cines were classified partially immunized and those which were not vaccinated at all were classified not immunized.86.1% were fully Immunized, 10.6% were partially immunized and 3.4% were not immunized.

Conclusion: Our study revealed that Immunization status of the children in an Affluent society (Hayatabad) was satisfactory. However it was below the International standards due to lack of information about the vaccination schedule and busy routine of the parents. The coverage can be standardized by running vaccination awareness campaigns through social media.

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Tuberculosis infection control in selected facilities managing drug-resistant tuberculosis in Bangladesh: Findings from a mixed-methods study

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Background: Nosocominal Tuberculosis epidemics in hospitals are a major threat to the patient and health workers safety. On the other hand, implementation of Tuberculosis infection control policy, strongly influences the prevention and transmission of Tuberculosis in hospitals. Thus we aimed to check the status of Tuberculosis infection control in the major drug-resistant Tuberculosis management centers of Bangladesh.

Methods and materials: We leveraged an explanatory mixed-methods design to contextualize this study. We included ($n=3$) major drug-resistant Tuberculosis management centers of Bangladesh to check their complaiance with the national Tuberculosis infection control policy. Non-participatory observations ($n=18$) using a structured observation checklist and record review using standard document review checklist were employed to check the extent of the implementation of infection control policy. After the quantitative data were analyzed, indivually at each hospital, we developed guidelines to explain the reasons for non-compliance with the Infection control standards. Hence, we conducted 9 Key-informant interviews with Managers,16 In-depth Interviews with health care providers, 12 In-depth Interviews with patients and 6 In-depth-phone Interviews with field staff ($n=43$). The data collection commenced from November 2018 to December 2018. The ethical approval for this study was sought from BRAC James P Grant school of public health.

Results: The infection control at drug-resistant Tuberculosis management centers have a scope of improvement. Survey findings revealed absence of dedicated budget for infection control, no capacity building activities, sub-optimal triage practices, sub-optimal ventilation, and non-compliance to personal protective equipment including N-95 masks. However, qualitative findings revealed that the reasons for non-compliance with infection control standards included; lack of funds, lack of infection control committee, lack of authority and lack of training.

Conclusion: Infection control practices at drug-resistant Tuberculosis management centers of Bangladesh require special attention of the national policy makers. The reasons for non-compliance with infection control standards are interconnected and represent asymmetries at individual, hospital and national levels.

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Nanoantibiotics: Effects on multidrug resistant pathogens

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Background: Multi drug resistant (MDR) pathogens have created a havoc among scientific and medical fraternity. This is the very prevalence of MDR pathogens that warrant extensive research to combat them. There are many mechanisms of developing resistance. One of them is biofilm formation. Frequent incidents of antibiotic-resistant biofilm forming pathogens in community-associated and hospital-acquired infections have become a global concern owing to failure of conventional therapies. Nano-antibiotics (NABs) are de novo tools to overcome the multi-drug resistant mechanisms employed by the superbugs. Inhibition of biofilm formation is one of those strategies to curb multi drug resistance phenomenon.

Methods and materials: In the current study, multi drug resistant pathogens were collected from various hospitals and their resistance spectra was determined. Commercially available antibiotics were procured and blank and antibiotic loaded chitosan based NABs were prepared by ionotropic gelation method.

NABs were charactized by various techniques to determine particle size, shape, physical stability and charge. After that antimicrobial and antibiofilm potential was determined.

Results: NABs were found carrying positive zeta potential of more than +50 mV, indicating highly stable nano-dispersion. Moreover, microscopic studies revealed their size as less than 100 nm. NABs were tested against clinical isolates of multi drug resistant Klebsiella pneumoniae, Pseudomonas aeruginosa, Escherichia coli, and methicillin resistant Staphylococcus aureus and wherein they demonstrated broad-spectrum anti-biofilm and anti-pathogenic activity.

Conclusion: Thus, in vitro synergistic action of cephalosporin drugs and chitosan polymer at nano-scale in contrast to free antibiotics can be an improved broad-spectrum strategy to thwart resistance mechanisms in both Gram-positive and Gram-negative resistant pathogens.

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