

## TECHNICAL HIGHLIGHT



# Institutionalizing Infection Prevention and Control in a TB and Lung Disease Hospital in Bangladesh

Team of nurses working at MDR-TB wards. (Photo credit: CTB)

## BACKGROUND

Tuberculosis (TB) is a major public health problem in Bangladesh. According to the World Health Organization's Global TB Report 2018,<sup>1</sup> Bangladesh ranks among 30 high TB-burden countries. In 2017, an estimated 364,000 new TB cases occurred with an incidence rate of 221 per 100,000 population. About 59,000 people died because of TB, and 5,800 new cases of drug-resistant TB (DR-TB) occurred. TB infection prevention and control (IPC) is an important strategy to prevent disease transmission—it is a combination of measures to minimize the risk of transmission from a TB case to other patients, health care providers, and the wider population. Health care providers

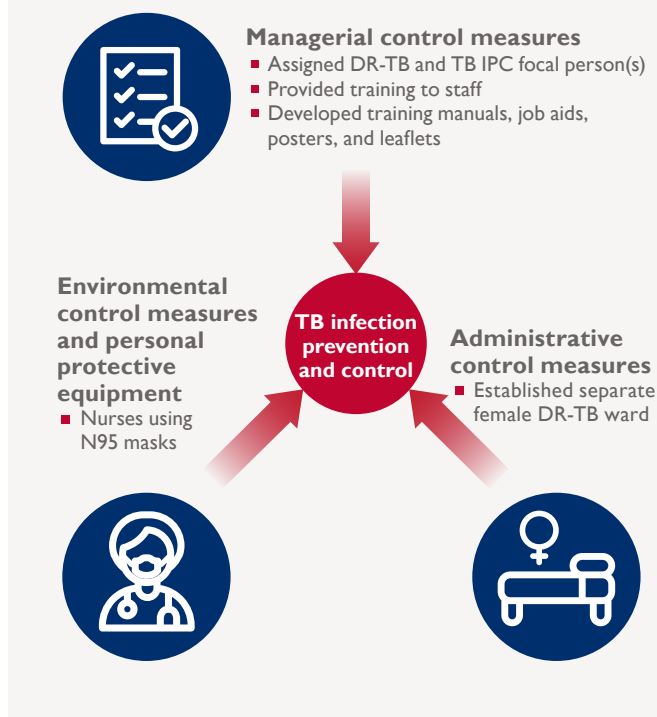
are most at risk of TB infection and disease compared to the general population. Because the risk of transmission of TB is much higher in health care settings, interventions to limit exposure and transmission are urgently needed. In Bangladesh, TB IPC is not followed strictly, creating a high risk of TB infection for both health care providers and patients. The USAID-funded Challenge TB (CTB) Project in Bangladesh is working in collaboration with the National Tuberculosis Control Programme (NTP) and the National Institute of Diseases of the Chest & Hospital (NIDCH) to strengthen TB IPC practices among nurses and patients.

## STRATEGIC RESPONSE

NIDCH is a specialized hospital for patients with respiratory diseases, including drug-sensitive TB and DR-TB. On average, 800 patients, of which 200 have TB or DR-TB, visit the outpatient department every day, and around 750 patients are admitted. Since December 2018, the approach (figure 1) that CTB and NIDCH have employed to reduce risks has included the following:

- Advocating to form a functioning TB IPC committee and developing an infection control plan per standard guidelines
- Training nurses to implement TB IPC measures
- Orienting DR-TB patients to create awareness
- Developing and displaying information, education, and communication (IEC) materials for health care providers, patients, and visitors
- Venue branding with TB messages
- Coordinating with NTP to ensure facility upgrades, such as installation of UV light, and logistics, such as providing N95 and surgical masks
- Regularly supervising TB infection control measures

FIGURE 1. TB IPC approach and selected achievements



## IMPLEMENTATION

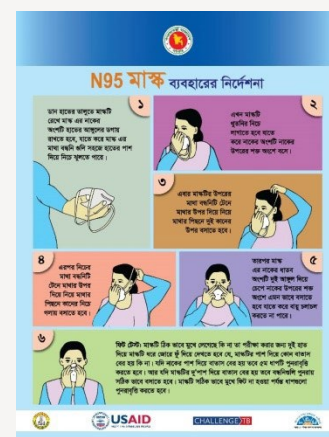
CTB Bangladesh staff, the director of the NIDCH, the focal person for DR-TB, and the nursing superintendent held regular meetings to institutionalize TB IPC among the staff of the hospital. A number of core interventions were developed.

- The project conducted training on TB IPC for nurses, including those newly appointed at NIDCH, to strengthen their capacity to improve TB IPC practices, particularly at DR-TB wards and the DOTS corner.
- The project also trained NIDCH staff on counseling TB patients for better treatment adherence.
- The project developed and printed two training manuals on TB IPC, job aids with instructions for health care providers on wearing N95 masks, and IEC materials (e.g., posters on TB IPC and leaflets on cough etiquette and treatment adherence for patients). These posters and job aids were installed at the DOTS corner, outpatient department, DR-TB wards, and laboratory at NIDCH.
- The project developed and installed posters for venue branding and signage in DR-TB patients' wards and at different locations at NIDCH. The posters with TB

awareness messages are intended to encourage visiting patients to carry out best practices to prevent infection. The signs indicated service delivery rooms, such as DR-TB wards, DR-TB control room, DOTS corner, national TB reference laboratory, and sputum collection site to help patients easily find designated areas.

- The project conducted orientation on TB IPC in two DR-TB wards to create awareness and improve TB IPC practices during hospital admission.
- The project conducts weekly follow-up visits to assess TB IPC practices at NIDCH with a checklist.

Job aid on wearing N95 masks. (Photo credit: CTB)



Venue branding and installation of posters at MDR-TB ward. (Photo credit: CTB)



Orientation on TB infection prevention with patients wearing masks (Photo credit: CTB)



## RESULTS AND ACHIEVEMENTS

Because of continuous advocacy, a specialist in respiratory medicine has been assigned as a focal person on DR-TB and TB IPC to oversee activities. From December 2018 to February 2019, 242 nurses and service providers were trained, among them 152 who were newly deputed on TB IPC. Because of these trainings, awareness of disease transmission has been raised among nurses working at the DR-TB ward. Nurses are regularly using N95 masks when handling patients in wards and collecting sputum. Patients are now also using surgical masks.

We also oriented 91 DR-TB patients on TB IPC, so patients are now following guidance on cough etiquette. In the female DR-TB ward, TB and non-TB patients were mixed together; as a result of continuing advocacy with NIDCH, non-TB patients were shifted to a separate female ward.

CTB printed and distributed 300 job aids on wearing N95 masks for health care providers, 300 posters on TB

IPC, and 4,000 leaflets on cough etiquette and treatment adherence. These IEC materials are designed for the patients and health facility's staff with an aim to reduce the risk of disease transmission.

Because of continuous support and monitoring from the project and NIDCH's focal person, TB IPC practices are improving day-by-day, and awareness among health care providers and patients has improved, which has been observed by on site monitoring using a checklist. Moreover, NIDCH has assigned two staff nurses for counseling and two staff nurses to manage TB information systems. CTB provided training to 12 nurses, including 2 working on information systems, on counseling DR-TB patients. The admitted DR-TB patients (approximately 100) are being counseled on the importance of treatment adherence and follow-up laboratory investigations.

## LESSONS LEARNED

- After the interventions, significant progress has been made so far at NIDCH. Through advocacy and training, nurses are more aware of practicing TB IPC.
- Staff capacity-building activities and supervision are lacking because of resource and logistics gaps.
- Because NIDCH is overburdened with patients with other respiratory diseases, isolation of the DR-TB ward to limit the transmission of TB among staff, patients, and family members is difficult.
- Triaging TB patients promptly, separating infectious patients, controlling the spread of pathogens (cough etiquette and respiratory hygiene), and minimizing time spent in the hospital can further strengthen IPC activities.



## Acknowledgments

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Nurse practicing IPC measures in MDR-TB ward. (Photo credit: CTB)



## WAY FORWARD

Despite important achievements, continuing to improve IPC at a specialized hospital such as NIDCH, remains critical. CTB recommends the following:

- Revitalize the IPC committee and develop an infection control plan that includes TB IPC; outlines practices for early identification, separation, and rapid diagnosis of people with possible TB; and initiates treatment and follow-up of confirmed TB cases.
- Assign a focal person for IPC to oversee that infection control procedures are implemented.
- Include airborne precautions, an uninterrupted supply of N95 masks for staff and surgical masks for the patients, and installation and maintenance of UV light as part of the infection control plan. However, maintenance and repair of UV germicidal irradiation is critical to getting the full benefit of the technology; this technology is lacking at NIDCH.
- Require TB IPC capacity-building activities for physicians and nurses. TB patients should be oriented continuously on TB IPC to make them and their family members aware and confident of the practices.
- Conduct periodic screening for health care providers who are at risk. CTB coordinated with NIDCH and NTP to initiate the process, but NTP should plan for large-scale screening and provision of rifapentine-based preventive treatment for preventive therapy followed by routine screening.

## References

- <sup>1</sup> WHO. Global Tuberculosis Report 2018. WHO/CDS/TB/2018.20. Geneva, World Health Organization 2018.

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