LESSONS LEARNED FOR INFECTION PREVENTION AND CONTROL

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World Health Organization

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Lessons learned for IPC

1. The pandemic revealed significant IPC gaps at national and facility level

First Global Report on IPC

1. The central role of IPC
2. The problem of unsafe care resulting from health-care associated infections and antimicrobial resistance
3. IPC implementation at the national level
4. IPC implementation at the health care facility level
5. Implementation of hand hygiene programmes at the health care facility level
6. Situation and challenges in implementing the minimum requirements for IPC programmes in WHO regions
7. The impact and economic side of IPC
8. Solutions to improve IPC
9. Directions and priorities for countries

World Health Organization. (2022). Global report on infection prevention and control. World Health Organization. https://apps.who.int/iris/handle/10665/354489.

Food and Agriculture Organization of the United Nations

WORLD ORGANISATION FOR ANIMAL HEALTH

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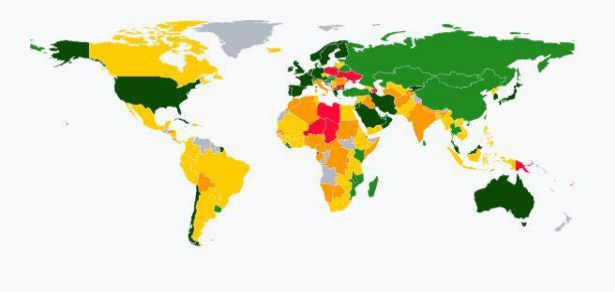
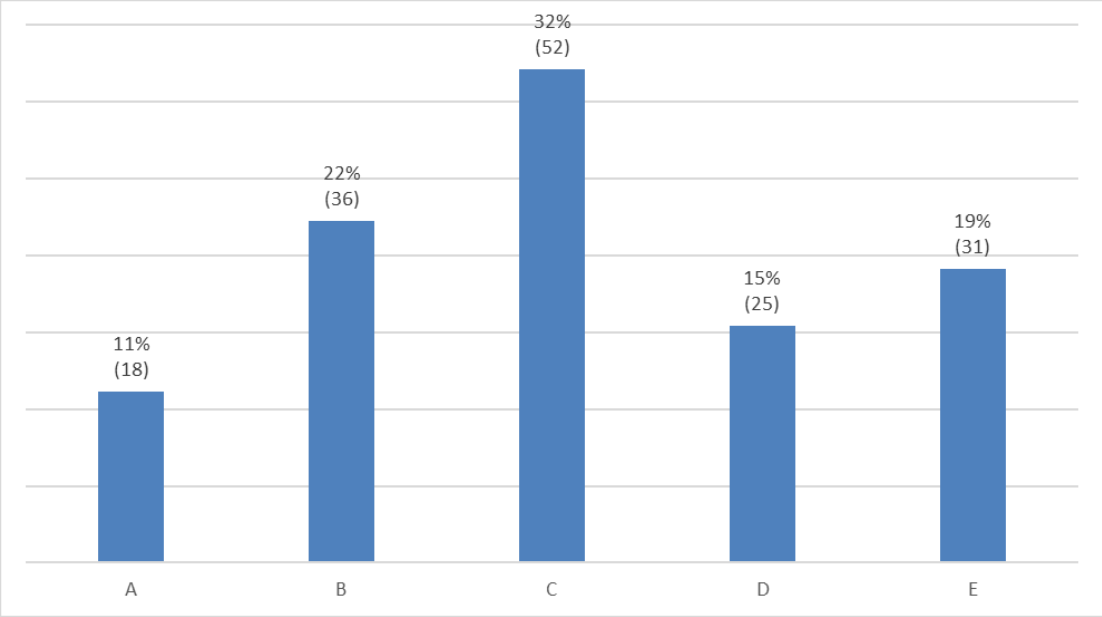
Global Database for the Tripartite Antimicrobial Resistance (AMR) Country Self-assessment Survey (TrACSS)

2020-2021





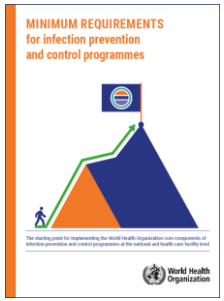
33%: no national IPC programme/plan (A) or not implemented (B)

35%: IPC programmes properly implemented in healthcare facilities nationwide (D) and monitored (E)

32%: IPC programme implemented in selected health-care facilities (C)

Compared to low income countries (LICs), HICs were more than eight times more likely to have a more advanced IPC implementation status; compared to upper middle-income countries, they were some five times more likely to have a more advanced IPC implementation status (WHO unpublished data).

World Health Organization. (2022). Global report on infection prevention and control. World Health Organization. https://apps.who.int/iris/handle/10665/354489.



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

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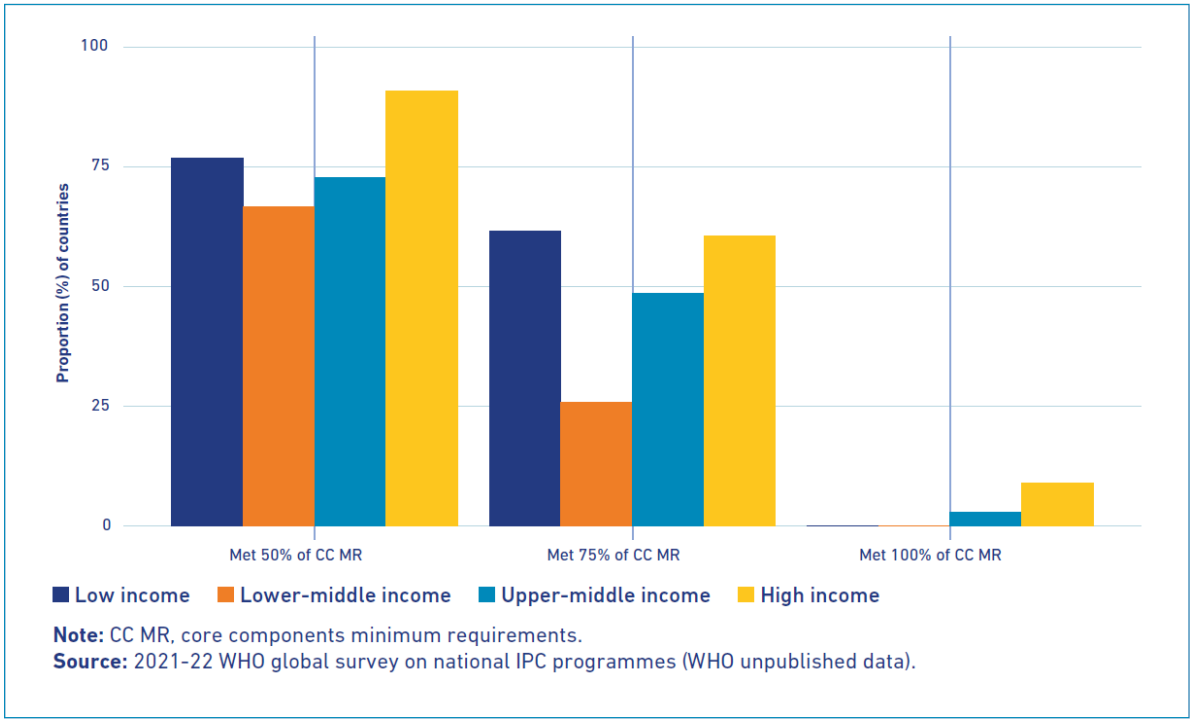

- Only **4%** of countries **met ALL MR**
  - **3% of UMICs**
  - **9% of HICs**
  - **none** in low and lower- middle income
- **50% met 75%** of MR
- **80% met 50%** of MR

World Health Organization. (2022). Global report on infection prevention and control. World Health Organization. https://apps.who.int/iris/handle/10665/354489.

Lessons learned for IPC

1. The pandemic revealed significant IPC gaps at national and facility level
2. Health care workers are at higher risk and need to be better protected and trained

Limited evidence on comparative effectiveness of respirators vs surgical masks

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Masks in healthcare settings

Comparison (intervention A vs. intervention B)	SARS-CoV-2 infection	SARS-CoV-1 or MERS-CoV infection †	Influenza, influenzalike illness, and other viral respiratory illness (excluding pandemic coronaviruses) ‡
Healthcare setting – moderate or higher risk (inpatient)			
Any mask vs. no mask • SARS-CoV-2: 2 obs studies • SARS-CoV-1/MERS-CoV: 12 obs studies • ILI: no studies	■	●	-
N95§ vs. no mask • SARS-CoV-2: 3 obs studies • SARS-CoV-1/MERS-CoV: 4 obs studies • ILI: no studies	■	◆	-
Surgical mask vs. no mask • SARS-CoV-2: 3 obs studies • SARS-CoV-1/MERS-CoV: 6 obs studies • ILI: No studies	■	■	-
Consistent/always mask use vs. inconsistent mask use • SARS-CoV-2: 2 obs studies • SARS-CoV-1/MERS-CoV: 4 obs studies • ILI: No studies	■	◆	-
N95 vs. surgical mask • SARS-CoV-2: 5 obs studies* + 1 cohort study • SARS-CoV-1/MERS-CoV: 5 obs studies • ILI: 3 RCTs	■	◆	●
Healthcare setting – lower risk (outpatient)			
N95 vs. surgical mask • SARS-CoV-2: no studies • SARS-CoV-1/MERS-CoV: no studies • ILI: 1 RCT	-	-	●

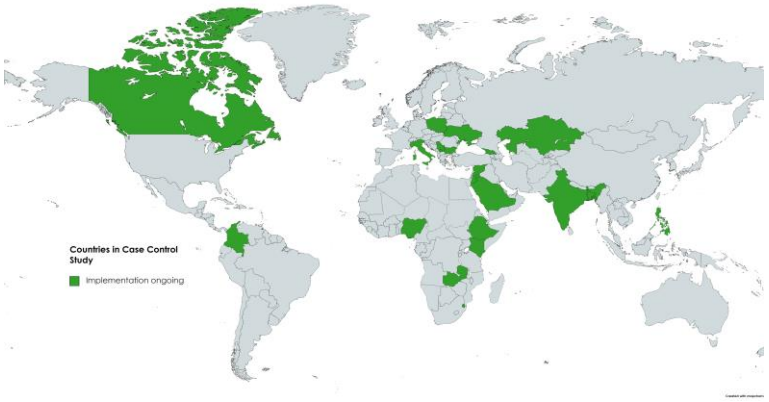
* One study partially conducted in Delta era (after February 2021)
† Only observational evidence was included for these infections
‡ Only RCT evidence was included for these infection
§ N95 or equivalent (e.g. P2 mask)

Strength of evidence
● Moderate
◆ Low
■ Insufficient
- No evidence

Direction of effect
Favors intervention A
Effects similar or no difference
No or too little evidence to determine

Chou R et al. Ann Int Med 2022, update 7 (Dec 2021) doi:10.7326/L21-0783

WHO Multicenter Case Control Study to Assess Risk Factors for COVID-19 in Health care Workers (HCWs)



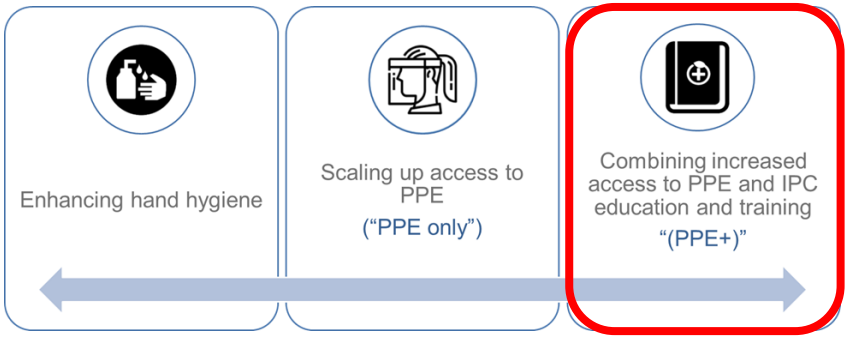
Main findings

- **3057 HCWs** from **121 study sites in 21 countries** participated (~80% low-middle income)
- **Risk factors** associated with COVID-19 infection in health workers identified:
  - Exposure to COVID-19 patients with prolonged **close contact** (>15min within 1 meter)
  - Not always appropriately performing **hand hygiene** after *close* patient contact
  - **Not adhering to PPE guidelines**: **exposure to COVID-19 patients' materials, not wearing a surgical mask or respirator appropriately**
  - Respirators were protective during **aerosol-generating procedures**

Accepted as oral presentation at 32nd ECCMID

IPC is cost-effective in response to outbreaks - OECD/WHO Joint Project on the COVID-19 pandemic

- Cost-effectiveness model used with data regarding the first 180 days of the pandemic
- **Combining increased access to PPE with IPC training** yields the **greatest global health and economic gains**



- **>50% of new infections among HCWs** in South-East Asia, Europe and the Americas, and approximately **1/3rd of new infections** in other regions, **could have been averted**

- **$7.2 billion USD** net savings globally
- **Hand hygiene also cost-effective** in most regions: HH intervention (alone) could have averted about 1 million new infections in health workers

Ozcelik E, Lerouge A, Cecchini M, Allegranzi B, Cassini A. 32nd European Congress of Clinical Microbiology and Infectious Diseases; 23-26 April, 2022. Abstract O0296

Lessons learned for IPC

1. The pandemic revealed significant IPC gaps at national and facility level
2. Health care workers need to be better protected and trained
3. Huge consequences of the pandemic on essential health services, AMR & health care associated infections

Two years into pandemic, health systems across all regions and income levels face persisting disruptions

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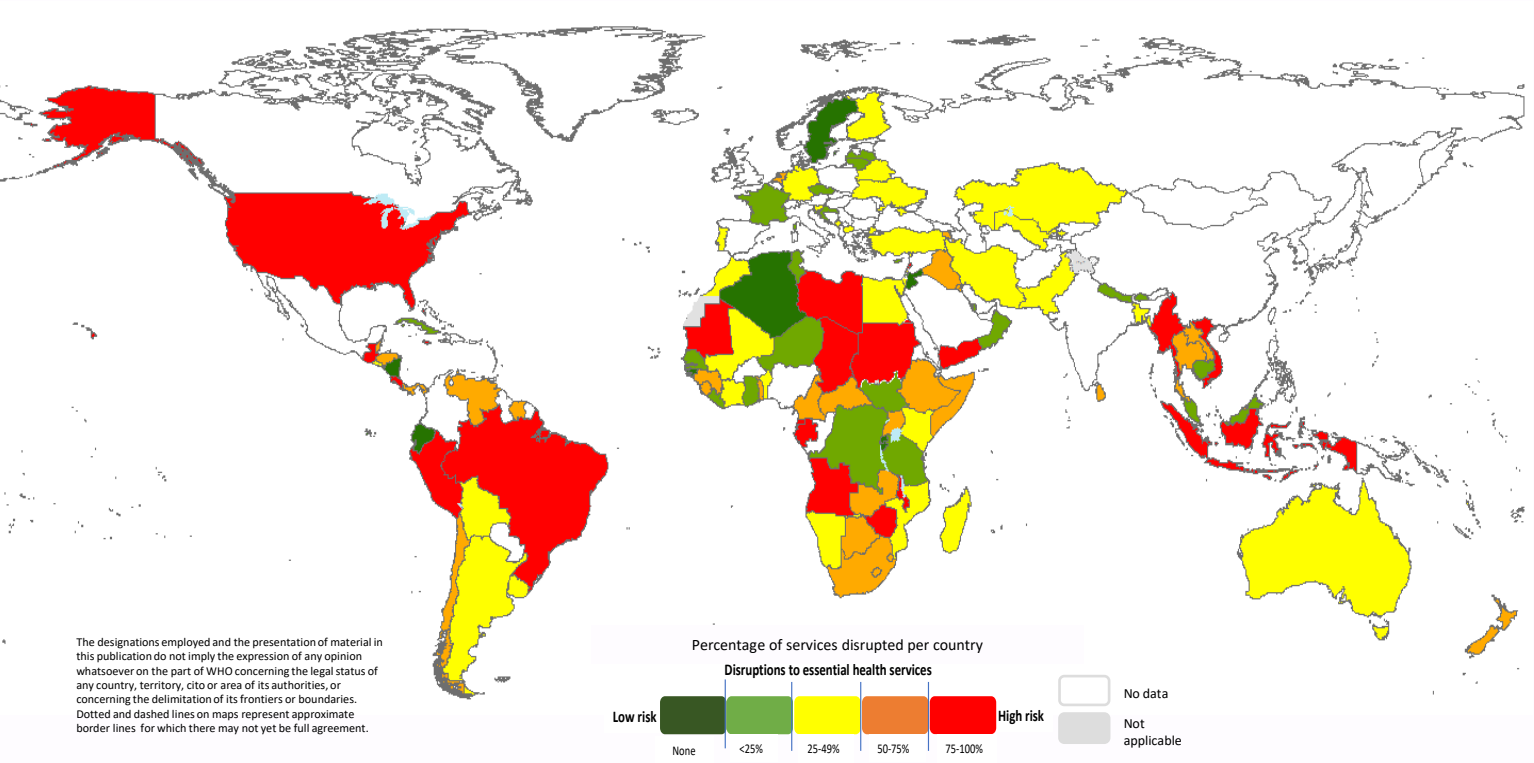
92% (117 of 127) countries reported persisting disruptions in at least one essential health service



On average, countries report disruptions to 45% of tracer health services

Source: WHO Round 3 Global pulse survey on continuity of essential health services (1), Nov-Dec 2021 (reflecting situation during previous 6 months)

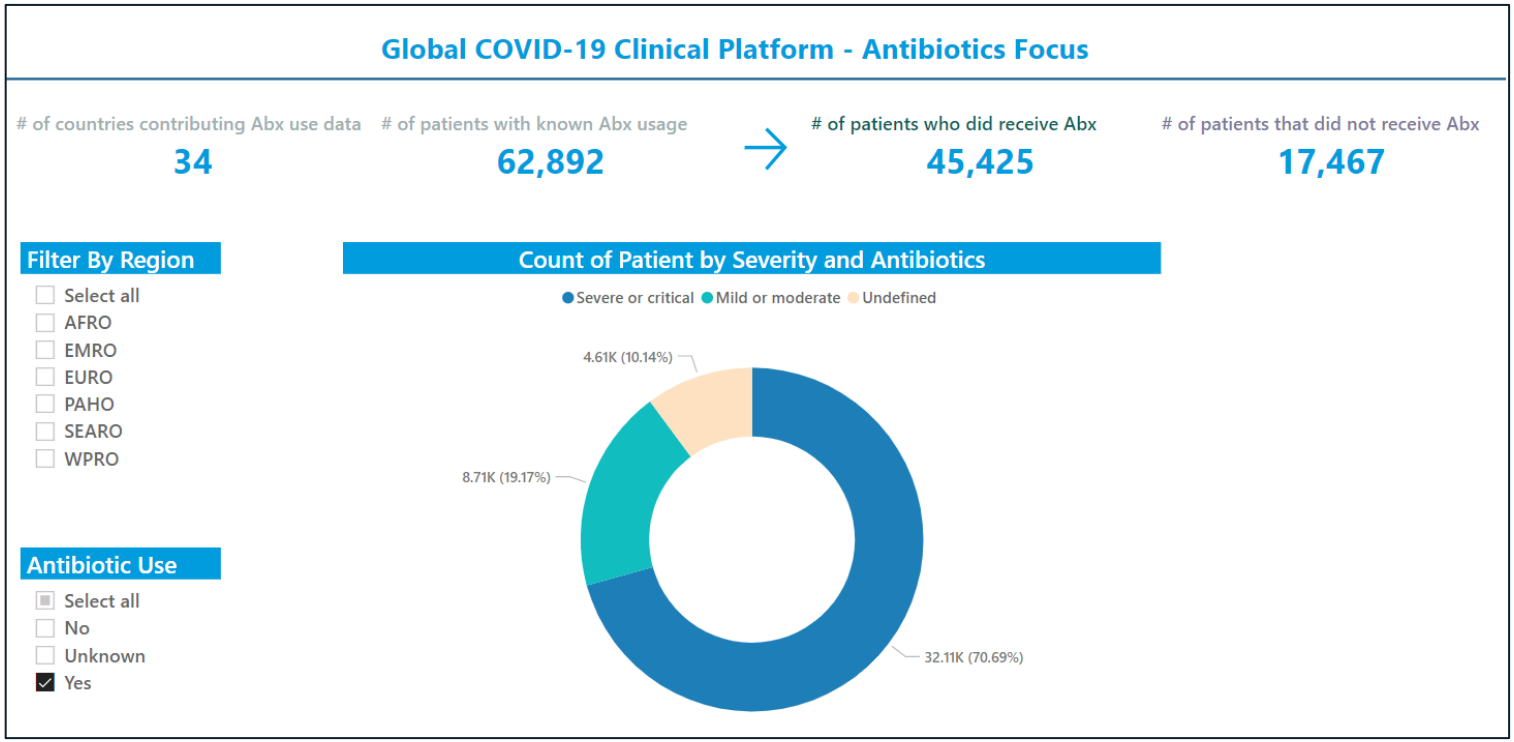
44% of countries in 2020 and **26%** in 2021 indicated **lack of IPC supplies and best practices** as a **major reason for essential health services disruption** (e.g., interruption of routine vaccination programmes)

AMR and COVID-19

- High antibiotic use is a driver of antimicrobial resistance (AMR)
- Antimicrobials are not effective against COVID-19, but often prescribed
- WHO guidance: do not use antimicrobials in mild & moderate COVID-19 patients, unless justifiable

Evidence from the WHO Clinical Platform:

- 72% of people hospitalized with COVId-19 received Abx
  - 70% had mild illness
  - 20% had severe illness and 10% unknown severity



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USA/Changes in the 2020 national HAI standardized infection ratios (SIRs) for acute-care hospitals, compared to 2019

	2020 Q1	2020 Q2	2020 Q3	2020 Q4
CLABSI	↓ -11.8%	↑ 27.9%	↑ 46.4%	↑ 47.0%
CAUTI	↓ -21.3%	No Change[1]	↑ 12.7%	↑ 18.8%
VAE	↑ 11.3%	↑ 33.7%	↑ 29.0%	↑ 44.8%
SSI: Colon surgery	↓ -9.1%	No Change[1]	↓ -6.9%	↓ -8.3%
SSI: Abdominal hysterectomy	↓ -16.0%	No Change[1]	No Change[1]	↓ -13.1%
Laboratory-identified MRSA bacteremia	↓ -7.2%	↑ 12.2%	↑ 22.5%	↑ 33.8%
Laboratory-identified CDI	↓ -17.5%	↓ -10.3%	↓ -8.8%	↓ -5.5%

Weiner-Lastinger LM et al. Infection Control & Hospital Epidemiology (2022), 43, 12–25. doi:10.1017/ice.2021.362

Lessons learned: PPE

- Severe PPE shortages demonstrated **need for decentralized/regional approaches** (in context of a pandemic) for PPE **manufacturing, logistic and disposal**
- Need to focus on **reusable/biodegradable PPE**
- The increased attention on **PPE should not hinder the attention on other IPC measures** (e.g., hand hygiene, training: significantly more effective than PPE alone)
- **Gaps exist among research outputs and the actionable outcomes**: evidence-based cost-effective IPC global measures require **high-quality and timely studies, stemming from collaborative multi-discipline groups**

Zhu, *et al.* 2021. WHO Bulletin *under review*

Thank you

WHO COVID-19 IPC R&D expert group

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Scientific strategies from recent outbreaks to help us prepare for Pathogen X
29-30 August 2022

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