PAKISTAN MISSION
TECHNICAL SUPPORT TO ESTABLISH NATIONAL AND FACILITY LEVEL INFECTION PREVENTION AND CONTROL PROGRAMMES

18th - 25th APRIL 2018

World Health Organization
REGIONAL OFFICE FOR THE Eastern Mediterranean



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1. Acknowledgement

The mission wishes to extend their sincere thanks and appreciation for the great support of the Federal and Provincial Ministry of Health senior officials, as well as the Veterinary section of the Ministry of National Food Security & Research. The mission would also like to thank the staff of the WHO Country Office in Pakistan, under the leadership of the WHO Representative Dr. Assai for their active support. Special thanks go to Dr. Farah Sabih for her professionalism and active engagement in all activities of the mission. We would also like to extend special thanks to all professionals from the public sector, and academia who participated in the mission, interviews, discussions, technical dialogues on IPC and AMR surveillance and, for their commitment and support during this mission.

2. Introduction

Enhancing Infection Prevention and Control (IPC) Programmes in countries is essential to promote quality and safety of health care services and respond to the threat of Antimicrobial Resistance (AMR). More recently, the United Nations Sustainable Development Goals (SDG) highlighted the importance of IPC as a contributor to safe, effective high-quality health service delivery.

In addition, IPC programs contribute to the prevention and control of health care-associated infections (HAIs), which are one of the most common adverse events in health care delivery. HAIs have a significant impact on morbidity, mortality and quality of life and represent an economic burden at the societal level. However, a large proportion of HAIs are preventable and there is a growing body of evidence to help raise awareness of the global burden of harm caused by these infections, including IPC strategies to reduce their spread. Preventing HAIs also leads to significant cost saving in healthcare.

One of the strategic objectives of the Global action plan (GAP)[1] for antimicrobial resistance (AMR) is to enhance the capacity of countries for implementing IPC programmes. Based on the recent WHO Guidelines on Core Components of IPC programmes [2] issued in December 2016, there are six basic IPC elements that should be available at national level and eight basic core components that should exist in acute health care facilities.

Pakistan has recently published a series of reports '*Situation Analysis Report on Antimicrobial Resistance in Pakistan*'[31] and the "Joint external evaluation of IHR core capacities carried out by the WHO and published in 2016. [4] Both reports clearly identified the need to build and strengthen the Infection Prevention and Control (IPC) services in the country.

[1] *Global Action Plan on Antimicrobial Resistance*. Geneva: World Health Organization, 2015.
[2] Guidelines on core components of infection prevention and control programmes at the national and acute health care facility level. Geneva: World Health Organization, 2016.
[3] *Situation Analysis Report on Antimicrobial Resistance in Pakistan;* GARP and CDDEP; 2018.
[4] *A Joint External Evaluation of IHR Core Capacities of the Islamic Republic of Pakistan: Mission report 27th April – 6th May 2016.* Geneva: World Health Organization, 2016.

3. The Context

Pakistan gained independence in 1947 and has a total land area of 770,880 Km2 (297,638 sq. miles) with over 200 million population according to the most recent census conducted in 2017 **(**https://en.wikipedia.org/wiki/2017_Census_of_Pakistan**).** It is the sixth most populous country in the world and the largest in the Eastern Mediterranean Region of WHO with approximately 60% of the population residing in rural areas.

Health services are available both in the country through the public and private sectors. However, access and quality of health care in the public sector is sub optimal with the still unregulated private sector providing 60%–70% of the health care in Pakistan.

Pakistan is a Federation with three levels of government namely Federal, Provincial and District. Governance is decentralized in the country, which is administratively divided into four major provinces of Punjab, Sindh, Khyber Pakhtunkhwa (KP), Baluchistan and four federating areas: Federally Administered Tribal Areas (FATA), Gilgit- Baltistan (GB), Azad Jammu & Kashmir (AJ&K) and Islamabad Capital Territory (ICT). Devolution in 2011 has redefined the mandate and roles and responsibilities of the federal and provincial governments in the country. The provincial governments are now fully autonomous and responsible to define their health needs, develop and implement policies, strategies and operational plans. However, the Federal Ministry of National Health Services Regulations & Coordination (Mo NHSR&C) still has the constitutional mandate to develop national framework for policies, define standards and fulfill international mandates and commitments on health.

AMR is a priority of the Government of Pakistan; focus and implementation of AMR is also one of the key recommendations of the Joint External Evaluation conducted in 2016. The National Institute of Health (NIH) is the designated AMR institution for the country since 2015. An oversight committee and core group had been previously notified to coordinate and technically facilitate the consultative process for development of AMR National Action Plan (NAP) for Pakistan. However, very recently an AMR Multi-Sectoral Steering Committee has been established to act as an advisory and oversight body for policy dialogue and facilitating the implementation mechanism and governance of AMR activities in the country (Annex 1). Pakistan following the Joint External Evaluation (JEE) has been collaborating and working more closely with the veterinary, agriculture and environment sectors on IHR relevant cross cutting areas like AMR, food safety, zoonosis and disease surveillance. An AMR focal point at the national level with provincial counterparts both for AMR and IPC have been notified by the Ministry of National Food Security & Research (Mo NFS&R) and provincial veterinary departments.

4. The Mission

During the Fifty-seventh Session of the WHO Regional Committee for the Eastern Mediterranean Region, resolution 57.6 "*Infection prevention and control in health care: time for collaborative action*" was agreed upon by all the Member States (http://applications.emro.who.int/docs/EM_RC57_r6_en.pdf). The resolution urges Member States to:

1. Strengthen/establish comprehensive national infection prevention and control programmes as an integral part of health care delivery systems with appropriate resources
2. Ensure that all infection prevention and control measures implemented in health care facilities are consistent with the available evidence and best practices
3. Build up human resource capacity on infection prevention and control and include infection prevention and control in the curricula of all health care workers
4. Ensure that all health care providers take necessary personal protection measures, including immunization, as appropriate
5. Define and establish comprehensive surveillance systems for health care-associated infections and antimicrobial resistance, and strengthen laboratory services, and
6. Link accreditation of health care facilities to effective infection prevention and control measures.

In line with the above-mentioned resolution, a WHO mission including representatives from the global IPC unit in HQ Geneva, the regional AMR/IPC adviser at EMRO, and the WHO Country Office AMR focal point conducted meetings and field visits in Pakistan from 18th to 25th April 2018.

4.1 Terms of Reference of the mission

1. Provide technical support to the Federal Ministry of Health and the Provinces on how to create/establish and implement a sound National and Facility level IPC programme
2. To discuss with senior health officials their needs in the area of IPC and AMR implementation
3. To provide technical support to develop a national AMR surveillance protocol in collaboration with U.S. CDC, and

1. To conduct baseline assessment of National programme using 'WHO Core components for infection prevention and control programmes National level assessment tool (IPCAT2) [http://www.who.int/infection-prevention/tools/core-components/en/], and Facility level IPC programme using WHO Infection Prevention and Control Assessment Framework at The Facility Level (IPCAF) (http://www.who.int/infection-prevention/tools/core-components/IPCAF-facility.PDF?ua=1)

4.2 Mission Members

The three WHO levels were represented in the mission paired with national counterparts as follows:

- Dr. Nizam Damani, Consultant, Global IPC Unit, WHO/HQ
- Dr. Maha Talaat, Regional Adviser, AMR/IPC, WHO/EMRO
- Dr. Farah Sabih, WHO Country Office, Pakistan

The Programme of the mission is attached as Annex 2.

4.3 Senior Officials Met during the Mission

Team members had meetings with the officials from the federal and provincial Ministry of Health as follows:

- Mr Naveed Kamran Baloch, Secretary Ministry of NHSR&C
- Dr Assad Hafeez, Director General Health, Ministry of NHSRC
- Dr Sabeen Afzal, Deputy Director Programmes, Ministry of NHSRC
- Prof Brigadier Aamer Ikram, Executive Director, National Institute of Health
- Dr Muhammad Salman Senior Virologist, NIH
- Dr Mumtaz Ali Khan, Epidemiologist, NIH
- Dr Amir Bin Zahoor, Director General, National Veterinary Laboratory (NVL), Ministry of FS&R
- Dr Javed Arshad, Senior Scientific Officer, NVL, Ministry of FS&R
- Dr Muhammad Abubakr, Senior Scientific Officer, NVL, Ministry of FS&R
- Professor Muhammad Umar, Vice Chancellor/ Dean, Rawalpindi Medical University
- Professor Naeem Khan, Director IPC, Head of Pathology Department, Holy Family Hospital, Rawalpindi

5. Field Visits

5.1 Visit to the Public Health Laboratory at the National Institute of Health

The Public Health Laboratories Division (PHLD) in Islamabad provides microbiology laboratory support to public and private sectors for timely detection, prevention and control of infectious diseases during outbreaks and epidemics (http://nih.org.pk/?page_id=388).

The PHLD gets technical assistance from the Centers for Disease Control (CDC) Atlanta, USA and WHO. It publishes regular Newsletter (*Seasonal Awareness and Alert Letter*). However, the Laboratory doesn't have full capacity to identify and perform full identification and susceptibility testing of all multidrug-resistant microorganism (MDROs) especially carbapenem resistant organisms. There is no automated detection and susceptibility testing system of microorganisms, nor the capacity for molecular diagnostic tests for MRDOs. The Laboratory does not have all the appropriate ATCC strains, and surveillance data on AMR is not routinely collected at the country level. The data sharing has been an issue since the devolution of health service at the provincial level. They have recently appointed a medically qualified microbiologist to take this work forward. However, in order to develop this capacity to meet international standard, laboratory personnel need will need more intensive training in a well-established National Reference Laboratory.

National Institute of Health is implementing the extended spectrum beta lactamases (ESBL) E coli Tricycle project in collaboration with the Microbiology lab of Shifa International Hospital for sample collection and testing of blood cultures and rectal swabs for the Health work package.

5.2 Visit to the Veterinary Microbiology Laboratory

The team also visited the National Veterinary Laboratory in Islamabad. The microbiology laboratory is a well-developed with trained human resource which coordinates with a network of four provincial and several district laboratories with the same capacity. NVL is also participating in the Tricycle project for assessing the presence of Extended-spectrum beta-lactamases (ESBL) producing *E. coli* in the food chain. So far, the Veterinary Laboratory has collected and processed 38 poultry samples from poultry ceaca, where 18 samples were positive for ESBL producing *E.coli*. The Director of the Laboratory made a request that they do not have all the relevant ATCC strain of bacteria (specifically for campylobacter) and requested WHO help to provide this strain.

5.3 Visit to the Hospitals in Islamabad and Rawalpindi

As a part of mission, the team also visited three hospitals in Islamabad and Rawalpindi. There was in-depth discussion with the senior hospital staffs followed by visit to the key departments in each hospital such as the microbiology lab, wards, waste management set up and intensive care units. The mission also shared and completed the WHO Infection Prevention and Control Assessment Framework (IPCAF) [http://www.who.int/infection-prevention/tools/core-components/IPCAF-facility.PDF?ua=1]in all three hospitals through technical discussions and collective consensus of the senior infectious disease consultants, head of hospital IPC team, microbiologist and all nurses of the IPC team (Annexes 3-5).

The following tertiary care hospitals were visited during the mission:

- **Pakistan Institute of Medical Sciences** (PIMS) is a 1200 bed health sciences institute located in Islamabad- capital city of Pakistan. It is a government funded teaching referral center, affiliated with the Quaid-e-Azam University. It is one of the region's leading tertiary level hospitals, which includes 22 medical and surgical specialist centers and also includes pediatric and other specialties http://www.pims.gov.pk/.

- The **Shifa International Hospital** is a private sector hospital in Islamabad with 500- bed acute tertiary care facility including 100 beds for critical care. The hospital established 25 years back has recently acquired the prestigious US Joint Commission International Accreditation (JCIA). It is a well-funded major acute private hospital in Islamabad and provides medical services including cancer, renal and liver transplant services (https://www.shifa.com.pk/).

- **Holy Family Hospital** is a tertiary care University hospital attached to the Rawalpindi Medical College (https://www.rmc.edu.pk/holy_family.php?id=42). Rawalpindi is part of Punjab province and therefore the hospital and the University is funded by the Government of Punjab province. There are a total of 2000 beds distributed in three general acute care tertiary hospitals attached to the Rawalpindi Medical University namely Holy Family, Benazir Bhutto Shaheed and District Headquarter hospitals.

5.3.1 Overall Comments on Assessment of Healthcare Facility Assessment

Establishment of IPC teams: All three healthcare facilities have established IPC Team and programme. It is important to note that the PIMS hospital was part of the WHO EMRO pilot site for 1st Global Safety Challenge 'Clean Care is Safer Care' and has produced a local alcohol-based hand rub (ABHR) solution in the hospital as per WHO formula. Even though, the local production stopped at the end of the

WHO Project in 2008-9, however, one of the positive outcome at the end of the WHO Pilot on Hand Hygiene was that the hospital recognized the importance of infection prevention and control (IPC) and appointed three IPC Nurses and established a full time IPC team with an ID physician as Infection Control Doctor.

- **IPC organizational structure**: All hospitals have a formal IPC structure in terms of establishment of IPC team and IPC committee, however, they were unable to demonstrate that the team goals and objectives had been set or an Annual Work Plan is defined. This is important for effective functioning of IPC in any health care facilities and recommendation was made to all hospitals that they should consider developing an Annual Work Plan based on local priorities. The number and ratio of IPC nurse varies between three hospitals from one ICN to 240 beds in PIMS to one ICN for 83 beds in Shifa private sector hospital. All IPC doctors closely liaise with IPC nurses on a regular basis and esp. during outbreaks, but we were unable to establish the amount of fixed sessions spent on IPC as a part of their job description.

  The senior manager support to the IPC team and committee was also variable. Some hospitals have a very strong managerial support while in others the IPC teams felt that the IPC issues are not resolved in a timely manner by the senior management. *In some hospitals, t*he IPC issues are not discussed in the senior management meeting as a part of the ongoing agenda item, nor IPC issues are linked to the Patient Safety forum and/ Morbidity and Mortality meetings. It is recommended that support of senior manager is essential and requires focus and further *strengthening* to address the observed gaps.

- **IPC Guidelines:** All hospitals have IPC guidelines and policies. In some hospitals, guidelines were developed by the IPC team without the involvement of stakeholders, without any date of issue or date of planned revision. The few guidelines reviewed were neither up-to-date nor based on the current evidence. Furthermore, , the IPC teams in general were unable to clearly differentiate between Policy, Guideline and Standard Operating Procedures (SOP). Some of the guidelines were not comprehensive and did not reflect all the specialties provided by the hospitals.

  Although National IPC guidelines were developed in 2005 but only one hospital was following them, and the recommendations were not based on the current evidence. Other hospitals have adopted guidelines based mainly on CDC and WHO 'Practical guidelines for infection control in health care facilities'. Manila (WPRO): World Health Organization, 2004. http://www.wpro.who.int/publications/docs/practical_guidelines_infection_control.pdf. The team was shown some sample guidelines.

- **Education and training:** In all three hospitals, none of the member of the IPC team has specialized qualification e.g. certification, diploma or degree in IPC. Some hospitals did not have a formal structure of the training programme for front line staff. The support service staff e.g. cleaning staff other administrative and managerial staff was not routinely trained The front-line staff were trained only by PowerPoint presentation with no practical training using bed side teaching or simulation. The IPC training is neither integrated with clinical practice nor periodic evaluation of training undertaken. . It is recommended that overall training programmes need strengthening and IPC team should aim to acquire specialist qualifications in IPC.
  Surveillance: With the exception of one hospital, other two hospitals do not participate in health care -associated infection (HAI) surveillance programme. One hospital performed surveillance only in Ventilator-associated Pneumonia (VAP) in the Medical ICU

- **Multimodal Strategy:** This concept was new to the all the hospital IPC teams. The Multimodal Strategy was explained to the members of the team using Hand Hygiene as an example. It was also emphasized that for the effective implementation of any IPC programme, multimodal strategy is essential both for implementation and sustainability of all IPC programme in a health care facility.

- **Monitoring, audits and feedback:** The audits carried out by various hospitals varied greatly. All hospitals did audits on Hand hygiene and waste management while one hospital carries out more audits, including audits of HAI care bundles and checklists. In all hospitals, the data were discussed amongst the IPC team and presented to the IPC committee meeting. However, .some hospital had no clear mechanisms of feedback of audit information to the front-line staff and key stakeholders. One hospital indicated that both surveillance and audit data were displayed in each ward on IPC dash board.

- **Workload, staffing and bed occupancy:** We were unable to obtain information on workload, staffing and bed occupancy despite IPCAF tool was given to all the hospitals in advance. Except for private hospitals, both public sector hospital indicated shortage of nursing staff, with the current moratorium on the recruitment of any staff due to pending election in the country at the end of July 2018.

- **Built environment, material and equipment:** Two public sectors raised the issue that even though water and electricity are available on a 24-hour basis, but the constant and regular availability of the supply of PPE and materials used for hand hygiene is an issue. In addition, the IPC team highlighted that the regular maintenance of the equipment was another challenge, and waste disposal was

given to an outside contractor. The IPC was satisfied that they were getting a regular supply of equipment from sterile supply department (SSD). Issues relating to SSD staff and use of quality control indicators were not discussed as the SSD staffs were not present. It is important to note that one hospital produced Alcohol based hand rub based on the WHO formulation using isopropyl alcohol. The mission proposed that WHO HQ will be happy to test the quality of isopropyl alcohol.

- **Microbiology Laboratory:** The team visited two public sector hospitals for a factual status of the available support and capacity, reliability of the identification and susceptibility testing of multidrug-resistant organisms (MDROs) for AMR and role of the microbiology laboratory in the collection and analysis of surveillance data on MDROs. During our brief visit, it was noted that laboratory services in both public-sector hospitals, need additional training, support and resources to carry out AMR work successfully. The laboratory staff in all three hospitals emphasized the need for robust National Reference Laboratory service.

6. Workshops conducted during the mission

6.1 National Technical Consultation Implementation Approach for Infection Prevention & Control

The workshop was held on 20th April 2018 in the Committee Room of the Ministry of National Health Services Regulations & Coordination (NHSR&C) on how to institute federal, provincial and facility level IPC programmes. Comprehensive participation from all levels had been ensured in view of devolution in Health which has resulted in enhanced financial and technical responsibility of the provincial governments.

The meeting was attended by senior Ministry of NHSR&C officials at the federal level, provincial directors, directors of acute care tertiary hospitals and others (Annex III for list of participants). The main aim of the technical meeting was introduction and discussion on the recent WHO '*Guidelines on Core Components of Infection Prevention and Control Programmes at the National and Acute Health Care Facility Level'* with focus on the need for consensus based establishment of national IPC programmes in the country. There was in depth and transparent discussion with the participants from all levels of the health care system on the best practices to establish and implement a successful coordinated IPC programme at all levels of health care. The dialogue was moderated and technical guided by the mission team through elaborating on the IPC concepts and responding to the queries of the senior health officials from the federal and provincial levels.

The specific meeting objectives had been defined to:

- Discuss and agree on the organogram related to the institution of the IPC organizational structure within the federal, provincial and facility levels, with clearly defined objectives, functions, and responsibilities.
- Agree on the affiliation of the IPC unit/department.
- Discuss the roles and responsibilities of the IPC unit or department at the different levels of healthcare.
- Discuss and agree on the qualifications of the team members that should be assigned to the IPC unit/department (background, experience).
- Discuss the importance of formalization of the IPC structures (ministerial decrees).
- Discuss the process of development or adoption of national IPC guidelines for Pakistan.
- Discuss IPC training needs based on the newly national IPC guidelines at all levels to ensure consistency.

Workshop proceedings

The workshop was officially opened by Dr Sabeen Afzal, Deputy Director Programmes, and Ministry of NHSRC. Two presentations were made by Dr Nizam Damani and Dr Maha Talaat to provide an overview and background information to clarify IPC concepts for subsequent detailed discussion on the topic. . Dr. Nizam Damani presented on '*Infection Prevention and Control (IPC) and Antimicrobial resistance (AMR) - an overview'* and Dr. Maha Talaat presented on '*WHO Core Components of Infection Prevention and Control'*.

An open discussion forum was facilitated by Dr Maha Talaat on the following topics:

- What are the suggested IPC structures required at federal, provincial and health care facility levels?
- What would be the linkages and the authorities for each of the structures created?
- What should be the background or the capacities that would take the lead in the various IPC structures?
- What would be the ideal process for adopting or developing national IPC guidelines for Pakistan?
- What are the IPC training needs and what would be an ideal IPC training program to ensure reach to the highest number of health care providers?

Workshop Recommendations

The main recommendation included establishing and creating IPC structures at the federal, provincial and health care facility levels:

a. Federal level

Federal IPC committee

- An IPC steering committee should be created headed by a senior technical health official such as the Minister of Health or his technical deputy. Members should include representatives from academia, public, military & para military and private sector hospitals, pharmacy, dentistry, nursing, laboratories, and senior federal and provincial decision makers in Health.
- The main terms of reference for this committee is to ensure standardization of IPC policies, standards, guidelines and activities at all health care settings providing health care in Pakistan within and outside of the Minister of Health , ensure implementation of IPC practices at country level, ensure availability of required funding and solve any anticipated problems and issues related to IPC.

Federal IPC unit or department

- Adding a formal structure of an IPC unit or department within the organogram of the NIH officially approved by the Minister of Health.
- The IPC unit or department at the federal should have clear defined objectives, functions, and responsibilities.
- The IPC unit or department at NIH will be responsible for strategic planning of the IPC programme, technical guidance, and coordination of IPC activities at federal, provincial and health care facility levels, development of national IPC guidelines in collaboration with provinces and other stakeholders, designing of standardized healthcare-associated infection (HAI) surveillance programme, advise implementation of multimodal strategies at health care facilities to prevent HAIs and antimicrobial resistance, establishing a system for monitoring, evaluating, and reporting key IPC indicators and compile and communicate an annual report for IPC activities at country level.
- An experienced full time health professional should be assigned as the IPC lead for the IPC unit/department at the federal level. This health professional should preferably be experienced in public health or epidemiology and supported by 2-3 team members with backgrounds in clinical microbiology, nursing, IT or others.
- The IPC lead may be immediately identified/notified by NIH to commence with coordinating the IPC agenda in Pakistan with the understanding that this person will be officially nominated as the lead when the IPC unit or department is formally established. In order to save time, the nominated IPC lead could start assigning a group of IPC experts in the country to work on adapting international IPC guidelines to the local context of Pakistan.

b. Provincial level

Provincial IPC steering committee

- A provincial IPC steering committee should be formed including senior health officials from the provinces and all partners providing health care services outside the public health sector (private, military, NGOs, others). The head of the provincial IPC steering committee will be represented in federal IPC steering committee.
- The main terms of reference for this committee will be to ensure dissemination and standardization of IPC policies, guidelines, standards and procedures at provincial level including all health care facilities

providing health services in Pakistan within and outside of the MOH, ensure availability of required funding and solve any anticipated problems and issues related to IPC.

Provincial IPC unit

- A provincial IPC unit will be established and embedded in the organogram of each of the large provinces officially approved by the director of the province.
- The IPC unit at the provincial level should have clear defined objectives, functions, and responsibilities.
- The provincial IPC unit will be responsible for implementation, coordination and supervision of all IPC related activities within the province, instituting the IPC governance structure in all provincial hospitals, implementation of national IPC guidelines and national HAI surveillance programme in collaboration with stakeholders, sharing of data with the federal level, monitoring and auditing IPC practices at the provincial level, ensuring availability of IPC supplies and equipment in all health care facilities, compile and communicate an annual report for IPC activities at provincial level.
- An experienced full time health professional should be assigned as the IPC lead for the provincial IPC unit. This health professional should preferably be experienced in public health or epidemiology and supported by 2-3 team members with various backgrounds such as microbiology, nursing, IT, or others.

c. Health care facility level

In each healthcare facility, an IPC programme should be developed with clear defined objectives to prevent health care-associated infections (HAIs).

Hospital IPC committee

- A hospital IPC committee should be created headed either by the hospital director or its deputy. Members should be directors of clinical departments, pharmacy, nursing, surgery, laboratory and others.
- Main terms of reference include approval of annual IPC working plans and policies for the facility, supporting and empowering the hospital IPC team, securing resources for the hospital IPC programme, encourage communication among the involved disciplines and departments in the facility.

Hospital IPC team

- A full time hospital IPC team should be established for each acute care health care facility, with dedicated and trained professionals with a minimum ratio of one full-time nurse per a range of 150-250 beds. A clinical microbiologist or an infectious diseases (ID) physician should preferably supervise the hospital IPC team.
- Hospital IPC team should be responsible for implementation of national IPC guidelines, policies, and procedures, implementation of HAI surveillance programmes and sharing data to provincial and federal levels, promoting safe practices in the hospital, monitoring and feedback of compliance of IPC practices, education and practical training of health care workers, assuring continuous availability of adequate supplies for implementing IPC practices, and outbreak prevention and response.

6.2 Workshop for Development of National AMR Surveillance Plan for Pakistan

In line with WHO recommendations, Pakistan National Strategic Framework for Containment of AMR 2016 and AMR National Action Plan 2017 calls for the establishment of an integrated AMR surveillance system.

A workshop was held on the 24th of April 2018 in this regard to bring together an array of partners representing federal and provincial reference laboratories, academia, national and international organizations focused on AMR research and development. The goal of the workshop was to establish a concrete AMR surveillance implementation strategy through 2020. The workshop was facilitated by Mr. Matthew Westercamp from DHQP division at U.S. CDC Atlanta supported by Dr. Maha Talaat (EMRO AMR/IPC Regional Adviser). Senior health officials of the Ministry, NIH and HSP representative participated in the workshop.

The specific aspects of AMR surveillance extensively discussed during the meeting included:

- Data sharing agreements between stakeholders including AMR sentinel surveillance sites and NIH
- NIH as the national coordinating center is committed to implementing the Global Antimicrobial Resistance Surveillance System (GLASS) since early 2015 in collaboration with the designated 5 sentinel sites for AMR surveillance for reporting to GLASS

- The need and importance of formalizing required approvals to allow provinces to report AMR surveillance data to the NIH
- Clarification and sensitization of the surveillance strategy including the flow of data, specimens, and isolates
- Determining stakeholder partner activities and responsibilities needed to implement AMR surveillance so that utilization of resources are optimized and duplication of efforts is avoided
- Coordinating AMR surveillance data with epidemiology and clinical data
- Feasibility of expanding surveillance sites including involvement of private and public sectors
- Utilization of national AMR surveillance data in implementing public health interventions to reduce emergence and spread of AMR in Pakistan.

7. Assessment of National IPC Programme

A follow up activity was conducted in the Ministry of NHSR&C after the technical meeting on 20th of April 2018 to complete the WHO questionnaire for assessment of IPC implementation through the application of IPCAT tool. The interview was conducted with Dr Sabeen Afzal, Deputy Director Programmes, Ministry of NHSRC, Dr. Ali (IHR coordinator) and federal and provincial participants. The tool included six IPC core components, and the completed version of IPCAT assessment tool is attached as Annex 7.

8. Partners' Meeting on AMR

An informal meeting was held at the WHO Country office on 23rd of April 2018 (Annex 8) with participation of WHO, US CDC, USAID, Health security partners, Field Epidemiology Training Programme and Laboratory (FELTP) and PATH. The main agenda item was discussion on the existing situation of the over 800 reported cases of drug resistant Typhoid in Sindh province of Pakistan being reported since the end of 2016. The provincial government had been taking necessary steps (vaccination, community awareness on hand washing/proper sewage disposal, etc.) with the support of partners since 2017. However, a detailed investigation requested by the Sindh DOH is in process by FELTP/NIH to enable clear assessment of the magnitude of drug resistant Typhoid outbreak.

Another significant development reported in the meeting was approval by the Federal EPI/ Ministry of National Health Services Regulations & Coordination for including the new conjugate typhoid vaccine in the routine EPI schedule. In this regard, PATH had been requested for provision of technical support to develop the proposal for submission to GAVI secretariat. The vaccine which is manufactured in India is expected to be available in Pakistan by 2019.

9. Technical Partners Supporting Pakistan

Several technical partners are supporting the Ministry in areas of AMR surveillance, detection and response, microbiology laboratory capacity building, and enhancing infection prevention and control programmes. The main technical partner for the MOH is the WHO CO and the regional EMRO AMR/IPC unit. The U.S. CDC office in Pakistan is collaborating closely with the MOH in various technical areas and is providing the expertise through assigning consultants to support the MOH.

Health security partners (HSP) are contracted by the US CDC for capacity building of microbiology laboratory of the NIH. An international consultant Dr. Abdul Chagla, originally from Pakistan has been recruited to provide training and technical guidance to improve laboratory capacities in NIH. Dr. Chagla did an assessment for the lab in 2017, followed by development of a work plan.

An additional technical partner is Aga Khan University who received two grants, one from HSP and the second one through WHO CO. The Aga Khan University is providing technical support to the private microbiology laboratories from the HSP grant, whereas the funding from the WHO CO is being utilized to provide supportive supervision to the microbiology laboratories of the 5 AMR assigned sentinel surveillance sites.

10. Debriefing Meeting with Senior Health Officials

The mission debrief was held on the last day of the mission (25th April 2018) with Ministry of NHSR&C senior officials including H.E. Dr. Mr Naveed Kamran Baloch, Secretary, Dr Assad Hafeez, Director General Health, Dr Sabeen Afzal, Deputy Director Programmes, and Dr Muhammad Salman Senior Virologist and national AMR focal point, NIH, with the attendance of HSP partners, and Matthew Westercamp from U.S. CDC. During the meeting, Dr Maha Talaat provided a quick review of the accomplishments of the mission and requested approval of the senior health officials to start immediate steps towards creating national, provincial, and facility level IPC programmes. A roadmap of actions for strengthening the IPC programmatic aspect and implementing the national AMR action plan was agreed upon. It was agreed that a federal and provincial level policy brief on IPC program will be provided by the technical unit in the EMR office. NIH will nominate/designate a focal point and some staff for coordinating IPC activities. The Secretary of Health expressed his keen interest and support for taking the necessary actions in Pakistan to start developing a national and facility level IPC programme and ensure the implementation of national AMR surveillance activities including reporting to GLASS.

11. Recommendations

The mission team members recommended the following actions/ steps for IPC implementation:

- Create the required IPC programme structure for Pakistan at all levels of health care as follows:
- Formalize the establishment an IPC unit or department in the National Institute of Health with assignment of a full time technical IPC lead supported by 2-3 technical members. The IPC unit should have clearly defined objectives, roles and responsibilities.
- Formalize the creation of a federal IPC committee as described above.
- The assigned IPC lead should start assembling a national group of experts representing all public and private sectors, academia, associations and others to adapt or develop national IPC guidelines for Pakistan. The minimum essential topics to be included in the guidelines are standard precautions (hand hygiene, use of personal protective equipment, reprocessing of instruments, waste management, and management of sharp injuries, triage and isolation precautions and prevention of health care-associated infections.
- The four provinces should formalize the institution of provincial IPC units and provincial IPC committees as described above.
- The provincial IPC leads should start providing technical support to all acute health care facilities in their provinces to establish the hospital IPC committees and teams according to standards.
- The federal and provincial IPC leads should develop a comprehensive IPC training plan to ensure capacity building of health care workers in each province through a cascade approach and master trainers.
- NIH should take the lead role in coordinating activities related to IPC and AMR among all technical partners (WHO, US. CDC, HSP, Aga Khan and others).
- Report good quality AMR data through the WHO international IT GLASS platform for the current data call which ends in July 2018.
- Endorse the national AMR surveillance plan developed by US CDC and WHO for implementation and obtain formal agreements from provinces to share AMR data with NIH for national and international reporting.
- Establish and strengthen the national AMR governance mechanism by creating a national AMR steering committee, and technical working groups according to WHO technical guidance to start national implementation of the AMR action plan submitted to the WHO in May 2018.

Annex 1 : Governance Multi Sectoral AMR Steering Committee

Government of Pakistan
Ministry of National Health Services Regulations & Coordination
LG&RD Complex, Sector G-5/2, Islamabad
*****

Islamabad, the 24th April, 2018

NOTIFICATION

F. No.8-30/2015-DDP-I The Secretary, Ministry of National Health Services, Regulations and Coordination (NHS,R&C), Islamabad is pleased to constitute an AMR Multi-Sectoral Steering Committee to oversee the whole process of developing National Policy on AMR, with the following composition and Terms of References:-

Composition:-

1. Secretary, M/o NHSR&C	**Chairperson/ Convener**
2. Director General Health, NHSR&C	Member
3. CEO, DRAP, NHSR&C	Member
4. Executive Director NIH, Islamabad.	Member
5. Representative, M/o National Food Security & Research	Member
6. Chairman, Pakistan Agriculture Research Council (NARC/PARCs Agricultures Research Institution Executive Director PMR&C, Islamabad,	Member
7. President, Pharmacy Council of Pakistan	Member
8. President, Pakistan Nursing Council	Member
9. Representative, National Laboratory Working Group	Member
10. Representative, Public Sector Hospital	Member
11. Representative, Private Sector Hospital	Member
12. Representative Pakistan Medical Association	Member
13. Representative, Pakistan Antimicrobial Resistance Network	Member
14. Representative, General Practitioner Association	Member
15. Representative, Medical Microbiology and Infectious Diseases Society of Pakistan	Member
16. Representative, Pakistan Pharmaceutical Manufacturers Association	Member
17. Representative WHO, Islamabad	Member
18. Representative, Pakistan Medical Veterinary Council	Member
19. Director General Health Services, Punjab, Sindh, KP, Baluchistan	Member
20. Director General Agriculture & Livestock, Punjab, Sindh, KP, Baluchistan	Member
21. Director Health Services, GB, FATA	Member
22. Representative AFIP, Rawalpindi.	Member
23. Focal Person, International Health Regulations (IHR)	Member/ Secretary

(Dr. Sabeen Afzal)
Deputy Director

Cont`d.....P/2

Terms of Reference

Sr. #	Terms of Reference
1	To facilitate and coordinate efforts to contain and reduce the threat of AMR at the national, provincial, regional and national and supranational levels.
2.	To act as an advisory and oversight body for AMR related activities in the country.
3.	To coordinate AMR-related activities in all sectors to ensure a systematic, comprehensive approach aligned with the objectives and strategic priorities defined in the AMR National Action Plan
4.	To facilitate and establish supporting technical working groups as required under each objective
5.	To review the progress and provide technical advice and recommendations for corrective action on implementation status of AMR National / Provincial Action Plans.
6.	To address AMR surveillance and reporting requirements in line with One Health approach for human, animal and agricultural sectors
7.	To provide a platform for information-sharing with relevant national stakeholders and partners and mutually reinforce AMR activities among different sectors
8.	To provide technical support for developing and implementing AMR monitoring & evaluation framework, tools and reporting modalities. .
9.	To meet regularly to ensure all partners are adequately briefed on activities under AMR

It is proposed that dedicated funds and adequately staffed and resourced secretariat may be provided to ensure effectiveness and optimal functioning of the AMR Steering Committee.

A meeting format and rules and standard operating procedures will be elaborated to guide the activities of the Committee.

Jabeen.

(Deputy Director)

Distribution:-

- All Members.

Copy to:-

1. Sr. PS to Secretary, M/o NHS, R&C, Islamabad.
2. PS to DG Health, M/o NHS, R&C, Islamabad.

Annex 2 : Agenda IPC AMR Mission

EMRO IPC & AMR Surveillance Mission Pakistan
18-25 April 2018
Final Agenda

Date Time	Time	Activity	Participation
Arrival of Mission: Dr Nizam Damani IPC Unit/HQ & Dr Maha Talaat, EMRO RA AMR-IPC			
Day 1: 18th April 2018			
9.00 am	WCO	Mission introduction Review mission preparation	Head of Country Office, WHO Pakistan & team Mission members
10.00 am- 2.00 pm	Pakistan Institute of Medical Sciences (PIMS)	Hospital visit & assessment on infection prevention & control assessment framework (IPCAF) tool in public sector hospital	Mission members Rep NIH WCO
3.00 pm- 4.00 pm	NIH Labs	Visit to public health sector reference lab	Mission members Rep NIH WCO
Day 2: 19th April 2018 (THURSDAY)			
10.00 am-2.00 pm	Shifa Hospital	Hospital visit & assessment on infection prevention & control assessment framework (IPCAF) tool in private sector hospital	Mission members NIH WCO
3.00- 4.00 pm	NVL	Visit public sector veterinary reference lab	Mission members NIH WCO

Day 3: 20th April 2018 (FRIDAY)			
10.00 am- 1.00 pm	Committee Room, Ministry of NHSR&C	Technical Meeting*: IPC Implementation Approach for Pakistan Technical briefing and strategic dialogue /consultation with federal & provincial participants ***Annex for details.**	Ministry of National Health Services & Regulations (NHSR&C) National Institute of Health (NIH) Reps TB & HIV/AIDS DOH Islamabad Capital Territory (for PHC/community perspective); Infectious Diseases Physicians ((IDP) tertiary hospitals (public & private); Health Development Partners (UNICEF;CDC;PHE & GIZ); NGOs/Professional bodies (Pakistan Antimicrobial Resistance Network/PARN); Provincial Level: Director Public Health Director Communicable Disease Control (provinces & regions)
2.00-4.00 pm	Small conference room WHO CO	Country Assessment on IPC: Infection Prevention and Control Assessment Tool (IPCAT) (facilitated by mission members)	Rep Ministry of NHSR&C NIH IPC focal points PIMS & Shifa Hospitals Reps of TB & HIV/AIDS
21 April 9.00 am -12 noon	Holy Family Hospital (HFH), Rawalpindi	SATURDAY Hospital visit & assessment on infection prevention & control assessment framework (IPCAF) tool in provincial public sector hospital Punjab	Mission members (WHO) NIH

Day 4: 22 April 2018 Consolidation/ compiling assessment SUNDAY			
Day 5: 23rd April 2018 CDC & WHO Mission Members: Dr Maha Talaat RA AMR/EMRO & Dr Matt			
9.00 am 12-3.00 pm	WCO Shifa hospital	MONDAY Internal meeting WHO & CDC Joint hospital visit for AMR	WHO & CDC mission members AMR FPs Health CO AMR FP
Day 6: 24th April 2018			
9.00 am-4.00 pm	NIH	TUESDAY *Technical meeting: AMR Surveillance activities & planning forward Session 1: GLASS implementation: progress review (sentinel sites) & way forward Session 2: AMR Surveillance: Planning forward	WHO & CDC mission members Rep of 5 designated sentinel sites: i. Aga Khan, Karachi; ii. Jinnah Postgraduate Medical Centre, Karachi; iii. Civil Hospital, Karachi; iv. Shaikh Zayed Hospital, Lahore; v. Jinnah Hospital, Lahore AMR FP Health/NIH team CO AMR FP
Day 7: 25th April 2018			
25 April 10.00- 11.00 am	Committee Room Mo NHSR&C	Joint Debrief by WHO & CDC	Secretary & Mo NHSR&C team ED NIH & team/ AMR FP WR & team

Technical Meeting IPC Implementation Approach in Pakistan

20th April 2018

Committee Room Ministry of National Health Services Regulations & Coordination, Islamabad

Time	Activity/ Session	Facilitators
9.30 am	Tilawat Quran	
9.40 am	Introduction of participants	
9.50 am	Welcome remarks	Dr Assad Hafeez*, Director General Ministry of NHSR&C/ Rep
10.00 am	Remarks WHO	Dr Mohammed Assai*, Head of Country Office, Pakistan
10.10 am	An Overview: Infection Prevention and Control and Antimicrobial Resistance	Dr Nizam Damani, Global IPC Unit, WHO Headquarters, Geneva
10.30-10.50 am	Orientation: WHO Core Components of Infection Prevention and Control	Dr Maha Talaat Regional Adviser AMR-IPC, EMRO
11.00- 1.00 pm	Facilitated Discussion: 1. Organization of IPC 2. Infrastructure and Programme at National, Provincial level and Healthcare Facility levels 3. Development and Implementation of National IPC Guidelines 4. Training and Education on IPC	Dr Nizam Damani Global IPC Unit, WHO Headquarters, Geneva Dr Maha Talaat, Regional Adviser AMR-IPC, EMRO
1.00-2.00 pm	Prayer & Lunch Break	

*availability to be confirmed

Annex 3: IPC Assessment Framework – PIMS

INFECTION PREVENTION AND CONTROL
ASSESSMENT FRAMEWORK AT THE FACILITY LEVEL

Pakistan Institute of Medical Sciences - PIMS

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*[2] at the acute health care facility level. The user should be familiar with the contents of these guidelines, including the *Practical manual for the implementation of the IPC core components at the facility level* before using this tool. The IPCAF is a systematic tool that can provide a baseline assessment of the IPC programme and activities within a health care facility, as well as ongoing evaluations through repeated administration to document progress over time and facilitate improvement.

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 (that is, a *self-assessment* tool), but it can also be used for joint assessments, through careful discussions between external assessors (for example, from the Ministry of Health, WHO or other stakeholders) and facility staff. The framework is intended for acute health care facilities, but it can be used in other inpatient health care settings. Although some indicators will be straightforward for high- and middle-income countries, this is a global tool that is valid for assessment of IPC standards in any country. The goal of the framework is to assess the current IPC situation in your facility, that is, 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. If the IPCAF is undertaken as a self-assessment, its usefulness depends on being completed objectively and as accurately as possible. Identifying existing strengths and achievements will help build confidence and convince decision-makers that success and progress is possible. Honestly recognizing gaps will help to create a sense of urgency for the changes needed to improve IPC. For these reasons, it is important to determine the correct score for each section as well as the overall score. Overall, the IPCAF gives a score that can be used as an indicator of the level of progress from an improvement perspective. These results can be used to develop a facility action plan, using the *Practical manual for the implementation of the IPC core components at the facility level* among other resources, 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.

[2] WHO Guidelines on core components of IPC programmes at the national and acute health care facility level. 2016 (http://www.who.int/infection-prevention/publications/core-components/en/, accessed 29 March 2018).

Who should complete and use the IPCAF?

- Health care professionals/teams responsible for organizing and implementing IPC activities and who have in-depth understanding and knowledge of 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 IPCAF assesses the health care facility as a whole. Of note: in most cases "you" refers to the facility and is not directly addressing the IPC lead/professional answering the question. The IPC team may need to consult with other relevant teams in the facility (for example, health care worker protection and safety, occupational health, surveillance and epidemiology, cleaning and maintenance, environmental health, administration, etc.) to be able to respond to questions accurately.
- The IPCAF is designed for global use at facilities of any size, regardless of their medical focus or development stage.
- If used in joint evaluations, the external assessor should be an IPC professional with an understanding of the recommendations contained in the *WHO Guidelines on core components of IPC programme*.

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 and thus, it 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. When unfamiliar with terminology in the stated questions, it is strongly recommended to consult the *WHO Guidelines on core components of IPC programmes* or other resources provided in the footnotes to familiarize yourself with new terms and concepts. Difficulties in answering specific questions could indicate that some IPC aspects are not sufficiently developed at your facility and users are encouraged to self-reflect. This can also help lead to improvement. In general, the user should 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 goal 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. The comparison of different health care facilities should be done very carefully, particularly when of different sizes, medical focus and socioeconomic setting. Therefore, the framework is not primarily intended for external comparison or benchmarking, but these might be possible - provided that a sound methodology is used.

Core Component 1: Infection Prevention and Control (67.5)

WHO IPC Assessment Framework: Health care facility level

Core component 1: Infection Prevention and Control programme (67.5)

Question	Answer	Score
1. Do you have an IPC programme?[3] **Choose one answer**	No	
	Yes, without clearly defined responsibilities	
	Yes, with clearly defined responsibilities and annual work plan	10
2. Is the IPC programme supported by an IPC team comprising of IPC professionals?[4] **Choose one answer**	No	
	Not a team, *only* an IPC focal person	
	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	
	No, *only* a part-time infection preventionist available	
	Yes, one per > 250 beds	5
	Yes, one per ≤ 250 beds	
4. Does the IPC team have an IPC team/focal person with dedicated time for IPC activities?	No	
	Yes	10
5. Does the IPC team include both doctors and nurses?	No	
	Yes	10
6. Do you have an IPC committee[5] or an equivalent actively supporting the IPC team?	No	
	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(patient safety director is the head of IP	

[3] 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. See the *WHO Guidelines on core components of IPC programmes at the national and acute health care facility level* for more information (http://www.who.int/infection-prevention/publications/core-components/en/).
[4] IPC professional: medical or nursing staff trained in a certified IPC course.
[5] An IPC team includes dedicated IPC professionals. An IPC committee is a multidisciplinary group with interested stakeholders across the facility.

	C committee)	
- Senior clinical staff (for example, physician, nurse)	No	
	Yes	2.5
- Facility management (for example, biosafety, waste, and those tasked with addressing water, sanitation, and hygiene (WASH))	No	
	Yes	2.5
8. Do you have clearly defined IPC objectives (that is, in specific critical areas)? **Choose one answer**	No	
	Yes, IPC objectives *only*	2.5
	Yes, IPC objectives and measurable outcome indicators (that is, adequate measures for improvement)	
	Yes, IPC objectives, measurable outcome indicators and set future targets	
9. Does the senior facility leadership show clear commitment and support for the IPC programme:		
- By an allocated budget specifically for the IPC programme (that is, covering all IPC activities, including salaries)?	No	0
	Yes	
- By 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	
10. Does your facility have microbiological laboratory support (either present on or off site) for routine day-to-day use? **Choose one answer**	No	
	Yes, but not delivering results reliably (timely and of sufficient quality)	5
	Yes, and delivering results reliably (timely and of sufficient quality)	
Subtotal score		**67.5/100**

Core component 2: Infection Prevention and Control guidelines

Question	Answer	Score
1. Does your facility have the expertise (in IPC and/or infectious diseases) for developing or adapting guidelines?	No	
	Yes	7.5
2. Does your facility have guidelines available for: (They are using the WHO Guidelines for 2004)		
Comments: The questions need to be modified? E.g. it is not mentioned whether they are developed by hospital or international, dates of development or dates of guidelines.		
- Standard precautions?	No	
	Yes	2.5
- Hand hygiene?	No	
	Yes	2.5
- Transmission-based precautions?[6]	No	
	Yes	2.5
- Outbreak management and preparedness?	No	0
	Yes	
- Prevention of surgical site infection?[7]	No	0
	Yes[6]	
- Prevention of vascular catheter-associated bloodstream infections?	No	0
	Yes	
- Prevention of hospital-acquired pneumonia ([HAP]; all types of HAP, including (but not exclusively) ventilator-associated pneumonia)?	No	0
	Yes	
- Prevention of catheter-associated urinary tract infections?	No	0
	Yes	
- Prevention of transmission of multidrug-resistant (MDR) pathogens?	No	
	Yes	2.5
- Disinfection and sterilization?	No	
	Yes	2.5
- Health care worker protection and safety[8]	No	
	Yes	2.5
- Injection safety?	No	0
	Yes	
- Waste management?	No	0
	Yes	
- Antibiotic stewardship?[9]	No	0

[6] 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).

[7] If no surgical interventions are undertaken at your facility, choose answer "Yes".

[8] Includes aspects of improving working conditions, detection of occupational diseases, health surveillance of workers, pre-employment screening and vaccinations.

[9] Refers to the appropriate use of antimicrobials to improve patient outcomes while minimizing the development and spread of resistance. More information can be found in the *WHO Global Framework for*

	Yes	
3. Are the guidelines in your facility evidence-based and consistent with national/international guidelines (if they exist)?	No	
	Yes	10
4. Is implementation of the guidelines adapted[10] according to the local needs and resources while maintaining key IPC standards?	No	
	Yes	10
5. Are frontline health care workers involved in both planning and executing the implementation of IPC guidelines in addition to IPC personnel?	No	0
	Yes	
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	
	Yes	7.5
7. Do health care workers receive specific training related to new IPC guidelines introduced in the facility?	No	0
	Yes	
8. Do you regularly monitor the implementation of at least some of the guidelines in your facility? (monitor HH compliance in ICUs once a year)	No	0
	Yes	
Subtotal score		**50/100**

Development & Stewardship to Combat Antimicrobial Resistance (http://www.who.int/phi/implementation/research/UpdatedRoadmap-Global-Framework-for-Development-Stewardship-to-combatAMR_2017_11_03.pdf?ua=1, accessed 29 March 2018).

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

Core component 3: Infection Prevention and Control education and training

Question	Answer	Score
1. Are there personnel with the IPC expertise to lead IPC training?	No	
	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	
	Yes	10
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	
	New employee orientation and regular (at least annually) IPC training for health care workers offered but not mandatory	
	New employee orientation and regular (at least annually) mandatory IPC training for all health care workers	
4. How frequently do cleaners and other personnel directly involved in patient care receive training regarding IPC in your facility? **Choose one answer**	Never or rarely	0
	New employee orientation *only* for other personnel	
	New employee orientation and regular (at least annually) training for other personnel offered but not mandatory	
	New employee orientation and regular (at least annually) mandatory IPC training for other personnel	
5. Does administrative and managerial staff receive general training regarding IPC in your facility?	No	0
	Yes	
6. How are health care workers and other personnel trained? **Choose one answer**	No trainings available	
	Using written information and/or oral instruction and/or e-learning *only*	5
	Includes *additional* interactive training sessions (for example, simulation and/or bedside training)	
7. 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, but not routinely	
	Yes, regularly (at least annually)	
8. 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	
	Yes, in all disciplines	

9. 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	
10. Is ongoing development/ education offered for IPC staff (for example, by regularly attending conferences, courses)?	No	0
	Yes	
Subtotal score		**25/100**

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	
2. Do you have personnel responsible for surveillance activities?	No	0
	Yes	
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	
4. Do you have informatics/IT support to conduct your surveillance (for example, equipment, mobile technologies, electronic health records)?	No	0
	Yes	
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	
6. In your facility is surveillance conducted for:		
- Surgical site infections?	No	0
	Yes	
- 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	
- Clinically-defined infections (for example, definitions based only on clinical signs or symptoms in the absence of microbiological testing)?	No	0
	Yes	
- Colonization or infections caused by multidrug-resistant[11] pathogens according to your local epidemiological situation?	No	0
	Yes	
- Local priority epidemic-prone infections (for example, norovirus, influenza, tuberculosis (TB), severe acute respiratory syndrome (SARS), Ebola, Lassa fever)?	No	0
	Yes	
- Infections in vulnerable populations (for example, neonates, intensive care unit, immunocompromised, burn patients)?[12]	No	0
	Yes	
- 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	
7. Do you regularly evaluate if your surveillance is in line with	No	0

[11] Multidrug-resistant: Non-susceptibility to at least one agent in three or more antimicrobial categories;
[12] If vulnerable patient populations are not treated at your facility, choose answer "Yes".

the current needs and priorities of your facility?[13]	Yes	
Methods of surveillance		
8. Do you use reliable surveillance case definitions (defined numerator and denominator according to international definitions [e.g. CDC NHSN/ECDC][14] or if adapted, through an evidence-based adaptation process and expert consultation?	No	0
	Yes	
9. Do you use standardized data collection methods (for example, active prospective surveillance) according to international surveillance protocols (for example, CDC NHSN/ECDC) or if adapted, through an evidence-based adaption process and expert consultation?	No	0
	Yes	
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	
11. Do you have adequate microbiology and laboratory capacity to support surveillance? **Choose one answer**	No	
	Yes, can differentiate gram-positive/negative strains but cannot identify pathogens	
	Yes, can reliably identify pathogens (for example, isolate identification) in a timely manner	
	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	
13. Do you analyze antimicrobial drug resistance on a regular basis (for example, quarterly/half-yearly/annually)?	No	0
	Yes	
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	
- Clinical leaders/heads of department	No	0

[13] A prioritization exercise should be undertaken to determine which HAIs to target for surveillance according to the local context (for example, areas and/or patients most at risk) according to available resources (see Interim practical manual supporting implementation of the *WHO Guidelines on core components of infection prevention* and control programmes) .

[14] United States Centers for Disease Control and Prevention (CDC) National Healthcare Safety Network (NHSN) (https://www.cdc.gov/nhsn/index.html, accessed 7 September 2017);
European Centre for Disease Prevention and Control (ECDC) (https://ecdc.europa.eu/en/about-us/partnerships-and-networks/disease-and-laboratory-networks/hai-net, accessed 7 September 2017).

	Yes	
- IPC committee	No	0
	Yes	
- Non-clinical management/administration (chief executive officer/chief financial officer)?	No	0
	Yes	
15. How do you feedback up-to-date surveillance information? (at least annually) **Choose one answer**	No feedback	0
	By written/oral information *only*	
	By presentation and interactive problem-orientated solution finding	
Subtotal score		**10/100**

Core component 5: Multimodal strategies

Definition: http://www.who.int/infection-prevention/publications/ipc-cc-mis.pdf?ua=1

Question	Answer	Score
1. Do you use multimodal strategies[15] to implement IPC interventions? (HH intervention)	No	
	Yes	15
2. Do your multimodal strategies include any or all of the following elements: **Choose one answer (the most accurate) per element**	**System change**	
	Element not included in multimodal strategies	
	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[16] and accessibility, such as the best placement of central venous catheter set and tray	
	Education and training	
	Element not included in multimodal strategies	
	Written information and/or oral instruction and/or e-learning *only*	5
	Additional interactive training sessions (includes simulation and/or bedside training)	
	Monitoring and feedback	
	Element not included in multimodal strategies	
	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	
	Communications and reminders	

[15] The use of multimodal strategies in IPC has been shown to be the best evidence-based approach to achieve sustained system and behavioural change for the implementation of IPC interventions. 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), (iii) monitoring infrastructures, practices, processes, outcomes and providing data feedback; (iv) reminders in the workplace/communications; and (v) culture change within the establishment or the strengthening of a safety climate. It also includes tools, such as checklists and bundles, developed by multidisciplinary teams that take into account local conditions. All five areas should be considered and necessary action taken, based on the local context and situation informed by periodic assessments. Lessons from the field of implementation science suggest that targeting only one of these five elements (that is, using a "unimodal" strategy) is more likely to result in improvements that are short-lived and not sustainable.

For more information, please see: http://www.who.int/infection-prevention/publications/ipc-cc-mis.pdf?ua=1 and the *Interim practical manual supporting implementation of the WHO Guidelines on Core Components of Infection Prevention and Control Programmes*.

[16] 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.

	Element not included in multimodal strategies	
	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)	
	Safety climate and culture change	
	Element not included in multimodal strategies	
	Managers/leaders show visible support and act as champions and role models, promoting an adaptive approach[17] 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)	
3. Is a multidisciplinary team used to implement IPC multimodal strategies?	No	
	Yes	15
4. Do you regularly link to colleagues from quality improvement and patient safety to develop and promote IPC multimodal strategies?	No	
	Yes (IPC team is the same as the patient safety team)	10
5. Do these strategies include bundles[18] or checklists?	No	
	Yes	10
Subtotal score		**75/100**

[17] 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.

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

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	
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	
3. Which processes and indicators do you monitor in your facility? **Tick all that apply**	None	
	Hand hygiene compliance (using the WHO hand hygiene observation tool[19] or equivalent)	5
	Intravascular catheter insertion and/or care	
	Wound dressing change	
	Barrier precautions and isolation to prevent the spread of multidrug resistant organisms (MDRO)	
	Cleaning of the ward environment	
	Disinfection and sterilization of medical equipment/instruments	
	Consumption/usage of alcohol-based handrub or soap	5
	Consumption/usage of antimicrobial agents	0
	Waste management	5
4. How frequently is the *WHO Hand Hygiene Self-Assessment Framework Survey* routinely undertaken? **Choose one answer**	Never	0
	Periodically, but no regular schedule	
	At least annually	
5. Do you feedback auditing reports (for example, feedback on hand hygiene compliance data or other processes) on the state of the IPC activities/performance? **Tick all that apply**	No reporting	0
	Yes, within the IPC team	
	Yes, to department leaders and managers in the areas being audited	
	Yes, to frontline health care workers	
	Yes, to the IPC committee or quality of care committees or equivalent	
	Yes, to hospital management and senior administration	
6. Is the reporting of monitoring data undertaken regularly (at least annually)?	No	0
	Yes	
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	
8. Do you assess safety cultural factors in your facility (for example, by using other surveys such as HSOPSC, SAQ, PSCHO, HSC[20])	No	0
	Yes	
Subtotal score		**15/100**

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

[20] 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: Colla JB, et al. Measuring patient safety climate: a review of survey. Qual Saf Health Care. 2005;14(5):364-6 (https://www.ncbi.nlm.nih.gov/pubmed/16195571, accessed 7 September 2017).

Core component 7: Workload, staffing and bed occupancy[21]

Question	Answer	Score
Staffing		
1.Are appropriate staffing levels assessed in your facility according to patient workload using national standards or a standard staffing needs assessment tool such as the *WHO Workload indicators of staffing need*[22] method?	No	0
	Yes	
2. Is an agreed (that is, WHO or national) ratio of health care workers to patients[23] maintained across your facility? **Choose one answer**	No	0
	Yes, for staff in less than 50% of units	
	Yes, for staff in more than 50% of units	
	Yes, for all health care workers in the facility	
3. Is a system in place in your facility to act on the results of the staffing needs assessments when staffing levels are deemed to be too low?	No	0
	Yes	
Bed occupancy		
4. Is the design of wards in your facility in accordance with international standards[24] regarding bed capacity? **Choose one answer**	No	0
	Yes, but *only* in certain departments	
	Yes, for all departments (including emergency department and pediatrics)	
5. Is bed occupancy in your facility kept to one patient per bed? **Choose one answer**	No	0
	Yes, but *only* in certain departments	
	Yes, for all units (including emergency departments and pediatrics)	
6. Are patients in your facility placed 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	
	No	
7. Is adequate spacing of > 1 meter between patient beds ensured in your facility? **Choose one answer**	No	0
	Yes, but *only* in certain departments	
	Yes, for all departments (including emergency department and pediatrics)	
8. Is a system in place in your facility 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	
	Yes, this is the responsibility of the hospital administration/management	
Subtotal score		**0/100**

[21] Particularly for these questions, the IPC team may need to consult with other relevant teams in the facility to be able to respond to questions accordingly.

[22] 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).

[23] Taking into account all health care workers involved in service delivery and patient care, including clinical staff (doctors, nurses, dentists, medical assistants, etc.), laboratory technicians and other health care workers (for example, cleaners).

[24] 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[25]

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	
	Yes, available on average ≥ 5 days per week or every day but not of sufficient quantity	
	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	
	Yes, accessible at all times and for all wards/groups	
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	
	Yes, stations present, but supplies are not reliably available	2.5
	Yes, reliably available	
4. In your facility, are ≥ 4 toilets or improved latrines[26] available for outpatient settings or ≥ 1 per 20 users for inpatient settings? **Choose one answer**	Less than required number of latrines available and functioning	
	Sufficient number present but not all functioning	2.5
	Sufficient number present and functioning	
Power supply, ventilation and cleaning		
5. In your health care facility, is sufficient energy/power supply available at day and night	No	

[25] 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). Particularly for these questions, the IPC team may need to consult with other relevant teams in the facility to be able to respond to questions accordingly and accurately.

[26] 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.

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**	Yes, sometimes or only in some of the mentioned areas	
	Yes, always and in all mentioned areas	7.5
6. Is functioning environmental ventilation (natural or mechanical[27]) available in patient care areas?	No	0
	Yes	
7. For floors and horizontal work surfaces, is there an accessible 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	
	Yes, record completed daily	
8. Are appropriate and well-maintained materials for cleaning (for example, detergent, mops, buckets, etc.) available? **Choose one answer**	No materials available	
	Yes, available but not well maintained	2.5
	Yes, available and well-maintained	
Patient placement and personal protective equipment (PPE) in health care settings		
9. Do you have single patient rooms or rooms for cohorting[28] patients with similar pathogens if the number of isolation rooms is insufficient (for example, TB, measles, cholera, Ebola, SARS)?[29] **Choose one answer**	No	
	No single rooms but rather rooms suitable for patient cohorting available	
	Yes, single rooms are available	7.5
10. Is PPE[30] available at all times and in sufficient quantity for all uses for all health care workers?	No	
	Yes, but not continuously available in sufficient quantities	2.5
	Yes, continuously available in sufficient quantities	
Medical waste management and sewage		
11. 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	
	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

[27] 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.

[28] Cohorting strategies should be based on a risk assessment conducted by the IPC team.

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

[30] Medical non-sterile and surgical sterile gloves, surgical masks, goggles or face shields and gowns are considered as essential PPE. Respirators and aprons should also be available in adequate quantities in all facilities for use when necessary.

	Yes	
12. 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	
	Pit in facility but insufficient dimensions; pits/dumps overfilled or not fenced/locked; or irregular municipal waste pick up	
	Yes	5
13. Is an incinerator or alternative treatment technology (either present on or off site and operated by a licensed waste management service) for the treatment of infectious and sharp waste (for example, an autoclave) functional and of a sufficient capacity? **Choose one answer**	No, none present	
	Yes, but not functioning reliably	
	Yes and functioning reliably	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	
	Yes, but not functioning reliably	
	Yes and functioning reliably	5
Decontamination and sterilization		
15. Does your health care facility provide a dedicated decontamination area and/or sterile supply department (either present on or off site and operated by a licensed decontamination management service) for the decontamination and sterilization of medical devices and other items/equipment? **Choose one answer**	No, not present	
	Yes, but not functioning reliably	
	Yes and functioning reliably	5
16. Do you reliably have sterile and disinfected equipment ready for use? **Choose one answer**	No, available on average < five days per week	
	Yes, available on average ≥ five days per week or every day, but not of sufficient quantity	
	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	
	Yes, but *only* sometimes available	2.5
	Yes, continuously available	
Subtotal score		**62.5/100**

Interpretation: A three-step process

1. Add up your points

Score	
Section (Core component)	**Subtotals**
1. IPC programme	67.5
2. IPC guidelines	50
3. IPC education and training	25
4. HAI surveillance	10
5. Multimodal strategies	75
6. Monitoring/audits of IPC practices and feedback	15
7. Workload, staffing and bed occupancy	0
8. Built environment, materials and equipment for IPC at the facility level	62.5
Final total	**305/800**

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.

Annex 4: IPC Assessment Framework – Shifa Hospital

INFECTION PREVENTION AND CONTROL ASSESSMENT FRAMEWORK AT THE FACILITY LEVEL SHIFA HOSPITAL

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*[31] at the acute health care facility level. The user should be familiar with the contents of these guidelines, including the *Practical manual for the implementation of the IPC core components at the facility level* before using this tool. The IPCAF is a systematic tool that can provide a baseline assessment of the IPC programme and activities within a health care facility, as well as ongoing evaluations through repeated administration to document progress over time and facilitate improvement.

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 (that is, a *self-assessment* tool), but it can also be used for joint assessments, through careful discussions between external assessors (for example, from the Ministry of Health, WHO or other stakeholders) and facility staff. The framework is intended for acute health care facilities, but it can be used in other inpatient health care settings. Although some indicators will be straightforward for high- and middle-income countries, this is a global tool that is valid for assessment of IPC standards in any country. The goal of the framework is to assess the current IPC situation in your facility, that is, 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. If the IPCAF is undertaken as a self-assessment, its usefulness depends on being completed objectively and as accurately as possible. Identifying existing strengths and achievements will help build confidence and convince decision-makers that success and progress is possible. Honestly recognizing gaps will help to create a sense of urgency for the changes needed to improve IPC. For these reasons, it is important to determine the correct score for each section as well as the overall score. Overall, the IPCAF gives a score that can be used as an indicator of the level of progress from an improvement perspective. These results can be used to develop a facility action plan, using the *Practical manual for the implementation of the IPC core components at the facility level* among other resources, 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:

6. prepare for action
7. **conduct a baseline assessment**
8. develop and execute an action plan
9. **evaluate impact**
10. 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.

[31] WHO Guidelines on core components of IPC programmes at the national and acute health care facility level. 2016 (http://www.who.int/infection-prevention/publications/core-components/en/, accessed 29 March 2018).

Who should complete and use the IPCAF?

- Health care professionals/teams responsible for organizing and implementing IPC activities and who have in-depth understanding and knowledge of 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 IPCAF assesses the health care facility as a whole. Of note: in most cases "you" refers to the facility and is not directly addressing the IPC lead/professional answering the question. The IPC team may need to consult with other relevant teams in the facility (for example, health care worker protection and safety, occupational health, surveillance and epidemiology, cleaning and maintenance, environmental health, administration, etc.) to be able to respond to questions accurately.
- The IPCAF is designed for global use at facilities of any size, regardless of their medical focus or development stage.
- If used in joint evaluations, the external assessor should be an IPC professional with an understanding of the recommendations contained in the *WHO Guidelines on core components of IPC programme*.

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 and thus, it 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.

5. **Inadequate**: IPC core components implementation is deficient. Significant improvement is required.
6. **Basic**: Some aspects of the IPC core components are in place, but not sufficiently implemented. Further improvement is required.
7. **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.
8. **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. When unfamiliar with terminology in the stated questions, it is strongly recommended to consult the *WHO Guidelines on core components of IPC programmes* or other resources provided in the footnotes to familiarize yourself with new terms and concepts. Difficulties in answering specific questions could indicate that some IPC aspects are not sufficiently developed at your facility and users are encouraged to self-reflect. This can also help lead to improvement. In general, the user should 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 goal 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. The comparison of different health care facilities should be done very carefully, particularly when of different sizes, medical focus and socioeconomic setting. Therefore, the framework is not primarily intended for external comparison or benchmarking, but these might be possible - provided that a sound methodology is used.

WHO IPC Assessment Framework: Health care facility level

Core component 1: Infection Prevention and Control programme (Team and Committee), yearly plans of the IPC teams)

Question	Answer	Score
1. Do you have an IPC programme?[32] **Choose one answer**	No	
	Yes, without clearly defined responsibilities	
	Yes, with clearly defined responsibilities and annual work plan	10
2. Is the IPC programme supported by an IPC team comprising of IPC professionals?[33] **Choose one answer (5 nurses and supervised by ID physician)**	No	
	Not a team, *only* an IPC focal person	
	Yes	10
3. Does the IPC team have at least one full-time infection preventionist or equivalent (5 nurses full time) **Choose one answer**	No infection preventionist available	
	No, *only* a part-time infection preventionist available	
	Yes, one per > 250 beds	
	Yes, one per ≤ 250 beds	10
4. Does the IPC team have an IPC team/focal person with dedicated time for IPC activities?	No	
	Yes	10
5. Does the IPC team include both doctors and nurses?	No	
	Yes	10
6. Do you have an IPC committee[34] or an equivalent actively supporting the IPC team?	No	
	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	
	Yes	5
- Senior clinical staff (for example,	No	

[32] 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. See the *WHO Guidelines on core components of IPC programmes at the national and acute health care facility level* for more information (http://www.who.int/infection-prevention/publications/core-components/en/).
[33] IPC professional: medical or nursing staff trained in a certified IPC course.
[34] An IPC team includes dedicated IPC professionals. An IPC committee is a multidisciplinary group with interested stakeholders across the facility.

physician, nurse)	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	
	Yes, IPC objectives *only*	
	Yes, IPC objectives and measurable outcome indicators (that is, adequate measures for improvement)	
	Yes, IPC objectives, measurable outcome indicators and set future targets	10
9. Does the senior facility leadership show clear commitment and support for the IPC programme:		
- By an allocated budget specifically for the IPC programme (that is, covering all IPC activities, including salaries)? No private budget, but all their requests get approved.	No	
	Yes	5
- By 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	
	Yes	5
10. Does your facility have microbiological laboratory support (either present on or off site) for routine day-to-day use? **Choose one answer**	No	
	Yes, but not delivering results reliably (timely and of sufficient quality)	
	Yes, and delivering results reliably (timely and of sufficient quality)	10
Subtotal score		**100/100**

Core component 2: Infection Prevention and Control guidelines

Question	Answer	Score
1. Does your facility have the expertise (in IPC and/or infectious diseases) for developing or adapting guidelines? They have policies and procedures (no guidelines). They use international guidelines. Use of CDC and WHO guidelines	No	
	Yes	7.5
2. Does your facility have guidelines available for: (not		
- Standard precautions?	No	
	Yes	2.5
- Hand hygiene?	No	
	Yes	2.5
- Transmission-based precautions?[35]	No	
	Yes	2.5
- Outbreak management and preparedness?	No	
	Yes	2.5
- Prevention of surgical site infection?[36]	No	
	Yes[6]	2.5
- Prevention of vascular catheter-associated bloodstream infections?	No	
	Yes	2.5
- Prevention of hospital-acquired pneumonia ([HAP]; all types of HAP, including (but not exclusively) ventilator-associated pneumonia)?	No	
	Yes	2.5
- Prevention of catheter-associated urinary tract infections?	No	
	Yes	2.5
- Prevention of transmission of multidrug-resistant (MDR) pathogens?	No	
	Yes	2.5
- Disinfection and sterilization?	No	
	Yes	2.5
- Health care worker protection and safety[37]	No	
	Yes	2.5
- Injection safety?	No	0
	Yes	
- Waste management?	No	
	Yes	2.5
- Antibiotic stewardship?[38]	No	

[35] 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).

[36] If no surgical interventions are undertaken at your facility, choose answer "Yes".

[37] Includes aspects of improving working conditions, detection of occupational diseases, health surveillance of workers, pre-employment screening and vaccinations.

[38] Refers to the appropriate use of antimicrobials to improve patient outcomes while minimizing the development and spread of resistance. More information can be found in the *WHO Global Framework for*

	Yes	2.5
3. Are the guidelines in your facility evidence-based and consistent with national/international guidelines (if they exist)?	No	
	Yes	10
4. Is implementation of the guidelines adapted[39] according to the local needs and resources while maintaining key IPC standards?	No	
	Yes	10
5. Are frontline health care workers involved in both planning and executing the implementation of IPC guidelines in addition to IPC personnel?	No	
	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	
	Yes	7.5
7. Do health care workers receive specific training related to new IPC guidelines introduced in the facility?	No	
	Yes	10
8. Do you regularly monitor the implementation of at least some of the guidelines in your facility?	No	
	Yes	10
Subtotal score		**97.5/100**

Development & Stewardship to Combat Antimicrobial Resistance (http://www.who.int/phi/implementation/research/UpdatedRoadmap-Global-Framework-for-Development-Stewardship-to-combatAMR_2017_11_03.pdf?ua=1, accessed 29 March 2018).

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

Core component 3: Infection Prevention and Control education and training (90/100)

Question	Answer	Score
1. Are there personnel with the IPC expertise to lead IPC training?	No	
	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	
	Yes	10
3. How frequently do health care workers receive training regarding IPC in your facility? **Choose one answer** **Orientation program for new hires and for students** **Internship orientation programs on standard precauations**	Never or rarely	0
	New employee orientation *only* for health care workers	
	New employee orientation and regular (at least annually) IPC training for health care workers offered but not mandatory	
	New employee orientation and regular (at least annually) mandatory IPC training for all health care workers	15
4. How frequently do cleaners and other personnel directly involved in patient care receive training regarding IPC in your facility? **Choose one answer**	Never or rarely	
	New employee orientation *only* for other personnel	
	New employee orientation and regular (at least annually) training for other personnel offered but not mandatory	
	New employee orientation and regular (at least annually) mandatory IPC training for other personnel	15
5. Does administrative and managerial staff receive general training regarding IPC in your facility?	No	0
	Yes	
6. How are health care workers and other personnel trained? **Choose one answer**	No trainings available	
	Using written information and/or oral instruction and/or e-learning *only*	
	Includes *additional* interactive training sessions (for example, simulation and/or bedside training)	10
7. Are there periodic evaluations of the effectiveness of training programmes (for example, hand hygiene audits, other checks on knowledge)? **Choose one answer**	No	
	Yes, but not routinely	
	Yes, regularly (at least annually)	10
8. 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	
	Yes, in some disciplines	5
	Yes, in all disciplines	

9. 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	
	Yes	5
10. Is ongoing development/ education offered for IPC staff (for example, by regularly attending conferences, courses)?	No	
	Yes	10
Subtotal score		**90/100**

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	
	Yes	5
2. Do you have personnel responsible for surveillance activities?	No	
	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	
	Yes	5
4. Do you have informatics/IT support to conduct your surveillance (for example, equipment, mobile technologies, electronic health records)?	No	0
	Yes	
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	
	Yes	5
6. In your facility is surveillance conducted for:		
- Surgical site infections?	No	
	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	
	Yes	2.5
- Clinically-defined infections (for example, definitions based only on clinical signs or symptoms in the absence of microbiological testing)?	No	
	Yes	2.5
- Colonization or infections caused by multidrug-resistant[40] pathogens according to your local epidemiological situation?	No	
	Yes	2.5
- Local priority epidemic-prone infections (for example, norovirus, influenza, tuberculosis (TB), severe acute respiratory syndrome (SARS), Ebola, Lassa fever)?	No	
	Yes	2.5
- Infections in vulnerable populations (for example, neonates, intensive care unit, immunocompromised, burn patients)?[41]	No	
	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	
	Yes	2.5
7. Do you regularly evaluate if your surveillance is in line with	No	

[40] Multidrug-resistant: Non-susceptibility to at least one agent in three or more antimicrobial categories;
[41] If vulnerable patient populations are not treated at your facility, choose answer "Yes".

the current needs and priorities of your facility?[42]	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][43] or if adapted, through an evidence-based adaptation process and expert consultation?	No	
	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) or if adapted, through an evidence-based adaption process and expert consultation?	No	
	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	
	Yes	5
11. Do you have adequate microbiology and laboratory capacity to support surveillance? **Choose one answer**	No	
	Yes, can differentiate gram-positive/negative strains but cannot identify pathogens	
	Yes, can reliably identify pathogens (for example, isolate identification) in a timely manner	
	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	
	Yes	5
13. Do you analyze antimicrobial drug resistance on a regular basis (for example, quarterly/half-yearly/annually)?	No	
	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	
	Yes	2.5
- Clinical leaders/heads of department	No	

[42] A prioritization exercise should be undertaken to determine which HAIs to target for surveillance according to the local context (for example, areas and/or patients most at risk) according to available resources (see Interim practical manual supporting implementation of the *WHO Guidelines on core components of infection prevention* and control programmes).

[43] United States Centers for Disease Control and Prevention (CDC) National Healthcare Safety Network (NHSN) (https://www.cdc.gov/nhsn/index.html, accessed 7 September 2017);
European Centre for Disease Prevention and Control (ECDC) (https://ecdc.europa.eu/en/about-us/partnerships-and-networks/disease-and-laboratory-networks/hai-net, accessed 7 September 2017).

	Yes	2.5
- IPC committee	No	
	Yes	2.5
- Non-clinical management/administration (chief executive officer/chief financial officer)?	No	
	Yes	2.5
15. How do you feedback up-to-date surveillance information? (at least annually) **Choose one answer (monthly report)**	No feedback	
	By written/oral information *only*	
	By presentation and interactive problem-orientated solution finding	7.5
Subtotal score		**95/100**

Core component 5: Multimodal strategies

Definition: http://www.who.int/infection-prevention/publications/ipc-cc-mis.pdf?ua=1

Question	Answer	Score
1. Do you use multimodal strategies[44] to implement IPC interventions? For Hand Hygiene	No	
	Yes	15
2. Do your multimodal strategies include any or all of the following elements: **Choose one answer (the most accurate) per element**	**System change**	
	Element not included in multimodal strategies	
	Interventions to ensure the necessary infrastructure and continuous availability of supplies are in place	
	Interventions to ensure the necessary infrastructure and the continuous availability of supplies are in place and addressing ergonomics[45] and accessibility, such as the best placement of central venous catheter set and tray	10
	Education and training	
	Element not included in multimodal strategies	
	Written information and/or oral instruction and/or e-learning *only*	
	Additional interactive training sessions (includes simulation and/or bedside training)	10
	Monitoring and feedback	
	Element not included in multimodal strategies	
	Monitoring compliance with process or outcome indicators (for example, audits of hand hygiene or catheter practices)	
	Monitoring compliance and providing timely feedback of monitoring results to health care workers and key players	10
	Communications and reminders	

[44] The use of multimodal strategies in IPC has been shown to be the best evidence-based approach to achieve sustained system and behavioural change for the implementation of IPC interventions. 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), (iii) monitoring infrastructures, practices, processes, outcomes and providing data feedback; (iv) reminders in the workplace/communications; and (v) culture change within the establishment or the strengthening of a safety climate. It also includes tools, such as checklists and bundles, developed by multidisciplinary teams that take into account local conditions. All five areas should be considered and necessary action taken, based on the local context and situation informed by periodic assessments. Lessons from the field of implementation science suggest that targeting only one of these five elements (that is, using a "unimodal" strategy) is more likely to result in improvements that are short-lived and not sustainable.

For more information, please see: http://www.who.int/infection-prevention/publications/ipc-cc-mis.pdf?ua=1 and the *Interim practical manual supporting implementation of the WHO Guidelines on Core Components of Infection Prevention and Control Programmes*.

[45] 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.

	Element not included in multimodal strategies	
	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)	
	Safety climate and culture change	
	Element not included in multimodal strategies	
	Managers/leaders show visible support and act as champions and role models, promoting an adaptive approach[46] and strengthening a culture that supports IPC, patient safety and quality	
	Additionally, teams and individuals are empowered so that they perceive ownership of the intervention (for example, by participatory feedback rounds)	10
3. Is a multidisciplinary team used to implement IPC multimodal strategies?	No	0
	Yes	
4. Do you regularly link to colleagues from quality improvement and patient safety to develop and promote IPC multimodal strategies?	No	0
	Yes	
5. Do these strategies include bundles[47] or checklists?	No	
	Yes	10
Subtotal score		**70/100**

[46] 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.

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

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? Quality department responsible for monitoring	No	
	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)? Quality and IPC team	No	
	Yes	7.5
3. Which processes and indicators do you monitor in your facility? **Tick all that apply**	None	
	Hand hygiene compliance (using the WHO hand hygiene observation tool[48] 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, but no regular schedule	
	At least annually	
5. Do you feedback auditing reports (for example, feedback on hand hygiene compliance data or other processes) on the state of the IPC activities/performance? **Tick all that apply**	No reporting	
	Yes, within the IPC team	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 annually)?	No	
	Yes	10
7. Are monitoring and feedback of IPC processes and indicators	No	
	Yes	5

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

performed in a "blame-free" institutional culture aimed at improvement and behavioural change?		
8. Do you assess safety cultural factors in your facility (for example, by using other surveys such as HSOPSC, SAQ, PSCHO, HSC[49])	No	
	Yes	5
Subtotal score		**95/100**

[49] 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: Colla JB, et al. Measuring patient safety climate: a review of survey. Qual Saf Health Care. 2005;14(5):364-6 (https://www.ncbi.nlm.nih.gov/pubmed/16195571, accessed 7 September 2017).

Core component 7: Workload, staffing and bed occupancy[50]

Question	Answer	Score
Staffing		
1.Are appropriate staffing levels assessed in your facility according to patient workload using national standards or a standard staffing needs assessment tool such as the *WHO Workload indicators of staffing need*[51] method?	No	
	Yes	5
2. Is an agreed (that is, WHO or national) ratio of health care workers to patients[52] maintained across your facility? **Choose one answer**	No	
	Yes, for staff in less than 50% of units	
	Yes, for staff in more than 50% of units	
	Yes, for all health care workers in the facility	15
3. Is a system in place in your facility to act on the results of the staffing needs assessments when staffing levels are deemed to be too low?	No	
	Yes	10
Bed occupancy		
4. Is the design of wards in your facility in accordance with international standards[53] regarding bed capacity? **Choose one answer**	No	
	Yes, but *only* in certain departments	
	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	
	Yes, but *only* in certain departments	
	Yes, for all units (including emergency departments and pediatrics)	15
6. Are patients in your facility placed 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	
	Yes, less frequently than twice a week	
	No	15
7. Is adequate spacing of > 1 meter between patient beds ensured in your facility? **Choose one answer**	No	
	Yes, but *only* in certain departments	
	Yes, for all departments (including emergency department and pediatrics)	15
8. Is a system in place in your facility to assess and respond when adequate bed capacity is exceeded?	No	
	Yes, this is the responsibility of the head of department	

[50] Particularly for these questions, the IPC team may need to consult with other relevant teams in the facility to be able to respond to questions accordingly.

[51] 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).

[52] Taking into account all health care workers involved in service delivery and patient care, including clinical staff (doctors, nurses, dentists, medical assistants, etc.), laboratory technicians and other health care workers (for example, cleaners).

[53] 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).

Choose one answer	Yes, this is the responsibility of the hospital administration/management	10
Subtotal score		**100/100**

Core component 8: Built environment, materials and equipment for IPC at the facility level[54]

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	
	Yes, available on average ≥ 5 days per week or every day but not of sufficient quantity	
	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	
	Sometimes, or only in some places or not available for all users	
	Yes, accessible at all times and for all wards/groups	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	
	Yes, stations present, but supplies are not reliably available	
	Yes, reliably available	7.5
4. In your facility, are ≥ 4 toilets or improved latrines[55] available for outpatient settings or ≥ 1 per 20 users for inpatient settings? **Choose one answer**	Less than required number of latrines available and functioning	
	Sufficient number present but not all functioning	
	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	No	

[54] 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). Particularly for these questions, the IPC team may need to consult with other relevant teams in the facility to be able to respond to questions accordingly and accurately.

[55] 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.

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**	Yes, sometimes or only in some of the mentioned areas	
	Yes, always and in all mentioned areas	7.5
6. Is functioning environmental ventilation (natural or mechanical[56]) available in patient care areas?	No	
	Yes	5
7. For floors and horizontal work surfaces, is there an accessible record of cleaning, signed by the cleaners each day? **Choose one answer**	No record of floors and surfaces being cleaned	
	Record exists, but is not completed daily or is outdated	
	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	
	Yes, available but not well maintained	
	Yes, available and well-maintained	5
Patient placement and personal protective equipment (PPE) in health care settings		
9. Do you have single patient rooms or rooms for cohorting[57] patients with similar pathogens if the number of isolation rooms is insufficient (for example, TB, measles, cholera, Ebola, SARS)?[58] **Choose one answer**	No	
	No single rooms but rather rooms suitable for patient cohorting available	
	Yes, single rooms are available	7.5
10. Is PPE[59] available at all times and in sufficient quantity for all uses for all health care workers?	No	
	Yes, but not continuously available in sufficient quantities	
	Yes, continuously available in sufficient quantities	7.5
Medical waste management and sewage		
11. 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	
	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.	

[56] 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.

[57] Cohorting strategies should be based on a risk assessment conducted by the IPC team.

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

[59] Medical non-sterile and surgical sterile gloves, surgical masks, goggles or face shields and gowns are considered as essential PPE. Respirators and aprons should also be available in adequate quantities in all facilities for use when necessary.

	Yes	5
12. 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	
	Yes	5
13. Is an incinerator or alternative treatment technology (either present on or off site and operated by a licensed waste management service) for the treatment of infectious and sharp waste (for example, an autoclave) functional and of a sufficient capacity? **Choose one answer**	No, none present	
	Yes, but not functioning reliably	
	Yes and functioning reliably	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	
	Yes, but not functioning reliably	
	Yes and functioning reliably	5
Decontamination and sterilization		
15. Does your health care facility provide a dedicated decontamination area and/or sterile supply department (either present on or off site and operated by a licensed decontamination management service) for the decontamination and sterilization of medical devices and other items/equipment? **Choose one answer**	No, not present	
	Yes, but not functioning reliably	
	Yes and functioning reliably	5
16. Do you reliably have sterile and disinfected equipment ready for use? **Choose one answer**	No, available on average < five days per week	
	Yes, available on average ≥ five days per week or every day, but not of sufficient quantity	
	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	
	Yes, but *only* sometimes available	
	Yes, continuously available	5
Subtotal score		**100/100**

Interpretation: A three-step process

4. Add up your points

Score	
Section (Core component)	**Subtotals**
9. IPC programme	100
10. IPC guidelines	97.5
11. IPC education and training	90
12. HAI surveillance	95
13. Multimodal strategies	70
14. Monitoring/audits of IPC practices and feedback	95
15. Workload, staffing and bed occupancy	100
16. Built environment, materials and equipment for IPC at the facility level	100
Final total	**747.5/800**

5. 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

6. 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.

Annex 5: IPC Assessment Framework – Holy Family Hospital

INFECTION PREVENTION AND CONTROL ASSESSMENT FRAMEWORK AT THE FACILITY LEVEL

HOLY FAMILY HOSPITAL - RAWALPINDI

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*[60] at the acute health care facility level. The user should be familiar with the contents of these guidelines, including the *Practical manual for the implementation of the IPC core components at the facility level* before using this tool. The IPCAF is a systematic tool that can provide a baseline assessment of the IPC programme and activities within a health care facility, as well as ongoing evaluations through repeated administration to document progress over time and facilitate improvement.

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 (that is, a *self-assessment* tool), but it can also be used for joint assessments, through careful discussions between external assessors (for example, from the Ministry of Health, WHO or other stakeholders) and facility staff. The framework is intended for acute health care facilities, but it can be used in other inpatient health care settings. Although some indicators will be straightforward for high- and middle-income countries, this is a global tool that is valid for assessment of IPC standards in any country. The goal of the framework is to assess the current IPC situation in your facility, that is, 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. If the IPCAF is undertaken as a self-assessment, its usefulness depends on being completed objectively and as accurately as possible. Identifying existing strengths and achievements will help build confidence and convince decision-makers that success and progress is possible. Honestly recognizing gaps will help to create a sense of urgency for the changes needed to improve IPC. For these reasons, it is important to determine the correct score for each section as well as the overall score. Overall, the IPCAF gives a score that can be used as an indicator of the level of progress from an improvement perspective. These results can be used to develop a facility action plan, using the *Practical manual for the implementation of the IPC core components at the facility level* among other resources, 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:

11. prepare for action
12. **conduct a baseline assessment**
13. develop and execute an action plan
14. **evaluate impact**
15. 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.

[60] WHO Guidelines on core components of IPC programmes at the national and acute health care facility level. 2016 (http://www.who.int/infection-prevention/publications/core-components/en/, accessed 29 March 2018).

Who should complete and use the IPCAF?

- Health care professionals/teams responsible for organizing and implementing IPC activities and who have in-depth understanding and knowledge of 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 IPCAF assesses the health care facility as a whole. Of note: in most cases "you" refers to the facility and is not directly addressing the IPC lead/professional answering the question. The IPC team may need to consult with other relevant teams in the facility (for example, health care worker protection and safety, occupational health, surveillance and epidemiology, cleaning and maintenance, environmental health, administration, etc.) to be able to respond to questions accurately.
- The IPCAF is designed for global use at facilities of any size, regardless of their medical focus or development stage.
- If used in joint evaluations, the external assessor should be an IPC professional with an understanding of the recommendations contained in the *WHO Guidelines on core components of IPC programme*.

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 and thus, it 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.

9. **Inadequate**: IPC core components implementation is deficient. Significant improvement is required.
10. **Basic**: Some aspects of the IPC core components are in place, but not sufficiently implemented. Further improvement is required.
11. **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.
12. **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. When unfamiliar with terminology in the stated questions, it is strongly recommended to consult the *WHO Guidelines on core components of IPC programmes* or other resources provided in the footnotes to familiarize yourself with new terms and concepts. Difficulties in answering specific questions could indicate that some IPC aspects are not sufficiently developed at your facility and users are encouraged to self-reflect. This can also help lead to improvement. In general, the user should 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 goal 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. The comparison of different health care facilities should be done very carefully, particularly when of different sizes, medical focus and socioeconomic setting. Therefore, the framework is not primarily intended for external comparison or benchmarking, but these might be possible - provided that a sound methodology is used.

WHO IPC Assessment Framework: Health care facility level

Core component 1: Infection Prevention and Control programme

Question	Answer	Score
1. Do you have an IPC programme?[61] **Choose one answer**	No	
	Yes, without clearly defined responsibilities	5
	Yes, with clearly defined responsibilities and annual work plan	
2. Is the IPC programme supported by an IPC team comprising of IPC professionals?[62] **Choose one answer**	No	
	Not a team, *only* an IPC focal person	
	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	
	No, *only* a part-time infection preventionist available	
	Yes, one per > 250 beds	5
	Yes, one per ≤ 250 beds	
4. Does the IPC team have an IPC team/focal person with dedicated time for IPC activities?	No	
	Yes	10
5. Does the IPC team include both doctors and nurses?	No	
	Yes	10
6. Do you have an IPC committee[63] or an equivalent actively supporting the IPC team?	No	
	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	
	Yes	5
- Senior clinical staff (for example, physician, nurse)	No	
	Yes	

[61] 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. See the *WHO Guidelines on core components of IPC programmes at the national and acute health care facility level* for more information (http://www.who.int/infection-prevention/publications/core-components/en/).
[62] IPC professional: medical or nursing staff trained in a certified IPC course.
[63] An IPC team includes dedicated IPC professionals. An IPC committee is a multidisciplinary group with interested stakeholders across the facility.

- Facility management (for example, biosafety, waste, and those tasked with addressing water, sanitation, and hygiene (WASH))	No	0
	Yes	
8. Do you have clearly defined IPC objectives (that is, in specific critical areas)? **Choose one answer**	No	0
	Yes, IPC objectives *only*	
	Yes, IPC objectives and measurable outcome indicators (that is, adequate measures for improvement)	
	Yes, IPC objectives, measurable outcome indicators and set future targets	0
9. Does the senior facility leadership show clear commitment and support for the IPC programme:		
- By an allocated budget specifically for the IPC programme (that is, covering all IPC activities, including salaries)?	No	0
	Yes	
- By 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	
	Yes	5
10. Does your facility have microbiological laboratory support (either present on or off site) for routine day-to-day use? **Choose one answer**	No	
	Yes, but not delivering results reliably (timely and of sufficient quality)	
	Yes, and delivering results reliably (timely and of sufficient quality)	10
Subtotal score		**70/100**

Core component 2: Infection Prevention and Control guidelines

Question	Answer	Score
1. Does your facility have the expertise (in IPC and/or infectious diseases) for developing or adapting guidelines?	No	
	Yes	7.5
2. Does your facility have guidelines available for:		
- Standard precautions?	No	
	Yes	2.5
- Hand hygiene?	No	
	Yes	2.5
- Transmission-based precautions?[64]	No	0
	Yes	
- Outbreak management and preparedness?	No	0
	Yes	
- Prevention of surgical site infection?[65]	No	0
	Yes[6]	
- Prevention of vascular catheter-associated bloodstream infections?	No	0
	Yes	
- Prevention of hospital-acquired pneumonia ([HAP]; all types of HAP, including (but not exclusively) ventilator-associated pneumonia)?	No	0
	Yes	
- Prevention of catheter-associated urinary tract infections?	No	0
	Yes	
- Prevention of transmission of multidrug-resistant (MDR) pathogens?	No	
	Yes	2.5
- Disinfection and sterilization?	No	
	Yes	2.5
- Health care worker protection and safety[66]	No	0
	Yes	
- Injection safety?	No	0
	Yes	
- Waste management?	No	
	Yes	2.5
- Antibiotic stewardship?[67]	No	0
	Yes	
3. Are the guidelines in your facility evidence-based and consistent with	No	

[64] 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).

[65] If no surgical interventions are undertaken at your facility, choose answer "Yes".

[66] Includes aspects of improving working conditions, detection of occupational diseases, health surveillance of workers, pre-employment screening and vaccinations.

[67] Refers to the appropriate use of antimicrobials to improve patient outcomes while minimizing the development and spread of resistance. More information can be found in the *WHO Global Framework for Development & Stewardship to Combat Antimicrobial Resistance* (http://www.who.int/phi/implementation/research/UpdatedRoadmap-Global-Framework-for-Development-Stewardship-to-combatAMR_2017_11_03.pdf?ua=1, accessed 29 March 2018).

national/international guidelines (if they exist)?	Yes	10
4. Is implementation of the guidelines adapted[68] according to the local needs and resources while maintaining key IPC standards?	No	
	Yes	10
5. Are frontline health care workers involved in both planning and executing the implementation of IPC guidelines in addition to IPC personnel?	No	0
	Yes	
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. Do health care workers receive specific training related to new IPC guidelines introduced in the facility?	No	
	Yes	10
8. Do you regularly monitor the implementation of at least some of the guidelines in your facility?	No	
	Yes	10
Subtotal score		**60/100**

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

Core component 3: Infection Prevention and Control education and training

Question	Answer	Score
1. Are there personnel with the IPC expertise to lead IPC training?	No	
	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	
3. How frequently do health care workers receive training regarding IPC in your facility? **Choose one answer**	Never or rarely	
	New employee orientation *only* for health care workers	
	New employee orientation and regular (at least annually) IPC training for health care workers offered but not mandatory	10
	New employee orientation and regular (at least annually) mandatory IPC training for all health care workers	
4. How frequently do cleaners and other personnel directly involved in patient care receive training regarding IPC in your facility? **Choose one answer**	Never or rarely	
	New employee orientation *only* for other personnel	
	New employee orientation and regular (at least annually) training for other personnel offered but not mandatory	10
	New employee orientation and regular (at least annually) mandatory IPC training for other personnel	
5. Does administrative and managerial staff receive general training regarding IPC in your facility?	No	0
	Yes	
6. How are health care workers and other personnel trained? **Choose one answer**	No trainings available	
	Using written information and/or oral instruction and/or e-learning *only*	5
	Includes *additional* interactive training sessions (for example, simulation and/or bedside training)	
7. Are there periodic evaluations of the effectiveness of training programmes (for example, hand hygiene audits, other checks on knowledge)? **Choose one answer**	No	
	Yes, but not routinely	
	Yes, regularly (at least annually)	10
8. 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	
	Yes, in all disciplines	

9. 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	
10. Is ongoing development/ education offered for IPC staff (for example, by regularly attending conferences, courses)?	No	0
	Yes	
Subtotal score		**45/100**

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	
2. Do you have personnel responsible for surveillance activities?	No	
	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	
4. Do you have informatics/IT support to conduct your surveillance (for example, equipment, mobile technologies, electronic health records)?	No	0
	Yes	
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	
	Yes	5
6. In your facility is surveillance conducted for:		
- Surgical site infections?	No	0
	Yes	
- 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	
- Clinically-defined infections (for example, definitions based only on clinical signs or symptoms in the absence of microbiological testing)?	No	0
	Yes	
- Colonization or infections caused by multidrug-resistant[69] pathogens according to your local epidemiological situation?	No	0
	Yes	
- Local priority epidemic-prone infections (for example, norovirus, influenza, tuberculosis (TB), severe acute respiratory syndrome (SARS), Ebola, Lassa fever)?	No	0
	Yes	
- Infections in vulnerable populations (for example, neonates, intensive care unit, immunocompromised, burn patients)?[70]	No	0
	Yes	
- 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	
7. Do you regularly evaluate if your surveillance is in line with	No	0

[69] Multidrug-resistant: Non-susceptibility to at least one agent in three or more antimicrobial categories;
[70] If vulnerable patient populations are not treated at your facility, choose answer "Yes".

the current needs and priorities of your facility?[71]	Yes	
Methods of surveillance		
8. Do you use reliable surveillance case definitions (defined numerator and denominator according to international definitions [e.g. CDC NHSN/ECDC][72] or if adapted, through an evidence-based adaptation process and expert consultation?	No	0
	Yes	
9. Do you use standardized data collection methods (for example, active prospective surveillance) according to international surveillance protocols (for example, CDC NHSN/ECDC) or if adapted, through an evidence-based adaption process and expert consultation?	No	0
	Yes	
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	
11. Do you have adequate microbiology and laboratory capacity to support surveillance? **Choose one answer**	No	
	Yes, can differentiate gram-positive/negative strains but cannot identify pathogens	
	Yes, can reliably identify pathogens (for example, isolate identification) in a timely manner	
	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	
13. Do you analyze antimicrobial drug resistance on a regular basis (for example, quarterly/half-yearly/annually)?	No	
	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	
- Clinical leaders/heads of department	No	0

[71] A prioritization exercise should be undertaken to determine which HAIs to target for surveillance according to the local context (for example, areas and/or patients most at risk) according to available resources (see Interim practical manual supporting implementation of the *WHO Guidelines on core components of infection prevention* and control programmes).

[72] United States Centers for Disease Control and Prevention (CDC) National Healthcare Safety Network (NHSN) (https://www.cdc.gov/nhsn/index.html, accessed 7 September 2017);
European Centre for Disease Prevention and Control (ECDC) (https://ecdc.europa.eu/en/about-us/partnerships-and-networks/disease-and-laboratory-networks/hai-net, accessed 7 September 2017).

	Yes	
- IPC committee	No	0
	Yes	
- Non-clinical management/administration (chief executive officer/chief financial officer)?	No	0
	Yes	
15. How do you feedback up-to-date surveillance information? (at least annually) **Choose one answer**	No feedback	0
	By written/oral information *only*	
	By presentation and interactive problem-orientated solution finding	
Subtotal score		**25/100**

Core component 5: Multimodal strategies

Definition: http://www.who.int/infection-prevention/publications/ipc-cc-mis.pdf?ua=1

Question	Answer	Score
1. Do you use multimodal strategies[73] to implement IPC interventions?	No	
	Yes	15
2. Do your multimodal strategies include any or all of the following elements: **Choose one answer (the most accurate) per element**	**System change**	
	Element not included in multimodal strategies	
	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[74] and accessibility, such as the best placement of central venous catheter set and tray	
	Education and training	
	Element not included in multimodal strategies	
	Written information and/or oral instruction and/or e-learning *only*	5
	Additional interactive training sessions (includes simulation and/or bedside training)	
	Monitoring and feedback	
	Element not included in multimodal strategies	
	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	
	Communications and reminders	

[73] The use of multimodal strategies in IPC has been shown to be the best evidence-based approach to achieve sustained system and behavioural change for the implementation of IPC interventions. 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), (iii) monitoring infrastructures, practices, processes, outcomes and providing data feedback; (iv) reminders in the workplace/communications; and (v) culture change within the establishment or the strengthening of a safety climate. It also includes tools, such as checklists and bundles, developed by multidisciplinary teams that take into account local conditions. All five areas should be considered and necessary action taken, based on the local context and situation informed by periodic assessments. Lessons from the field of implementation science suggest that targeting only one of these five elements (that is, using a "unimodal" strategy) is more likely to result in improvements that are short-lived and not sustainable.

For more information, please see: http://www.who.int/infection-prevention/publications/ipc-cc-mis.pdf?ua=1 and the *Interim practical manual supporting implementation of the WHO Guidelines on Core Components of Infection Prevention and Control Programmes*).

[74] 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.

	Element not included in multimodal strategies	0
	Reminders, posters, or other advocacy/awareness-raising tools to promote the intervention	
	Additional methods/initiatives to improve team communication across units and disciplines (for example, by establishing regular case conferences and feedback rounds)	
	Safety climate and culture change	
	Element not included in multimodal strategies	
	Managers/leaders show visible support and act as champions and role models, promoting an adaptive approach[75] 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)	
3. Is a multidisciplinary team used to implement IPC multimodal strategies?	No	0
	Yes	
4. Do you regularly link to colleagues from quality improvement and patient safety to develop and promote IPC multimodal strategies?	No	0
	Yes	
5. Do these strategies include bundles[76] or checklists?	No	
	Yes	10
Subtotal score		**45/100**

[75] 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.

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

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	
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	
3. Which processes and indicators do you monitor in your facility? **Tick all that apply**	None	
	Hand hygiene compliance (using the WHO hand hygiene observation tool[77] or equivalent)	5
	Intravascular catheter insertion and/or care	0
	Wound dressing change	0
	Barrier precautions and isolation to prevent the spread of multidrug resistant organisms (MDRO)	0
	Cleaning of the ward environment	0
	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, but no regular schedule	
	At least annually	
5. Do you feedback auditing reports (for example, feedback on hand hygiene compliance data or other processes) on the state of the IPC activities/performance? **Tick all that apply**	No reporting	
	Yes, within the IPC team	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	0
6. Is the reporting of monitoring data undertaken regularly (at least annually)?	No	
	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	
	Yes	5
8. Do you assess safety cultural factors in your facility (for example, by using other surveys such as HSOPSC, SAQ, PSCHO, HSC[78])	No	0
	Yes	
Subtotal score		**50/100**

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

[78] 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: Colla JB, et al. Measuring patient safety climate: a review of survey. Qual Saf Health Care. 2005;14(5):364-6 (https://www.ncbi.nlm.nih.gov/pubmed/16195571, accessed 7 September 2017).

Core component 7: Workload, staffing and bed occupancy[79]

Question	Answer	Score
Staffing		
1.Are appropriate staffing levels assessed in your facility according to patient workload using national standards or a standard staffing needs assessment tool such as the *WHO Workload indicators of staffing need*[80] method?	No	0
	Yes	
2. Is an agreed (that is, WHO or national) ratio of health care workers to patients[81] maintained across your facility? **Choose one answer**	No	0
	Yes, for staff in less than 50% of units	
	Yes, for staff in more than 50% of units	
	Yes, for all health care workers in the facility	
3. Is a system in place in your facility to act on the results of the staffing needs assessments when staffing levels are deemed to be too low?	No	0
	Yes	
Bed occupancy		
4. Is the design of wards in your facility in accordance with international standards[82] regarding bed capacity? **Choose one answer**	No	
	Yes, but *only* in certain departments	5
	Yes, for all departments (including emergency department and pediatrics)	
5. Is bed occupancy in your facility kept to one patient per bed? **Choose one answer**	No	
	Yes, but *only* in certain departments	5
	Yes, for all units (including emergency departments and pediatrics)	
6. Are patients in your facility placed 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	
	Yes, less frequently than twice a week	
	No	15
7. Is adequate spacing of > 1 meter between patient beds ensured in your facility? **Choose one answer**	No	
	Yes, but *only* in certain departments	5
	Yes, for all departments (including emergency department and pediatrics)	
8. Is a system in place in your facility to assess and respond when adequate bed capacity is	No	
	Yes, this is the responsibility of the head	

[79] Particularly for these questions, the IPC team may need to consult with other relevant teams in the facility to be able to respond to questions accordingly.

[80] 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).

[81] Taking into account all health care workers involved in service delivery and patient care, including clinical staff (doctors, nurses, dentists, medical assistants, etc.), laboratory technicians and other health care workers (for example, cleaners).

[82] 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).

exceeded? **Choose one answer**	of department	
	Yes, this is the responsibility of the hospital administration/management	10
Subtotal score		40/100

Core component 8: Built environment, materials and equipment for IPC at the facility level[83]

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	
	Yes, available on average ≥ 5 days per week or every day but not of sufficient quantity	
	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	
	Yes, accessible at all times and for all wards/groups	
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	
	Yes, stations present, but supplies are not reliably available	
	Yes, reliably available	7.5
4. In your facility, are ≥ 4 toilets or improved latrines[84] available for outpatient settings or ≥ 1 per 20 users for inpatient settings? **Choose one answer**	Less than required number of latrines available and functioning	
	Sufficient number present but not all functioning	
	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	No	

[83] 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). Particularly for these questions, the IPC team may need to consult with other relevant teams in the facility to be able to respond to questions accordingly and accurately.

[84] 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.

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**	Yes, sometimes or only in some of the mentioned areas	
	Yes, always and in all mentioned areas	7.5
6. Is functioning environmental ventilation (natural or mechanical[85]) available in patient care areas?	No	
	Yes	5
7. For floors and horizontal work surfaces, is there an accessible record of cleaning, signed by the cleaners each day? **Choose one answer**	No record of floors and surfaces being cleaned	
	Record exists, but is not completed daily or is outdated	2.5
	Yes, record completed daily	
8. Are appropriate and well-maintained materials for cleaning (for example, detergent, mops, buckets, etc.) available? **Choose one answer**	No materials available	
	Yes, available but not well maintained	
	Yes, available and well-maintained	5
Patient placement and personal protective equipment (PPE) in health care settings		
9. Do you have single patient rooms or rooms for cohorting[86] patients with similar pathogens if the number of isolation rooms is insufficient (for example, TB, measles, cholera, Ebola, SARS)?[87] **Choose one answer**	No	
	No single rooms but rather rooms suitable for patient cohorting available	
	Yes, single rooms are available	7.5
10. Is PPE[88] available at all times and in sufficient quantity for all uses for all health care workers?	No	
	Yes, but not continuously available in sufficient quantities	
	Yes, continuously available in sufficient quantities	7.5
Medical waste management and sewage		
11. 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	
	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.	
	Yes	5

[85] 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.

[86] Cohorting strategies should be based on a risk assessment conducted by the IPC team.

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

[88] Medical non-sterile and surgical sterile gloves, surgical masks, goggles or face shields and gowns are considered as essential PPE. Respirators and aprons should also be available in adequate quantities in all facilities for use when necessary.

12. 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	
	Pit in facility but insufficient dimensions; pits/dumps overfilled or not fenced/locked; or irregular municipal waste pick up	
	Yes	5
13. Is an incinerator or alternative treatment technology (either present on or off site and operated by a licensed waste management service) for the treatment of infectious and sharp waste (for example, an autoclave) functional and of a sufficient capacity? **Choose one answer**	No, none present	
	Yes, but not functioning reliably	
	Yes and functioning reliably	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	
	Yes, but not functioning reliably	
	Yes and functioning reliably	5
Decontamination and sterilization		
15. Does your health care facility provide a dedicated decontamination area and/or sterile supply department (either present on or off site and operated by a licensed decontamination management service) for the decontamination and sterilization of medical devices and other items/equipment? **Choose one answer**	No, not present	
	Yes, but not functioning reliably	
	Yes and functioning reliably	5
16. Do you reliably have sterile and disinfected equipment ready for use? **Choose one answer**	No, available on average < five days per week	
	Yes, available on average ≥ five days per week or every day, but not of sufficient quantity	
	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	
	Yes, but *only* sometimes available	
	Yes, continuously available	5
Subtotal score		**92.5/100**

Interpretation: A three-step process

7. Add up your points

Score	
Section (Core component)	**Subtotals**
17. IPC programme	70
18. IPC guidelines	60
19. IPC education and training	45
20. HAI surveillance	25
21. Multimodal strategies	45
22. Monitoring/audits of IPC practices and feedback	50
23. Workload, staffing and bed occupancy	40
24. Built environment, materials and equipment for IPC at the facility level	92.5
Final total	**427.5/800**

8. 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

9. 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.

Annex 6: LOP Technical Meeting IPC Implementation Approach 20TH April 2018

S. No	Participants Name	Organization
1	Dr. Mobeen Memon	Director of Admin and Accounts, D.G Health Services Sindh, Hyderabad
2	Dr. Majid Khan	Deputy Director, Health Department KPK, Peshawar
3	Dr. Syed Yasir Hussain	Deputy Director, Director Public Health
4	Dr. Mumtaz Khan	Head of Pathology, AIMS Muzaffarabad, AJK
5	Dr. Matloob Hussain Raja	Director of General Livestock, D.G Livestock AJK
6	Dr. Nadeem ur Rehman	Technical Officer FELTP, D.G Health Services AJK, Muzzaffarabad
7	Dr. Anisa Afridi	Director of Public Health, D.G Health Services FATA, Peshawar
8	Dr. Himayat ullah	FELTP, D.G Health Services FATA, Peshawar
9	Prof Dr. Naeem Akhtar	Head of Pathology Rawalpindi Medical University
10	Dr. Asim Saeed	Microbiologist, NIH-CDC Project
11	Dr. Noureen Nishtar	WHO
12	Dr. Yasir Waheed	NTP
13	Mr. Ali Mirza	WHO/MNHSRC
14	Mr. Emaad Hassan	Deputy Director, US CDC Pakistan
15	Dr. Mahmood ur Rehman	DRAP
16	Dr. Farah Sabih	WHO
17	Dr Nizam Damani	WHO/HQ
18	Dr. Mala Talaat	WHO/EMRO
19	Dr. Sabeen Afzal	M/o NHSR&C
20	Dr. Mumtaz Ali Khan	NIH
21	Dr. Aamina Bibi Zaheer	NUL
22	Dr. Kalsoom Bibi	VO, L& DD KPK Peshawar
23	Fahmida Iqbal	UNAIDS
24	Dr. Sofia Furqan	NACP
25	Dr. Ehtisham	Livestock Punjab
26	Dr. M. Javed Arshad	National Vet Lab M/o NFS&R
27	Dr Syeda Zahida Sarwar	Program Manager, Inflection Control Program
28	Dr. Aminah Khan	Deputy Program Manager, Inflection Control Program
29	Mr. Kamran Naeem	UNICEF (WASH Specialist)
30	Dr. Naseem Akhtar	PIMS

Annex 7: National IPC Assessment Tool

World Health Organization

Core components for infection prevention and control programmes
National level assessment tool*

For instruction on how to use this assessment tool, refer to the **Updated instructions for the national infection prevention and control assessment tool 2** (IPCAT2)

Country	Pakistan
National health authority	Ministry of National Health Services Regulations & Coordination

Details of person responding to the questionnaire:		***Details of person completing the questionnaire (leave blank if self-assessment)***	
Name	*Dr Sabeen Afzal*	Name	*Dr Farah Sabih*
Title/position	*Deputy Director Programs*	Title/position	*National Professional Officer*
Institution	*Mo NHSR&C*	Institution	*WHO*
E-mail	drsabeenafzal@gmail.com	E-mail	sabihf@who.int

Date(s) of assessment	*20.4.2018*	Assessment mode	Self-assessment
Date(s) of previous asse:	*DD/MM/YY*	(Choose from dropdown list)	Interview

HEALTH CARE WITHOUT AVOIDABLE INFECTIONS

*This tool is based on the 2016 ***WHO Guidelines on core components for infection prevention and control programmes at the national and acute healthcare facility level*** (http://www.who.int/infection-prevention/publications/ipc-components-guidelines/en/)

The tool supports steps two and four of the five implementation steps (baseline assessment and evaluation) contained within the **Interim practical manual supporting national implementation of the WHO guidelines on core components of infection prevention and control programmes** (http://www.who.int/infection-prevention/campaigns/clean-hands/cc-implementation-guideline.pdf?ua=1)

A glossary of terms (abbreviations/acronyms) is included in the Updated instructions for the national infection prevention and control assessment tool 2 (IPCAT2).

1	Infection prevention control (IPC) programmes*	4%		
	Components for assessment (Red font=Gap or "N" response)	Score (Y or N)	Comments	Verifiers
1.1	**Organization and leadership of the programme**	0%		
1.1.1	An active IPC programme exists at the national level	N	Some provinces have dedicated IPC units (Punjab);	*Interview or national IPC programme/work plan, website*
1.1.2	An appointed infection preventionist(s) in charge of the programme can be identified	N		*Interview or national IPC programme/work plan, website*
1.1.3	The appointed technical team of infection preventionist(s) includes both doctors and nurses	N		*Interview or national IPC programme/work plan, website*
1.1.4	The appointed infection preventionist(s) have undergone training in IPC in the prevention of health care-associated infection (HAI)	N		*Interviews, training certificates or equivalent*
1.1.5	The appointed infection preventionist(s) have dedicated time for the tasks (at least one full-time person)	N		*Interview & check of TORs*
1.1.6	The programme has been granted authority to make decisions that influence field implementation	N		*Document signed by most responsible national authority*
1.1.7	There is an identified, protected and dedicated budget allocated according to planned activity	N	Available where some set	*An official document or budget summary*
1.1.8	An official multidisciplinary group/committee or equivalent structure is established to support the IPC team at the national level (for example, national IPC committee)	N		*A national IPC programme/work plan*
1.2	**The scope of IPC responsibilities is defined and includes**	0%		
1.2.1	Development of national policies, guidelines and standards for effective, evidence-based practices	N	National level guidelines were developed in 2004-5. It has been	*Interviews and a national IPC programme/work plan*
1.2.2	Development of a national plan for preventing HAIs relating to endemic pathogens and those with epidemic potential, for example, including national goals, objectives and strategies	N		*Interviews and a national IPC programme/work plan*
1.2.3	Development of national monitoring frameworks to measure implementation with policies, guidelines and standards	N		*Interviews and a national IPC programme/work plan*
1.2.4	Development and support of IPC training and educational programmes to support the facility level	N	No structured system, however, trainings are undertaken by vertical	*Interviews and a national IPC programme/work plan*
1.2.5	Surveillance and epidemiology of HAI and HAI-related aspects of antimicrobial resistance (AMR) in collaboration with epidemiologists, data managers and information technology experts	N		*Interviews and a national IPC programme/work plan*
1.2.6	A national plan to support early detection of HAI outbreaks and prompt and effective response	N		*Interviews and a national IPC programme/work plan*
1.2.7	Assurance of national procurement of adequate supplies for IPC practices, including access to essential infrastructures, materials and equipment necessary for safe IPC practice	N	Some vertical programs and hospitals procure selected IPC supplies. Punjab procures supplies for hospital waste disposal	*Interviews and a national IPC programme/work plan*

1.3	**Clear linkages (including routine communications) between IPC and other programmes and professional organizations**	13%		
1.3.1	Other national programmes, for example AMR, quality and safety, water, sanitation and hygiene, environment, tuberculosis, human immunodeficiency virus, immunization, maternal, child and adolescent health	N	Structures exist without regular coordination; however, they work together on need basis.	*A national IPC programme/work plan & interviews with relevant departments*
1.3.2	Priority public health programs including integration of IPC with IHR & preparedness relating to public health emergencies	N		*A national IPC programme/work plan & interviews with relevant departments*
1.3.3	National referral laboratories and laboratory biosafety	Y	NIH is the NRL for all outbreak investigations in the community in	*A national IPC programme/work plan & interviews with relevant departments*
1.3.4	Occupational health programmes	N		*A national IPC programme/work plan & interviews with relevant departments*
1.3.5	Patient associations/civil society bodies	N		*A national IPC programme/work plan & interviews with relevant departments*
1.3.6	Scientific professional organizations (for example, IPC professional societies and other relevant medical, nursing and allied health professional societies)	N		*A national IPC programme/work plan & interviews with relevant departments*
1.3.7	Training establishments and academia	N		*A national IPC programme/work plan & interviews with relevant departments*
1.3.8	Relevant sub-national bodies, for example, provisional or district health offices	N		*A national IPC programme/work plan & interviews with relevant departments*

*For further information, please refer to page 11 of the *WHO Guidelines on core components on infection prevention and control programmes at the national and acute healthcare facility level*- (Good practice statement 1b: http://www.who.int/infection-prevention/publications/ipc-components-guidelines/en/) and pages 13-22 of *Interim practical manual supporting national implementation of the WHO Guidelines on core components on infection prevention and control programmes* (http://www.who.int/infection-prevention/campaigns/clean-hands/cc-implementation-guideline.pdf)

2	IPC guidelines*	0%		
	Components for assessment (Red font=Gap or "N" response)	Score (Y or N)	Comments	Verifiers
2.1	**Development, dissemination and implementation of national technical guidelines**	0%		
2.1.1	The IPC programme has a mandate to produce guidelines for preventing and controlling HAI	N	National level guidelines were developed in 2004-5. It has been updated in Punjab in 2012.	*A national IPC programme/work plan; URL/web link to guidelines if in the public domain*
2.1.2	The guidelines are for national coverage, including all acute health care facilities (both public and private)	N		*A national IPC programme/work plan*
2.1.3	The guidelines are reviewed at least every five years and updated to reflect the current evidence base	N	National level guidelines were developed in 2004-5. It has been updated in Punjab in 2012	*A national IPC programme/work plan*
2.1.4	The development of guidelines involves the use of evidence-based scientific knowledge and international/national standards	N		*The guidelines & interview*
2.1.5	The IPC programme has the necessary expertise to develop national guidelines	N		*Interviews, training certificates or equivalent*
2.1.6	The IPC programme actively addresses guideline adaptation and standardization of effective preventive practices (standard operating procedures) and their implementation to reflect local conditions	N		*The guidelines & interview & national IPC programme/work plan*
2.1.7	Guideline development involves early engagement of key stakeholders, including involvement of programmes closely linked to IPC (see section 1.3)	N		*The guidelines & interview & national IPC programme/work plan*
2.1.8	The IPC programme develops multimodal implementation strategies using available national/international implementation support packages	N		*The guidelines & interview & national IPC programme/work plan*
2.1.9	The IPC programme has the capability to ensure that the infrastructure and supply-related requirements to enable facility-level guideline implementation are in place/being addressed	N		*Interviews & national IPC programme/work plan*
2.2	**Education and training of relevant healthcare workers on IPC guidelines**	0%		
2.2.1	The IPC programme supports and mandates a programme of health worker education and training on guideline recommendations across all facilities	N	No structured system, however, trainings are undertaken by vertical programs and units where IPC set ups	*A national IPC programme/work plan & review of training materials*
2.2.2	The IPC programme supports and mandates a programme of health worker education and training on guideline recommendations at the pregraduate level	N		*A national IPC programme/work plan & review of training materials*
2.2.3	The IPC programme supports and mandates a programme of health worker education and training on guideline recommendations at the postgraduate level	N		*A national IPC programme/work plan & review of training materials*
2.3	**Monitoring of guideline adherence**	0%		
2.3.1	A national system and schedule of monitoring and evaluation is in place to check on adherence with guideline recommendations, for example, at least annually	N		*The guidelines & interview*

2.4	**Minimum set of national guidelines**	0%		
2.4.1	National guidelines are based on local priorities, frequency of practices and practices associated with the populations most at risk of HAI	N		*The guidelines & interview*
2.4.2	Basic/essential guidelines have been developed based on/adapted from interntional standards**	**N**		*The guidelines & interview*
2.4.3	Specific guidelines to prevent the most prevalent HAIs (catheter-associated urinary tract infection, central line-associated bloodstream infection, surgical site infection, ventilator-associated infection) have been developed, depending on the context and complexity of care required	**N**		*The guidelines & interview*

*For further information, please refer to page 12 of the *WHO Guidelines on core components for infection prevention and control programmes at the national and acute healthcare facility level (*recommendation 2: http://www.who.int/infection-prevention/publications/ipc-components-guidelines/en/) and pages 23-30 of *Interim practical manual supporting national implementation of the WHO Guidelines on core components on infection prevention and control programmes* (http://www.who.int/infection-prevention/campaigns/clean-hands/cc-implementation-guideline.pdf)

** **Basic/essential guidelines include:**
standard precautions; decontamination; safe handling of linen and laundry; health care waste management; respiratory hygiene and cough etiquette; environmental cleaning; prevention of sharps injuries;
hand hygiene;
transmission-based precautions (including patient identification, placement and personal protective equipment);
aseptic technique for invasive procedures (including surgery);
device management for clinical procedures;
sterilization and medical devices decontamination;
safe handling of linen and laundry;
health care waste management;
respiratory hygiene and cough etiquette;
environmental cleaning;

3	IPC education and training*	0%		
	Components for assessment (Red font=Gap or "N" response)	Score (Y or N)	Comments	Verifiers
3.1	Supporting and facilitating IPC education and training at the facility level	0%		
3.1.1	The national IPC programme provides guidance and recommendations for in-service training at the facility level (for example, frequency, expertise required, requirements for new employee orientation, monitoring and evaluation approaches)	N	No structured system, however, trainings are undertaken by vertical programs and units where IPC set ups are functional	*National IPC plans and training curricula & interview*
3.1.2	The national IPC programme provides content and support for IPC training of all health workers at the facility level	N		*National IPC plans and training curricula & interview*
3.1.3	The national IPC programme provides content and support for other personnel that support health service delivery**	N		*National IPC plans and training curricula & interview*
3.1.4	The national IPC programme provides content and support for the training of IPC professionals to support competence development/development of an IPC career pathway	N		*National IPC plans, interview & training certificates or equivalent*
3.1.5	The national IPC programme provides content and support to undertake national HAI surveillance	N		*National IPC plans and training, curricula & interview*
3.2	National curricula and IPC training and education	0%		
3.2.1	National IPC curricula, developed (or under development) in collaboration with local academic institutions are available for pregraduate courses	N		*National IPC plans & curricula;*
3.2.2	National IPC curricula, developed (or under development) in collaboration with local academic institutions is available for postgraduate courses	N		*National IPC plans & curricula*
3.2.3	National curricula are informed by international curricula/networks and adapted to national needs and local resources	N		*National IPC plans & curricula*
3.2.	National curricula are adapted to national needs and local resources	N		*National IPC plans & curricula*
3.2.5	IPC training is integrated into continuing medical, nursing and allied health professional education and training	N		*National IPC plans & interviews*

3.3	**Monitoring of IPC education and training**	0%		
3.3.1	A national system and schedule of monitoring and evaluation is in place to check on the effectiveness of training and education, for example, at least annually	N		*National IPC plans & interviews*

3.4	**Implementation of training and education**	0%		
3.4.1	Standardized training tools in line with national guidelines and international standards to support implementation of curricula are available	N		*National IPC plans, training materials, interviews*
3.4.2	The national IPC training supports packages to promote the use of participatory and team- and task-based strategies	N		*National IPC plans, training materials, interviews*
3.4.3	The national IPC training supports packages to promote the use of simulation	N		*National IPC plans, training materials, interviews*
3.4.4	The national IPC training supports packages to promote the use of multimodal strategies	N		*National IPC plans, training materials, interviews*
3.4.5	The national IPC training supports packages to promote the integration and embedding of IPC training within clinical practice and the training of other disciplines	N		*National IPC plans, training materials, interviews*
3.4.6	The national IPC training supports packages to promote the importance of involving patients or family members in facility-level training programmes	N		*National IPC plans, training materials, interviews*

*For further information, please refer to page 12 of the *WHO Guidelines on core components for infection prevention and control programmes at the national and acute healthcare facility level.* (Good practice statement 3b: http://www.who.int/infection-prevention/publications/ipc-components-guidelines/en/) and pages 31-40 of *Interim practical manual supporting national implementation of the WHO Guidelines on core components on infection prevention and control programmes* (http://www.who.int/infection-prevention/campaigns/clean-hands/cc-implementation-guideline.pdf)

** Including cleaning of the facility, auxiliary service staff and administrative and managerial staff (for example, local authorities and hospital administrators/managers and executive leaders)

4	HAI infection surveillance	0%		
	Components for assessment (Red font=Gap or "N" response)	Score (Y or N)	Comments	Verifiers
4.1	**Coordination of surveillance at the national level**	0%		
4.1.1	A national HAI surveillance programme and network of facilities is established and supported (including financially) by governments and national authorities	N	Some hospitals have the data, which is however, neither	*A national IPC programme/work plan*
4.1.2	The national IPC team is trained in HAI surveillance concepts and methods	N		*A national IPC programme/work plan*
4.1.3	The national IPC programme (or collaborating partner) leads are designated to coordinate the national HAI surveillance programme and network	N		*A national IPC programme/work plan*
4.1.4	The national IPC programme collects a representative sample of data on HAI at the country level or in selected regions according to feasibility, including the use of trained data collectors	N		*A national IPC programme/work plan & interview*
4.1.5	The national HAI surveillance programme links with AMR surveillance systems	N	Included in the AMR NAP	*A national IPC programme/work plan & interview*
4.1.6	The national HAI surveillance programme links with the national public health bodies responsible for International Health Regulations to ensure timely detection of outbreaks	N		*A national IPC programme/work plan & interview*
4.1.7	National HAI surveillance data are used for benchmarking purposes (for example, establishing baselines for comparison)	N		*A national IPC programme/work plan & interview*
4.2	**National objectives of surveillance are defined and include**	0%		
4.2.1	Describing the epidemiology of HAI (that is, incidence and/or prevalence, type, aetiology, severity, burden of disease)	N		*A national IPC programme/work plan; surveillance guidelines & interview*
4.2.2	Identification of risk factors, for example, high-risk populations, procedures and exposures	N	Veritcal programs TB, Heapatits, AIDS work with high risk	*A national IPC programme/work plan; surveillance guidelines & interview*
4.2.3	Early detection of outbreaks	N	Trained staff available upto the district level under DSRU and	*A national IPC programme/work plan; surveillance guidelines & interview*
4.2.4	Informing policy priorities	N		*A national IPC programme/work plan; surveillance guidelines & interview*
4.2.5	Assessment of the impact of IPC interventions	N		*A national IPC programme/work plan; surveillance guidelines & interview*
4.3	**Prioritized HAIs for surveillance are defined and include**	0%		
4.3.1	Epidemic-prone infections (for example, norovirus, influenza, severe acute respiratory syndrome)	N		*A national IPC programme/work plan; surveillance guidelines & interview*
4.3.2	Infections in vulnerable populations (for example, neonates, burn patients, intensive care unit patients, immunocompromised hosts)	N		*A national IPC programme/work plan; surveillance guidelines & interview*
4.3.3	Infections that may cause severe outcomes	N		*A national IPC programme/work plan; surveillance guidelines & interview*
4.3.4	Infections caused by multidrug-resistant, extensive drug-resistant and pandrug pathogens (for example, WHO priority/Global Antimicrobial Surveillance Systems**)	N		*A national IPC programme/work plan; surveillance guidelines & interview*
4.3.5	Infections associated with invasive devices or specific procedures (for example, intravascular devices, surgery, etc.)	N		*A national IPC programme/work plan; surveillance guidelines & interview*
4.3.6	Infections that may affect health care workers in clinical, laboratory and other settings (for example, hepatitis B or C, human immunodeficiency virus, influenza)	N		*A national IPC programme/work plan; surveillance guidelines & interview*

4.4	**Methods of surveillance are defined and include**	**0%**		
4.4.1	Standardized active prospective data collection methods	N		*A national IPC programme/work plan; surveillance guidelines & interview*
4.4.2	Standardized case definitions of infections (including accurate denominators) informed by international standards, careful local expert consultation and validation	N	Disease prioritization list is notifed for both Health & Vet	*A national IPC programme/work plan; surveillance guidelines & interview*
4.4.3	Systems to regularly assess data quality (for example, review of case report forms, microbiology results, denominator determination) and surveillance programme attributes (for example, sensitivity, specificity, user-acceptability)	N		*A national IPC programme/work plan; surveillance guidelines & interview*

4.5	**Microbiology and laboratory support**	**0%**		
4.5.1	The national IPC programme has microbiological support to monitor certain organisms (at least one national reference microbiology laboratory)	N	Microbiology capability exists for supporting IPC, which maybe	*A national IPC programme/work plan; surveillance guidelines & interview*
4.5.2	Microbiological data on the aetiology and patterns of AMR (at least for prioritized HAIs, for example, most severe infections)	N		*A national IPC programme/work plan; surveillance guidelines & interview*

4.6	**Information is analyzed and timely feedback provided to all relevant stakeholders**	**0%**		
4.6.1	Clear and regular reporting lines from facility to the national level are in place	N		*A national IPC programme/work plan; surveillance guidelines & interview*
4.6.2	National IPC programme has a clear plan for data management and analysis at the national level	N		*A national IPC programme/work plan; surveillance guidelines & interview*
4.6.3	National IPC programme provides timely feedback reports to relevant stakeholders on the national situation of HAI and special events	N		*A national IPC programme/work plan; surveillance guidelines, feedback reports & interview*
4.6.4	National IPC programme provides timely feedback reports to relevant stakeholders on outbreak management and control	N		*A national IPC programme/work plan; surveillance guidelines, feedback reports & interview*
4.6.5	National IPC programme provides timely feedback reports to relevant stakeholders on HAI caused by multidrug-resistant pathogens	N		*A national IPC programme/work plan; surveillance guidelines, feedback reports & interview*
4.6.6	HAI surveillance data are linked with available IPC and water, sanitation and hygiene monitoring data	N		*A national IPC programme/work plan & interview*
4.6.7	Feedback reports from the national level to relevant stakeholders contain both analyses and recommendations	N		*A national IPC programme/work plan; surveillance guidelines, feedback reports & interview*

*For further information, please refer to page 13 of the *WHO Guidelines on core components for infection prevention and control programmes at the national and acute healthcare facility level*. (Recommendation 4b: http://www.who.int/infection-prevention/publications/ipc-components-guidelines/en/) and pages 41-49 of *Interim practical manual supporting national implementation of the WHO Guidelines on core components on infection prevention and control programmes* (http://www.who.int/infection-prevention/campaigns/clean-hands/cc-implementation-guideline.pdf)

**WHO priority organisms http://www.who.int/medicines/publications/WHO-PPL-Short_Summary_25Feb-ET_NM_WHO.pdf?ua=1

6	Monitoring/audit of IPC practices, feedback and control activities*	0%		
	Components for assessment (Red font=Gap or "N" response)	Score (Y or N)	Comments	Verifiers
6.1	**Monitoring/audit and feedback framework for IPC is established at national level, including**	0%		
6.1.1	A well-defined plan focusing on IPC outcomes, processes and strategies, with clear goals, targets and operational plans	N		*A national IPC programme/work plan, IPC indicators & interview*
6.1.2	IPC indicators integrated within national monitoring systems, for example, health management information system	N		*A national IPC programme/work plan, IPC indicators, HMIS (or equivalent) reports & interview*
6.1.3	Development of tools to collect information needed for monitoring/audit and feedback in a systematic way including the WHO hand hygiene self-assessment framework	N		*A national IPC programme/work plan, IPC indicators & interview*
6.1.4	National monitoring/audit and feedback activities aligned with equivalent activities at the local level (focused on core IPC indicators)	N		*A national IPC programme/work plan, IPC indicators & interview*
6.1.5	A mechanism to train national and local auditors is in place	N		*A national IPC programme/work plan, IPC indicators & interview*
6.1.6	Mechanisms to link/cross-reference IPC monitoring/audit data with available water, sanitation and hygiene monitoring data	N		*A national IPC programme/work plan, IPC indicators & interview*

6.2	**Monitoring/audit indicators are defined**	0%		
6.2.1	Hand hygiene compliance monitoring and feedback is identified as a key national indicator, at the very least for reference hospitals	N	WASH is functioning under MoCC with limited coordinatination with Health sector or social mobilization for hand	*A national IPC programme/work plan & interview*
6.2.2	All indicators are linked to the targets established by the national IPC work plan	N		*A national IPC programme/work plan & interview*
6.2.3	Core indicators include both process and outcome indicators (for example, focused on structures/infrastructure and the environment as well as practices of health care workers)	N		*A national IPC programme/work plan & interview*
6.2.4	A minimal set of core indicators for health care facilities in the country is defined	N		*List of indicators*

6.3	**Monitoring/audit and feedback process and reporting**	0%		
6.3.1	Information on the monitoring/audit of national IPC goals and strategies is collected regularly	N		*Monitoring/audit reports*
6.3.2	Monitoring/audit of IPC activities and structures of health care facilities is conducted regularly	N		*Monitoring/audit reports*
6.3.3	Information collected is regularly analyzed and used to inform national decision making	N		*Monitoring/audit reports*
6.3.4	Evaluation of the performance of local IPC programmes is performed in an improvement-oriented institutional culture	N		*Monitoring/audit reports*
6.3.5	The IPC national programme facilitates facility-level self or peer evaluation against national standards/goals	N		*A national IPC programme/work plan & interview*
6.3.6	Regular reports of monitoring/audit results are provided to drive improvement action at the facility level as part of a multimodal strategy	N		*Monitoring/audit reports*

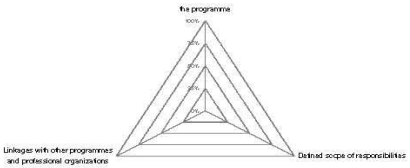
*For further information, please refer to page 15 of the WHO Guidelines on core components for infection prevention and control programmes at the national and acute healthcare facility level. (Recommendation 6b: http://www.who.int/infection-prevention/publications/ipc-components-guidelines/en/) and pages 60-68 of *Interim practical manual supporting national implementation of the WHO Guidelines on core components on infection prevention and control programmes* (http://www.who.int/infection-prevention/campaigns/clean-hands/cc-implementation-guideline.pdf)

Assessment of IPC core components at the national level - summary results

IPC programmes	4%
IPC guidelines	0%
IPC education and training	0%
HAI infection surveillance	0%
Multimodal strategies	0%
Monitoring/audit of IPC practices, feedback and control activities	0%

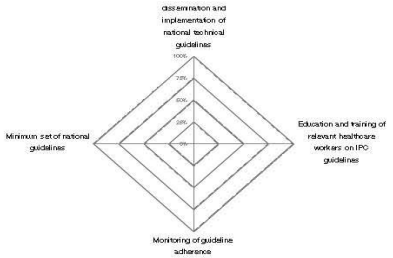
1 IPC programme

Elements	Score
Organization and leadership of the programme	0%
Defined scope of responsibilities	0%
Linkages with other programmes and professional organizations	13%



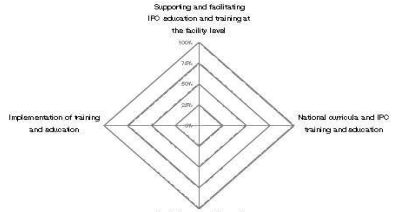
2 IPC guidelines

Elements	Score
Development, dissemination and implementation of national technical guidelines	0%
Education and training of relevant healthcare workers on IPC guidelines	0%
Monitoring of guideline adherence	0%
Minimum set of national guidelines	0%



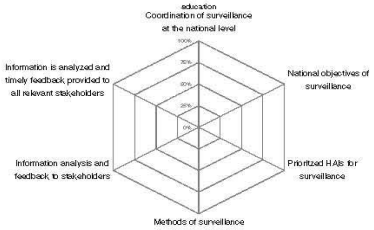
3 IPC education and training

Elements	Score
Supporting and facilitating IPC education and training at the facility level	0%
National curricula and IPC training and education	0%
Monitoring of training and education	0%
Implementation of training and education	0%



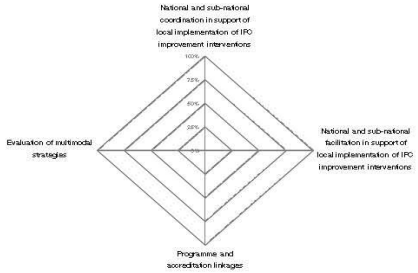
4 HAI infection surveillance

Elements	Score
Coordination of surveillance at the national level	0%
National objectives of surveillance	0%
Prioritzed HAIs for surveillance	0%
Methods of surveillance	0%
Information analysis and feedback to stakeholders	0%
Information is analyzed and timely feedback provided to all relevant stakeholders	0%



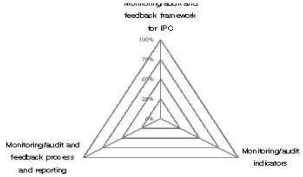
5 Multimodal strategies

Elements	Score
National and sub-national coordination in support of local implementation of IPC improvement interventions	0%
National and sub-national facilitation in support of local implementation of IPC improvement interventions	0%
Programme and accreditation linkages	0%
Evaluation of multimodal strategies	0%



6 Monitoring/audit, feedback and control activities

Elements	Score
Monitoring/audit and feedback framework for IPC	0%
Monitoring/audit indicators	0%
Monitoring/audit and feedback process and reporting	0%



Annex 8: LOP Partners' Meeting on AMR 23 April 2018

AMR IPC MISSION MEETING 23 April 2018

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