

Sameeksha* – Infection Prevention and Control for COVID-19

* *Sameeksha* is a Hindi word, meaning review. This compilation of recent key IPC resources on COVID-19 includes brief summary of relevant publications from scientific journals; guidelines from WHO, Ministry of Health and Family Welfare and others; training and IEC resources; and links between COVID-19 and AMR. The intended target audience for this includes clinical and public health professionals in both public and private sector in India. Kindly note: inclusion of publications and resources in this review/compilation does not imply an endorsement by WHO.

Key highlights of volume 19

- Analysis of an outbreak of nosocomial COVID-19 at a tertiary care centre in South India
- WHO toolkit on IPC in health-care facilities in the event of a surge or resurgence in cases of COVID-19
- Guidelines for provision of family planning services during and post COVID-19 pandemic
- Infection prevention and control in maternal and neonatal care
- An Indian perspective on delineating the impact of COVID-19 on AMR

Publications from scientific journals

Analysis of an outbreak of nosocomial COVID-19 at a tertiary care centre in South India

- Incidence of nosocomial COVID-19 infections was found to be 8.6% compared with the total burden of COVID-19 patients in hospital during the same time period.
- Despite low nosocomial COVID-19 in their centre, suggests a policy of universal gloving, coupled with the already existing practice of universal N95 masking and face shield use, could potentially bring down the rate of nosocomial COVID-19 even further.

JRCPE | Article | 10 December 2021 | [Online link](#)

Hidden hazards of SARS-CoV-2 transmission in hospitals: a systematic review

- Multivariate analyses identified patient areas and aerosol-generating procedures to promote, whereas patient masking decreased both air and surface borne SARS-CoV-2 contamination which presents a notable hazard of hospital associated COVID-19.
- Proposes that the type of ventilation used, the presence of effective air filtration, purification, or sufficient fresh air supply as well as more than 16 ACH are crucial in ensuring appropriate dilution for infection prevention and control.

Wiley | Review | 4 December 2021 | [Online link](#)

Are coveralls required as personal protective equipment during the management of COVID-19 patients?

- Contamination of PPE rarely occurred if the contact time with patients was relatively short (≤ 30 min) during the management of patients with severe-to-critical COVID-19 and was identified only in the gown-covered parts and it was statistically significant.
- Study suggests that a long-sleeved gown would be adequate to protect the body from contamination with SARS-CoV-2 because significant differences of contamination according to symptom onset, contact time, or type of activities were not identified.

BMC | Short report | 27 November 2021 | [Online link](#)

Infection prevention strategies are highly protective in COVID-19 units while main risks to healthcare professionals come from coworkers and the community

- Multivariable regression models to assess healthcare professional (HCP) exposure risk faced in community settings and non-patient care work activities, while accounting for the infection prevention strategies in place within healthcare settings.
- Highlights that prior to universal masking, COVID-19 risk of HCP was dominated by workplace and community exposures suggesting that infection prevention protocols prevent patient-to-HCP transmission.

BMC | Research | 22 November 2021 | [Online link](#)

Effectiveness of infection prevention and control interventions, excluding personal protective equipment, to prevent nosocomial transmission of SARS-CoV-2

- Review underscores the lack of available evidence on the effectiveness of IPC strategies for SARS-CoV-2 infection in hospitals and the need to generate evidence which could also be applicable to other pathogens.
- Calls for high quality intervention studies to determine systematically which IPC measures to implement in healthcare settings and to inform policies to protect our most vulnerable populations and healthcare workers.

IPP | Review | 29 November 2021 | [Online link](#)

Intestinal viral infections of nSARS-CoV2 in the Indian community: risk of virus spread in India

- Review evidence of gastrointestinal contamination and dissemination of nSARS-CoV-2 infection via potential faecal–oral transmission and suggests further studies to address enteric involvement.
- The study concludes that faecal route of nSARS-CoV2 only enhances risk of infection and COVID-19 cases and also contaminates water resources, with the need for wastewater and sewage surveillance and water treatment.

JMV | Review | 26 November 2021 | [Online link](#)

Brought to light: how ultraviolet disinfection can prevent the nosocomial transmission of COVID-19 and other infectious diseases

- Explores disease transmission in healthcare facilities and the possible role of ultraviolet (UV) disinfection which can be integrated with manual environmental cleaning in high-risk areas.
- Suggests research into the long-term benefits of UV disinfection and reduction of HAI rates to promote this technology for use in clinical settings.

Applied Microbiology | Review | 16 November 2021 | [Online link](#)

The influence of the use of face masks during the COVID-19 pandemic on the human microbiome – a mini-review

- Highlights the mask use in conjunction with other preventive measures, including isolation of infected people, immunization, proper respiratory culture, regular, frequent replacement of masks, and hand hygiene.
- Draws attention to educating society on hand hygiene and the value of nose and mouth covers, along with frequency of their replacement and/or disinfection.

OMJ | Review | 17 November 2021 | [Online link](#)

A cold chain-independent specimen collection and transport medium improves diagnostic sensitivity and minimizes biosafety challenges of COVID-19 molecular diagnosis

- Evaluation of the newly developed clinical specimen collection medium, SupraSens microbial transport medium (SSTM) compared to commercial viral transport medium (VTM) in field studies SSTM could capture more symptomatic and asymptomatic COVID-19 patients and yielded significantly lower quantitative PCR threshold cycle values.
- Study highlights the global utility of SSTM in overcoming the major bottlenecks to equitable access to molecular testing.

ASM | Research | 8 December 2021 | [Online link](#)

SARS-CoV-2: overview and its impact on oral health

- Survival against SARS-CoV-2 infection may be partially dependent on periodontal health, good oral hygiene, and access to dental care.
- Optimum oral health, maintaining good systemic health, and elimination of smoking habits may be beneficial for the prevention and management of COVID-19 infections.

Biomedicines | Review | 15 November 2021 | [Online link](#)

WHO and other guidelines

Infection Prevention and Control (IPC) in health-care facilities in the event of a surge or resurgence in cases of COVID-19

- Prioritization toolkit providing a framework for action steps and is accompanied by references to existing WHO resources to assist with managing each step
- Intended for emergency operations centre focal persons for health facilities, incident managers, health-care managers and administrators, and infection prevention and control focal persons

WHO | Prioritization toolkit | 17 December 2021 | [Online link](#)

WHO recommendations on mask use by health workers, in light of the Omicron variant of concern

- Interim guidelines superseding earlier recommendations published on 1 October 2021.
- New conditional recommendation added on the use of respirators in healthcare settings where ventilation is known to be poor or cannot be assessed or the ventilation system is not properly maintained.

WHO | Interim guidelines | 22 December 2021 | [Online link](#)

COVID-19 infection prevention and control living guideline: mask use in community settings

- Provides updated technical guidance on mask use in community settings in the context of the evolving epidemiological situation of COVID-19, including the emergence of the variant of concern Omicron.
- New information includes updated mask recommendations for the general public, a statement on policies for adherence to preventive measures and on the type of mask to be used by higher-risk individuals.

WHO | Living guideline | 22 December 2021 | [Online link](#)

Enhancing readiness for Omicron (B.1.1.529): technical brief and priority actions for member states

- The use of well-fitting masks, physical distancing, ventilation of indoor space, crowd avoidance, and hand hygiene remain key to reducing transmission of SARS CoV-2 even with the emergence of the 3 Omicron variant.
- Diagnostic accuracy of routinely used PCR and antigen-based rapid diagnostic test (Ag-RDT) assays does not appear to be influenced by Omicron. Most Omicron variant sequences reported include a deletion in the S gene, causing some S gene targeting PCR assays to appear negative.

WHO | Brief | 17 December 2021 | [Online link](#)

Global analysis of healthcare waste in the context of COVID-19

- WHO will launch the WHO Global analysis of health care waste in the context of COVID-19 in January 2022.
- The report will reflect on the current health care waste situation, in relation to personal protective equipment, highlighting innovative solutions and lays out a set of recommendations for integrating better, safer, and more environmentally sustainable waste practices into the current COVID-19 response and future pandemic preparedness efforts.

WHO | Brief | 28 November 2021 | [Online link](#)

MoHFW guidelines

Guidelines for provision of family planning services during and post COVID-19 pandemic

- Emphasises adherence to IPC protocols including cleaning, waste segregation and transportation.
- Includes key infection prevention and control practices specific for family planning services.

MoHFW | Guidelines | 24 November 2021 | [Online link](#)

Guidelines for international arrivals

- New guidelines issued in view of reporting of a new variant of SARS-CoV-2 (B.1.1.529; named Omicron) which has been now classified as Variant of Concern by the World Health Organization in supersession of all guidelines issued on the subject on and after 28 November 2021)

MoHFW | Guidelines | 30 November 2021 | [Online link](#)

FAQs on SARS-CoV-2 variant-Omicron

- Reiterated that the infection prevention and control precautions and steps to be taken remain same as before which include proper masking, vaccination, physical distancing and good ventilation.

MoHFW | FAQs | 3 December 2021 | [Online link](#)

Training / IEC resources

Infection prevention and control in maternal and neonatal care

- One of the most relevant determinants of deaths from maternal and neonatal sepsis is poor knowledge of infection prevention and control (IPC) standards and principles among front line health care workers.
- Addresses an urgent need for strengthened training strategies to support successful implementation and IPC country capacity building.

OpenWHO | MOOC | December 2021 | [Online link](#)

Infodemic management 101

- The course covers an overview of the COVID-19 infodemic, along with strategies and tools to navigate through misinformation and disinformation.

OpenWHO | MOOC | December 2021 | [Online link](#)

COVID-19 and Antimicrobial Resistance

Delineating the impact of COVID-19 on antimicrobial resistance: an Indian perspective

- Outlines that extensive production and use of antimicrobials during the pandemic may have contaminated the environment with antimicrobial residues which could select for antimicrobial resistance in bacteria.
- Emphasizes the need for research studies to understand the impact of the pandemic on AMR in India.

STE | Review | 16 November 2021 | [Online link](#)

COVID-19 pandemic: upswing in antibiotic misuse

- Misuse of azithromycin and doxycycline have worsened the already existing problem of AMR.
- Suggests that measures aimed at controlling COVID-19 pandemic need to be complemented with promoting antibiotic prudence, minimising irrational antibiotic use and encouraging development of new antibiotics.

MMS | Review | 5 December 2021 | [Online link](#)

C-reactive protein-guided use of procalcitonin in COVID-19

- Heterogeneity in procalcitonin (PCT) measurements was observed, with maximal positive predictive value of 50% for high CRP values whereas low CRP was strongly predictive of low PCT concentrations.
- CRP-guided PCT testing algorithms can reduce unnecessary PCT measurement and associated high costs, further supporting antimicrobial stewardship strategies in COVID-19.

JAC | Article | 28 November 2021 | [Online link](#)

Increment antimicrobial resistance during the COVID-19 pandemic: results from the Invifar network

- Mexican study represented 46 centres and provided 2 different approaches (whole-year analysis and exclusive COVID-19 centres analysis) of a 2-year comparison of pre-pandemic and pandemic periods.
- Showed increase in AMR during the COVID-19 pandemic with an increase in oxacillin resistance for *S. aureus* and carbapenem resistance for *K. pneumoniae* from blood specimens, probably due to increased consumption.

MDR | Article | 6 December 2021 | [Online link](#)

A metabolomics approach for the diagnosis of secondary infections in COVID-19

- Scottish multi-centre prospective diagnostic observational study explored the metabolite changes associated with bacterial infections in COVID-19 patients comparing data sets with microbiological and biochemical methods of diagnosing infection.
- Suggests metabolomics analyses may provide additional strategies for identifying secondary infections, which might permit early specific tailored antimicrobial therapy to critically ill patients with COVID-19.

BMC | Study Protocol | 2 December 2021 | [Online link](#)

Analysis of the prescription of antibiotics during the implementation of COVID-19 personal protection measures in a regional health system

- Spanish study looked the prescription of antibiotics during the COVID-19 pandemic time and found the prescription of antibiotics in 2020 was significantly lower than in 2019.
- Highlights that personal protection measures against COVID-19 transmission coincide with the greatest reduction of antibiotic prescription.

CEOR | Research | 15 November 2021 | [Online link](#)

Discarded masks as hotspots of antibiotic resistance genes during COVID-19 pandemic

- In-situ time-series experiment investigated the dynamic changes of antibiotic resistance genes (ARG), bacteria and protozoa associated with discarded masks and found relative abundance of ARGs in masks increased after 7 days.
- Study showed masks shelter and enrich microbial communities and highlights the importance of managing discarded masks with the potential ecological risk of mask contamination.

JHM | Research | 15 November 2021 | [Online link](#)

Impact of the SARS-CoV2 pandemic on a persuasive educational antimicrobial stewardship program in a university hospital in Southern Italy

- Interrupted time series analysis compared the antibiotic consumption and costs, average length of hospital stay and in-hospital mortality between 12 months before and 9 months after the interruption.
- Concludes that the interruption of ASP during COVID-19 led to an increase in the consumption of broad-spectrum antibiotics, particularly in surgical wards.

Antibiotics | Articles | 16 November 2021 | [Online link](#)

Trend analysis of carbapenem-resistant Gram-negative bacteria and antimicrobial consumption in the post-COVID-19 era, an extra challenge for healthcare institutions

- Analysis in 99 critical care facilities in Brazil, showed carbapenem-resistant *A. baumannii* (CRAB)/1,000 patient-day increased in 2020 and this finding had a strong positive correlation with the incidence of COVID-19.
- Polymyxin consumption also increased but without significant correlation to CRAB or COVID-19 incidence highlighting the need to strengthen infection control programmes and antimicrobial stewardship.

JHI | Short report | 19 November 2021 | [Online link](#)