National Action Plan on Infection Prevention and Control For Healthcare Facilities

2022 – 2023

MINISTRY OF HEALTH AND WELLNESS AND THE WORLD HEALTH ORGANIZATION

Republic of Mauritius

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Foreword by the Minister of Health and Wellness

On behalf of the Ministry of Health and Wellness, I am delighted to present this national action plan which will, for the first time, nationally, standardize and guide the development of the Infection Prevention and Control Programme in Mauritius.

Infection prevention and control is the cornerstone of safe patient care. The experience of COVID-19 has highlighted the need for all services to access infection prevention and control advice in a timely fashion, relevant to the service they deliver. Proper implementation of the systems and practices required to ensure adequate infection prevention and control will reduce to a minimum the transmission of infections within our healthcare system.

This action plan translates the visions of the Ministry's national policy into ambitious strategies and goals. I recommend this action plan to all and ask that all key players support its successful implementation in order to save lives.

This was truly a collaborative project, and I would like to express my sincere gratitude to all those who were involved in supporting the development of this action plan including the World Health Organization.

Dr. The Honorable K. K. S. Jagutpal

Minister of Health and Wellness

28 March 2022

Acknowledgement

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I am thankful in particular to Dr. F. Shaikh, WHO Technical Officer for Health System Strengthening, and Dr. T. Karimba, WHO Clinical Epidemiologist and IPC Consultant, for collaborating with us in developing this document.

I also wish to extend my appreciation to the IPC team members of the regional hospitals who offered their opinions during the SWOT analysis and who helped with the elaboration of the operational plan.

Dr. D. C. Nuckchady
National IPC Focal Point

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List of abbreviations

AMR	Antimicrobial Resistance
CAUTI	Catheter-Associated Urinary Tract Infection
CIC	Consultant In Charge
CLABSI	Central Line Associated Bloodstream Infection
CNE	Continuous Nursing Education
HAI	Hospital-Acquired Infections
HCF	Healthcare Facilities
HCW	Healthcare Worker
ICT	IPC Team
ICU	Intensive Care Unit
IPC	Infection Prevention and Control
IPCAT-2	Infection Prevention and Control Assessment Tool 2
IT	Information Technology
IWC	IPC Writing Committee
KAP	Knowledge, Attitudes and Practices
MDRO	Multi-Drug Resistant Organisms
METEST	Ministry of Education, Tertiary Education, Science and Technology
MIH	Mauritius Institute of Health
MITCI	Ministry of Information Technology, Communication and Innovation
MOHW	Ministry of Health and Wellness
NAP	National Action Plan
NIC	National IPC Committee
NIFP	National IPC Focal Point
NIG	National IPC Guidelines
PPE	Personal Protective Equipment
RIC	Regional IPC Committee
SOP	Standard Operating Procedure
SSI	Surgical Site Infection
SWOT	Strengths, Weaknesses, Opportunities, and Threats
ToR	Terms of Reference
VAP	Ventilator Associated pneumonia
WHO	World Health Organization

Executive summary

The overarching objective of this national action plan is “to promote patient and staff safety by preventing the spread of healthcare-related infections”.

This action plan covers a span of 2 years only and lays out the basic steps required to establish the backbone of a proper infection prevention and control programme in Mauritius. Its goals are:

1. Disseminating guidelines and other information on infection prevention and control.
2. Setting up a surveillance system for hospital-acquired infections and for antimicrobial resistance.
3. Finding ways to avoid ruptures in the supply chain of materials and equipment needed for infection prevention and control.

The following 5 strategic objectives were identified as being necessary to achieve the above goals:

1. Improving the infection prevention and control programme, writing up new standard operating procedures and disseminating the National IPC Guidelines.
2. Training in infection prevention and control, starting surveillance of hospital-acquired infections and enhancing the surveillance of multi-drug resistant organisms.
3. Increasing the use of multimodal strategies in infection prevention and control.
4. Monitoring and auditing infection prevention and control practices.
5. Ensuring adequate workload, staffing and bed occupancy and guaranteeing that materials and equipment for infection prevention and control are readily available in sufficient quantity.

80 activities were determined to be crucial to help the Ministry actualize these 5 objectives – the matrix in the operational plan elaborates on these activities and includes the indicators that will be used to assess the progress made at the end of the year.

The total cost of this action plan is Rs 17,901,390 over the course of 2 years with an estimated cost of Rs 13,089,890 being spent in 2022 and Rs 4,811,500 in 2023.

Introduction

As per the World Health Organization's (WHO) definition, infection prevention and control (IPC) is a practical, evidence-based approach which prevents patients and health workers from being harmed by avoidable infection and as a result of antimicrobial resistance.

The emergence of new infectious diseases has made all countries around the world realize the necessity for increased awareness and attention to IPC. With the rise of COVID-19 in Mauritius, the Ministry of Health and Wellness (MOHW) with support from other sectors has decided to place more emphasis on the role of IPC in our healthcare facilities.

The National Action Plan on Antimicrobial Resistance (NAP AMR) 2017-2021 of MOHW mentions that its overarching goal is "to promote and ensure the prudent and judicious use of antimicrobials in the human and agricultural sectors with emphasis on the promotion of ***infection prevention and control***, in an endeavor to slow down the rate of development and spread of antimicrobial resistant microorganisms, and to ensure that antimicrobials remain a viable option in the management of infectious diseases" (emphasis added).

In order to achieve its sixth strategic objective which is to dispense effective biosecurity and IPC measures, the following activities have been earmarked in the NAP AMR:

1. Review the membership and terms of reference (ToR) of the National IPC Committee.
2. Review and update the national IPC policy and guidelines for IPC in healthcare facilities and communities.
3. Identify and empower dedicated personnel for the implementation of IPC policy and guidelines in healthcare facilities and communities.
4. Run campaigns on hygiene, hand washing and food security.
5. Progressively implement surveillance of hospital-acquired infections (HAI) in all hospitals.
6. Set up stewardship committees with membership and ToR in healthcare facilities.
7. Incrementally introduce antimicrobial stewardship interventions in healthcare facilities.

It should be noted that with the setting up of the National IPC Committee (NIC) in 2021 and with the designation of a National IPC Focal Point, activities 1 and 2 have been completed while activities 3 and 5 are ongoing. Given the impact of COVID-19 in Mauritius, the public has been thoroughly sensitized on the importance of hand hygiene (i.e., activity 4).

The current document focuses on strategic objectives and activities related to IPC as opposed to just antimicrobial resistance. The total estimated cost of the NAP on IPC is Rs 17,901,390 over the course of 2 years.

The overarching objective of the NAP on IPC is "to promote patient and staff safety by preventing the spread of healthcare-related infections".

Justification

A situation analysis on IPC that was carried out in 2019 to 2020 highlighted multiple weaknesses in our healthcare facilities:

1. Compliance to hand hygiene was only 12% and this eventually dropped to 1% despite training.
2. Patients who were infected with multi-drug resistant organisms (MDRO) were rarely being isolated.
3. Nursing staff was pricking saline pints in an unhygienic manner. This led to the microbial contamination of the intravenous fluids; investigations in 2021 revealed that injecting patients with contaminated fluids possibly contributed to septicemias among several patients.
4. The rate of HAI was elevated compared to that of other countries.
5. The thoroughness of disinfection cleaning score was nil. This suggested that either the disinfectant used was ineffective or the high-touch surfaces in hospitals were not being cleaned (or both). In fact, a report from the Government Analyst Division in 2022 revealed that the concentration of sodium hypochlorite in unopened Javel bottles used in the healthcare facilities is often 0.05% and sometimes 0.4%, which is too low. After dilution, such a disinfectant loses its antimicrobial property.

Mauritius scored 5% on the Infection Prevention and Control Assessment Tool 2 (IPCAT-2) in 2020 – this improved to 41% in 2021 after interventions brought forward by the NIC.

During visits by teams comprised of WHO representatives, specialists and Regional Public Health Superintendents in 2021 to assess the level of compliance of public healthcare centers with respect to IPC in the context of COVID-19, Mauritius scored only 50% - this placed us behind multiple neighboring countries in the African continent. Another assessment 6 months later demonstrated some improvement with the new score being 62%.

Given the above shortcomings, the development of the NAP on IPC 2022-2023 will enable us to better equip our healthcare facilities, to rapidly mobilize resources required for the implementation of standard precautions and transmission-based precautions and to identify and prevent HAI. It is thus hoped that patient and staff safety will be improved.

Methodology

In September 2021, Dr. T. Karimba, WHO Technical Officer, used the IPCAT-2 questionnaire to identify weaknesses in IPC in the public healthcare facilities. With the help of the National IPC Focal Point, relevant actions were picked out to address these gaps. Further input was obtained from the IPC team leaders and deputy IPC team leaders of each of the 5 regions of the country.

Because of the surge of COVID-19 in October and November 2021, the workshops that were planned to finalize the NAP could not be organized. Instead, in December 2021, discussions were carried out amongst stakeholders during 5 working sessions.

Each session was held in a regional hospital with members of the regional IPC team, the Regional Public Health Superintendent, the Regional Nursing Administrator, the Microbiologist, the Medical Superintendent, the Regional Health Services Administrator and/or the Manager of Procurement and Supply. Dr. F. Shaikh and Dr. T. Karimba from WHO acted as facilitators.

Each session was centered around a specific strategic objective as follows:

1. Improving the IPC programme, writing up new standard operating procedures (SOP) and disseminating the National IPC Guidelines (NIG).
2. Training in IPC, starting HAI surveillance and enhancing the surveillance of MDRO.
3. Increasing the use of multimodal strategies in IPC.
4. Monitoring and auditing IPC practices.
5. Ensuring adequate workload, staffing and bed occupancy and guaranteeing that materials and equipment for IPC are readily available in sufficient quantity.

A SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis was conducted to assess the current gaps in the system. A risk analysis together with a risk mitigation strategy was also carried out. The rapporteur from each working session was asked to summarize the findings of the group and to submit a report.

A coordination meeting was conducted at WHO headquarters in order to integrate the work accomplished by each group. After the descriptive part of the NAP was completed, in January 2022, it was sent to the Lead Health Analyst for the costing analysis which took a further 2 months.

SWOT analysis

The SWOT analysis informed the National Action Plan and is shown in table 1.

Strategic objective	SWOT Analysis	
Improving the IPC programme, writing up new SOPs and disseminating the NIG	**Strengths** • The surge in the cases of COVID-19 has made people realize the importance of IPC	**Weaknesses** • Weak regional leadership • ICT members do not have dedicated time for IPC • Lack of motivation of HCW and ICT members to engage themselves in IPC-related activities • Shortage of staff • Limited access to guidelines and SOPs
	Opportunities • NIC / RIC / ICT have been set up • Their ToR have been written and approved	**Threats** • Increased absenteeism due to HCW falling sick from COVID-19 or from other diseases
Training in IPC, starting HAI surveillance and enhancing the surveillance of MDRO	**Strengths** • Robust lab information system • Microbiologist was dedicating some of his time to enter data regarding MDRO	**Weaknesses** • Dedicated staff are not available to carry out surveillance of HAI • Some HCW, especially doctors, are unwilling to be trained in IPC • High rate of absenteeism during training sessions • Nursing staff feel they do not have enough resources or are not empowered to put their theoretical knowledge into practice • Lack of tool to monitor training • No existing lab information system in the bacteriology section
	Opportunities • Trainers are available for training in IPC and they are motivated	**Threats** • Conference rooms and electronic equipment (projectors, etc.) may not be available all the time for training • The Microbiologist may not have the time to continue entering data for the surveillance of MDRO

Increasing the use of multimodal strategies in IPC	**Strengths** • CPD points are available for doctors for training purposes • PowerPoint slides and a brief curriculum on training for IPC have been written and disseminated • Posters on hand hygiene have been printed by WHO and have been disseminated	**Weaknesses** • Signages in isolation wards are inadequate • Nursing staff eat inside isolation wards, thus putting themselves at risk for catching COVID-19 • Ward managers and Consultants-in-Charge do not feel accountable whenever there are breaches in IPC standard
	Opportunities • The National IPC Guidelines have been written, approved and disseminated • IPC teams have been set up in all 5 regions	**Threats** • HCW are likely to resist behavior change
Monitoring and auditing IPC practices	**Strengths** • Checklists have been written and used to assess different wards	**Weaknesses** • Lack of discipline among HCW • Shortage of staff, due to COVID-19, during the peaks of admission
	Opportunities • Ward managers and charge nurses know that they will be evaluated in terms of compliance with sanitary protocols and IPC practices	**Threats** • Frequent changes in IPC team members
Ensuring adequate workload, staffing and bed occupancy and guaranteeing that materials and equipment for IPC are readily available in sufficient quantity	**Strengths** • Strategic geographic location of Mauritius, which can facilitate collaboration with surrounding countries (such as La Réunion, South Africa, India and Australia)	**Weaknesses** • Absence of national standards for patient to staff ratio • Discrepancies between workload & staffing levels • Absence of clear and practical protocol / action plan when bed capacity is exceeded (surge capacity management plan) • IPC's expertise not sought out during the planning of layout of infrastructural building • No adequate ventilation in some areas • Lack of adequate IPC equipment and supplies • Absence of proper vehicle for the transport of waste from wards to storage waste (dumping) areas, etc. • Inadequate distribution of IPC material due to a weak supply chain management system and deficient stock management • Excessive delays in accessing supplies due to unnecessary bureaucracy

	Opportunities • MOHW often receives assistance and support from WHO and other organizations • Political will to improve IPC is currently robust • Financial support is usually adequate • Possibility to explore public-private partnership exists • Government Analyst Division can help to test the quality of some IPC items (e.g., the concentration of Javel)	**Threats** • Some staff state they are burnt out • Vacant positions remain unfilled

Table 1: IPC – Infection Prevention and Control. ICT – IPC Team. HCW – Healthcare Workers. SOP – Standard Operating Procedure. NIG – National IPC Guidelines. NIC – National IPC Committee. RIC – Regional IPC Committee. ToR – Terms of Reference. WHO – World Health Organization. MOHW – Ministry of Health and Wellness. HAI – hospital-acquired infections. CPD – Continuous Professional Development.

Strategic objectives

This section summarizes the strategic objectives and subsequent activities recommended by the NAP on IPC.

The implementation of the NAP will be under the responsibility of the NIC. It is mandated and empowered to complete all the activities recommended in this action plan.

1. Improving the IPC programme, writing up new SOPs and disseminating the NIG

The IPC programme will be improved by:

- Ensuring there is a line of reporting from the wards and the departments in the hospitals and dispensaries to the NIC.
- Giving dedicated time to IPC team members to fulfil activities related to IPC.
- Offering rewards to IPC team members and to wards which are performing well with respect to IPC.

In addition, new SOPs will be written and the old SOPs will be revised. The NAP proposes the development of an applet from which the NIG and SOPs can be downloaded. This will facilitate dissemination.

In order to print these SOPs and to write reports regularly, electronic equipment will need to be bought for the IPC team members to use.

Moreover, the action plan recommends increasing collaboration with other sectors like the Occupational Health Department and the Health and Safety Department.

2. Training in IPC, starting HAI surveillance and enhancing the surveillance of MDRO

Training in IPC will be continued during the next 2 years. It is suggested that Continuous Nursing Education (CNE) points should be given to nursing officers during training and like doctors, they will not be able to renew their registration unless they have received an adequate number of CNE each year.

To boost knowledge in IPC, all healthcare workers (HCW) who will start work in healthcare facilities (HCF) will need to get a training in IPC during induction. Also, the curriculum at the level of the School of Nursing should be modified to include a chapter on IPC.

A national IPC team will have to be set up and trained on HAI surveillance so that accurate data via point prevalence surveys can be collected in a timely manner.

While awaiting the computerization of the lab, additional staff will need to be recruited to gather data on MDRO. Currently, data are collected only for patients admitted to the ICUs – surveillance of MDRO will need to be expanded to include other locations.

3. Increasing the use of multimodal strategies in IPC

Isolation wards are currently not built and maintained at the proper standard. IPC teams will have to create adequate flow plans and provide more support whenever isolation wards are opened in regional hospitals.

More posters and signages will have to be printed and disseminated – these will act as reminders and will help to change the behavior of HCW whenever they are about to see a patient with a contagious illness.

Checklists will have to updated so that HCF can be assessed in an objective and consistent manner.

4. Monitoring and auditing IPC practices

Checks are currently being done in a haphazard manner. A schedule for carrying out IPC audits need to be established.

IPC Liaison Officers should be identified in all wards so that continuous monitoring can occur at all times.

A National IPC Team will visit the HCF for an evaluation every 6 months. Creating this team is of paramount importance.

5. Ensuring adequate workload, staffing and bed occupancy and guaranteeing that materials and equipment for IPC are readily available in sufficient quantity

Understaffing can hinder progress in IPC – the action plan advocates for continuous recruitment of staff, especially to fill vacant positions.

Due to challenges faced when procuring and distributing items, a list of IPC items will need to be created together with their specifications and the amount needed annually should be quantified in a scientific manner. The NAP advises the Procurement Department to have a proper system to manage its stock so as to avoid shortages of items.

The concentration of Javel used in the hospitals should be tested regularly and bottles of Javel should be properly labeled with their concentration.

It should be noted that the current NAP on IPC does not have many activities related to the following components:

1. Employee health i.e., the vaccination and evaluation of HCW who are sick. The National Vaccine Committee and the MAUNITAG are already looking after the vaccination campaign currently.
2. Bundles of care. Basic training in IPC should be instituted before the implementation and monitoring of more advanced and specific techniques.
3. IPC in the community. While this is an essential topic, the prevention and control of community-acquired infections such as malaria, dengue, chikungunya, sexually transmissible infections, HIV, hepatitis, tuberculosis, gastroenteritis, conjunctivitis, lice, scabies, leptospirosis and other notifiable diseases, is already being carried out by various departments at MOHW.
4. Research. Unfortunately, MOHW lags behind in research; publications in peer-reviewed journals are rare. Once enough support and funding are gathered, research in IPC should be started.
5. IPC for animals. Identifying and reducing infections in animals can help prevent the transmission of zoonoses to humans. However, the responsibility of this component partly falls under the Ministry of Agro-Industry and Food Security. Partnership with that ministry will need to be strengthened in the future.

Moreover, to ensure feasibility and limit expenses, costly activities have not been included e.g., setting up negative pressure rooms and building new isolation wards.

It is proposed that some of the above components be emphasized in the subsequent NAP after 2023.

Strategic and operational plan

No.	Activities	Responsibility	Timeframe	Indicators			Cost for 2022 (Rs)	Cost for 2023 (Rs)
				Description	Baseline	Target		
1. Improving the IPC programme, writing up new SOPs and disseminating the NIG								
1.1	ICT should write monthly reports to RIC	ICT	3 months	Number of reports sent per year	0	12	0	0
1.2	Release ICT members 0.5 days per week for IPC work	NIC	3 months	Number of reports / checklists filled per month	0	4	0	0
1.3	Offer an award to the best regional ICT member	RIC	6 months	Number of awards given per region per year	0	2	40,000	40,000
1.4	Have 2 dedicated nurses per regional hospital (after formal training in IPC)	NIC	24 months	Number of dedicated nurses present for IPC in the country	0	10	0	0
1.5	Create an app from which IPC material can be downloaded	MITCI and MOHW	6 months	App is running	No	Yes	200,000	0
1.6	Printing and dissemination of NIG	NIC	1 month	Number of copies printed	0	350	257,250	0
1.7	Printing and dissemination of SOPs after review	NIC	6 months	Percentage of wards with copies of SOPs	0%	100%	0	0
1.8	Review of NIG	IWC	12 months	NIG has been reviewed	No	Yes	0	0
1.9	Buy IT equipment for IPC	NIC	24 months	IT equipment has been bought	No	Yes	460,000	0
1.10	Review of SOPs	IWC	6 months	SOPs reviewed	No	Yes	0	0
1.11	Write an SOP on sterilization	IWC	3 months	SOP has been written	No	Yes	0	0

1.12	Write an SOP on the reuse of face shields	IWC	3 months	SOP has been written	No	Yes	0	0
1.13	Write an SOP on the cleaning of incubators	IWC	3 months	SOP has been written	No	Yes	0	0
1.14	Meeting with CIC of Occupational Health	NIC	3 months	Meeting has been held	No	Yes	0	0
1.15	Meeting with Health and Safety Officer	NIC	3 months	Meeting has been held	No	Yes	0	0
1.16	Offer an award to the ward with the best IPC practices	RIC	6 months	Number of awards given per region per year	0	2	20,000	20,000
1.17	Print and disseminate relevant communication materials like posters and brochures	NIC	12 months	Whether the communication materials have been printed and disseminated	No	Yes	122,500	0
1.18	Write an SOP on the handling of central lines	IWC	3 months	SOP has been written	No	Yes	0	0
1.19	Write a biosafety manual for the laboratory	NIC and Central Health Laboratory	24 months	Biosafety manual has been written	No	Yes	0	0
1.20	Allowance for reviewing SOPs and guidelines, editing writing material, doing overtime and supervising teams	NIC and Human Resource	12 months	Allowance has been given	No	Yes	300,000	300,000
2. Training in IPC, starting HAI surveillance and enhancing the surveillance of MDRO								
2.1	Annual point prevalence surveys for each HAI (VAP, CAUTI, CLABSI and SSI)	NIC	12 months	Number of reports from surveys per year	0	4	0	0
2.2	Require CNE for the annual registration of nursing officers	NIC and Nursing Council	12 months	CNE requirement is approved	No	Yes	0	0
2.3	Training of all HCW in IPC during	NIC	12 months	Induction training in	No	Yes	0	0

	induction			IPC has started				
2.4	Change nursing curriculum to include a chapter on IPC	NIC and METEST	24 months	Curriculum has been adapted	No	Yes	0	0
2.5	Train HCW who have already been recruited in basic IPC	RIC	24 months	Number of HCW trained per region per year	350	500	625,000	625,000
2.6	Institute feedback mechanism from participants on trainers	RIC	6 months	Feedback mechanism present	No	Yes	0	0
2.7	To electronically collect data on MDRO at JH and SSRNH	NIC and Director of Laboratory Services	12 months	Whether data are reaching NIFP electronically from JH and SSRNH	No	Yes	0	0
2.8	To expand data collection on MDRO to non-ICU locations	NIC and Director of Laboratory Services	24 months	Whether MDRO data on non-ICU places are being collected and submitted to NIFP	No	Yes	80,000	0
2.9	To have a National IPC Team to conduct HAI surveillance and outbreak investigations	NIC	24 months	Whether a National IPC Team is available	No	Yes	0	0
2.10	Set up a diploma course in IPC	NIC and MIH	12 months	Recruitment of nursing officers for the diploma course in IPC has started	No	Yes	2,430,640	0
2.11	Encourage training through online IPC courses	NIC	24 months	Online training material is available for use	No	Yes	0	0
2.12	Carry out a KAP survey on IPC	NIC	24 months	Report on KAP survey is available	No	Yes	0	0
2.13	Give a Training Acknowledgement Form to HCW trained in IPC	NIC	6 months	Training Acknowledgement Form is written and used	No	Yes	0	0

3. Increasing the use of multimodal strategies in IPC								
3.1	Develop a flow plan and proper layout for isolation facilities and flu clinics	RIC	6 months	Flow plan and layout have been written for all isolation facilities and flu clinics	No	Yes	0	0
3.2	To review the current checklists used for monitoring	NIC	3 months	Checklists have been reviewed	No	Yes	0	0
3.3	Write antibiotic guidelines to reduce antibiotic abuse	IWC	18 months	Antibiotic guidelines are available	No	Yes	100,000	0
3.4	Set up Antimicrobial Stewardship Teams in each regional hospital	NIC	24 months	Number of Antimicrobial Stewardship Teams available nationally	0	5	0	0
3.5	Assess antimicrobial consumption annually	NIC	12 months	Number of reports on antimicrobial consumption per year	0	1	0	0
3.6	Install elbow taps in all high-risk areas	NIC	24 months	Percentage of high-risk areas with elbow taps	NA	100%	160,000	0
3.7	Have bedside sanitizer holders in all high-risk areas	NIC	12 months	Percentage of high-risk areas with bedside sanitizer holders	0%	100%	50,000	0
3.8	Have properly colored pedal bins in all high-risk areas	NIC	12 months	Percentage of high-risk areas with colored pedal bins	NA	100%	95,000	0
3.9	To remove cloth curtains and replace them with plastic curtains in all high-risk areas	RIC	12 months	Percentage of high-risk areas with plastic curtains	NA	100%	100,000	0
3.10	Improve ventilation in COVID-19 ICUs	NIC	12 months	Percentage of COVID-19 ICUs where ventilation has been improved	0%	100%	1,050,000	0

3.11	To have aluminium or plastic washable dividers in high-risk areas	RIC	24 months	Percentage of high-risk areas with proper dividers	0%	100%	250,000	0
3.12	Destination should be alerted before moving contagious patients (including those with MDRO) – this should be documented	RIC	12 months	Percentage of times destination is alerted when contagious patients are moved	0%	100%	0	0
3.13	Have a cleaning schedule in use in all wards	RIC	6 months	Percentage of wards filling the cleaning schedule	0%	100%	0	0
3.14	Improve ventilation in hemodialysis units	NIC	6 months	Percentage of hemodialysis units where ventilation has improved	0	100%	0	0
4. Monitoring and auditing IPC practices								
4.1	Have an IPC book in each ward for the IPC Liaison Officer to fill in	RIC	3 months	Percentage of wards with the IPC book	0%	100%	0	0
4.2	Weekly visits of wards or healthcare facilities by ICT members	RIC	3 months	Number of reports submitted to ITL after the visits per month	0	4	0	0
4.3	Nominating IPC Liaison Officers for wards and other healthcare facilities	NIC	6 months	Percentage of wards and healthcare facilities with designated IPC Liaison Officers	0%	100%	0	0
4.4	IPC checks of healthcare facilities countrywide by a National IPC Team	NIC	6 months	Number of reports per year from the NIC to the RIC	0	2	0	0
4.5	Carry out a HCW Assessment Survey on COVID-19 and find out how many HCW may have contracted hospital-acquired COVID-19	NIC	6 months	Report on HCW Assessment Survey	0	1	0	0

4.6	Assess compliance on hand hygiene in each regional hospital through the use of WHO's hand hygiene monitoring tool	RIC	12 months	Report on hand hygiene compliance is available	No	Yes	0	0
4.7	Wards should not prick saline pints in an unhygienic manner for injection	RIC	12 months	Percentage of wards that do not prick saline pints in an unhygienic manner	50%	100%	0	0
4.8	Use the WHO Hand Hygiene Self-Assessment Framework to evaluate each regional hospital	RIC	24 months	Number of reports based on the framework that have been submitted from each regional hospital to NIC	0	5	0	0
4.9	To write outcome indicators and set targets as part of a National Strategic Framework on IPC	NIC	24 months	National Strategic Framework has been written and approved	No	Yes	0	0
4.10	Outbreak thresholds should be updated annually	NIC	12 months	Outbreak thresholds have been updated every year	No	Yes	0	0
4.11	Regional hospitals are informed of all outbreaks that have been identified via a specific form	NIC	6 months	Percentage of outbreaks that are notified to the hospitals	10%	100%	0	0
4.12	Carry out a patient survey on IPC in each region	NIC	24 months	Report from survey is available	No	Yes	0	0
4.13	Obtain monthly data on mortality from sepsis from each hospital	NIC and Department of Health Statistics	12 months	Number of reports submitted each year	0	5	0	0
5. Ensuring adequate workload, staffing and bed occupancy and guaranteeing that materials and equipment for IPC are readily available in sufficient quantity								
5.1	Fill in vacant positions	MOHW	24 months	Percentage of vacant positions for doctors, nurses and attendants	NA	100%	0	0

				that have been filled				
5.2	Make a list of IPC items that are regularly needed	IWC	12 months	List written	No	Yes	0	0
5.3	Quantify the annual amount of IPC items to procure	NIC	12 months	Quantification completed	No	Yes	0	0
5.4	Ensure Javel bottles have a concentration written on them	NIC	6 months	Bottles are correctly labelled	No	Yes	0	0
5.5	Test available Javel in the store for its concentration	NIC	3 months	Concentration is available	No	Yes	0	0
5.6	Procure sufficient quantity of small vials of water and normal saline for injections for each regional hospital	NIC	12 months	Vials have been procured by pharmacy	No	Yes	236,500	236,500
5.7	Buy equipment to assess ventilation quality	NIC	6 months	Equipment has been bought	No	Yes	23,000	0
5.8	Dedicated nursing staff that travel to do IPC checks should get traveling allowance	NIC	12 months	Traveling allowance given to dedicated nurses	No	Yes	0	0
5.9	Buy equipment to assess level of cleanliness in HCF	NIC	6 months	Equipment is bought	No	Yes	110,000	10,000
5.10	Calculate the thoroughness of disinfection cleaning score for each regional hospital	RIC	12 months	Score is calculated and a report is submitted	No	Yes	0	0
5.11	Work with procurement section to see how the management of the stock and the supply distribution can be improved to avoid scarcity of supplies	NIC	24 months	A work plan is written and submitted	No	Yes	0	0
5.12	Have paper towel and paper towel dispensers in all wards	RIC	12 months	Percentage of wards with paper towel and paper towel dispensers	NA	100%	4,880,000	3,380,000
5.13	PPE stations (donning area) should be found close to all isolated	RIC	12 months	Percentage of isolated patients that have PPE	NA	100%	0	0

	patients			near them (donning area)				
5.14	Proper bins (doffing area) should be found close to all isolated patients	RIC	12 months	Percentage of isolated patients that have bins near them (doffing area)	NA	100%	0	0
5.15	Buy 3-bucket mop wringer trolleys	NIC	6 months	Number of trolleys bought	0	100	1,300,000	0
5.16	Buy respirator fit test kits	NIC	6 months	Number of persons that can be tested	0	1000	50,000	50,000
5.17	Buy dry heat sterilization pouches	NIC	12 months	Percentage of wards with dry heat sterilizers that have pouches	0	100%	150,000	150,000
5.18	To reevaluate the needs to buy colored bin bags, dry heat sterilizers, biological and chemical sterilization indicators, disinfectant wipes, semi-permeable dressings for IV lines and alcohol caps	NIC	24 months	Evaluation and quantification has been completed	No	Yes	0	0
5.19	Make a list of commonly used items for IPC that should be renewed automatically in the store	IWC	12 months	List has been written and submitted	No	Yes	0	0
5.20	To assess whether sluice rooms use closed toilets instead of sinks for waste disposal	ICT	24 months	Sluice rooms have been assessed	No	Yes	0	0

Table 2: IPC – Infection Prevention and Control. SOP – Standard Operating Procedure. ICT – IPC Team. RIC – Regional IPC Committee. NIC – National IPC Committee. MITCI - Ministry of Information Technology, Communication and Innovation. MOHW – Ministry of Health and Wellness. NIG – National IPC Guidelines. IWC – IPC Writing Committee. IT – Information Technology. CIC – Consultant In Charge. HAI – Hospital-Acquired Infections. VAP – Ventilator Associated pneumonia. CAUTI – Catheter-Associated Urinary Tract Infection. CLABSI – Central Line Associated Bloodstream Infection. SSI – Surgical Site Infection. CNE – Continuous Nursing Education. HCW – Healthcare Worker. METEST - Ministry of Education, Tertiary Education, Science and Technology. JH – Dr. A. G. Jeetoo Hospital. SSRNH - Sir Seewoosagur Ramgoolam National Hospital. MDRO – Multi-Drug Resistant Organisms. NIFP – National IPC Focal Point. MIH – Mauritius Institute of Health. KAP – Knowledge, Attitudes and Practices. NA – Not Available. ICU – Intensive Care Unit. HCF – Healthcare Facilities. PPE – Personal Protective Equipment.

Recap of the indicative estimated costs for 2 years

	DETAILS OF ACTIVITIES UNDER IPC NAP	Estimated cost for year 2022	Estimated cost for year 2023	Total estimated cost for 2 years
		Rs	Rs	Rs
1.	Improving the IPC programme, writing up new SOPs and disseminating the NIG	1,399,750.00	360,000.00	1,759,750.00
2.	Training in IPC, starting HAI surveillance and enhancing the surveillance of MDRO	3,135,640.00	625,000.00	3,760,640.00
3.	Increasing the use of multimodal strategies in IPC	1,805,000.00	0.00	1,805,000.00
4.	Monitoring and auditing IPC practices	0.00	0.00	0.00
5.	Ensuring adequate workload, staffing and bed occupancy and guaranteeing that materials and equipment for IPC are readily available in sufficient quantity	6,749,500.00	3,826,500.00	10,576,000.00
	TOTAL ESTIMATED COSTS	**13,089,890**	**4,811,500**	**17,901,390**

The average estimated cost per year is Rs 8,950,695.

Risk analysis

The following risks were common to most strategic interventions and their associated activities. Risk identification and mitigation is delineated in the next table:

Risk identification	Risk mitigation
Frequent inter-hospital transfers of IPC team members	Put into place a mentor-mentee apprenticeship prior to the transfers
Inability to attract or motivate dedicated IPC team members	Develop a new cadre for IPC nursing officers
Resistance to behavioral change	Train, educate, support and lead as many HCW as possible
Lack of qualified, trained or interested human resources	Fill vacant posts and identify a budget for dedicated IPC staff
Lack of ownership and/or buy-in by stakeholders	Implement comprehensive consultation, collaboration, sensitization and advocacy for the action plan and obtain Cabinet endorsement.