

Effective control of SARS-CoV-2 transmission in Wanzhou, China

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Bordering the western side of Hubei Province, Wanzhou was projected to be heavily hit at the beginning of the COVID-19 epidemic in China. This study investigated the transmission dynamics and risk factors of SARS-CoV-2 infection in Wanzhou, as well as the effectiveness of control measures to contain COVID-19 spread. Epidemiological data was analyzed for 183 confirmed COVID-19 cases and their close contacts from 5 generations of transmission (G1-G5) of SARS-CoV-2 throughout the entire COVID-19 outbreak in Wanzhou. 67.2% and 32.8% of cases were symptomatic and asymptomatic, respectively. Asymptomatic and presymptomatic transmission accounted for 75.9% of the total recorded transmission. The reproductive number was 1.64 (95%CI: 1.16-2.40) for G1-to-G2 transmission, and decreased to 0.31-0.39 in later generations, concomitant with implementation of rigorous control measures. Substantially higher infection risk was associated with contact within 5 days after the infectors had been infected (odds ratio: 2.88, 95% confidence interval: 1.22-6.78), frequent contact (2.89, 1.39-6.02), and >8 hours of contact duration (6.08, 2.88-12.83). The spread of COVID-19 was effectively controlled in Wanzhou by breaking the transmission chain through social distancing, extensive contact tracing, mass testing, and strict quarantine of close contacts. This provides evidence for better handling of the COVID-19 pandemic.

Keywords: COVID-19, transmission characteristics, risk factors, effectiveness of control measures

Biography:

Yaoyue Hu is Associate professor, School of Public Health and Management, Chongqing Medical University. Prof. Yaoyue Hu was trained in epidemiology and public health. Her research interests lie in epidemiology in chronic diseases, healthy ageing, and the risk factors, using longitudinal data from large cohort studies. After she obtained her PhD from University College London, she worked as a research scientist at the Max Planck Institute for Demographic Research. Currently she works at Chongqing Medical University as an associate professor.