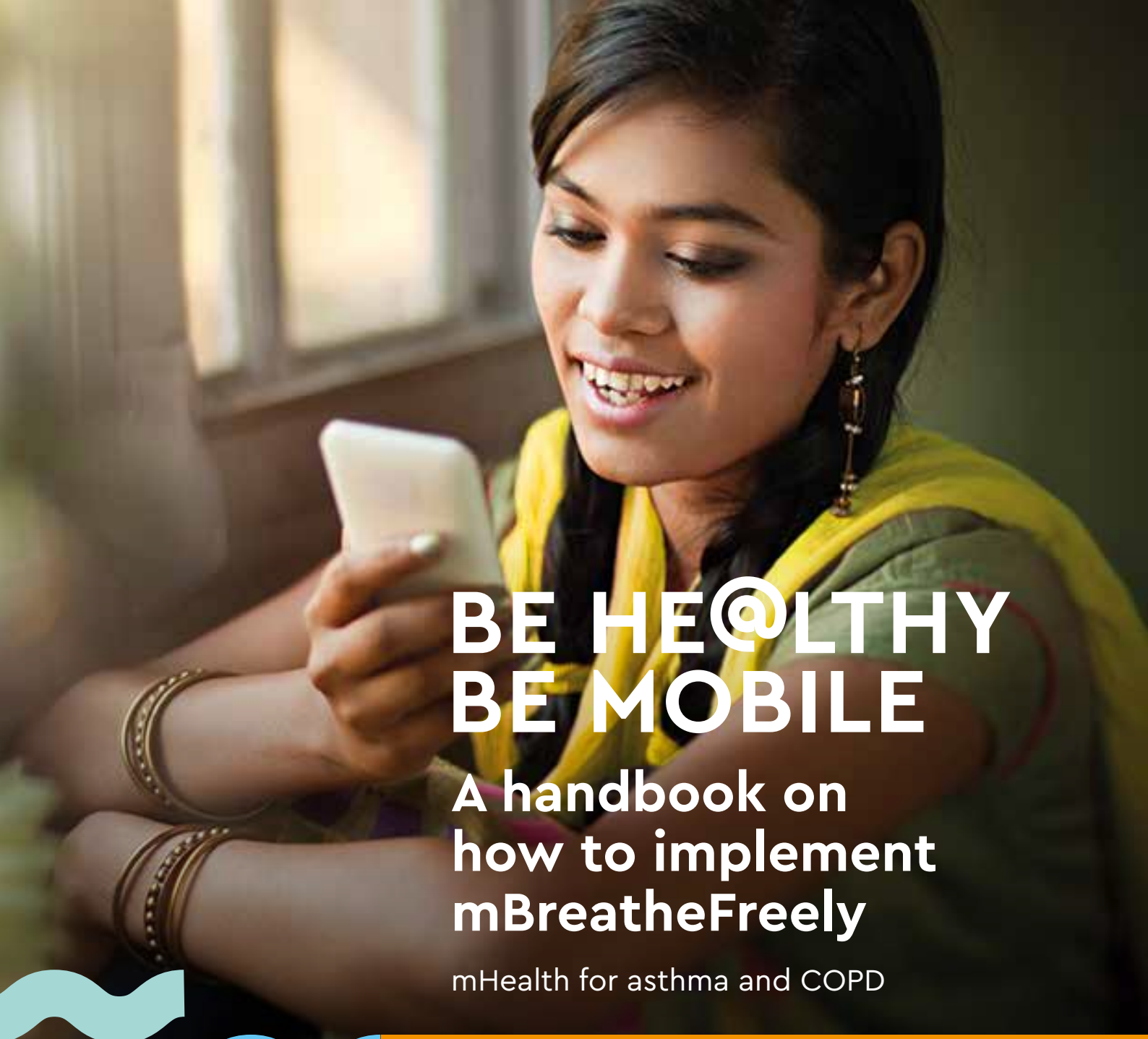

BE HE@LTHY BE MOBILE

A handbook on how to implement mBreatheFreely

mHealth for asthma and COPD

World Health Organization

ITU

A handbook on how to implement mBreatheFreely, mHealth for COPD and asthma

ISBN 978-92-4-151400-2 (WHO)

ISBN 978-92-61-27101-5 (ITU)

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Suggested citation. A handbook on how to implement mBreatheFreely, mHealth for COPD and asthma. Geneva: World Health Organization and International Telecommunication Union, 2018. Licence: CC BY-NC-SA 3.0 IGO.

Cataloguing-in-Publication (CIP) data. CIP data are available at http://apps.who.int/iris.

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Printed in Geneva, Switzerland

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A handbook on how to implement mBreatheFreely

mHealth for asthma and COPD

Acknowledgements

The World Health Organization (WHO) and International Telecommunications Union (ITU) gratefully acknowledge the following contributors to this handbook:

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Further contributions
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Administrative support
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Editing
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Layout and design
blossoming.it

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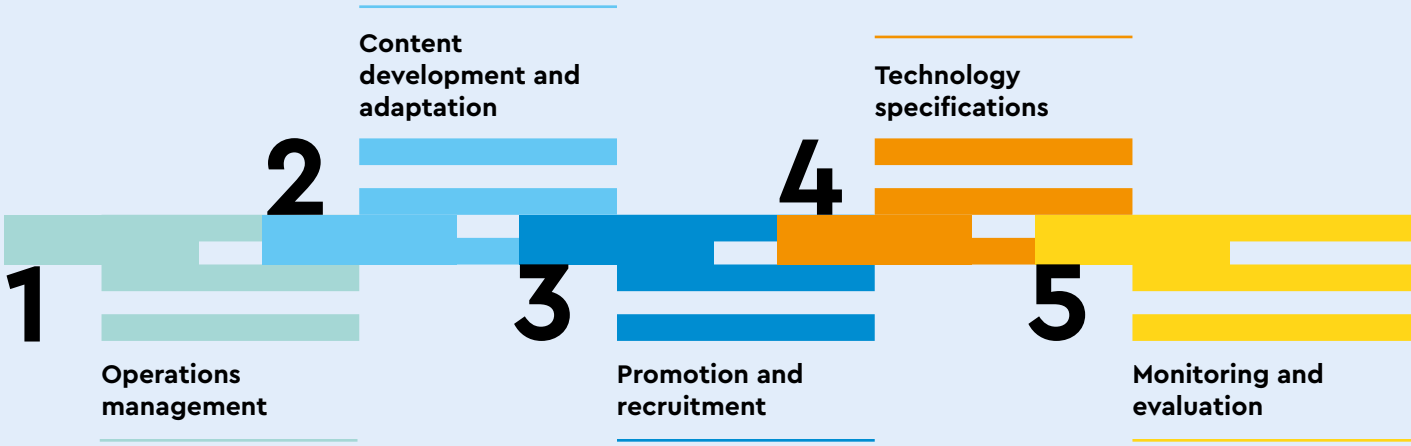
Executive Summary

The Be He@lthy Be Mobile initiative is a global partnership led by the World Health Organization (WHO) and the International Telecommunication Union (ITU), representing the United Nations agencies for health and information communications technologies (ICTs). The initiative supports the scale up of mobile health technology (mHealth) within national health systems to help combat noncommunicable diseases (NCDs). These include diabetes, cancers, cardiovascular diseases and chronic respiratory diseases, such as asthma and chronic obstructive pulmonary disease (COPD). These are long-term conditions that can significantly affect both the quality and length of patients' lives, especially in settings where resources for diagnosis and treatment are limited.

To help address these issues, Be He@lthy Be Mobile has developed the mBreatheFreely programme, which uses mHealth to provide health information and support to people living with asthma and COPD. mHealth is defined as "medical and public health practice supported by mobile devices, such as mobile phones, patient monitoring devices, personal digital assistants, and other wireless devices" (1).

The mBreatheFreely handbook was prepared by an international group of experts in mHealth for asthma and COPD, in collaboration with WHO and ITU, to **provide guidance for country governments and policymakers to develop, implement, and evaluate an mBreatheFreely programme for the prevention and control of asthma and COPD**. The health messaging provided in the handbook uses evidence-based behaviour change techniques to help persons at risk of, with, or caring for those with asthma and COPD, prevent and manage these conditions. This handbook describes the considerations and decisions to be made in planning a national mBreatheFreely programme in five key areas:



For each area, evidence-based operational guidance and resources are given, which can assist governments in drawing up a detailed workplan for a national mBreatheFreely programme. Subsequent annexes provide information on existing programmes, example programme algorithms and message content, timelines and costing templates.

THE BURDEN OF ASTHMA AND COPD

Chronic respiratory diseases are long-term conditions affecting the respiratory tract. The two most common conditions are COPD and asthma. COPD affects more than 200 million people worldwide (2). An under-diagnosis rate of 72–93% has been reported (3). About 300 million people suffer from asthma and its incidence has been increasing over recent decades (4,5). The greatest burden of lung disease occurs in low- and middle-income countries, where almost 90% of COPD deaths and 80% of asthma deaths occur (6,7). Diagnosis and treatment of chronic respiratory diseases in low- and middle-income countries are hampered by barriers including access to medical care, as well as poor public awareness of the diseases and their risk factors. Access to assessment, diagnosis, management and preventive measures must be improved in order to reverse this trend. Awareness of key risk factors, such as the use of tobacco and indoor and outdoor air pollution, and their reduction could also help to reduce the burden and mortality trends.

WHAT IS MHEALTH FOR ASTHMA AND COPD?

The use of mobile technology including short message service (SMS), mobile phone applications (apps), and telemedicine is increasingly considered as a way to improve access to prevention, diagnosis and management of COPD and asthma (8). Studies on the use of text messaging in disease management and disease prevention indicate that text messaging can be an effective tool in certain aspects of health behaviour change and disease management. High-income countries, such as Denmark, Norway and the United States of America, are implementing mHealth programmes for COPD, and many small-scale studies have either been completed or are underway focusing on mHealth for asthma (9–12). SMS and app programmes are the most common forms of mHealth (13). Low- and middle-income countries mostly use SMS solutions.

mHealth is promoted as a strategy to support self-management of both asthma and COPD. While mHealth mediated self-management is not consistently superior to usual care, it is a safe option for delivery and support of self-care. An overview of literature on mHealth in asthma and COPD can be found in Annex 1, and five examples of mHealth programmes are described in Annex 2.

WHY USE MHEALTH FOR ASTHMA AND COPD?

Most mHealth applications for asthma and COPD currently focus only on management for severe cases of either disease. In addition to management, however, there is also a need to focus on improving self-management education to prevent symptoms (by being proactive, intervening early, using a stepped care model, among others) and disease progression (such as targeting persons with mild cases), thus providing practical help to patients so that they can manage both their treatment and their daily lives with minimal support from the health system. To address the imbalance in research focus, there is also a clear need to translate effective models of care from high-income countries and adapt them to low- and middle-income country settings.

WHAT IS AN MBREATHEFREELY PROGRAMME?

The mBreatheFreely programme is designed as a population-based programme targeting asthma and COPD. It should take into account a wide diversity of individuals and their motiva-

tions for changing their approach to self-management and managing their condition. Even if the majority of a population does not have asthma or COPD, some people may still be interested in the programme because they know someone with asthma or COPD, while others may be at high risk or have undiagnosed asthma or COPD. Although an assessment of needs and capabilities will be performed prior to implementing the programme in any particular location, the programme will aim to provide information to enhance prevention, motivate testing in people at risk, and provide appropriate, culturally relevant guidance both for people with chronic respiratory disease and for the general population.

When implementing the programme, it is important to keep in mind that factors that contribute to asthma or COPD may differ geographically, even within a country, particularly as a result of income disparity. The significance of dietary habits, physical activity and access to health care must also be considered.

A comprehensive mBreatheFreely programme in a wide geographical area should aim to address the spectrum of disease of asthma and COPD, the use of appropriate technologies, and the needs and cultural norms of the population. mBreatheFreely interventions should be embedded in the continuum of prevention and care, as mHealth can support services at all levels (Box 1).

MAIN TARGET POPULATIONS

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