

The epidemic of major sexually transmitted diseases in Shanghai, China, 2009-2018

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Summary

Acquired immune deficiency syndrome (AIDS), hepatitis B virus (HBV), hepatitis C virus (HCV), gonorrhea and syphilis are the major sexually transmitted diseases (STDs) in the world, which are the focus of epidemic prevention and control in China. The epidemiological trend analysis of STDs in Shanghai could reflect the epidemic situation of these diseases in high-income areas of China, providing a reference for how to control their epidemic. Although the overall incidence rate of infectious diseases levelled off after 2009, Shanghai still faces many new obstacles in the fight against STDs. Without effective prevention and control strategies for high-risk behaviors, such as active sexual activity without protection, for key susceptible populations, there may be a more serious epidemic of STDs in the future. Given these situations, strategies for controlling STDs in Shanghai should be more targeted with the development of epidemics, focusing on the following key areas for future work: *i*) attaching importance to health education; *ii*) strengthening epidemic surveillance; and *iii*) developing Community Health Service Centers (CHSC) as intervention subjects.

Keywords: HIV/AIDS, HBV, HCV, gonorrhea, syphilis

The prevalence and incidence of the curable sexually transmitted diseases (STDs) remain high according to global estimates, with more than 1 million infections acquired every day worldwide (1). Acquired immune deficiency syndrome (AIDS), hepatitis B virus (HBV), hepatitis C virus (HCV), gonorrhea and syphilis are the major STDs in the world, which are the focus of epidemic prevention and control in China (2-3). Shanghai Municipality represents the highest level of development in China, and STDs in Shanghai are close to the highest level in the country. The epidemiological trend analysis of STDs in Shanghai could reflect the epidemic situation of these diseases in high-income areas of China, providing a reference for how to control their epidemic.

Based on the data (4-24) from Shanghai Municipal

Health Commission (the incidence data for 2017 are not available), reported cases of AIDS increased from 106 in 2009 to 350 in 2018, while the reported incidence rate of AIDS from 0.77 cases per 100,000 individuals grew to 2.42 cases per 100,000 individuals (Figures 1-2). Although the number of people living with AIDS continues to increase, this may be because of the expansion of HIV testing rather than more new HIV infections occurring (25). Besides, benefiting from China's substantial progress, such as vaccination and drug discovery, in tackling its viral hepatitis epidemic, the reported incidence rate of HBV and HCV declined from 10.13 cases per 100,000 individuals and 2.09 cases per 100,000 individuals in 2009 to 2.17 cases per 100,000 individuals and 0.16 cases per 100,000 individuals in 2018, respectively (Figures 1-2). In addition, gonorrhea and syphilis epidemics are still serious, while showing a downward trend in the past three years, with a reported incidence rate of 16.27 cases per 100 000 individuals and 67.05 cases per 100 000 individuals in 2018, respectively (Figures 1-2).

As one of the most developed cities in China,

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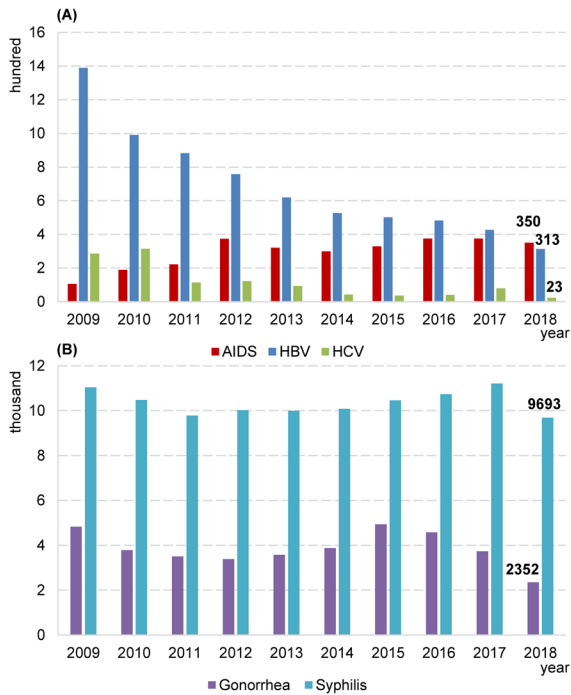


Figure 1. Reported cases of sexually transmitted disease in Shanghai, China, 2009-2018. Based on the data from Shanghai Municipal Health Commission, the reported cases of AIDS increased from 106 in 2009 to 350 in 2018, and the reported cases of HBV, HCV, gonorrhea and syphilis declined from 1389, 286, 4830 and 11041 in 2009 to 313, 23, 2352 and 9693 in 2018, respectively.

Shanghai Municipality was also once the one with the most prevalent venereal disease in China, with the highest rates (55.3 cases per 100,000 individuals) of total syphilis cases reported in 2005 (26). Although the overall incidence rate of infectious diseases levelled off after 2009, Shanghai still faces many new obstacles in the fight against STDs. As social activity developed and the economy increased, the main mode of STDs transmission has also changed in China. Men who have sex with men (MSM) has become one of the high-risk groups for AIDS infection and other sexually transmitted diseases in China (27-28). Without effective prevention and control strategies for high-risk behaviors, such as active sexual activity without protection, for these key populations, there may be a more serious epidemic of STDs in the future.

Given these situations, strategies for controlling STDs in Shanghai should be more targeted with the development of epidemics, focusing on the following key areas for future work: *i) Attaching importance to health education.* By giving full play to the role of non-governmental organizations (NGOs), to maximize health education for key populations, including publicity materials, behavioral intervention, condom distribution, testing mobilization, etc. *ii) Strengthening epidemic surveillance.* Relevant departments should improve management ability and work skills, providing STD-related services and continuously monitoring the

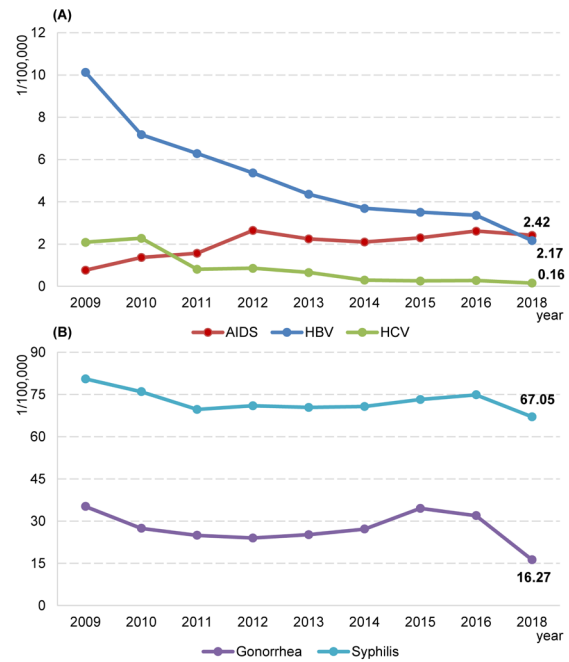


Figure 2. Reported incidence rate of sexually transmitted disease in Shanghai, China, 2009-2016, 2018. The reported incidence rate of AIDS from 0.77 cases per 100,000 individuals grew to 2.42 cases per 100,000 individuals. Besides, the reported incidence rate of HBV, HCV declined from 10.13 cases per 100,000 individuals and 2.09 cases per 100,000 individuals in 2009 to 2.17 cases per 100,000 individuals and 0.16 cases per 100,000 individuals in 2018, respectively. In addition, the reported incidence rate of 16.27 cases per 100,000 individuals and 67.05 cases per 100,000 individuals in 2018, respectively.

prevalence of STDs. On the basis of in-depth analysis of current STDs epidemic characteristics, more evidence-based decision-making is being adopted to better control the STDs epidemic. *iii) Developing Community Health Service Centers (CHSC)* as intervention subjects. Implementing the STDs prevention strategies with CHSC as the main body as soon as possible, so that CHSC can play a more important role in providing STD-related medical services, achieving early diagnosis and immediate treatment for STDs.

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