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

World Health Organization

Introduction and user instructions

The Infection Prevention and Control (IPC) Assessment Framework (IPCAF) is a tool to support the implementation of the *World Health Organization (WHO) Guidelines on core components of IPC programmes*[1] at the acute health care facility level. It is a systematic tool that can provide a baseline assessment of IPC programme activities within a health care facility as well as ongoing evaluations through repeated administration to document progress over time.

What is its purpose?

The IPCAF is a structured, closed-formatted questionnaire with an associated scoring system. It is primarily intended to be self-administered (i.e. a self-assessment tool), but it can also be used for joint assessments, through discussions between external assessors (e.g. from the Ministry of Health, WHO or other stakeholders) and facility staff. The goal of the framework is to assess existing IPC activities/resources and identify strengths and gaps that can inform future plans. It can be considered as a diagnostic tool for facilities to detect relevant problems or shortcomings that require improvement and identify areas where they can meet international standards and requirements. The results can be used to develop a facility action plan to strengthen existing measures and motivate facilities to intensify efforts where needed. By completing it regularly, facilities can monitor their progress over time.

WHO proposes five steps for the implementation of IPC facility programmes:

1. prepare for action
2. **conduct a baseline assessment**
3. develop and execute an action plan
4. **evaluate impact**
5. sustain the programme over the long term.

In particular, the IPCAF is a valuable tool to support Steps 2 and 4 of this process. Step 2 "conduct a baseline assessment" is concerned with understanding the current situation, including strengths and weaknesses, to guide action planning for improvement. Step 4 "evaluate impact" is concerned with assessing the effectiveness of activities undertaken in the context of the action plan.

1 WHO Guidelines on core components of IPC programmes at the national and acute health care facility level, http://www.who.int/infection-prevention/publications/core-components/en/

Who should complete and use the IPCAF?

- Health care professionals responsible for organizing and implementing IPC activities and who have in-depth understanding and knowledge of the IPC activities at the facility level.
- If there are no professionals in charge of IPC or there is not yet an IPC programme established, the tool should be completed and used by senior facility managers.
- The framework was designed for global use at facilities of any size, medical focus and progress.
- If used in joint evaluations, the external assessor should be an IPC professional with an understanding of the *WHO Guidelines on core components of IPC programme* recommendations.

How is it structured?

The IPCAF is structured according to the recommendations in the *WHO Guidelines on core components of IPC programmes* at the acute health care facility level. The framework is divided into eight sections reflecting the eight WHO IPC core components, which are then addressed by a total of 80 indicators. These indicators are based on evidence and expert consensus and have been framed as questions with defined answers to provide an orientation for assessment. Based on the overall score achieved in the eight sections, the facility is assigned to one of four levels of IPC promotion and practice.

1. **Inadequate:** IPC core components implementation is deficient. Significant improvement is required.
2. **Basic**: Some aspects of the IPC core components are in place, but not sufficiently implemented. Further improvement is required.
3. **Intermediate**: Most aspects of IPC core components are appropriately implemented. The facility should 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 activities.
4. **Advanced**: The IPC core components are fully implemented according to the WHO recommendations and appropriate to the needs of the facility.

How does it work?

When completing the questions contained in the eight sections, choose the answer(s) that most accurately describe(s) the situation at your facility. In general, choose only one answer per question (question marked either "yes/no" or "choose one answer"). Some questions are designed to allow multiple answers. These questions are marked with the note "please tick all that apply", which enables you to choose all answers that are appropriate to your facility (choose at least one). Points are allocated to the individual answers of each question, depending on the importance of the question/answer in the context of the respective core component. In each section (core component), a maximum score of 100 points can be achieved. After you have answered all questions of a component, the score can be calculated by adding the points of every chosen answer. By adding the total scores of all eight components, the overall score is calculated.

Is the IPCAF suitable for inter-facility comparison?

The primary target of the framework is to provide an orientation to assess the situation of IPC at the individual health care facility level and to monitor the development and improvement of IPC activities over time through repeated use. It is not primarily intended for external comparison or benchmarking. The comparison of different health care facilities should be done very carefully, particularly when of different sizes, medical focus and socioeconomic setting.

Core component 1: IPC programme

Question	Answer	Score
1. Do you have an IPC programme?[2] Choose one answer	☐ No	0
	☐ Yes, without clearly defined responsibilities	5
	☐ Yes, with clearly defined responsibilities and annual work plan	10
2. Is the IPC programme supported by an IPC team comprising of IPC professionals?[3]	☐ No	0
	☐ Not a team, *only* an IPC focal person	5
	☐ Yes	10
3. Does the IPC team have at least one full-time infection preventionist or equivalent (nurse or doctor working 100% in IPC) available? Choose one answer	☐ No infection preventionist available	0
	☐ No, *only* a part-time infection preventionist available	2.5
	☐ Yes, one per > 250 beds	5
	☐ Yes, one per ≤ 250 beds	10
4. Does the IPC team have an IPC team/focal person with dedicated time for IPC activities?	☐ No	0
	☐ Yes	10
5. Does the IPC team include both doctors and nurses?	☐ No	0
	☐ Yes	10
6. Do you have an IPC committee[4] **or an equivalent actively supporting the IPC team?**	☐ No	0
	☐ Yes	10
7. Are any of the following professional groups represented/included in the IPC committee or an equivalent?		
Senior facility leadership (for example, administrative director, chief executive officer (CEO), medical director)	☐ No	0
	☐ Yes	5
Senior clinical staff (for example, physician, nurse)	☐ No	0
	☐ Yes	2.5
Facility management (for example, biosafety, waste, and those tasked with addressing water, sanitation, and hygiene (WASH))	☐ No	0
	☐ Yes	2.5
8. Do you have clearly defined IPC objectives (that is, in specific critical areas)? Choose one answer	☐ No	0
	☐ Yes, IPC objectives *only*	2.5
	☐ Yes, IPC objectives <u>and</u> measurable outcome indicators (that is, adequate measures for improvement)	5
	☐ Yes, IPC objectives, measurable outcome indicators <u>and</u> set future targets	10
9. Does the senior facility leadership demonstrate support for the IPC programme?		
Is there an allocated budget for the IPC programme?	☐ No	0
	☐ Yes	5
Is there demonstrable support for IPC objectives and indicators within the facility (for example, at executive level meetings, executive rounds, participation in morbidity and mortality meetings)?	☐ No	0
	☐ Yes	5
10. Does your facility have microbiological laboratory support for routine day-to-day use? Choose one answer	☐ No	0
	☐ No, <u>but</u> the facility is linked to a reference laboratory of another facility	5
	☐ Yes, an onsite laboratory is available	10
Subtotal Score		**/100**

2 IPC programmes should have clearly defined objectives based on local epidemiology and priorities according to risk assessment, and defined functions and activities that align with and contribute towards the prevention of health care associated infections and antimicrobial resistance in health care. It should also include dedicated, trained IPC professionals.
3 IPC professional: medical or nursing staff trained in a certified IPC course.
4 An IPC team includes dedicated IPC professionals. An IPC committee is a multidisciplinary group with interested stakeholders across the facility.

Core component 2: IPC guidelines

Question	Answer	Score
1. Does your facility have the expertise for developing or adapting guidelines?	☐ No	0
	☐ Yes	10
2. Does your facility have IPC guidelines available for:		
Standard precautions?	☐ No	0
	☐ Yes	2.5
Hand hygiene?	☐ No	0
	☐ Yes	2.5
Transmission-based precautions?[5]	☐ No	0
	☐ Yes	2.5
Prevention of surgical site infection?	☐ No	0
	☐ Yes	2.5
Prevention of vascular catheter-associated bloodstream infections?	☐ No	0
	☐ Yes	2.5
Prevention of hospital-acquired pneumonia?	☐ No	0
	☐ Yes	2.5
Prevention of catheter-associated urinary tract infections?	☐ No	0
	☐ Yes	2.5
Prevention of transmission of multidrug-resistant (MDR) pathogens?	☐ No	0
	☐ Yes	2.5
Disinfection and sterilization?	☐ No	0
	☐ Yes	2.5
Health care worker protection and safety	☐ No	0
	☐ Yes	2.5
Injection safety?	☐ No	0
	☐ Yes	2.5
Waste management?	☐ No	0
	☐ Yes	2.5
Antibiotic stewardship?	☐ No	0
	☐ Yes	2.5
3. Are the guidelines in your facility evidence-based and consistent with national/international guidelines (if they exist)?	☐ No	0
	☐ Yes	10
4. Implementation of the guidelines is adapted[6] according to the local conditions?	☐ No	0
	☐ Yes	10
5. Are frontline health care workers involved in planning and executing the implementation of IPC guidelines in addition to IPC personnel?	☐ No	0
	☐ Yes	10
6. Are relevant stakeholders (for example, leading doctors and nurses, hospital managers, quality management) involved in the development and adaptation of the IPC guidelines in addition to IPC personnel?	☐ No	0
	☐ Yes	7.5
7. Do health care workers receive specific training related to IPC guidelines each time they are issued?	☐ No	0
	☐ Yes	10
8. Do you regularly monitor the implementation of at least some of the guidelines in your facility?	☐ No	0
	☐ Yes	10
Subtotal Score		**/100**

5 Transmission-based precautions are to be used in addition to Standard Precautions for patients who may be infected or colonized with certain infectious agents for which additional precautions are needed to prevent infection transmission. They are based on the routes of transmission of specific pathogens (for example, contact vs droplets). More information can be found in the United States Centers for Disease Control and Prevention Guidelines for Isolation Precautions: (https://www.cdc.gov/infectioncontrol/pdf/guidelines/isolation-guidelines.pdf, accessed 7 September 2017).

6 IPC team carefully reviews guidelines to prioritize activities according to needs and resources while maintaining key IPC standards.

Core component 3: IPC education and training

Question	Answer	Score
1. Are there personnel with the IPC expertise to lead IPC training?	☐ No	0
	☐ Yes	10
2. Are there additional non-IPC personnel with adequate skills to serve as trainers and mentors (for example, link nurses or doctors, champions)? Choose one answer	☐ No	0
	☐ Yes, to perform periodic training	10
	☐ Yes, to perform comprehensive and regular training	15
3. How frequently do health care workers receive training regarding IPC in your facility? Choose one answer	☐ Never or rarely	0
	☐ New employee orientation *only* for health care workers	5
	☐ New employee orientation <u>and</u> regular (at least annually) IPC training for health care workers offered but not mandatory	10
	☐ New employee orientation <u>and</u> regular (at least annually) mandatory IPC training for all health care workers	15
4. How frequently do other personnel receive training regarding IPC in your facility (for example, cleaners, auxiliary service staff and administrative and managerial staff)? Choose one answer	☐ Never or rarely	0
	☐ New employee orientation *only* for other personnel	5
	☐ New employee orientation <u>and</u> regular (at least annually) training for other personnel offered but not mandatory	10
	☐ New employee orientation <u>and</u> regular (at least annually) mandatory IPC training for other personnel	15
5. How are health care workers and other personnel trained? Choose one answer	☐ No trainings available	0
	☐ Using written information and/or oral instruction and/or e-learning *only*	5
	☐ Includes *additional* interactive training sessions (includes simulation and/or bedside training)	10
6. Are there periodic evaluations of the effectiveness of training programmes (for example, hand hygiene audits, other checks on knowledge)? Choose one answer	☐ No	0
	☐ Yes, <u>but</u> not routinely	5
	☐ Yes, regularly (at least annually)	10
7. Is IPC training integrated in the clinical practice and training of other specialties (for example, training of surgeons involves aspects of IPC)? Choose one answer	☐ No	0
	☐ Yes, in some disciplines	5
	☐ Yes, in all disciplines	10
8. Is there tailored IPC training for patients or family members to minimize the potential for health care-acquired infections (for example, immunosuppressed patients, patients with invasive devices, patients with multidrug-resistant infections)?	☐ No	0
	☐ Yes	5
9. Is ongoing development/ education offered for IPC staff (for example, by regularly attending conferences, courses)?	☐ No	0
	☐ Yes	10
Subtotal Score		**/100**

Core component 4: Health care-associated infection (HAI) surveillance

Question	Answer	Score
Organization of surveillance		
1. Is surveillance an essential and well-defined component of your IPC programme?	☐ No	0
	☐ Yes	5
2. Do you have personnel responsible for surveillance activities?	☐ No	0
	☐ Yes	5
3. Have the professionals responsible for surveillance activities been trained in basic epidemiology, surveillance and IPC (that is, capacity to oversee surveillance methods, data management and interpretation)?	☐ No	0
	☐ Yes	5
4. Do you have informatics/IT support to conduct your surveillance (for example, equipment, mobile technologies, electronic health records)?	☐ No	0
	☐ Yes	5
Priorities for surveillance - defined according to the scope of care		
5. Do you go through a prioritization exercise to determine the HAIs to be targeted for surveillance according to the local context (that is, identifying infections that are major causes of morbidity and mortality in the facility)?	☐ No	0
	☐ Yes	5
6. Do you conduct surveillance for:		
Surgical site infections?	☐ No	0
	☐ Yes	2.5
Device-associated infections (for example, catheter-associated urinary tract infections, central line-associated bloodstream infections, peripheral-line associated bloodstream infections, ventilator-associated pneumonia)?	☐ No	0
	☐ Yes	2.5
Clinically-defined infections (for example, in the absence of microbiological testing)?	☐ No	0
	☐ Yes	2.5
Colonization or infections caused by multidrug-resistant[7] pathogens according to your local epidemiological situation?	☐ No	0
	☐ Yes	2.5
Local priority epidemic-prone infections (for example, norovirus, influenza, tuberculosis (TB), severe acute respiratory syndrome (SARS), Ebola, Lassa fever)?	☐ No	0
	☐ Yes	2.5
Infections in vulnerable populations (for example, neonates, intensive care unit, immunocompromised, burn patients)?	☐ No	0
	☐ Yes	2.5
Infections that may affect health care workers in clinical, laboratory, or other settings (for example, hepatitis B or C, human immunodeficiency virus (HIV), influenza)?	☐ No	0
	☐ Yes	2.5
7. Do you regularly evaluate if your surveillance is in line with the current needs and priorities?	☐ No	0
	☐ Yes	5
Methods of surveillance		
8. Do you use reliable surveillance case definitions (defined numerator and denominator according to international definitions [e.g. CDC NHSN/ECDC][8] or if adapted, through an evidence-based adaptation process and expert consultation?	☐ No	0
	☐ Yes	5
9. Do you use standardized data collection methods (for example, active prospective surveillance) according to international surveillance protocols (for example, CDC NHSN/ECDC)[8] or if adapted, through an evidence-based adaption process and expert consultation?	☐ No	0
	☐ Yes	5
10. Do you have processes in place to regularly review data quality (for example, assessment of case report forms, review of microbiology results, denominator determination, etc.)?	☐ No	0
	☐ Yes	5

7 Multidrug-resistant: Non-susceptibility to at least one agent in three or more antimicrobial categories;

8 United States Centers for Disease Control and Prevention National Healthcare Safety Network (accessed 7 September 2017); European Centre for Disease Prevention and Control (https://ecdc.europa.eu/en/about-us/partnerships-and-networks/disease-and-laboratory-networks/hai-net, accessed 7 September 2017).

11. Do you have adequate microbiology and laboratory capacity to support surveillance? Choose one answer	☐ No	0
	☐ Yes, can differentiate gram-positive/negative strains but cannot identify pathogens	2.5
	☐ Yes, can reliably identify pathogens (for example, isolate identification) in a timely manner	5
	☐ Yes, can reliably identify pathogens and antimicrobial drug resistance patterns (that is, susceptibilities) in a timely manner	10
Information analysis and dissemination/data use, linkage, and governance		
12. Are surveillance data used to make tailored unit/facility- based plans for the improvement of IPC practices?	☐ No	0
	☐ Yes	5
13. Do you analyze antimicrobial drug resistance on a regular basis (for example, quarterly/half-yearly/annually)?	☐ No	0
	☐ Yes	5
14. Do you regularly (for example, quarterly/half-yearly/annually) feedback up-to-date surveillance information to:		
Frontline health care workers (doctors/nurses)?	☐ No	0
	☐ Yes	2.5
Clinical leaders/heads of department	☐ No	0
	☐ Yes	2.5
IPC committee	☐ No	0
	☐ Yes	2.5
Non-clinical management/administration (chief executive officer/chief financial officer)?	☐ No	0
	☐ Yes	2.5
15. How do you feedback up-to-date surveillance information? (at least annually) Choose one answer	☐ No feedback	0
	☐ By written/oral information *only*	2.5
	☐ By presentation and interactive problem-orientated solution finding	7.5
Subtotal Score		**/100**

Core component 5: Multimodal strategies

Question	Answer	Score
1. Do you use multimodal strategies[9] to implement IPC interventions?	☐ No	0
	☐ Yes	15
2. Is a multidisciplinary team used to implement IPC multimodal strategies?	☐ No	0
	☐ Yes	15
3. Do you regularly link to colleagues from quality improvement and patient safety to develop and promote IPC multimodal strategies?	☐ No	0
	☐ Yes	10
4. Do these strategies include bundles[10] or checklists?	☐ No	0
	☐ Yes	10
5. Do your multimodal strategies include any or all of the following elements: Choose one answer (the most accurate) per element	**System change**	0
	☐ Element not included in multimodal strategies	0
	☐ Interventions to ensure the necessary infrastructure and continuous availability of supplies are in place	5
	☐ Interventions to ensure the necessary infrastructure and the continuous availability of supplies are in place and addressing ergonomics[11] and accessibility, such as the best placement of central venous catheter set and tray	10
	Education and training	
	☐ Element not included in multimodal strategies	0
	☐ Written information and/or oral instruction and/or e-learning *only*	5
	☐ Additional interactive training sessions (includes simulation and/or bedside training)	10
	Monitoring and feedback	
	☐ Element not included in multimodal strategies	0
	☐ Monitoring compliance with process or outcome indicators (for example, audits of hand hygiene or catheter practices)	5
	☐ Monitoring compliance and providing timely feedback of monitoring results to health care workers and key players	10
	Communications and reminders	
	☐ Element not included in multimodal strategies	0
	☐ Reminders, posters, or other advocacy/awareness-raising tools to promote the intervention	5
	☐ Additional methods/initiatives to improve team communication across units and disciplines (for example, by establishing regular case conferences and feedback rounds)	10
	Safety climate and culture change	
	☐ Element not included in multimodal strategies	0
	☐ Managers/leaders show visible support and act as champions and role models, promoting an adaptive approach[12] and strengthening a culture that supports IPC, patient safety and quality	5
	☐ Additionally, teams and individuals are empowered so that they perceive ownership of the intervention (for example, by participatory feedback rounds)	10
Subtotal Score		**/100**

9 Multimodal strategy: ≥3 components implemented in an integrated way to achieve improvement of an outcome and change behavior (for example, hand hygiene practices). Components can include (i) system change (for example, making the necessary infrastructure, supplies and human resources available), (ii) education and training of health care workers and key players (for example, managers), (iv) 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. It also includes tools, such as checklists and bundles, developed by multidisciplinary teams that take into account local conditions.

10 Bundles: sets of evidence-based practices focused on improving the care process in a structured manner, for example, improvement of catheter insertion.

11 Ergonomics: human factors or an understanding of interactions among humans and elements of a system to optimize human well-being and overall system performance and prevent human error. More information at: http://www.health.org.uk/sites/health/files/IntegratingHumanFactorsWithInfectionAndPreventionControl.pdf, accessed 7 September 2017.

12 Adaptive approaches consider the behavioural, organizational and cultural complexity in health care systems. They aim to improve the local safety climate and motivate local teams to consistently perform best practices by shaping attitudes, beliefs, and values of clinicians. This could include engaging leadership, improving collaborations and team work, and facilitating staff ownership of the intervention. More information at: http://www.ahrq.gov/professionals/quality-patient-safety/cusp/index.html, accessed 7 September 2017.

Core component 6: Monitoring/audit of IPC practices and feedback

Question	Answer	Score
1. Do you have trained personnel responsible for monitoring/audit of IPC practices and feedback?	☐ No	0
	☐ Yes	10
2. Do you have a well-defined monitoring plan with clear goals, targets and activities (including tools to collect data in a systematic way)?	☐ No	0
	☐ Yes	7.5
3. Which processes and indicators do you monitor in your facility? Tick all that apply	☐ None	0
	☐ Hand hygiene compliance (using the WHO hand hygiene observation tool[13] or equivalent)	5
	☐ Intravascular catheter insertion and/or care	5
	☐ Wound dressing change	5
	☐ Barrier precautions and isolation to prevent the spread of multidrug resistant organisms (MDRO)	5
	☐ Cleaning of the ward environment	5
	☐ Disinfection and sterilization of medical equipment/instruments	5
	☐ Consumption/usage of alcohol-based handrub or soap	5
	☐ Consumption/usage of antimicrobial agents	5
	☐ Waste management	5
4. How frequently is the *WHO Hand Hygiene Self-Assessment Framework Survey* routinely undertaken? Choose one answer	☐ Never	0
	☐ Periodically, <u>but</u> no regular schedule	2.5
	☐ At least annually	5
5. Do you feedback auditing reports on the state of the IPC activities/performance? Tick all that apply	☐ No reporting	0
	☐ Yes, to IPC team as part of the auditing process	2.5
	☐ Yes, to department leaders and managers in the areas being audited	2.5
	☐ Yes, to frontline health care workers	2.5
	☐ Yes, to the IPC committee or quality of care committees or equivalent	2.5
	☐ Yes, to hospital management and senior administration	2.5
6. Is the reporting of monitoring data undertaken regularly (at least biannually)?	☐ No	0
	☐ Yes	10
7. Are monitoring and feedback of IPC processes and indicators performed in a "blame-free" institutional culture aimed at improvement and behavioural change?	☐ No	0
	☐ Yes	5
8. Do you assess safety cultural factors in your facility (for example, by using other surveys such as HSOPSC, SAQ, PSCHO, HSC[14])	☐ No	0
	☐ Yes	5
Subtotal Score		**/100**

13 WHO hand hygiene monitoring and feedback tools can be found here: http://www.who.int/gpsc/5may/tools/evaluation_feedback/en/, accessed 7 September 2017.

14 HSOPSC: Hospital survey on patient safety culture; SAQ: Safety attitudes questionnaire, PSCHO: Patient safety climate in healthcare organizations; HSC: Hospital safety climate scale. A summary of these surveys can be found at: http://qualitysafety.bmj.com/content/14/5/364.long, accessed 7 September 2017.

Core component 7: Workload, staffing and bed occupancy

Question	Answer	Score
Staffing		
1. Do you assess appropriate staffing levels according to patient workload using a standard staffing needs assessment tool such as the *WHO Workload indicators of staffing need*[15] method?	☐ No	0
	☐ Yes	5
2. Do you maintain an agreed (that is, WHO or national) ratio of health care workers to patients across the facility? Choose one answer	☐ No	0
	☐ Yes, for staff in less than 50% of units	5
	☐ Yes, for staff in more than 50% of units	10
	☐ Yes, for all health care workers in the facility	15
3. Do you have a system in place to act on the results of the staffing needs assessments when staffing levels are deemed to be too low?	☐ No	0
	☐ Yes	10
Bed occupancy		
4. Is the design of your ward in accordance with international standards[16] regarding bed capacity? Choose one answer	☐ No	0
	☐ Yes, <u>but</u> *only* in certain departments	5
	☐ Yes, for all departments (including emergency department and pediatrics)	15
5. Is bed occupancy in your facility kept to one patient per bed? Choose one answer	☐ No	0
	☐ Yes, <u>but</u> *only* in certain departments	5
	☐ Yes, for all units (including emergency departments and pediatrics)	15
6. Do you place patients in beds standing in the corridor outside of the room (including beds in the emergency department)? Choose one answer	☐ Yes, more frequently than twice a week	0
	☐ Yes, less frequently than twice a week	5
	☐ No	15
7. Do you ensure adequate spacing of > 1 meter between patient beds? Choose one answer	☐ No	0
	☐ Yes, <u>but</u> *only* in certain departments	5
	☐ Yes, for all departments (including emergency department and pediatrics)	15
8. Do you have a system to assess and respond when adequate bed capacity is exceeded? Choose one answer	☐ No	0
	☐ Yes, this is the responsibility of the head of department	5
	☐ Yes, this is the responsibility of the hospital administration/ management	10
Subtotal Score		**/100**

15 The WHO Workload indicators of staffing need method provides health managers with a systematic way to determine how many health workers of a particular type are required to cope with the workload of a given health facility and aid decision-making (http://www.who.int/hrh/resources/wisn_user_manual/en/, accessed 7 September 2017).

16 The WHO Essential environmental health standards in health care guidance provides guidance on standards required for health care in medium- and low-resource countries. These guidelines have been written for use by health managers and planners, architects, urban planners, water and sanitation staff, clinical and nursing staff, carers and other health care providers, and health promoters (http://www.who.int/water_sanitation_health/publications/ehs_hc/en/, accessed 7 September 2017).

Core component 8: Built environment, materials and equipment for IPC at the facility level[17]

Question	Answer	Score
Water		
1. Are water services available at all times and of sufficient quantity for all uses (for example, hand washing, drinking, personal hygiene, medical activities, sterilization, decontamination, cleaning and laundry)? Choose one answer	☐ No, available on average < 5 days per week	0
	☐ Yes, available on average ≥ 5 days per week or every day but not of sufficient quantity	2.5
	☐ Yes, every day and of sufficient quantity	7.5
2. Is a reliable safe drinking water station present and accessible for staff, patients and families at all times and in all locations/wards? Choose one answer	☐ No, not available	0
	☐ Sometimes, or only in some places or not available for all users	2.5
	☐ Yes, accessible at all times and for all	7.5
Hand hygiene and sanitation facilities		
3. Are functioning hand hygiene stations (that is, alcohol-based handrub solution or soap and water with a basin/pan and clean single-use towels) available at all points of care? Choose one answer	☐ No, not present	0
	☐ Yes, stations present, but supplies are not reliably available	2.5
	☐ Yes, reliably available	7.5
4. In your facility, are ≥ 4 toilets or improved latrines[18] available for outpatient settings or ≥ 1 per 20 users for inpatient settings? Choose one answer	☐ Less than required number of latrines available and functioning	0
	☐ Sufficient number present but not all functioning	2.5
	☐ Sufficient number present and functioning	7.5
Power supply, ventilation and cleaning		
5. In your health care facility, is sufficient energy/power supply available at day and night for all uses (for example, pumping and boiling water, sterilization and decontamination, incineration or alternative treatment technologies, electronic medical devices, general lighting of areas where health care procedures are performed to ensure safe provision of health care and lighting of toilet facilities and showers)? Choose one answer	☐ No	0
	☐ Yes, sometimes or only in some of the mentioned areas	2.5
	☐ Yes, always and in all mentioned areas	7.5
6. Is functioning environmental ventilation (natural or mechanical[19]) available in patient care areas?	☐ No	0
	☐ Yes	5
7. For floors and horizontal work surfaces, is there a visible record of cleaning, signed by the cleaners each day? Choose one answer	☐ No record of floors and surfaces being cleaned	0
	☐ Record exists, but is not completed daily or is outdated	2.5
	☐ Yes, record completed daily	5
8. Are appropriate and well-maintained materials for cleaning (for example, detergent, mops, buckets, etc.) available? Choose one answer	☐ No materials available	0
	☐ Yes, available but not well maintained	2.5
	☐ Yes, available and well-maintained	5
Patient placement in health care settings		
9. Do you have single patient rooms or rooms for cohorting[20] patients with similar pathogens if the number of isolation rooms is insufficient (for example, TB, measles, cholera, Ebola, SARS)?[21] Choose one answer	☐ No	0
	☐ No single rooms but rather rooms suitable for patient cohorting available	2.5
	☐ Yes, single rooms are available	7.5
Medical waste management and sewage		
10. Do you have functional waste collection containers for non-infectious (general) waste, infectious waste and, sharps waste in close proximity to all waste generation points*? Choose one answer	☐ No bins or separate sharps disposal	0
	☐ Separate bins present but lids missing or more than 3/4 full; only two bins (instead of three); or bins at some but not all waste generation points.	2.5
	☐ Yes	5

17 This component can be assessed in more detail using the WHO Water and sanitation for health facility improvement tool (WASH FIT) (http://www.who.int/water_sanitation_health/publications/water-and-sanitation-for-health-facility-improvement-tool/en/, accessed 7 September 2017).

18 Improved sanitation facilities include flush toilets into a managed sewer or septic tank and soak-away pit, VIP latrines, pit latrines with slab and composting toilets. To be considered usable, a toilet/latrine 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 or cracks or leaks in the toilet structure, the hole or pit should not be blocked, water should be available for flush/pour flush toilets. It should be within the grounds of the facility and it should be clean as noted by absence of waste, visible dirt and excreta and insects.

19 Natural ventilation: outdoor air driven by natural forces (for example, winds) through building purpose-built openings, including windows, doors, solar chimneys, wind towers and trickle ventilators. Mechanical ventilation: air driven by mechanical vans installed directly in windows or walls or in air ducts for supplying air into, or exhausting air from, a room. More information at: http://www.who.int/water_sanitation_health/publications/natural_ventilation/en/, accessed 7 September 2017.

20 Cohorting strategies should be based on a risk assessment conducted by the IPC team.

21 Negative pressure ventilation conditions in isolation rooms may be necessary to prevention transmission of some organisms (for example, multidrug-resistant TB).

11. Is a functional burial pit/fenced waste dump or municipal pick-up available for disposal of non-infectious (non-hazardous/general waste)? Choose one answer	☐ No pit or other disposal method used	0
	☐ Pit in facility but insufficient dimensions; pits/dumps overfilled or not fenced/locked; or irregular municipal waste pick up	2.5
	☐ Yes	5
12. Is an incinerator or alternative treatment technology for the treatment of infectious and sharp waste (for example, an autoclave) functional and of a sufficient capacity? Choose one answer	☐ No, none present	0
	☐ Present, but not functional	2.5
	☐ Yes	5
13. Are at least two pairs of household cleaning gloves and one pair of overalls or apron and boots in a good state and available for each cleaning and waste disposal staff member? Choose one answer	☐ No, not available	0
	☐ Yes, available but in poor condition	2.5
	☐ Yes, in good condition	5
14. Is wastewater safely managed using on-site treatment (for example, septic tank followed by drainage pit) or sent to a functioning sewer system? Choose one answer	☐ No, not present	0
	☐ Present, but not functioning	2.5
	☐ Yes	5
Decontamination and sterilization		
15. Does your health care facility provide a dedicated decontamination area and/or sterile supply department for the decontamination and sterilization of medical devices and other items/equipment? Choose one answer	☐ No, not present	0
	☐ Present, but not functioning	2.5
	☐ Yes	5
16. Do you reliably have sterile and disinfected equipment ready for use? Choose one answer	☐ No, available on average < five days per week	0
	☐ Yes, available on average ≥ five days per week or every day, but not of sufficient quantity	2.5
	☐ Yes, available every day and of sufficient quantity	5
17. Are disposable items available when necessary? (for example, injection safety devices, examination gloves) Choose one answer	☐ No, not available	0
	☐ Yes, but *only* sometimes available	2.5
	☐ Yes, continuously available	5
Subtotal Score		**/100**

Interpretation: A three-step process

1. Add up your points

Section (Core component)	Subtotals
1. IPC programme	
2. IPC guidelines	
3. IPC education and training	
4. HAI surveillance	
5. Multimodal strategies	
6. Monitoring/audits of IPC practices and feedback	
7. Workload, staffing and bed occupancy	
8. Built environment, materials and equipment for IPC at the facility level	
Final Total	**/800**

2. Determine the assigned "IPC level" in your facility using the total score from Step 1

Total score (range)	**IPC level**
0–200	Inadequate
201–400	Basic
401–600	Intermediate
601–800	Advanced

3. Review the areas identified by this evaluation as requiring improvement in your facility and develop an action plan to address them (reference relevant WHO IPC improvement tools: http://www.who.int/infection-prevention/tools/core-components/en/. Keep a copy of this assessment to compare with repeated uses in the future.