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## Masculine sex ratios, population age structure and the potential spread of HIV in China

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### Abstract

There is much speculation regarding the contribution of China's changing demography to the spread of HIV/AIDS. We employ a bio-behavioral macrosimulation model of the heterosexual spread of HIV/AIDS to evaluate the roles that China's unique demographic conditions -- (1) masculine sex ratios at birth and (2) a population age structure that reflects rapid fertility decline since the 1970's -- play in altering the market for sexual partners, thereby potentially fueling an increase in behaviors associated with greater risk of HIV infection. We first simulate the relative contributions of the sex ratio at birth and the population age structure to the oversupply of males in the market for sexual partners and show that the sex ratio at birth only aggravates the severe oversupply of males which is primarily a consequence of the population age structure. We then examine the potential consequences of this demographic distortion for the spread of HIV infection and show that, to the extent that males adapt to the dearth of suitable female partners by seeking unprotected sexual contacts with female sex workers, the impact of the oversupply of males in the sexual partnership market on the spread of HIV will be severe.

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

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