INFECTION PREVENTION AND CONTROL ASSESSMENT FRAMEWORK

CAHO-ISQua International Webinar Series-41
7 May 2024

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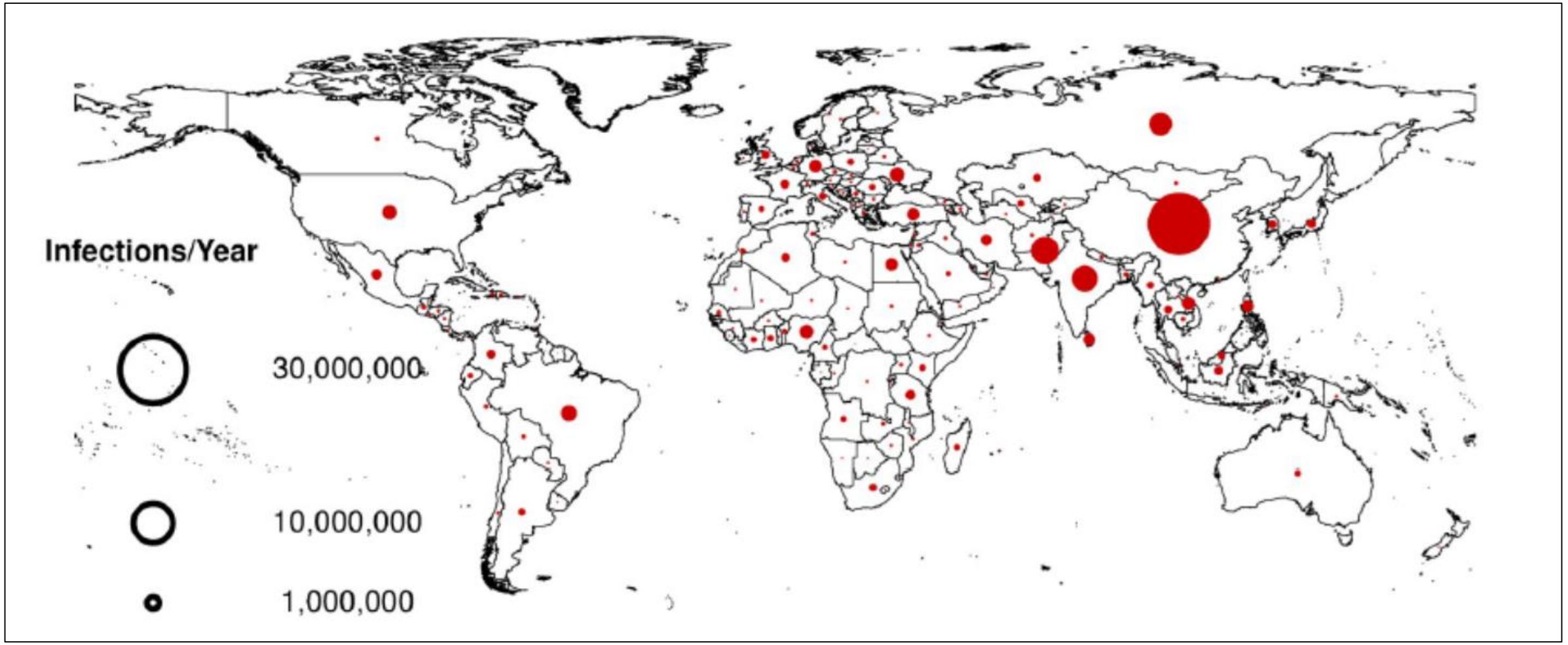
World Health Organization

136 million* hospital-associated antibiotic resistant infections per year, globally

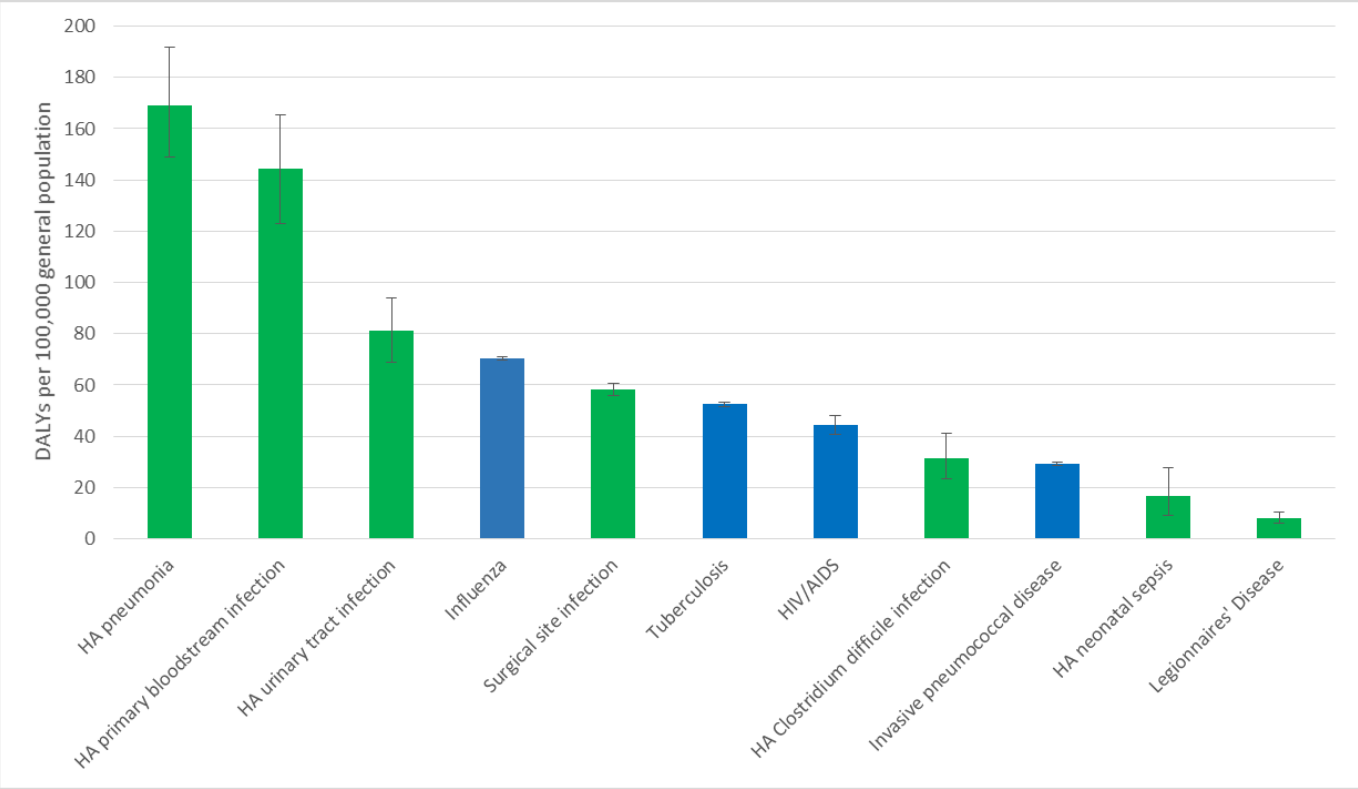
World Health Organization



*(95% credible interval (CI) 26-246 million)

Balasubramanian R, et al; PLoS Med 2023
https://doi.org/10.1371/journal.pmed.1004178

Comparing the burden of HAIs with other infectious diseases in EU/EEA (2011-12)



HAIs
account for **twice the burden**
of 32 other infectious diseases

The burden of 5 (4/5 typically HA) most frequent R pathogens is comparable to the combined burden of influenza, TB & HIV/AIDS

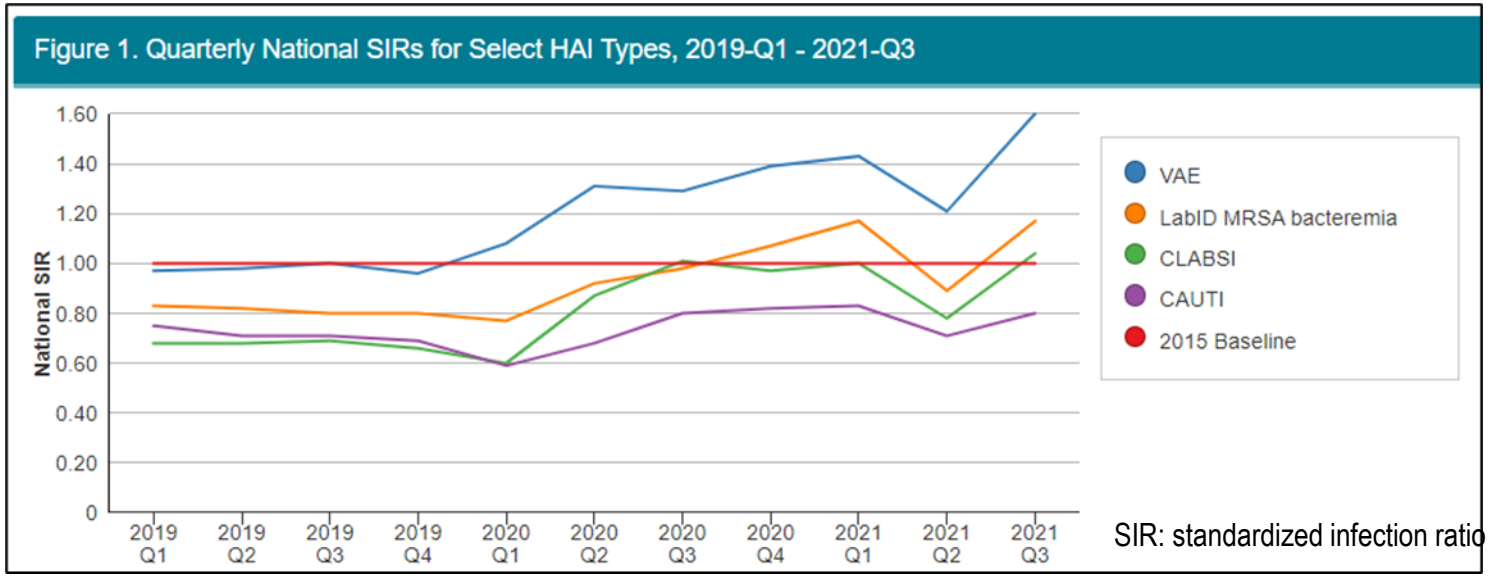
75% of DALYs attributable to AMR in Europe is a result of **HAIs**

DALYs: disability-adjusted life years, i.e. years of life lost to due to premature mortality and years lived with a disability due to HAIs

Cassini A, et al. PLoS Med 2016;13(10):e1002150
Cassini A, et al. Eurosurveillance 2018;23(16):pii=17-00454
Cassini A, et al. Lancet Infect Dis. 2019 Jan;19(1):56-66. doi: 10.1016/S1473-3099(18)30605-4.

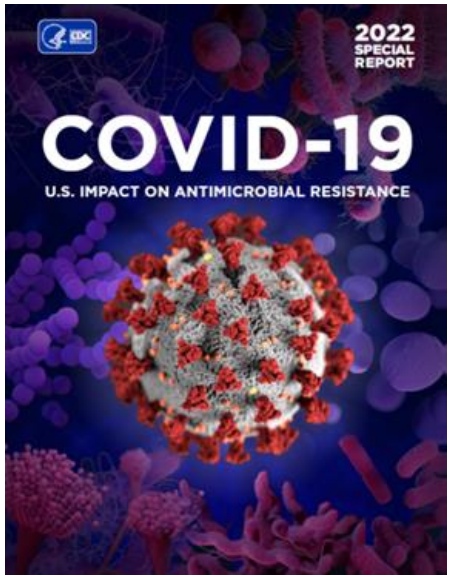
Hospital-acquired infections during the COVID-19 pandemic

World Health Organization

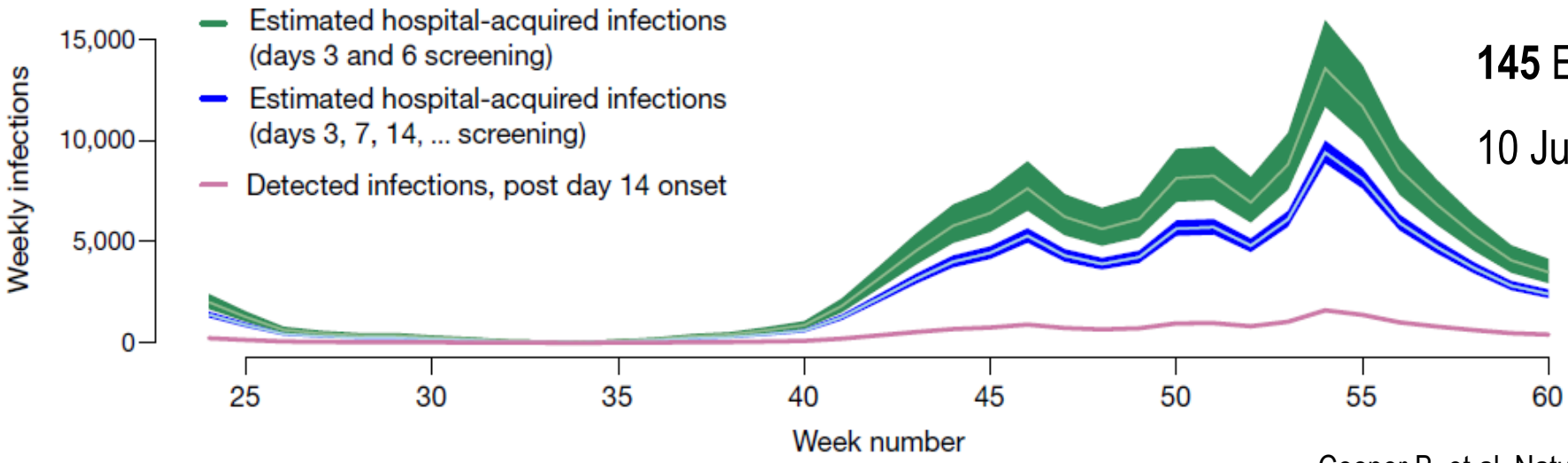


SIR: standardized infection ratio

https://www.cdc.gov/hai/data/portal/covid-impact-hai.html



https://www.cdc.gov/drugresistance/pdf/covid19-impact-report-508.pdf



145 English NHS acute hospital trusts

10 June 2020-17 Feb 2021

99,000-143,000 hospital-acquired SARS-CoV2 (1-2%) of admitted patients

Cooper B, et al. Nature 2023; https://doi.org/10.1038/s41586-023-06634-z

% of countries/facilities meeting ALL WHO IPC minimum requirements

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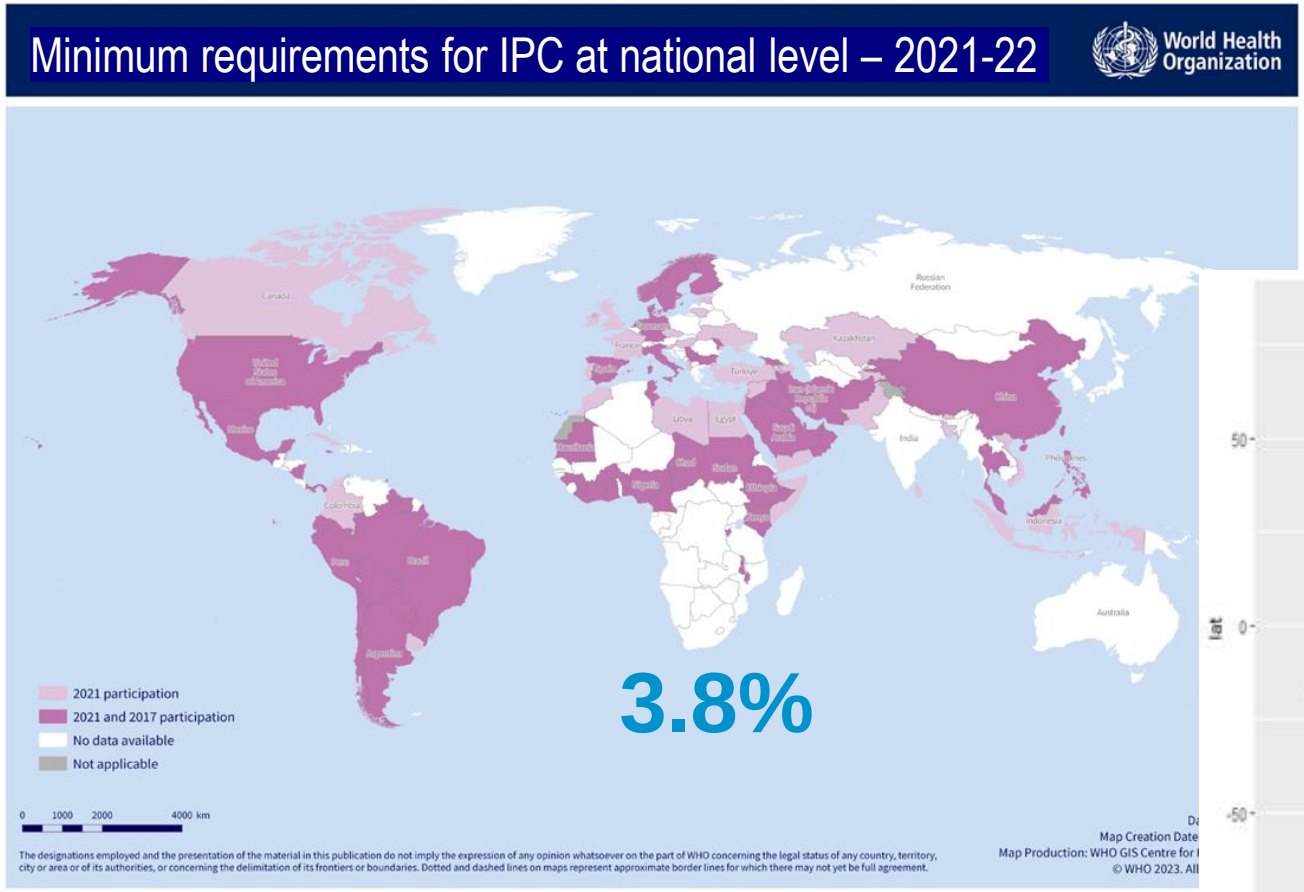
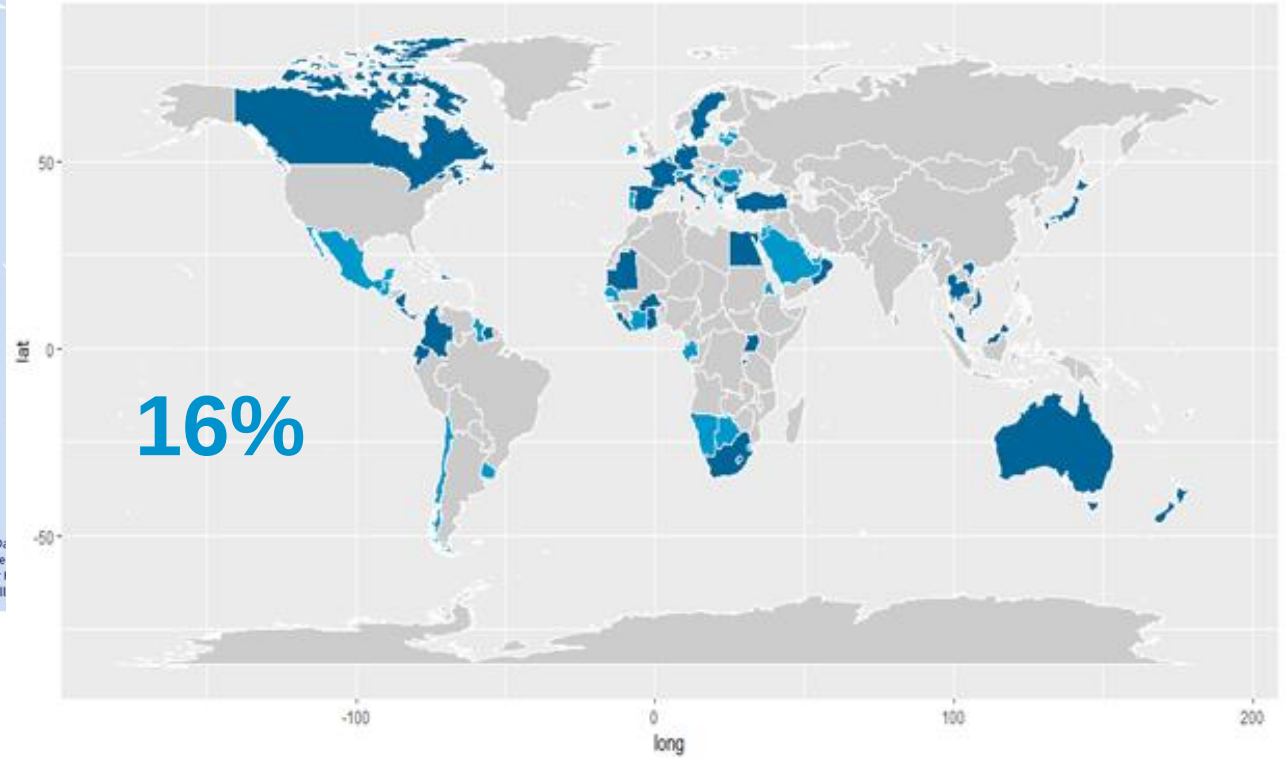
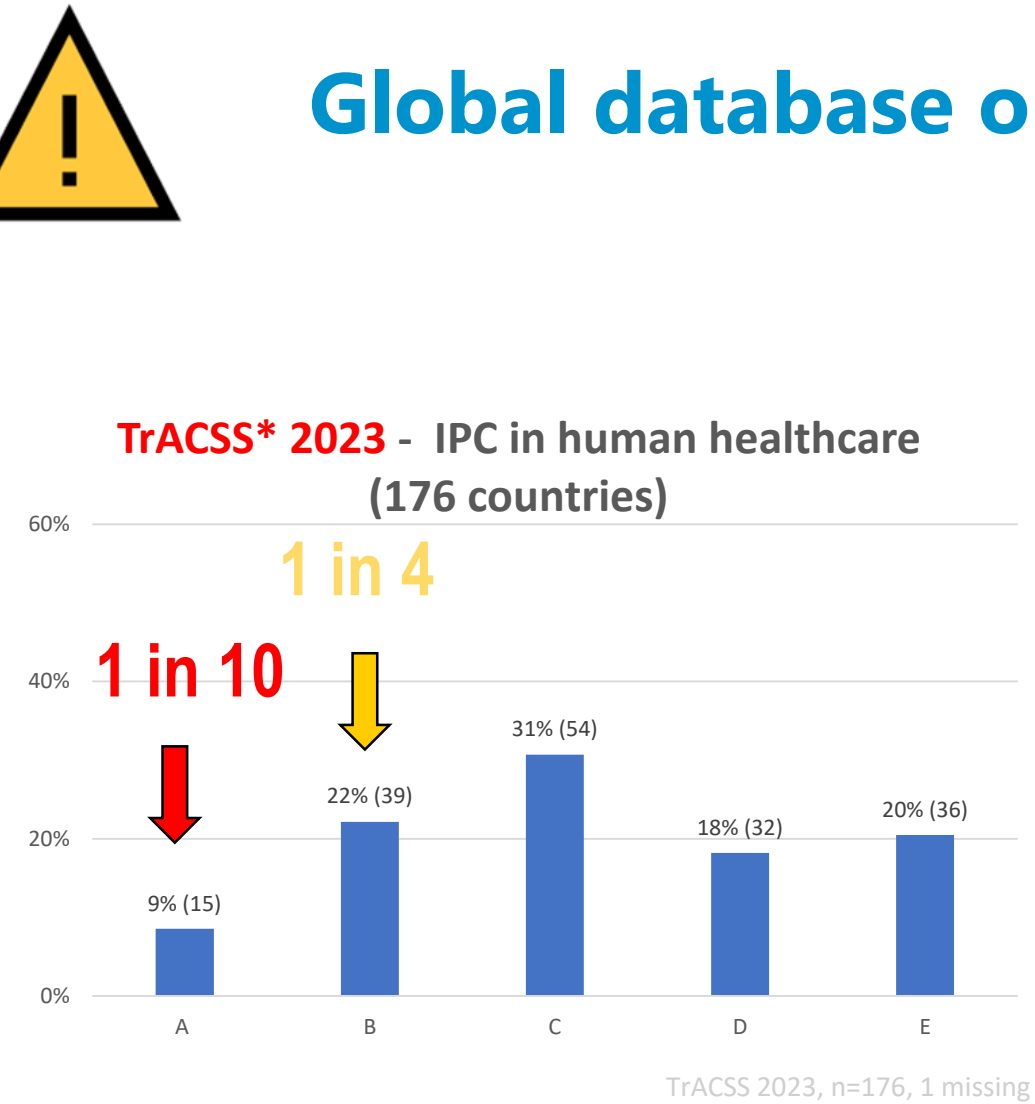




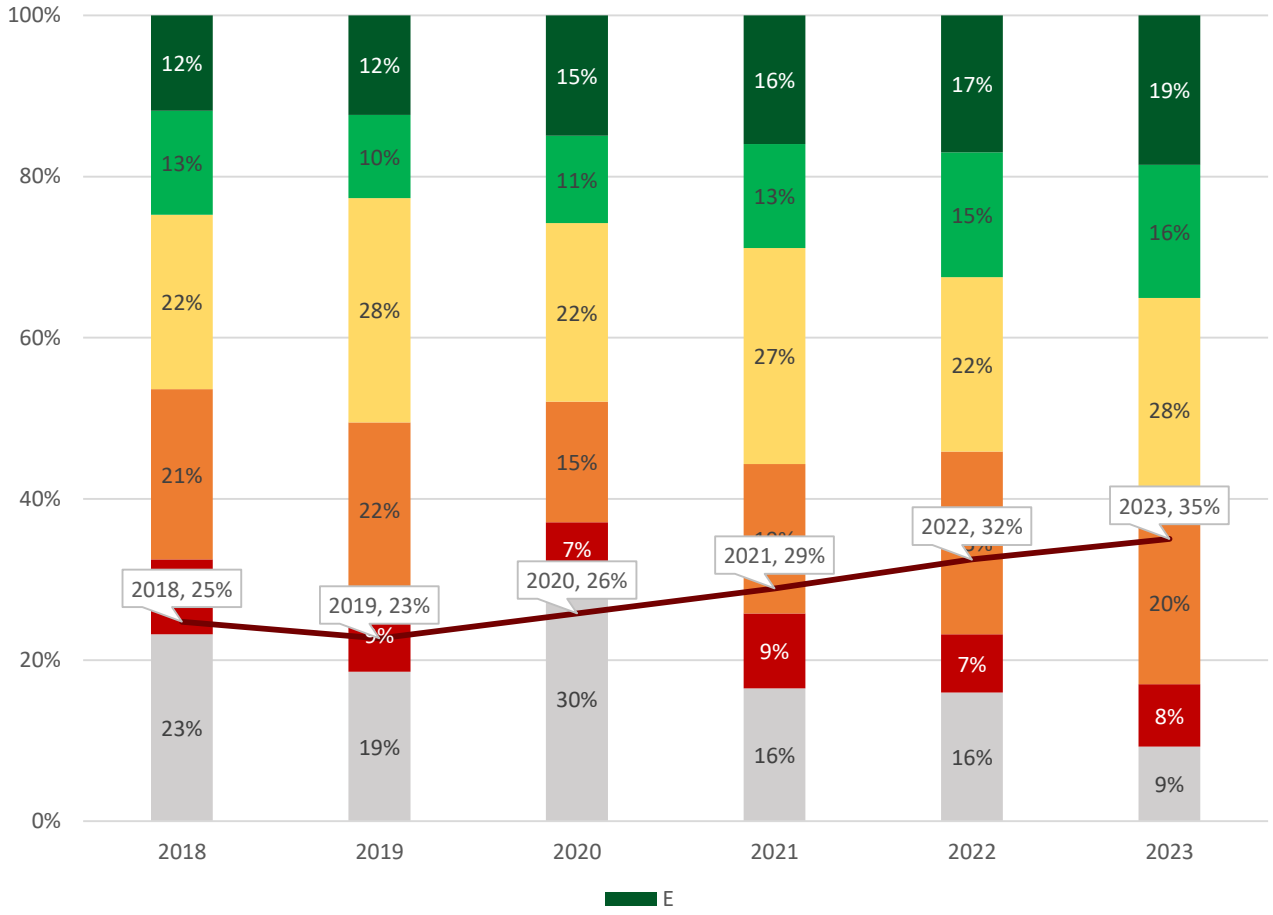
Minimum requirements for IPC at facility level – 2019

WHO Global report on IPC 2022, https://apps.who.int/iris/handle/10665/354489

Global database on AMR: IPC component



Trend – Low implementation on this indicator globally (slow, modest increases in nationwide implementation of IPC programmes (D-E) since 2018 (from 25% to 35%))

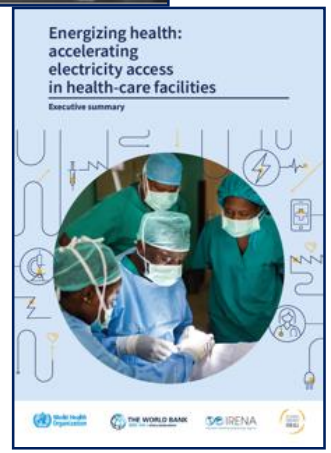


*Tripartite AMR Country Self-Assessment Survey (TrACSS)
https://amrcountryprogress.org/

Globally, major WASH gaps persist: 2023 global report

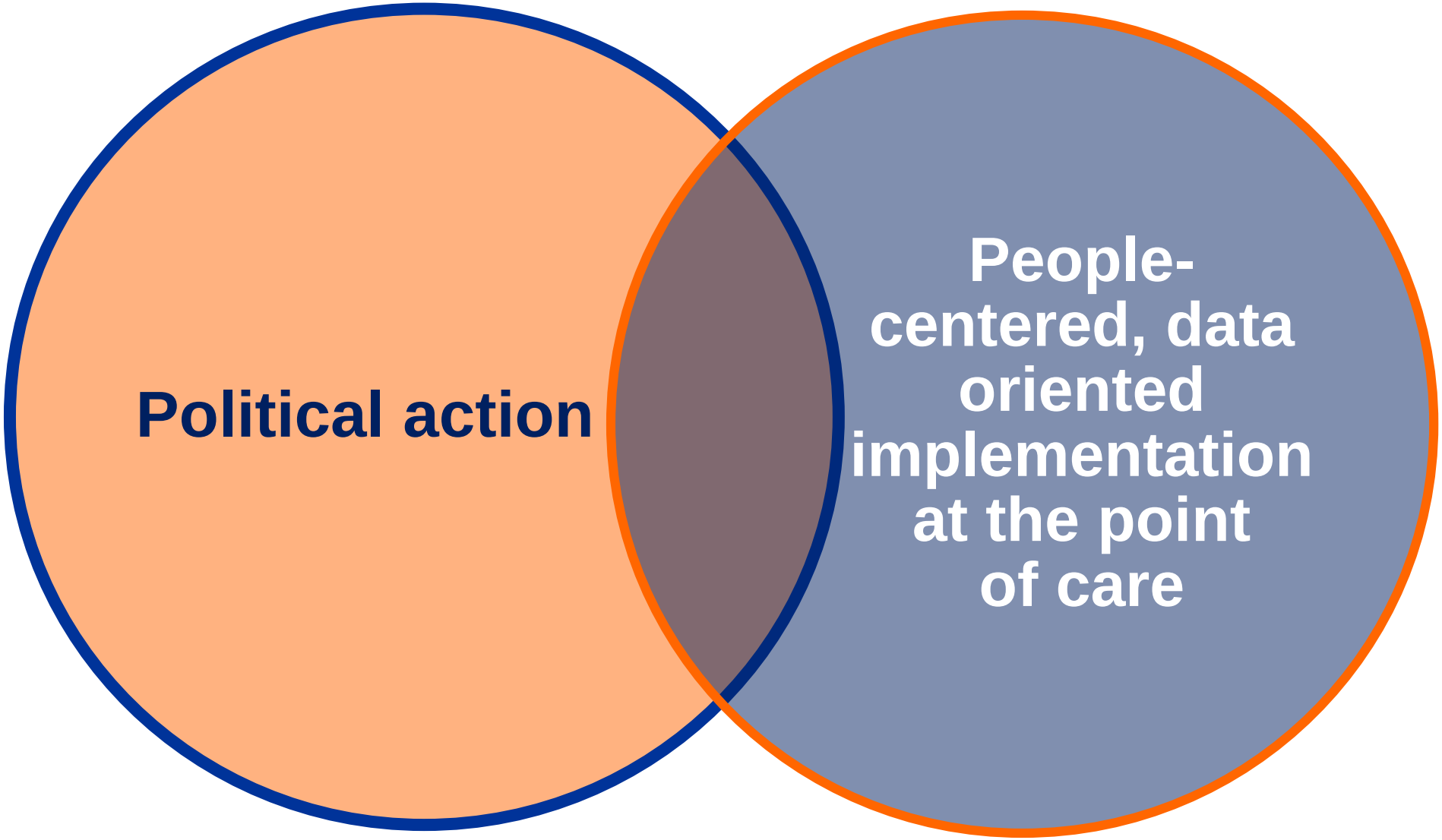
"Do not call it a health care facility if there is no water, sanitation, hygiene or electricity."

WATER	**1 in 4** HCFs lacks basic water—facilities serving 1.7 billion people; **in LCDs 1 out of 2 lack basic services**
SANITATION	**1 in 10** has no sanitation—780 million people use facilities without toilets; **in LCDs 8 out of 10 lack basic services**
HAND HYGIENE	**1 in 2** lacks basic hand hygiene (at points of care and toilets); **in LCDs 2 out of 3 lack basic services**
HEALTH CARE WASTE	**2 in 5** lack basic waste services (segregation + treatment); **in LCDs 2 out of 3 lack basic services**
ELECTRICITY	**1 billion** served by facilities without reliable energy



Source: *Progress on WASH in Health Care Facilities 2000-2021: Focus on WASH and IPC* (WHO/UNICEF, 2022); Energizing health: accelerating electricity access in health-care facilities (WHO, 2023)

Two main levels for IPC improvement



WHO core components for effective IPC programmes

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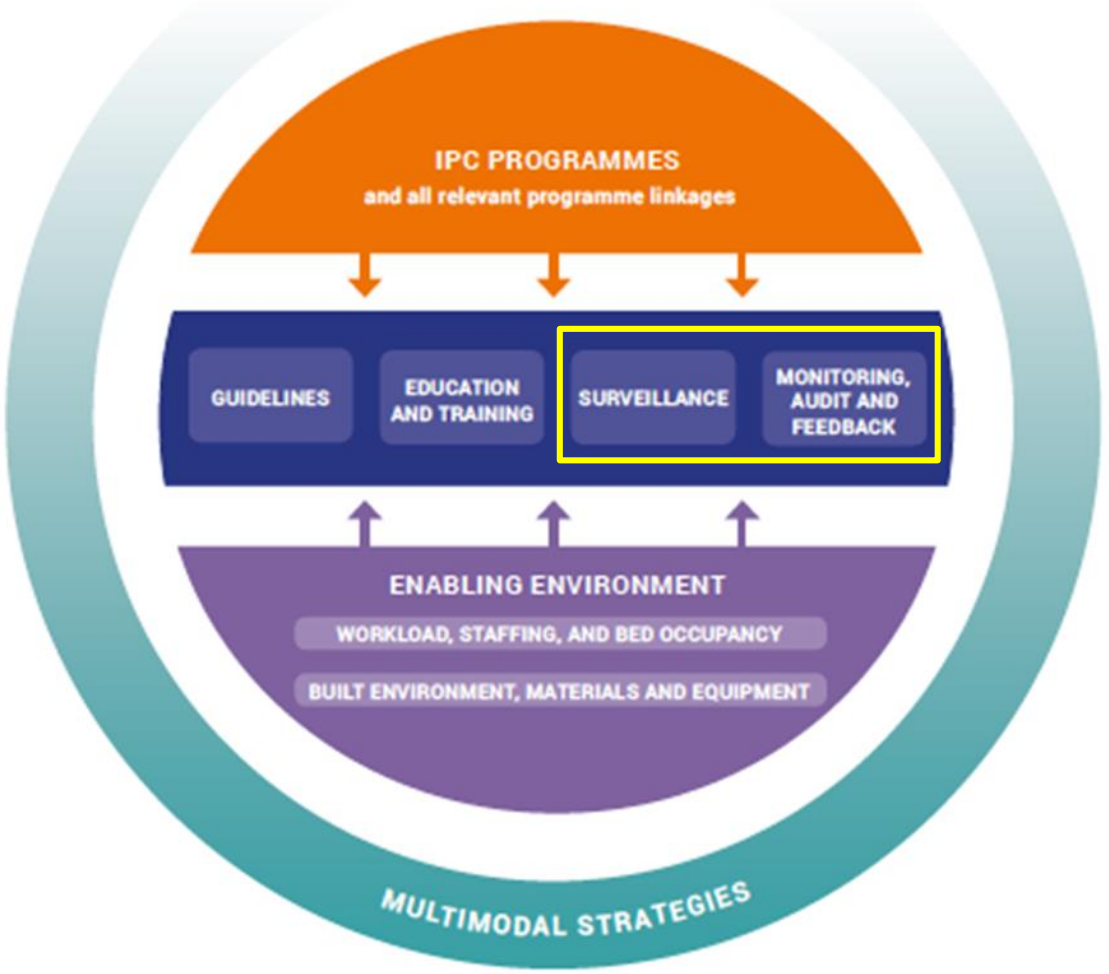
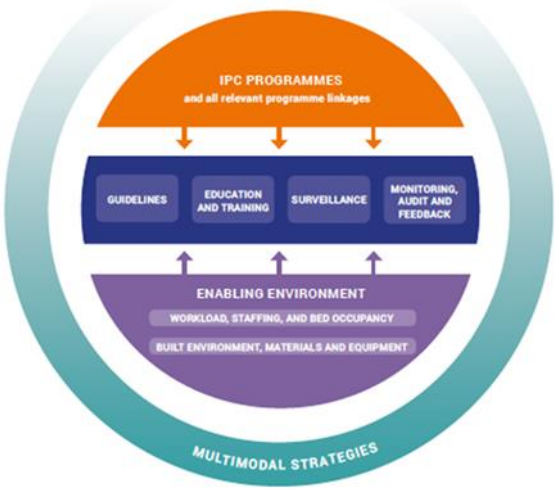
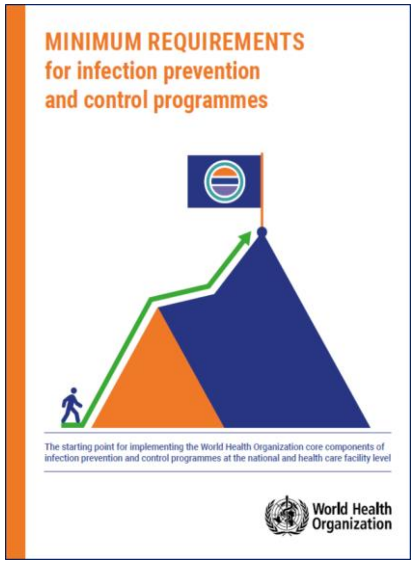
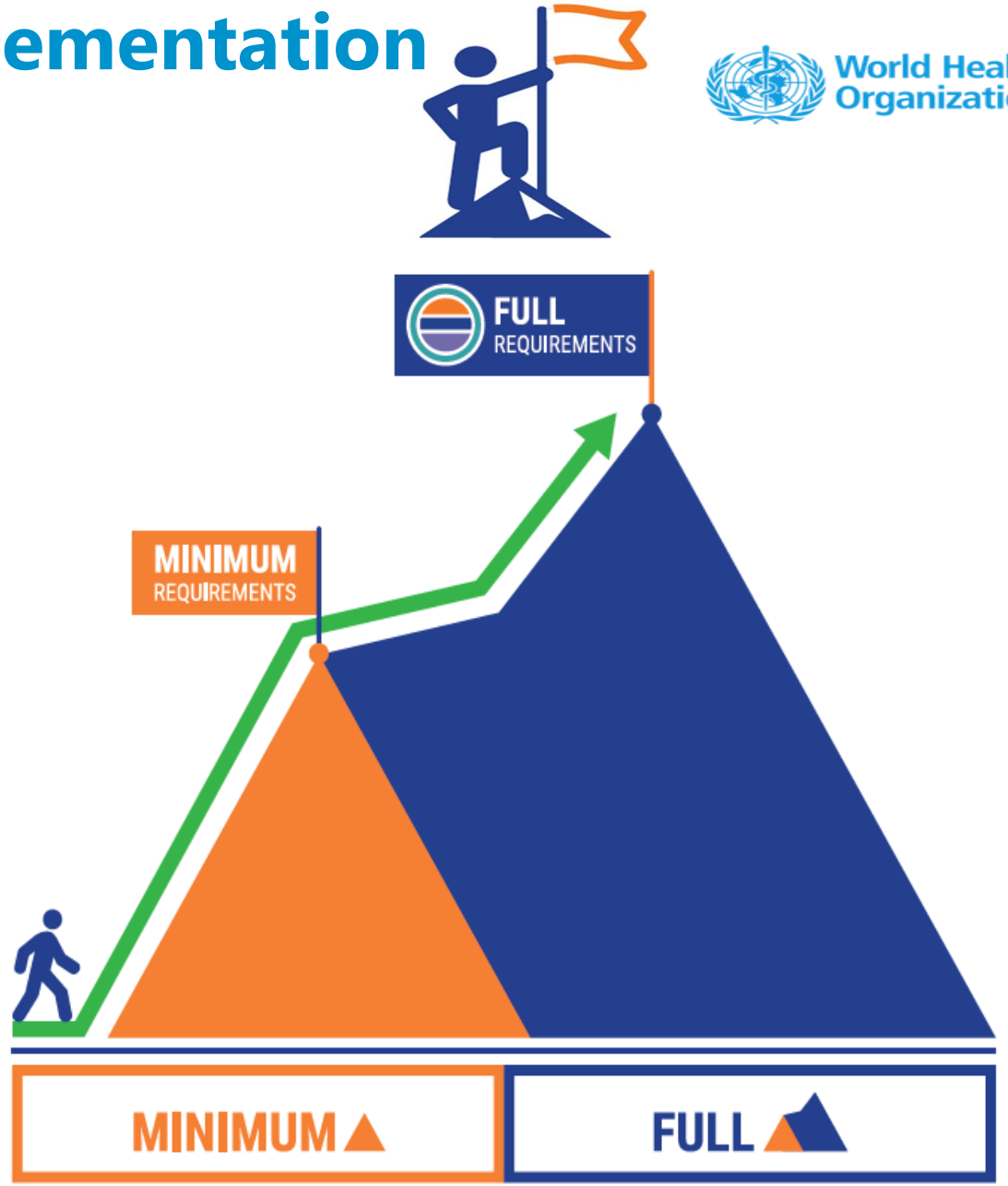


- **8 Core components**
  - *8 Facility level*
  - *6 National level*
- **CC4:** HAI and AMR surveillance
- **CC6:** IPC monitoring, audit and feedback

A stepwise approach for implementation







Core component 6: Monitoring/audit of IPC practices/activities & feedback

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

National level: National IPC M&E programme should be established to assess the extent to hich standards are being met and activities are performed according to programme'sgoals and objectives. HH monitoring with feedback as a key national indicator (strong)

- To achieve **behavioural change or other improvements, programme's evaluation, and stakeholders' engagement**
- To document **progress and impact**
- **Essential: timely feedback and data interpretation for action**
- **Integration/alignment** with other monitoring systems needed

Minimum requirements: CC6

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LEVEL	MINIMUM REQUIREMENT
NATIONAL	Establishment by the national IPC focal point of a **technical group for HAI surveillance and IPC monitoring** which: ➢ is multidisciplinary ➢ develops a **national strategic plan** for HAI surveillance and IPC monitoring ➢ develops an **integrated system** for the collection and analysis of data (for example, protocols, tools) ➢ provides **training** at the facility level to collect and analyze these data ➢ develops **recommendations for minimum indicators** (for example, hand hygiene).
PRIMARY CARE	• Monitoring of **IPC structural and process indicators** should be put in place at primary care level, based on IPC priorities identified in the other components. • This requires decisions at the national level and implementation support at the sub-national level.

Minimum requirements: CC6

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LEVEL	MINIMUM REQUIREMENT
SECONDARY CARE H TERTIARY CARE H	• A **person responsible** for the conduct of the **periodic or continuous monitoring of selected indicators for process and structure**, informed by the priorities of the facility or the country. • **Hand hygiene** is an essential indicator to be monitored. • **Timely and regular feedback** needs to be provided to key stakeholders, in order to lead to appropriate action, particularly to the hospital administration. • Data should also be provided to national level, in alignment with any national coordination or policies • National levels should provide timely feedback to facilities and provide interpretation of data or guidance for improvement actions.

Assessments in a spirit of improvement

- Regular assessments of IPC programmes are essential for **continuous quality improvement.**
- Assessment helps to create a **sense of urgency** for the changes needed to resolve/overcome the **existing gaps** and improve IPC
- Assessment also helps to identify **existing strengths** and take stock of achievements made so far to convince decision-makers that success and **progress is possible.**
- By using a **validated tool** (e.g. WHO IPCAT2), you can be confident that the information collected is meaningful and will support improvement.

Multimodal improvement strategy (CC5) for IPC interventions

What infrastructure, equipment and supplies are needed?

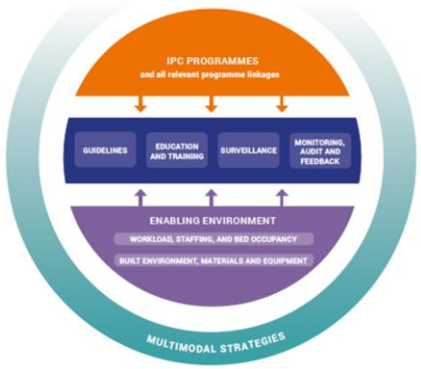
Who needs training? What type? How frequently?

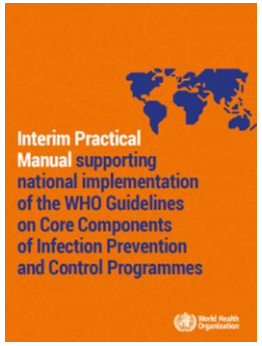
How can you identify gaps to prioritize actions, track progress and feed back to drive change?

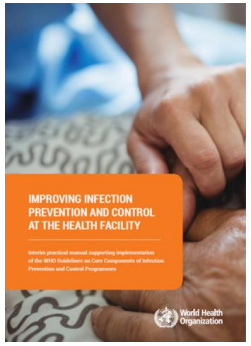
How do you promote and reinforce the appropriate messages?

Do senior managers support the intervention? Are others willing to be champions?

Assessments as part of quality improvement interventions

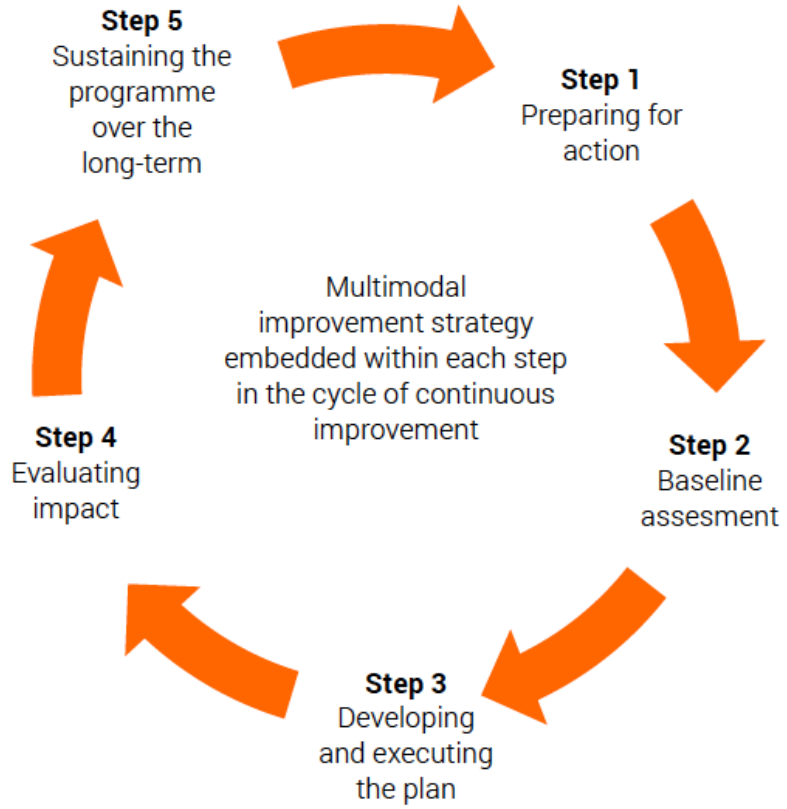






Tomczyk S et a. ARIC 2021. doi: 10.1186/s13756-021-00962-3

Implementation cycle



https://www.who.int/teams/integrated-health-services/infection-prevention-control/core-components

Interpreting results

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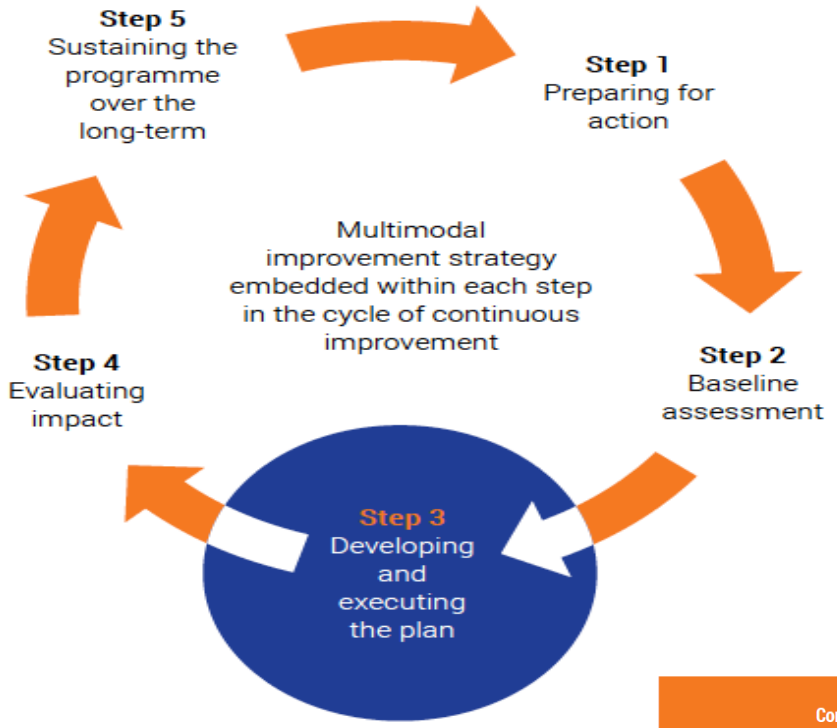
Box 8. IPCAF scoring interpretation

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

Source: *Facility Interim Pratical Manual* http://www.who.int/infection-prevention/tools/core-components/en/



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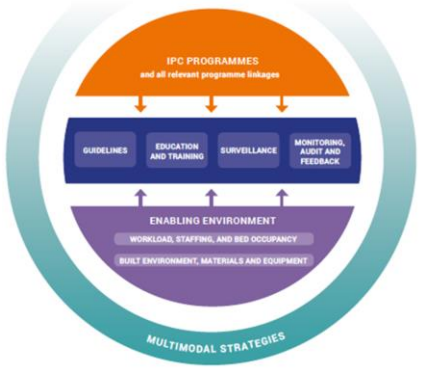
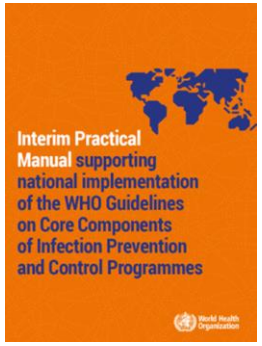
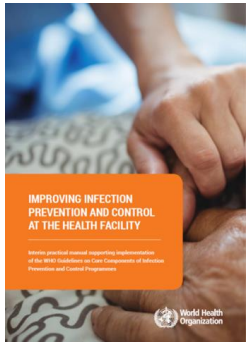
STEP 3
DEVELOPING AND EXECUTING THE PLAN

	Rapid recap	Sample action plan	Potential barriers and solutions	Tools and resources
Core component 1: IPC programmes	Page 54	Page 55	Page 56	Page 59
Core component 2: IPC guidelines	Page 62	Page 63	Page 64	Page 67
Core component 3: IPC education and training	Page 68	Page 69	Page 70	Page 72
Core component 4: HAI surveillance	Page 73	Page 74	Page 77	Page 80
Core component 5: Multimodal strategies	Page 81	Page 82	Page 83	Page 85
Core component 6: IPC monitoring/audit of IPC practices and feedback	Page 86	Page 87	Page 89	Page 90
Core component 7: Workload, staffing and bed occupancy	Page 91	Page 92	Page 93	Page 94
Core component 8: Built environment, materials and equipment for IPC	Page 95	Page 96	Page 98	Page 99

Assessments as part of quality improvement interventions







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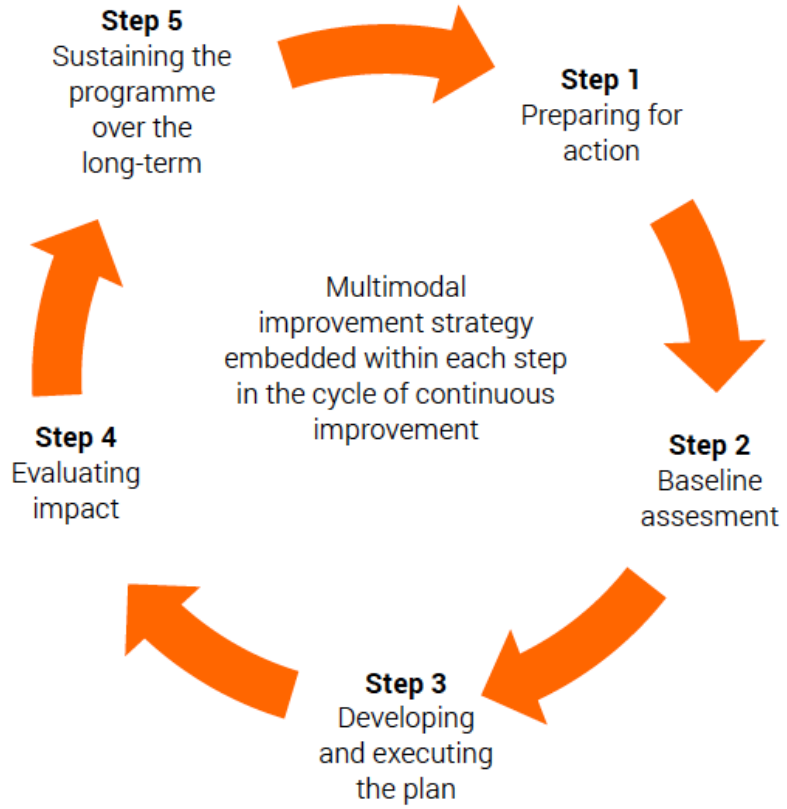
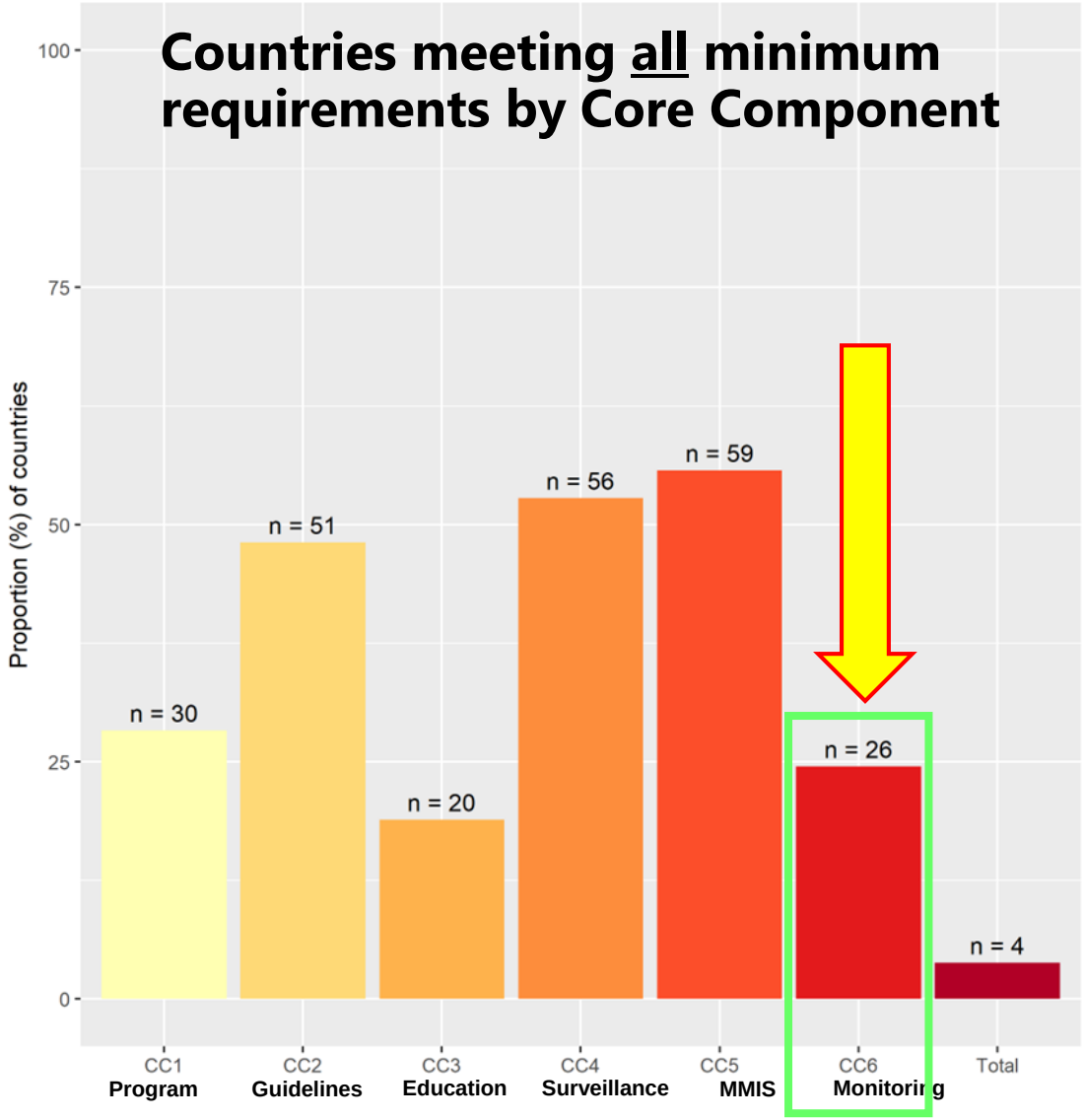


https://www.who.int/teams/integrated-health-services/infection-prevention-control/core-components

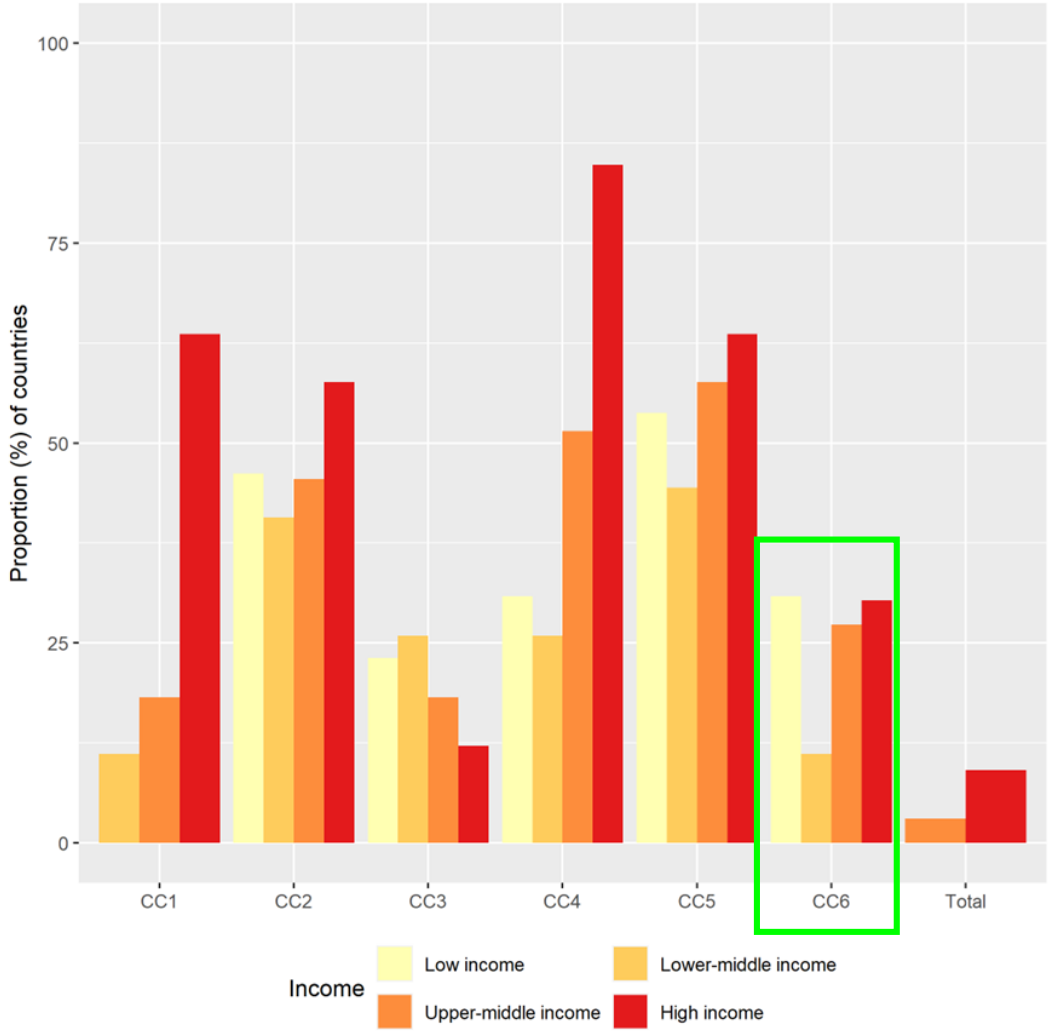
2021 WHO global survey on IPC minimum requirements (MR) at national level: 106 countries



- **26%** of countries fulfilled minimum requirements for IPC monitoring

WHO Global report on IPC 2022, https://apps.who.int/iris/handle/10665/354489

Proportion of countries meeting all minimum requirements by Core Component and WB income level (2021, 106 countries)



WHO Global report on IPC 2022, https://apps.who.int/iris/handle/10665/354489

IPC core components implementation at facility level, 2019

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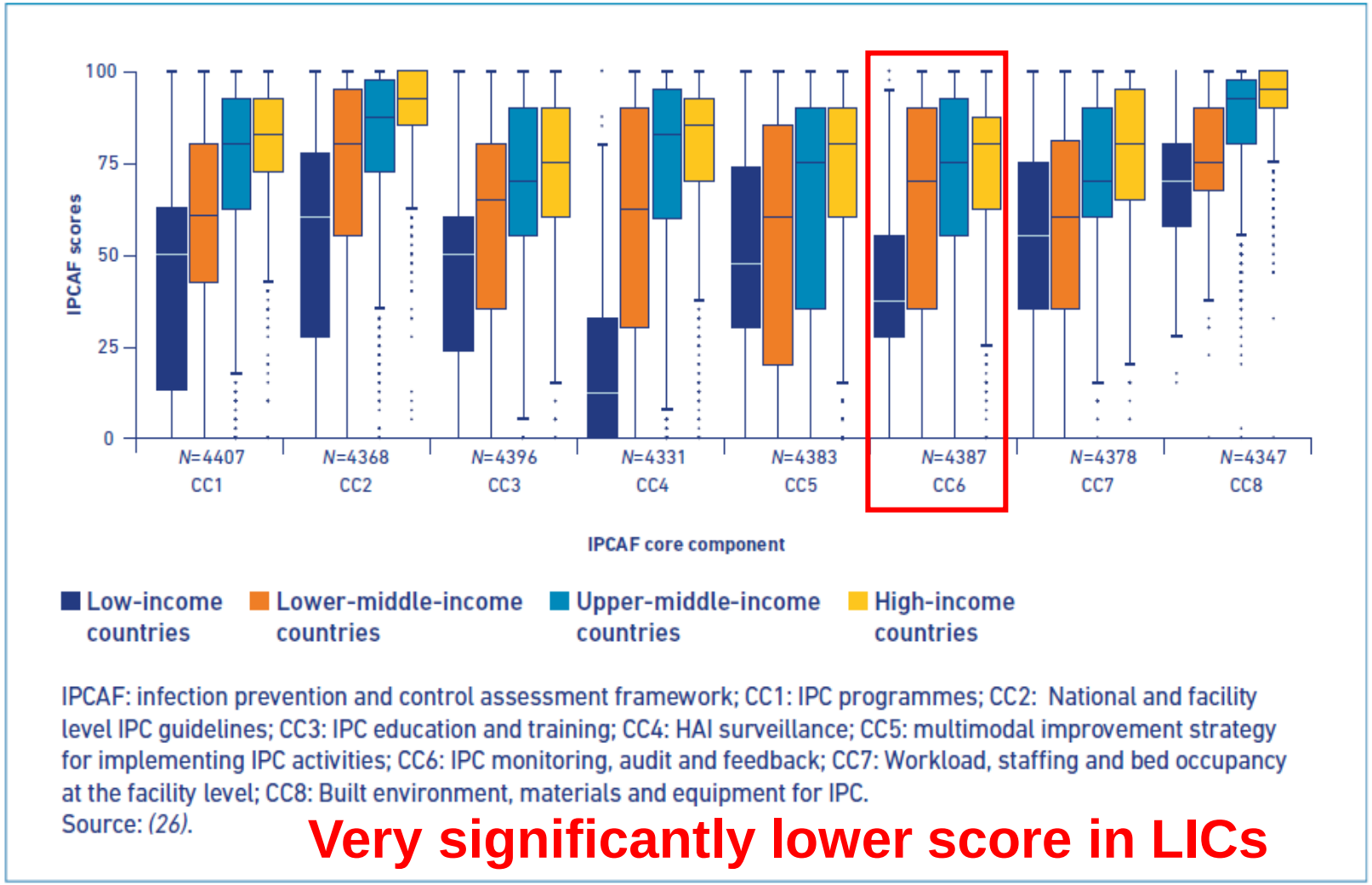
Fig. 5. IPC scores, by core component and World Bank income level of countries participating in the 2019 WHO global survey on IPC programmes at the facility level



IPCAF: infection prevention and control assessment framework; CC1: IPC programmes; CC2: National and facility level IPC guidelines; CC3: IPC education and training; CC4: HAI surveillance; CC5: multimodal improvement strategy for implementing IPC activities; CC6: IPC monitoring, audit and feedback; CC7: Workload, staffing and bed occupancy at the facility level; CC8: Built environment, materials and equipment for IPC.
Source: *(26)*.

Very significantly lower score in LICs

Tomczyk S, et al. The Lancet Infectious Diseases 2022, https://doi.org/10.1016/S1473-3099(21)00809-4

2021-22 global survey on IPC minimum requirements at the national level – comparison with 2017-18 in 62 countries

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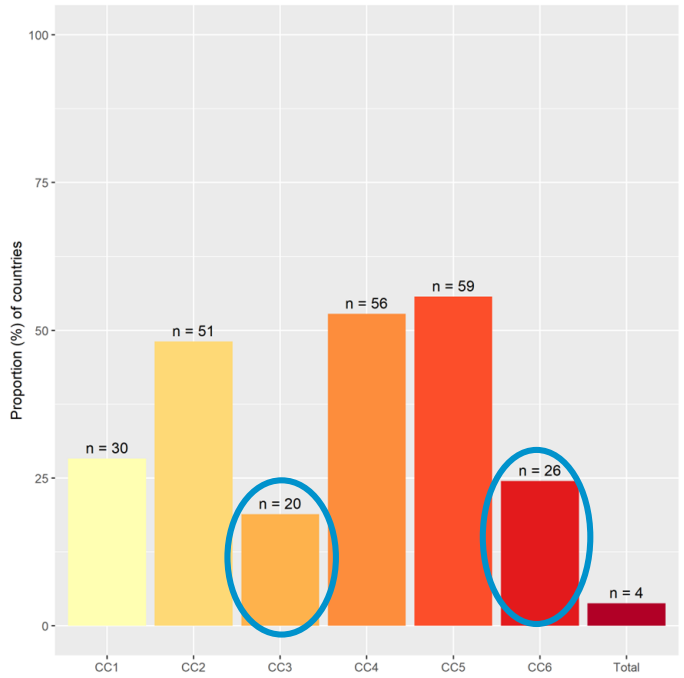
Significant improvement

- National IPC programme
- Protected and dedicated budget
- National IPC guidelines
- Guidelines developed using international standards
- Promotion of multimodal strategies to implement IPC at the facility level
- HH compliance monitoring as a national indicator

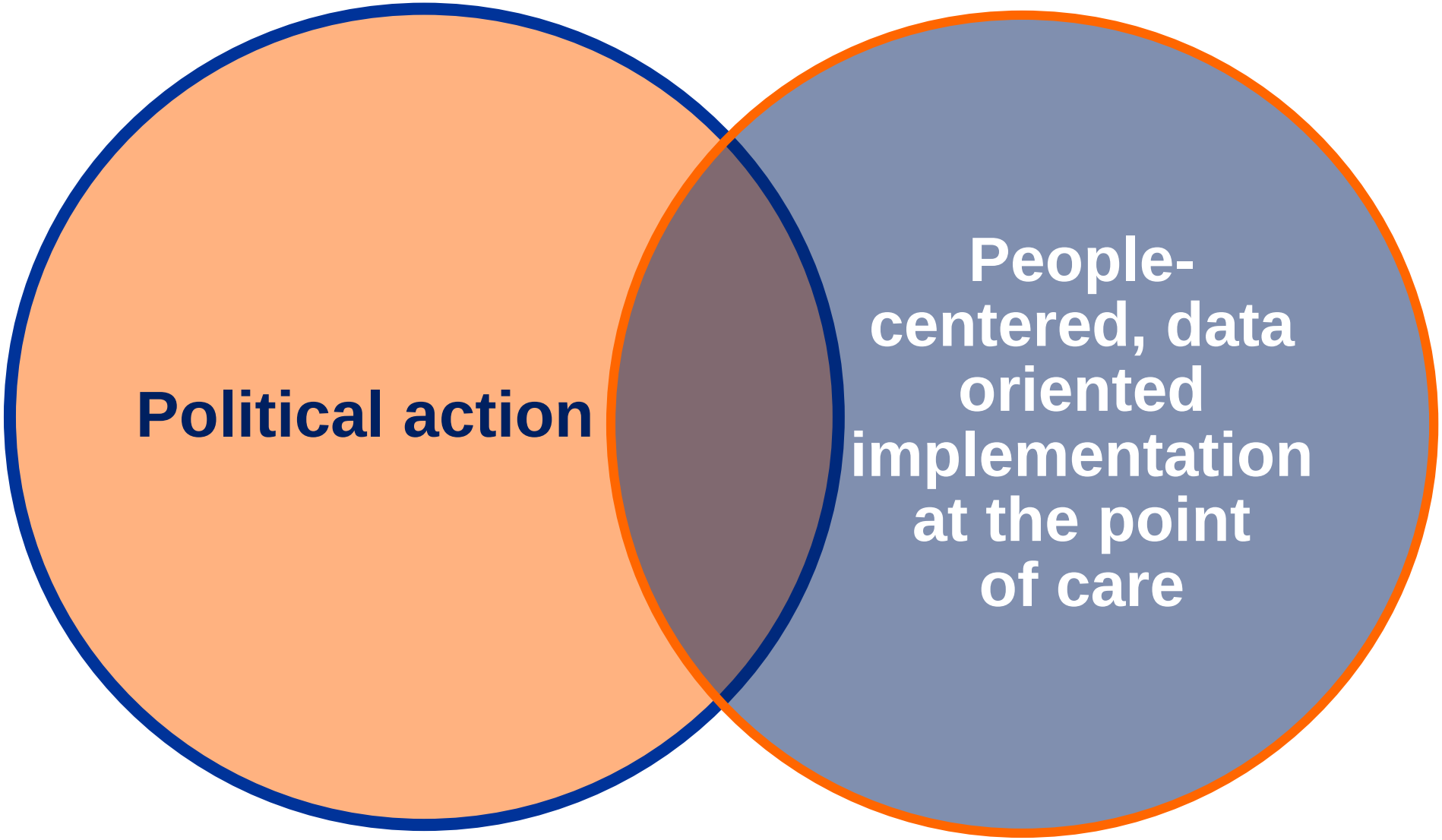
No improvement

- National in-service curriculum
- IPC monitoring system

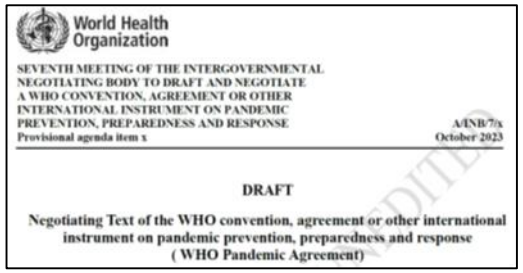


WHO confidential data, submitted to the Lancet Global Health

Two main levels for IPC improvement



IPC 2022-2030: Elevating IPC in the global health and political agenda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SEVENTH MEETING OF THE INTERGOVERNMENTAL NEGOTIATING BODY TO DRAFT AND NEGOTIATE A WHO CONVENTION, AGREEMENT OR OTHER INTERNATIONAL INSTRUMENT ON PANDEMIC PREVENTION, PREPAREDNESS AND RESPONSE

A/INB/7/x
Provisional agenda item x
October 2023

DRAFT

Negotiating Text of the WHO convention, agreement or other international instrument on pandemic prevention, preparedness and response
(WHO Pandemic Agreement)

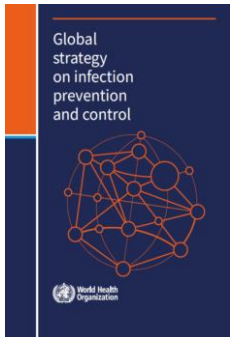
IPC resolution adoption at WHA75 in May 2022

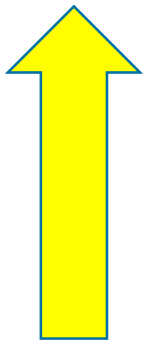
IPC global strategy adopted at WHA76 in May 2023

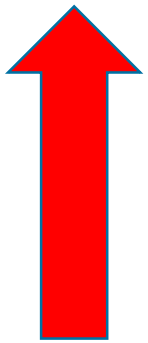
IPC in Draft Pandemic Agreement

IPC global action plan & monitoring framework to WHA77 in May 2024


Global strategy on infection prevention and control







REPORTING ON PROGRESS 2025-2030

https://www.who.int/teams/integrated-health-services/infection-prevention-control

Adopted by the 76th WHA in May 2023 & launched on 12 September 2023

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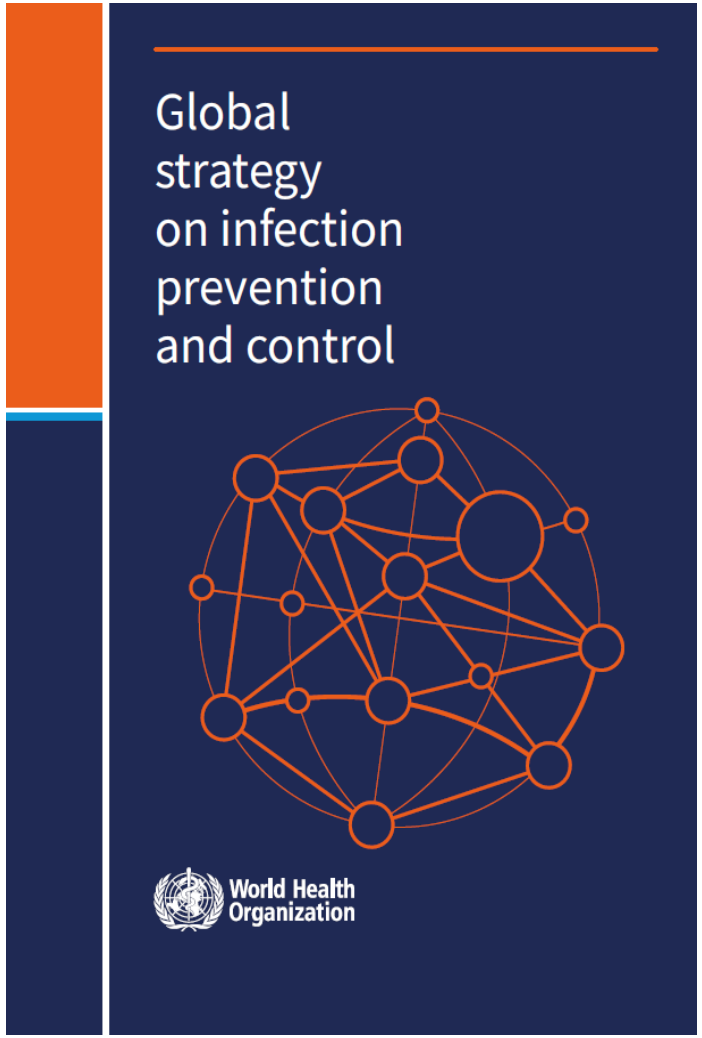

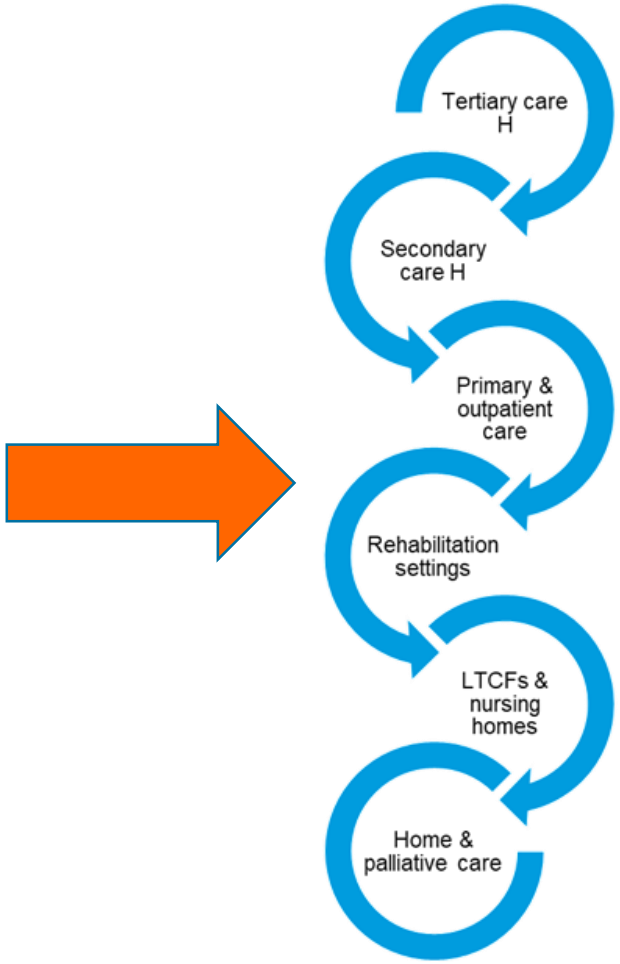

HEALTH CARE WITHOUT AVOIDABLE INFECTIONS

By 2030, everyone accessing or providing health care is safe from associated infections

https://www.who.int/publications/m/item/global-strategy-on-infection-prevention-and-control

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Global Strategy on IPC – 8 Strategic Directions

https://www.who.int/publications/m/item/draft-global-strategy-on-infection-prevention-and-control

5 Data for action

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a. Establish and/or better utilize systems for regular data collection (including high-quality laboratory data) and feedback on IPC and WASH indicators (particularly for hand hygiene) and HAI surveillance (including for epidemic-/pandemic-prone diseases and health and care workers' infections);

b. ensure training and expertise for data collection, analysis, interpretation and quality control;

c. ensure integration of IPC and HAI data into national health information and accreditation systems, and provide regular feedback on key IPC performance indicators to relevant audiences and stakeholders;

d. establish mechanisms for accountability based on IPC and HAI data;

e. use these data for action in a spirit of safety and quality improvement and not for punishment or penalties; and

f. develop, implement, measure, and regularly update locally tailored and actionable improvement plans.

From the global strategy to the GAP&MF

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Global Strategy on IPC – 8 Strategic Directions

Global Action Plan & Monitoring Framework

- **Actions**
- **Indicators**
- **Targets**

- **Global**
- **National**
- **Facility**

Theory of Change

Guide to implementation

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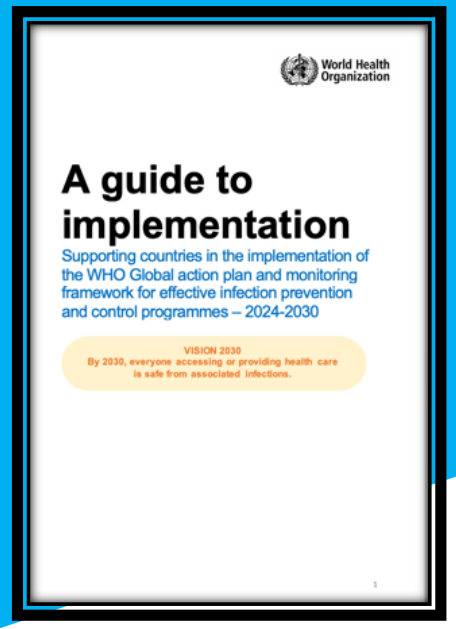
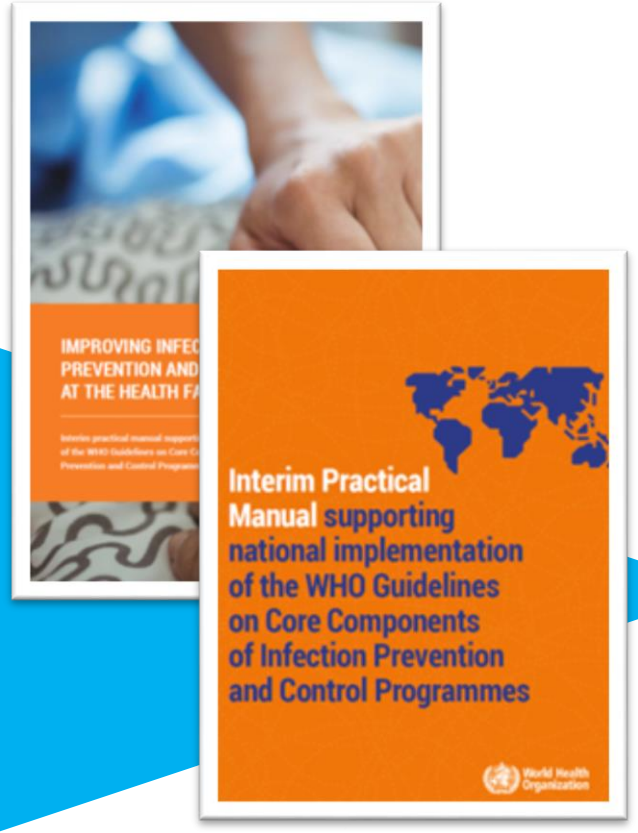
Implementation





By 2030, everyone accessing or providing health care is safe from associated infections.

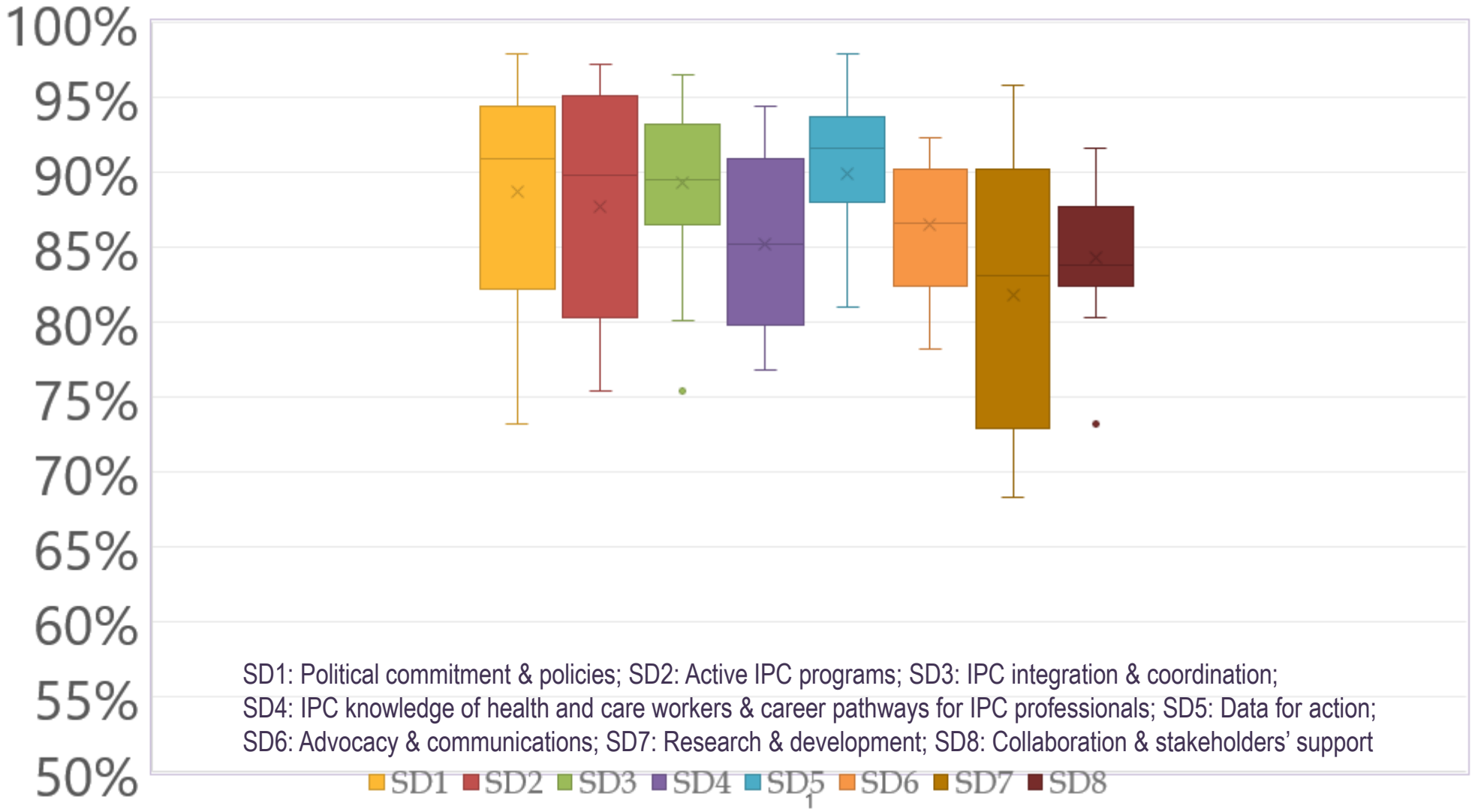
GSIPC 8 Strategic Directions

A new Guide to Implementation to support development of national action plan on IPC

Aligned with and signposting to existing implementation manuals (IPC & related programmes)

IPC National action plans developed and implemented.

WHO monitoring framework : high level of consensus on indicators and targets to measure progress in IPC



Poster 3454 presented at ECCMID 2024

Proposal to measure global progress in IPC against the following priority targets*, 2024-2030

World Health Organization

Increase** of proportion of countries:

- with a costed and approved national action plan and monitoring framework on IPC
- with an identified dedicated budget allocated to fund the national IPC programme and action plan
- with legislation /regulation to address IPC
- meeting all WHO IPC Minimum Requirements for IPC programmes at national level
- with national IPC programmes at Level 4 or 5 in SPAR 9.1 and Level D or E in TrACSS 3.5 (highest levels)
- with basic water (1), sanitation (2), hygiene (3), and waste services (4) in all health care facilities
- with a national HAI and related AMR surveillance system
- that have achieved their national targets on reducing HAIs

*Monitoring framework identified through a Delphi survey including MS IPC national focal points; **up to 80-100%

Proposal to measure national progress in IPC against the following priority targets*, 2024-2030

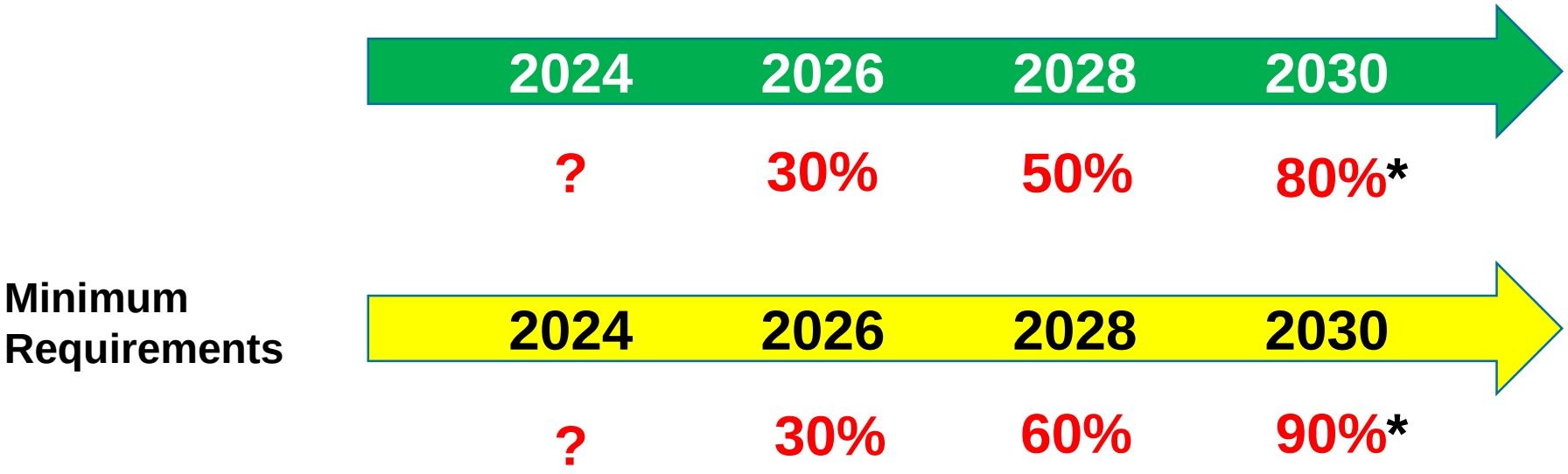
World Health Organization

Increase* of proportion of health care facilities:

- meeting **all WHO IPC Minimum Requirements** for IPC programmes
- **with a dedicated and sufficient funding for WASH services and activities**
- **providing and/or requiring IPC training to all frontline clinical and cleaning staff** and **managers**
- having an **HAI and related AMR surveillance system**

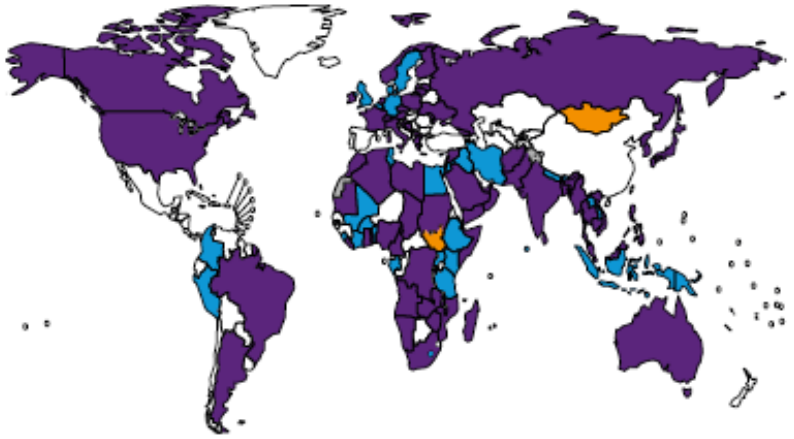
*Monitoring framework identified through a Delphi survey including MS IPC national focal points; **up to 80-100%

Measuring targets over time



*with a view of evaluating status in 2030, and setting new target (likely to be 100%) for 2035

Existing monitoring systems used to draw the IPC MF indicators



WHO Global Antimicrobial Resistance and Use Surveillance System (GLASS)

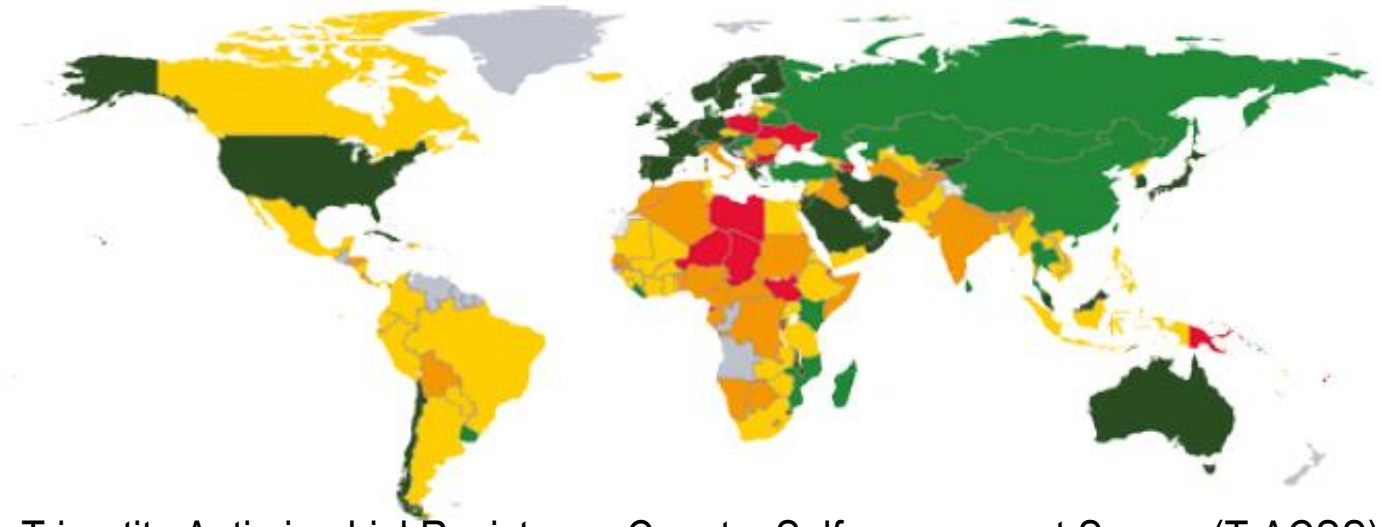
JMP service ladders for WASH in health care facilities

SERVICE LEVEL	WATER	SANITATION	HYGIENE	WASTE MANAGEMENT	ENVIRONMENTAL CLEANING
BASIC SERVICE	Water is available from an improved source* on the premises.	Improved sanitation facilities* are usable, with at least one toilet dedicated for staff, at least one sex-separated toilet with menstrual hygiene facilities, and at least one toilet accessible for people with limited mobility.	Functional hand hygiene facilities (with water and soap and/or alcohol-based hand rub) are available at points of care, and within five metres of toilets.	Waste is safely segregated into at least three bins, and sharps and infectious waste are treated and disposed of safely.	Protocols for cleaning are available, and staff with cleaning responsibilities have all received training.
LIMITED SERVICE	An improved water source is available within 500 metres of the premises, but not all requirements for a basic service are met.	At least one improved sanitation facility is available, but not all requirements for a basic service are met.	Functional hand hygiene facilities are available either at points of care or toilets but not both.	There is limited separation and/or treatment and disposal of sharps and infectious waste, but not all requirements for a basic service are met.	There are cleaning protocols and/or at least some staff have received training on cleaning.
NO SERVICE	Water is taken from unprotected dug wells or springs, or surface water sources; or an improved source that is more than 500 metres from the premises; or there is no water source.	Toilet facilities are unimproved (e.g. pit latrines without a slab or platform, hanging latrines, bucket latrines) or there are no toilets.	No functional hand hygiene facilities are available either at points of care or toilets.	There are no separate bins for sharps or infectious waste, and sharps and/or infectious waste are not treated/disposed of.	No cleaning protocols are available and no staff have received training on cleaning.

* Improved water sources are those that by nature of their design and construction have the potential to deliver safe water. These include piped water, boreholes or tubewells, protected dug wells, protected springs, rainwater, and packaged or delivered water. Improved sanitation facilities are those designed to hygienically separate human excreta from human contact. These include wet sanitation technologies – such as flush and pour-flush toilets connecting to sewers, septic tanks or pit latrines – and dry sanitation technologies – such as dry pit latrines with slabs, and composting toilets.

FIGURE 1 JMP service ladders for global monitoring of WASH in health care facilities

WHO/UNICEF Joint Monitoring Programme for WASH in HCFs



Tripartite Antimicrobial Resistance Country Self-assessment Survey (TrACSS)

World Health Organization e-SPAR STATE PARTY ANNUAL REPORT

2022

Capacity 9

Infection prevention and control (IPC)

	Score per indicator			Total
	9.1	C.9.2	C.9.3	C.9
AVG Global Capacity	64	59	62	**62**
AFRO	53	40	44	**46**
AMRO	61	63	58	**61**
EMRO	67	57	65	**63**
EURO	71	72	77	**74**
SEARO	62	56	60	**59**
WPRO	75	65	72	**71**

World Health Organization

Determining the baseline for the MF:

WHO global survey on minimum requirements for IPC programmes at the national and facility levels – 2023-24

22 November 2023 – 20 April 2024

Participation of 142 countries and 6,049 facilities

from all regions and type of facility

Upcoming WHO Guidance on HAI surveillance -

Two documents & WHO simplified HAI definitions for resource-limited settings

World Health Organization

A comprehensive guide to HAI surveillance

- Overview of basic principles, concepts, methods, & best practices

- New WHO modified HAI case definitions for low-resource settings

- Targets national IPC leads, focal points, policy makers, IPC stakeholders

PPS Protocol to implement HAI surveillance

Detailed description and technical advice on best practices on how to conduct HAI surveillance using the new WHO HAI case definitions in a framework of a point prevalence survey

New WHO IPC in-service curriculum

Foundational

- All HCWs regardless of their role, years of experience, setting and interaction with patients

Intermediate

- clinical practitioners who interact with patients and those accessing health services, such as nurses, doctors, allied health care professionals, health care assistants, etc.

Advanced

- staff who require additional specialized knowledge and skills determined by their clinical roles and settings, such as specialists working in clinical areas where invasive procedures are performed and facility managers

https://www.who.int/teams/integrated-health-services/infection-prevention-control/ipc-training-resources

Target Audience:

IPC and other professionals responsible for the IPC training for HCWs in their organizations.

All HCWs involved in service delivery and patient care and all other personnel that support health service delivery.

Next steps:

- Pre-graduate curriculum on IPC
- IPC international curriculum & certificate

My 5 Moments: The Game

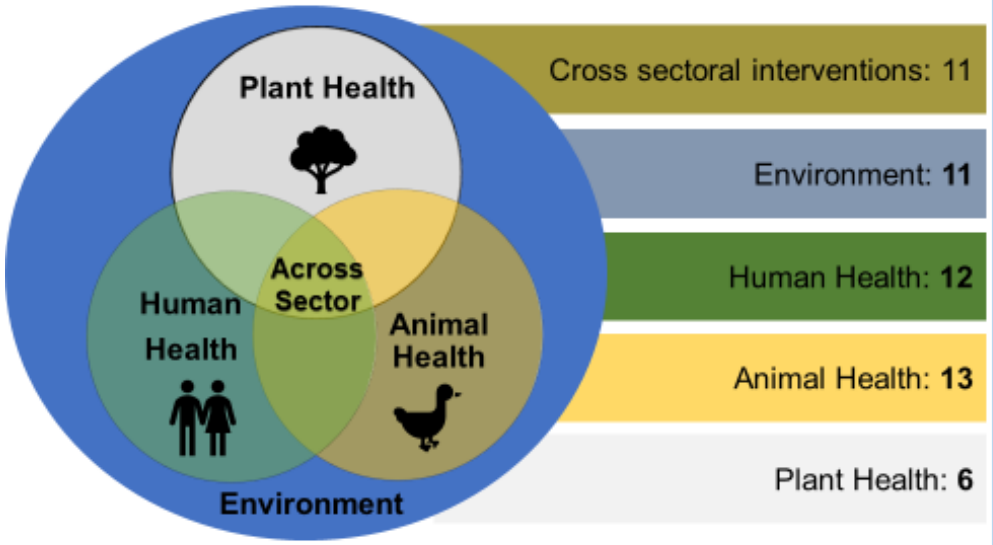
- An innovative adult-learning approach through gamification
- A collaboration between WHO IPC Unit and Hub, WHO Academy, game designers, learning game experts, and end users
- Set 200 years in the future at the international alien hospital
- Players encounter a series of challenges to test their knowledge of the Five Moments within their clinical routines
- Supports clinical health professionals and Students in healthcare education in translating hand hygiene principles into practice

https://5mgame.lxp.academy.who.int/

Estimating the return in investments: WHO/OECD studies on cost-effectiveness of a One Health package of interventions and of IPC in the health care sector

World Health Organization

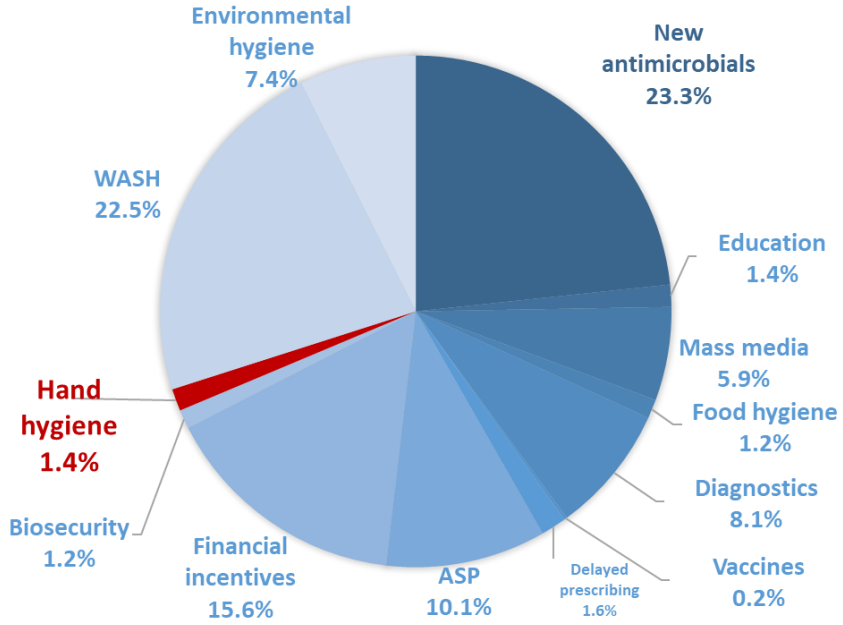
AMR interventions listed to reduce the AMR impact



- Cross sectoral interventions: 11
- Environment: 11
- Human Health: 12
- Animal Health: 13
- Plant Health: 6

- Education and Awareness
- AMR / AMU / AMC Surveillance
- Infection Prevention and Control
- R&D, New Technologies
- Appropriate use, Stewardship
- Access to Essential Services
- Policy, Legislation, Advocacy, Financing
- Organizational Development, Integration
- Data and Evidence

HAIs policies cost little



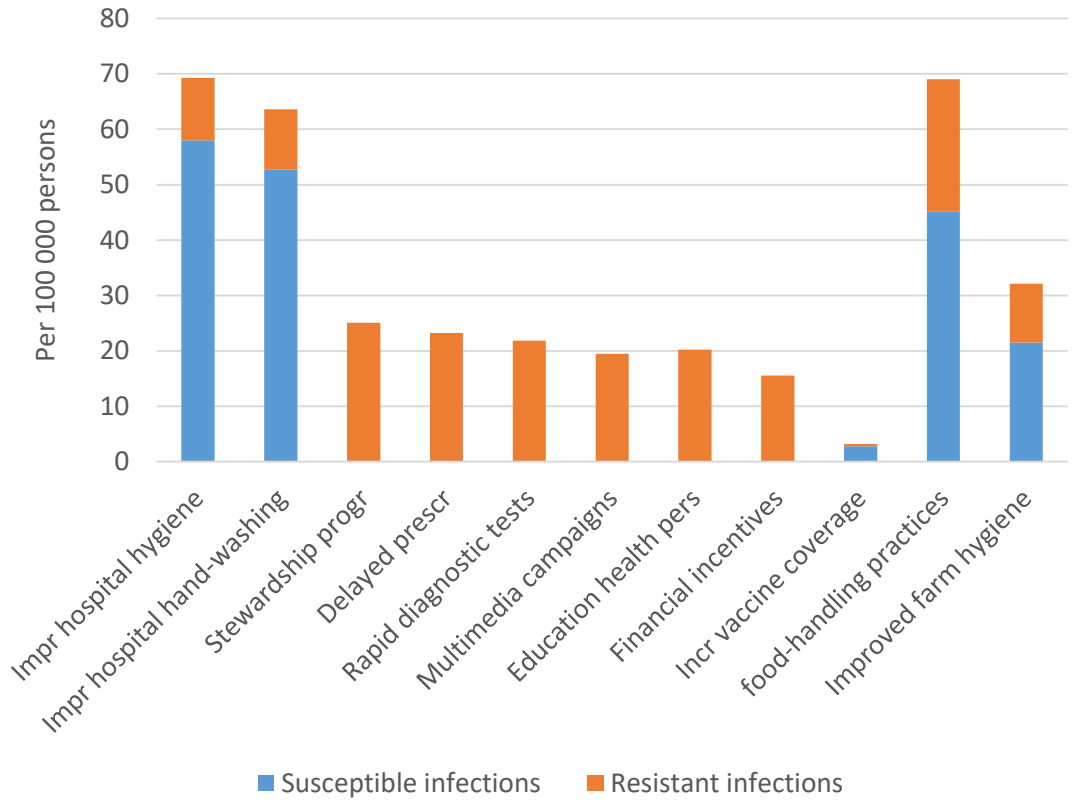
Source: Annex to the GLG report 'Building the investment case for action against antimicrobial resistance' - https://www.amrleaders.org/resources.

Effectiveness and return in investment of IPC

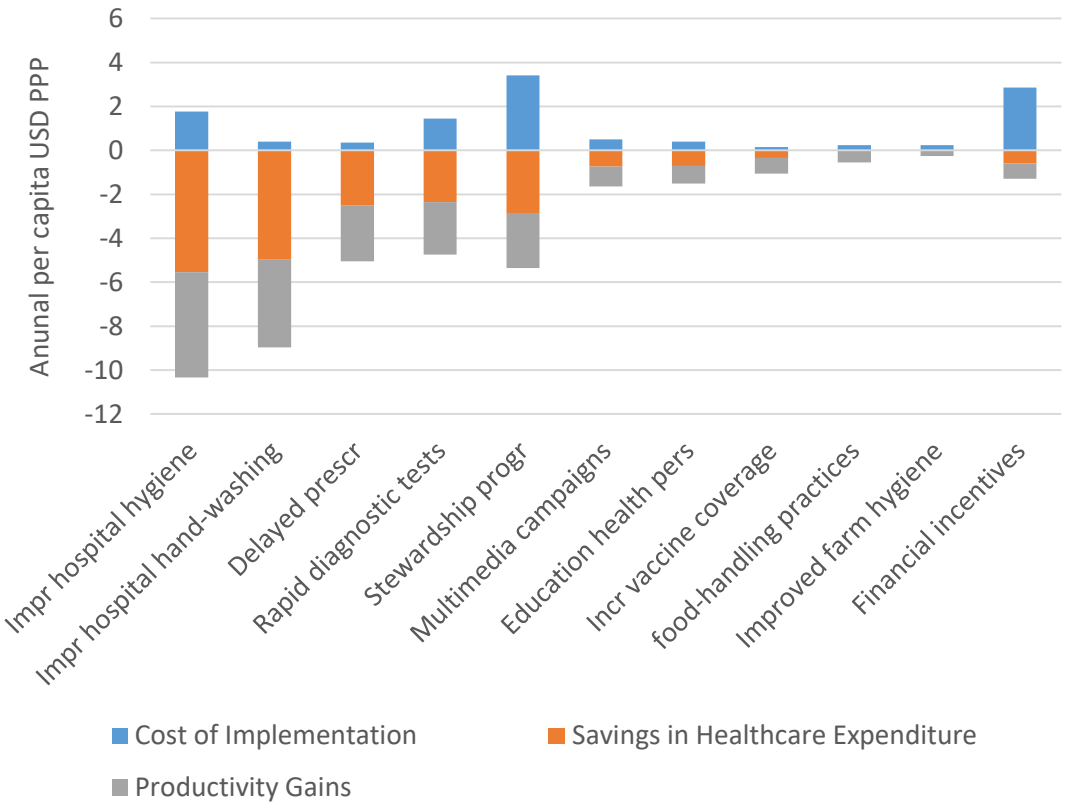
World Health Organization

Scaling up IPC is the best-buy, an effective and cost-saving investment for G7 countries: 5 USD PPP gained for each USD PPP invested

IPC is the most effective intervention to avert infections



IPC produces the highest economic gains



OECD (2023), *Embracing a One Health Approach to Fight Antimicrobial Resistance*, (oecd/amr-onehealth) & WHO global report on IPC 2022 (https://www.who.int/publications/i/item/9789240051164)

Thank you very much for your attention & thanks to the WHO IPC team

World Health Organization

HEALTH CARE WITHOUT AVOIDABLE INFECTIONS

https://www.who.int/teams/integrated-health-services/infection-prevention-control