Strengthening airborne infection control measures in Mumbai health facilities, 2016-2020

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Introduction

The COVID-19 pandemic highlights the importance of having infection control policy and practices in place at healthcare facilities (HCF) to protect patients and health care workers.

SHARE INDIA and Centers for Disease Control and Prevention collaborated with Municipal Corporation of Greater Mumbai (MCGM) to build institutional capacity and strengthen airborne infection control (AIC) measures in primary and secondary HCF in ten municipal wards of Mumbai.

Methods

- MCGM's multi-disciplinary AIC unit (AICU) provided on-site AIC training, periodic monitoring assessments, intensive follow-up, and mentorship for each HCF.
- Baseline and four follow-up assessments scheduled every ~4-6 months.
- A standardized 41-indicator monitoring tool reflecting national guidelines assessed AIC measures in 10 wards.
- Baseline assessments were phased during October 2016–February 2018 and follow-up assessments completed August 2019–Jan 2020.

Results

- AICU completed baseline and follow-up assessments at 143 HCF over 29 months.
- Compliance with AIC policies and practices for administrative, environmental, and personal protective equipment measures increased over baseline by 16%, 4% and 22% respectively. Compliance with 'separation or triage of coughing patient', important for limiting transmission of respiratory pathogens, had the least improvement, from 1% to 10%.
- Overall, annual screening of healthcare workers for tuberculosis increased from 8% to 36%.
- The level of improvements of individual indicators varied: net difference in appointing a designated AIC point-person increased by 86%, masking coughing patients by 32%, implementing crowd management by 15%, ensuring open unobstructed windows by 12%, and correctly wearing N95 respirators by 22%. **(Table 1).**
- A dashboard was developed using the data to monitor the progress on the implementation of AIC indicators from baseline to fourth follow up **(Image 1) .**

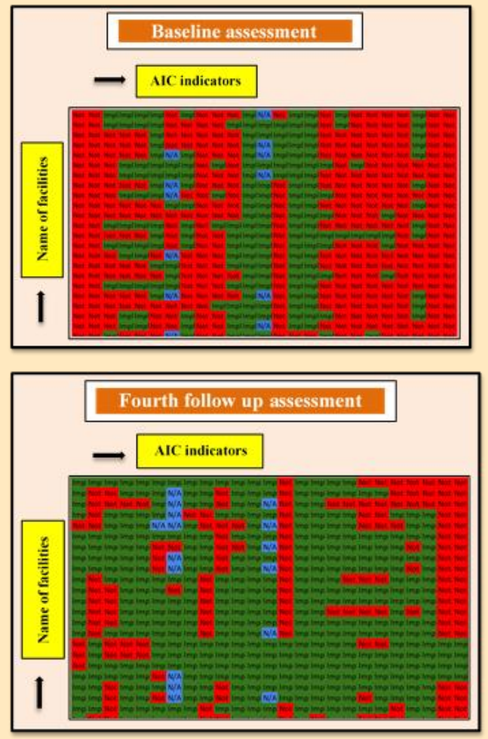
Conclusion

Assuring effective AIC measures in HCF is essential to protect patients and health care workers but can be resource intensive and challenging to implement and monitor. An innovative model which included training, periodic assessments utilizing a standardized monitoring tool, and intensive follow-ups and mentorship by a dedicated AIC team was associated with improved compliance for all AIC measures.

Table 1: Changes in compliance with airborne infection control measures after AIC unit assessments at primary and secondary Mumbai healthcare facilities (n=143)

Assessment indicators	Implemented (%) at Baseline (Oct 2016)	Implemented (%) at 1st follow up (Mar 2017)	Implemented (%) at 2nd follow up (Sep 2017)	Implemented (%) at 3rd follow up (May 2019)	Implemented (%) at 4th follow up (Aug 2019)
Designated infection control point of contact (POC) identified (asked)	2%	84%	96%	91%	88%
Patient waiting areas not crowded (observed)	48%	51%	56%	59%	63%
Patients with cough are fast tracked to the health care provider (observed)	3%	26%	36%	51%	50%
Patients with cough are promptly separated from others (observed)	1%	6%	12%	13%	10%
Surgical mask or handkerchief provided to coughing patients (observed)	34%	56%	62%	63%	66%
Sputum is collected in a designated area far away from others, preferably outdoors (observed)	23%	68%	74%	65%	67%
All windows/doors opened without obstruction (observed)	68%	77%	80%	82%	80%
Staff wearing N-95 respirators correctly (observed)	31%	54%	59%	51%	53%
N-95 respirators are readily available to staff who have contact with coughing patients, patients with presumptive TB (observed)	54%	75%	75%	67%	70%
Staff are symptom screened for TB disease annually (Ask)	8%	26%	26%	35%	36%

Image 1: Dashboard for monitoring progress on AIC implementation from baseline to 4th follow up



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