

Better healthcare could reduce crippling personal costs of tuberculosis care in China

January 25 2016

Improved universal healthcare is urgently needed to lower catastrophic health expenditure (CHE) for low-income tuberculosis (TB) patients in China, according to a study published in the open access journal *Infectious Diseases of Poverty*. Expanding universal healthcare could reduce the numbers of people affected by CHE.

CHE is defined as out-of-pocket (OOP) payments for healthcare that exceed a certain proportion of [household income](#), leading to the sacrifice of basic necessities such as shelter, food and clothing. OOP payments for TB care include diagnosis and treatment, as well as non-medical expenses (e.g. transport).

The study by researchers from the National Center for TB Control and Prevention, China CDC and Shandong University, China, which involved 747 TB cases, found that a large number of households experience CHE—up to 66.8% overall. China has the second largest national burden of TB in the world after India. Incidence of CHE is highest among the poorest households, 95% of which experience CHE, compared to 43% of the richest households.

In this study, CHE was measured based on the two most commonly used thresholds: 10% of annual household income; and 40% of non-food expenditure, the effective income left to a household once the need for food has been met.

This study is the first to examine the often catastrophic economic effects

of TB care on individuals and households by looking at the incidence, intensity and causes of CHE from TB care. CHE incidence describes the number of households whose healthcare expenditure exceeds these thresholds—66.8% for household income and 54.7% for non-food expenditure. CHE intensity is measured by how much healthcare costs per household exceed these thresholds. On average, health care payments made up 41% of household annual income and 52% of non-food expenditure. As with incidence, intensity of CHE in China was highest for low-income households.

The researchers identified several significant causes of CHE, including unemployment, old age, and patient income. An increased likelihood of experiencing CHE was observed for households with fewer income earners (less than four members) and those that received minimum living security, a type of government subsidy intended to secure a minimum standard of living.

The study used data collected between April and May 2013 in three Chinese cities during a baseline survey for the China Government—Gates Foundation TB Phase II program on TB control. TB patients were recruited using a cluster sampling method which divides a population into groups—in this case three districts from each city and three townships/streets from each district. From each group, a random sample of 30 TB cases was selected, making a total of 747 cases.

All patients were interviewed face-to-face, using a standardized survey questionnaire which included questions on age, sex, education, household income/expenditure, health service expenditures, and non-medical expenses (e.g. transportation costs).

Measures of annual household income and expenditure on food and healthcare relied on self-reported information and may have been subject to recall biases. As the sample was restricted to TB patients who

sought care in local dispensaries and designated hospitals, estimates exclude those who did not seek care due to financial barriers. Hence, the incidence and intensity of CHE may have been underestimated.

The researchers suggest that expanding what the free treatment packages will cover, for example by including transport costs and supplementary medication, and increasing the reimbursement rates and the number of people covered by universal healthcare is necessary to lower the numbers of people affected by CHE in China. This may also have positive economic effects as TB is most prevalent among 15-54 year-olds who make up the most economically productive sector of the population.

More information: Chengchao Zhou et al. Factors that determine catastrophic expenditure for tuberculosis care: a patient survey in China, *Infectious Diseases of Poverty* (2016). [DOI: 10.1186/s40249-016-0100-6](https://doi.org/10.1186/s40249-016-0100-6)

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Citation: Better healthcare could reduce crippling personal costs of tuberculosis care in China (2016, January 25) retrieved 24 April 2024 from <https://medicalxpress.com/news/2016-01-healthcare-crippling-personal-tuberculosis-china.html>

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