

Results from a test-and-treat study for influenza among residents of homeless shelters in King County, WA: a stepped-wedge cluster-randomized trial.

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Abstract

Background Persons experiencing homelessness face increased risk of influenza as overcrowding in congregate shelters can facilitate influenza virus spread. Data regarding on-site influenza testing and antiviral treatment within homeless shelters remains limited. **Methods** We conducted a cluster-randomized stepped-wedge trial of point-of-care molecular influenza testing coupled with antiviral treatment with baloxavir or oseltamivir in residents of 14 homeless shelters in Seattle, WA, USA. Residents [?]3 months with cough or [?]2 acute respiratory illness (ARI) symptoms and onset <7 days were eligible. In control periods, mid-nasal swabs were tested for influenza by RT-PCR. The intervention period included on-site rapid molecular influenza testing and antiviral treatment for influenza-positives if symptom onset was <48 hours. The primary endpoint was monthly influenza virus infections in the control versus intervention period. Influenza whole genome sequencing was performed to assess transmission and antiviral resistance. **Results** During 11/15/2019–4/30/2020, and 11/2/2020–4/30/2021, 1,283 ARI encounters from 668 participants were observed. Influenza virus was detected in 51 (4%) specimens using RT-PCR, (A=14; B=37); 21 influenza virus infections were detected from 269 (8%) of intervention-eligible encounters by rapid molecular testing and received antiviral treatment. 37% of ARI-participant encounters reported symptom onset <48 hours. The intervention had no effect on influenza virus transmission (adjusted relative risk 1.73, 95% CI 0.50–6.00). Of 23 influenza genomes, 86% of A(H1N1)pdm09 and 81% of B/Victoria sequences were closely related. **Conclusion** Our findings suggest feasibility of influenza test-and-treat strategies in shelters. Additional studies would help discern an intervention effect during periods of increased influenza activity

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