Incidence of hospitalization due to influenza-associated severe acute respiratory infection during 2010-2019 in Bangladesh

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Abstract

Background: Global influenza-associated acute respiratory infections contribute to 3-5 million severe illnesses requiring hospitalization annually, with 90% of hospitalizations occurring among children <5 years in developing countries. In Bangladesh, limited availability of nationally representative, robust estimates of influenza-associated hospitalizations limit allocation of resources for prevention and control measures. Methods: This study used data from the Hospital Based Influenza Surveillance (HBIS) system in Bangladesh from 2010-2019 and Healthcare Utilization Surveys to determine hospital utilization patterns in the catchment area. We estimated annual influenza-associated hospitalization numbers and rates for all age groups in Bangladesh using methods outlined by the World Health Organization and adjusted for enrolment, laboratory testing practices, and healthcare seeking behavior. We then estimated national hospitalization rates by multiplying age-specific hospitalization rates with the corresponding annual national census population. Results: Annual influenza-associated hospitalization rates per 100,000 population for all ages ranged from 31 (95% CI: 27-36) in 2011 to 139 (95% CI: 130-149) in 2019. Children <5 years old had the highest rates of influenza-associated hospitalization, ranging from 114 (95% CI: 90-138) in 2011 to 529 (95% CI: 481-578) in 2019, followed by adults aged ≥65 years with rates ranging from 46 (95% CI: 34-57) in 2012 to 252 (95% CI: 213-292) in 2019. The national hospitalization estimates for all ages from 2010-2019 ranged from 47,891 to 236,380 per year. Conclusions: The impact of influenza-associated hospitalizations in Bangladesh may be considerable, particularly for young children and older adults. Targeted interventions, such as influenza vaccination for these age groups, should be prioritized and evaluated.

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