evidence from studies in adult patients, but they are considered valid also for paediatric patients

www.who.int/infection-prevention/publications/essentialmedicines

<http://apps.who.int/iris/bitstream/10665/250680/1/9789241549882-eng.pdf?ua=1>
<http://www.who.int/infection-prevention/tools/focus-amr/en/>
https://www.who.int/medicines/publications/essentialmedicines/UNEDITED_TRS_2019_EC22_Sept.pdf?ua=1

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Online resources

- **WAAW Interactive landing page** – explores AMR and antibiotics, incorporating data, video, feature articles and animation.
- **Global Campaign Map** – a chance for global participants in WAAW to share their events and activities
- **AMR Educational toolkit** – A small selection of games and downloadable education materials to help share knowledge of AMR with school-aged children and build awareness from the earliest years.

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WHO Antibiotic Resistance: Augmented Reality App

- WHO's first ever augmented reality app on AMR
- A gamified public education tool aimed at students
- Available for download from the App Store and Google Play, Monday 18th November.

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AMS toolkit for facilities in LMIC – six components



1. National structures

NATIONAL CORE ELEMENTS

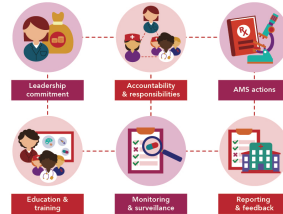


- ✓ NAP - AMS a national priority
- ✓ National AMC surveillance
- ✓ Treatment guideline
- ✓ Links to IPC/WASH

<https://apps.who.int/iris/bitstream/handle/10665/329404/9789241515481-eng.pdf>

2. Facility structures

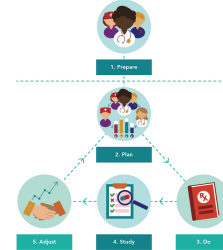
HEALTH-CARE FACILITY CORE ELEMENTS



- ✓ **Governance – accountability/responsibilities**
- ✓ **Human resources**
- ✓ **Education & training on AMS**
- ✓ **Monitoring AMS**

3. Plan AMS programme

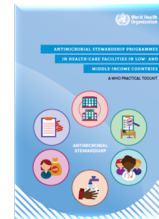
PERFORMING AMS INTERVENTIONS



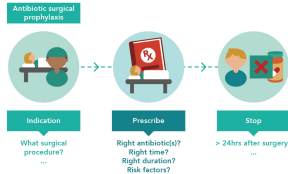
- ✓ **SWOT analysis – what is - and what should be in place?**
- ✓ **Implementation plan**
- ✓ **PDSA - systematic approach to work with depts. on AMS**

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AMS toolkit for facilities in LMIC – six components



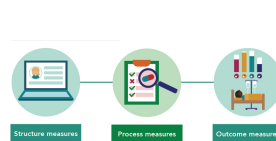
4. Perform AMS interventions



- ✓ Educational interventions
- ✓ Feedback interventions
- ✓ Restriction (preauthorization)
- ✓ Structure (IT systems)

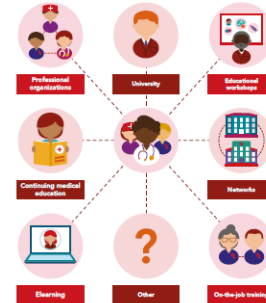
<https://apps.who.int/iris/bitstream/handle/10665/329404/9789241515481-eng.pdf>

5. Monitor AMS programme



- ✓ **Structure measures: core elements**
- ✓ **Outcome measures: ABX use, patient outcomes**
- ✓ **Process measures: proportions e.g. of pneumonia patients receiving appropriate antibiotic treatment**

6. Education and training



- ✓ **AMR competencies & skills**
- ✓ **Face to face workshops**
- ✓ **Online e-learning resources**

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Webinar
WHO Practical Toolkit to Implement Antimicrobial Stewardship Programmes in Health-Care Facilities in LMICs
Thursday, 21 November, 2019
12:30-13:30 GVA (CEST/GMT+1)
Link to connect to the webinar: <https://who-meeting.webex.com/who-meeting/onstage/g.php?MTID=e9a4b4514be43b6c6c4eca88dad3ec67d>

Agenda
Moderator: Sarah Paulin, WHO HQ

Speakers:

- Peter Beyer, WHO HQ – Introductory remarks
- Ingrid Smith, WHO HQ – Overview of the AMS toolkit
- Klara Tisocki, WHO, SEARO (TBC) - Country/Regional implementation perspective

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THANK YOU

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Learn more at: <http://www.who.int/infection-prevention/en/>



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www.webbertraining.com/schedulep1.php

November 21, 2019	PRIORITIZING RESEARCH AREAS FOR ANTIBIOTIC STEWARDSHIP PROGRAMS Speaker: Dr. Caroline Nott and Dr. Kathryn Suh , The Ottawa Hospital
December 5, 2019	HOW TO COMMUNICATE ABOUT HEALTHCARE-ASSOCIATED INFECTION WITH X, Y AND Z GENERATIONS Speaker: Dr Anne-Gaëlle Venier , Hôpital Pellegrin - CHU de Bordeaux, France
December 18, 2019	<i>(FREE Teleclass)</i> CLEANING IN HEALTHCARE Speaker: Prof. Andreas Voss , Radboud University, The Netherlands

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