Improving Infection Prevention and Control Standards in Tertiary Care Hospitals of Bangladesh: Policy Recommendations Based on Baseline Assessment Results

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Key Messages:

1. **This cross-sectional study shows a need for an IPC strategy in hospitals in Bangladesh.**
2. **Most hospitals fell into the category of Basic IPC level (40.45%).**
3. **Non-teaching private hospitals scored an advanced level of IPC.**
4. **Only 16% of hospitals had full-time IPC professionals, and none in national institutes.**
5. **Except for non-teaching private hospitals, only 3% have guidelines for antibiotic stewardship.**
6. **Most private and public hospitals had inadequate healthcare workers (HCWs).**

Context to the study

Infection prevention and control (IPC) is an evidence-based approach and practical solution to prevent hazards caused by avoidable infection to patients and health workers at every healthcare interaction. Achieving quality healthcare delivery is only possible with effective IPC (1). Effective IPC strengthens patient safety and the health system (2).

The burden of HCAI is much higher in low- and middle-income countries (LMICs) than in high-income countries. Programs to support IPC are essential in low- and middle-income countries, where secondary infections may negatively affect health care delivery and medical hygiene standards (3).

Essential, effective IPC programs can influence the quality of care, improve patient safety, and protect all those providing care in the health system (4).

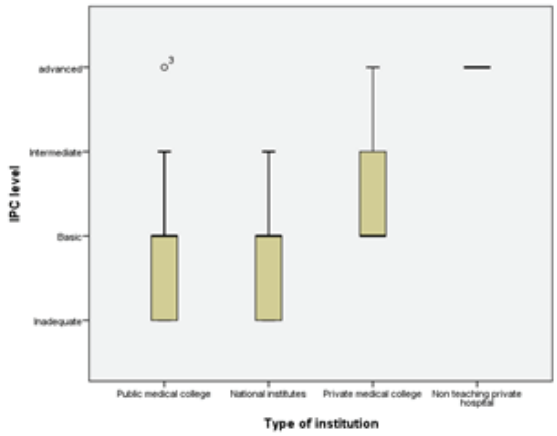
There are very few studies regarding this in Bangladesh. One study shows that HCAIs account for about 5% of patients staying in hospital longer than 72 hours and that healthcare workers have also been affected by respiratory tract infections at work in about 27% (5). Another study found that hospital-acquired diarrhea occurred in 4% of healthcare workers and 2.6% of hospital patients (6). Other studies from Bangladesh have estimated overall rates of HCAIs ranging from 8 to 30%, exacerbated by inadequate IPC. (7,8)

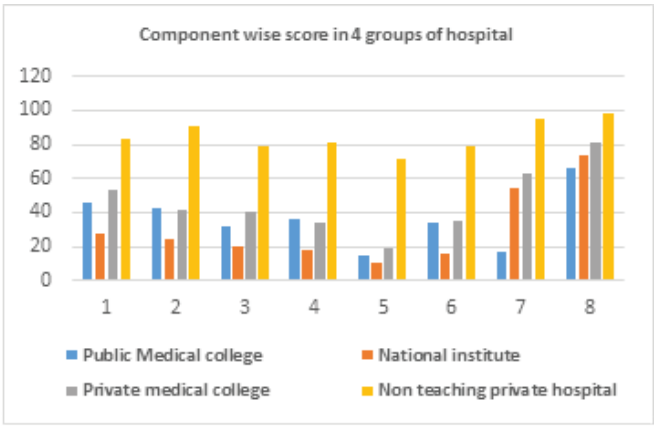
The World Health Organization (WHO) developed the Infection Prevention and Control Assessment Framework (IPCAF) tool to support the implementation of guidelines on core components of IPC programs at the acute facility level. The IPCAF is a closed structured questionnaire with an associated scoring system. It is primarily intended for self-administered but can also be used for collaborative assessments through in-depth discussions between external assessors and facility staff. The frame can also be used in inpatient hospital settings. This is a valid global tool for assessing IPC standards in each country. It can be recognized as a diagnostic tool for facilities to detect relevant problems or deficiencies that need improvement and to identify areas where they can meet international standards and requirements. (9,10)

Summary of Research

Background: Infection prevention and control (IPC) in healthcare facilities is crucial for the safety and well-being of patients, healthcare workers, and the community. Strengthening the IPC program is essential to prevent healthcare-associated infection and reduce the burden of infectious diseases. IPC is an under-focused area in Bangladesh. This study assessed the current IPC level of different tertiary care hospitals all over Bangladesh, including public and private facilities.

Methods: A cross-sectional study was conducted in 37 tertiary care hospitals across Bangladesh from December 2022 to May 2023. Hospitals were grouped into public medical college hospitals (n=11), Private medical college hospitals (n=11), national institutes (n=11), and non-teaching private hospitals (n=4). Information was collected from the IPC focal person and/or hospital administrator using the WHO IPCAF questionnaire. A face-to-face interview was taken, and the IPC level was calculated by summating eight core components (CC) of the questionnaire into Inadequate, Basic, Intermediate, and Advanced. Key features of each of the eight core components were analyzed.





Result: The overall median IPCAF score was 252.50(IQR: 194-470.75), ranging from 130 to 785. The majority of hospitals (n=15) fell into the category of Basic IPC level (40.45%), 9 into inadequate (24.32%), 7 into Intermediate (18.91%), and 6 into advanced level (16.2%). 36.36% of public medical colleges, 45.45% of national institutes, and 54.54% of private medical colleges had basic IPC levels. All 4 non-teaching private hospitals scored advanced levels of IPC. Regarding core component (CC), the highest median score (80) and the mean score was 20.81 in CC 8 (Built environment, materials, and equipment), the lowest median score (0) and the mean score was 76.36 in CC 5 (Multimodal strategies for implementation of IPC). CC 4 (Healthcare-associated infection surveillance) and CC 6 (monitoring/audit of IPC practices and feedback) had the second-lowest median score of 25. Only 16% of hospitals had full-time IPC professionals, and none in national institutes. Except for non-teaching private hospitals, only 3% have guidelines for antibiotic stewardship. Most hospitals had adequate water and power supply, but most private and public hospitals had inadequate healthcare workers (HCWs).

Conclusion: Though there is a need for more IPC strategy, significant improvement can be made by some policy-level decisions, institutional initiatives, and regular monitoring and adopting of surveillance programs.

Policy Recommendations

1. Strengthening IPC Programs: by increasing resources and personnel dedicated to IPC, including increasing funding, providing adequate staffing, and ensuring the availability of essential IPC supplies.

2. Development of IPC Professionals: including hiring infection prevention specialists and establishing a career path for IPC specialists. These professionals should be trained in the latest IPC guidelines and best practices.

3. Standardization of IPC Guidelines: updated regularly in consultation with stakeholders and tailored to the specific needs of each healthcare facility.

4. Emphasis on IPC Education and Training: for all healthcare workers, including doctors, nurses, and support staff. This includes training on proper hand hygiene practices, the use of personal protective equipment, and safe handling and disposal of infectious materials.

5. Special Consideration on Health-Associated Infection Surveillance: To identify areas of improvement in IPC programs, regularly collect and analyze data on healthcare-associated infections to monitor trends and identify areas for improvement.

6. Adopting Multimodal Strategy: implementing IPC interventions, including education, monitoring, feedback, and environmental controls. This can help ensure that IPC practices are implemented consistently and effectively.

7. Implementation of Monitoring and Audit of IPC Practices and Feedback: to identify areas for improvement. Feedback should be provided to healthcare workers to reinforce good practices and address areas where improvement is needed.

8. Standardization of Workload, Staffing, and Bed Capacity: to meet the needs of patients and maintain safe IPC practices.

9. Efficient Management of Built Environment, Materials, and Equipment for safe IPC practices. Healthcare facilities should ensure that facilities are adequately maintained and cleaned and that equipment and materials are regularly inspected and replaced when needed.

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