

# DELIVERING COMPREHENSIVE COPD SERVICES IN PRIMARY CARE IN CHINA

## Saving lives and reducing healthcare costs

### POLICY BRIEF

**100M**

Adults live with COPD

100 million or 14% of adults aged over 40 have COPD, mainly due to tobacco smoking, exposure to PM2.5 from indoor biomass and ambient air pollution. Nearly 90% of COPD cases go undiagnosed.

**1.06M**

Annual deaths attributed to COPD

Nearly one third (1.06 million) of the 3.2 million annual global deaths from COPD are in China. COPD ranks among the top three causes of death in the country.

**33%-118%**

Share of annual income on healthcare costs

Every year, a person with COPD loses ¥ 458 (\$72) to ¥ 22678 (\$3565) from direct healthcare costs of COPD, accounting for 33%-118% of the local average annual income.

**¥ 195.6B**

Annual costs for the health system

Each year, ¥ 195.6 billion or \$30.3 billion is spent in healthcare expenses attributable to COPD, which is nearly 10% of China's total health expenditure.

Chronic obstructive pulmonary disease (COPD) is a major public health challenge in China. COPD is a lifelong condition, which can leave people breathless, fatigued, prone to chest infections and be life limiting. Most individuals with COPD go undiagnosed or get diagnosed much later in the course of the disease often causing irreversible lung damage, hospitalisation, poor quality of life and death. National health policies in China do recommend screening for earlier COPD diagnosis but there is no local evidence and consensus on which screening tests are the most accurate and cost-effective. Further, while primary health care is a positive and potentially feasible environment for delivering comprehensive COPD care, the perspectives of patients and general practitioners need to be better understood if large scale primary care COPD diagnosis and management is to be realised.

In 2018, through links with the International Primary Care Respiratory Group (UK), the Peking University First Hospital collaborated with the University of Birmingham on the 'Breathe Well' research programme funded by the UK National Institute for Health Research. The Breathe Well programme was implemented in 4 countries - Brazil, China, Georgia and the Republic of North Macedonia. As part of this programme, the team in China conducted two research studies: First, they examined 2445 participants from community health centres in Beijing, Chengdu, Guangzhou and Shenyang and identified the most accurate and cost-effective screening strategies in primary care for detecting COPD. Second, using mixed methods, the team explored the need for and design of a community-based lung health service.

## What did we find?

Spirometry is a simple test carried out using a device called a spirometer, which measures how much air a person can breathe out in one forced breath. While spirometry using a machine that sits on a desk is the gold standard test for diagnosing COPD, it is often unavailable and underused in primary health care settings in China. We thus tested if simple screening strategies were accurate and cost-effective in identifying COPD. We also explored patients' and general practitioners' (GPs) knowledge about COPD and its management and their acceptance of a community-based lung health service delivered in primary care.

### **We found that:**

- A combination of the Chinese Symptom Based Questionnaire (C-SBQ) and microspirometry was the most accurate test strategy for identifying cases of COPD. This strategy costs ¥385 (\$60) for each true case detected.
- With adequate training and support, primary care teams, including GPs and nurses, can accurately implement simple lung function tests and identify COPD in undiagnosed individuals.
- Patients did not fully understand COPD, its implications and how to manage it, and existing health services did not meet their needs. GPs lacked the capacity and resources to manage COPD.
- Patients and GPs were in favour of a community-based lung health service delivered by nurses and physiotherapists, offering education, psychological support and exercise including Tai Chi.

## What needs to be done?

1. Simple and low-cost screening strategies can be used to accurately identify undiagnosed cases of COPD for earlier diagnosis, management and, where needed, timely referral. This evidence should inform national health policy and clinical practice for COPD.
2. This study urges decision makers to mandate COPD services in primary care settings as it is feasible to deliver, convenient for patients, and substantially reduces the burden on and costs for secondary and tertiary care.
3. Primary care teams need to be supported with capacity building, screening strategies, medications, resources and financial incentives to deliver COPD screening and a comprehensive lung health service for long-term management (including bronchodilation advised by WHO as a 'Best Buy').
4. Primary care teams need to be multidisciplinary and include nurses, physiotherapists and specialists and be adequately supported to deliver COPD services.
5. Communication campaigns are needed to raise awareness about COPD and its consequences and to create a demand for COPD screening and management services in primary care facilities.
6. Tobacco cessation can reduce the risk of developing COPD and also lengthen the life of individuals with COPD. WHO advises counselling to help people quit as a 'Best Buy' and pharmacotherapy as a 'Good Buy' subject to local pricing. COPD diagnosis should trigger help to quit in primary health care.

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