It Is Time For The World To Take COPD Seriously: A Statement From The GOLD Board Of Directors

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It Is Time For The World To Take COPD Seriously: A Statement From The GOLD Board Of Directors

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Chronic obstructive pulmonary disease (COPD) is the third leading cause of death in the world and it is thought that 1 in 10 of the adult global population have the disease (1). Despite this, COPD has not received the level of attention it requires by Ministries of Health and health services, particularly in low- and middle-income countries (LMIC), where most of the people with this disease live and where there is limited access to spirometry to confirm the diagnosis, little effective therapy and minimal public health policy on prevention. In 2012 the World Health Assembly endorsed the “25 by 25 goal”, focusing on reducing premature deaths from non-communicable disease (NCDs) by 25% by the year 2025 (2), but whilst the third United Nations (UN) High Level Meeting (HLM) on NCDs in September 2018 acknowledged that “action to realize the commitments made for the prevention and control of non-communicable diseases is inadequate” many felt the Political Declaration lacked ambition and was a missed opportunity to address the global NCD epidemic. As COPD is a highly prevalent NCD, is the third most common causes of premature death and is highly preventable we, the Board of Directors (BoD) of the Global Initiative for Chronic Obstructive Lung Disease (GOLD), are especially concerned that the disease has not been taken seriously enough by the UN/World Health Organization (WHO): not enough is being done to address the increasing prevalence, morbidity and mortality caused by COPD and there is no coordinated strategy to encourage countries to prioritise and resource its prevention and management.

It is important that governments are made aware that COPD can no longer be seen as a condition solely caused by smoking in adult life, although this is certainly a major risk factor. From a global perspective, exposure to biomass fumes and air

pollution in adult life are important risk factors and there is now good evidence that poor pre and postnatal lung growth as a result of malnutrition, infections and/or passive exposure to pollutants also leads to COPD (3-5). The contribution of these different risks factors varies. In high socio-demographic index (SDI) countries, the behavioural risks (smoking and second-hand smoke) are the most important causes, while environmental exposures and early life events appear to explain the majority of burden in lower-SDI quintiles. Within many countries the inequalities in burden and mortality due to COPD relate to poverty (5) and at a global level COPD is more prevalent in countries where inequalities in living standards are more extreme. COPD is one of the most important and preventable cause of global inequalities in health outcomes. This new understanding of COPD opens novel windows of opportunity for prevention, early diagnosis and more effective therapeutic interventions.

The Global Burden of Disease (GBD) study estimated that between 1990 and 2015 the prevalence of COPD increased by 44·2% and that in 2015 COPD affected 104·7 million men and 69·7 million women globally (6). These estimates are based on data from surveys using standardised questionnaires and spirometry such as those that have been done under the umbrella of the Burden of Obstructive Lung Disease (BOLD) study (7) and similar studies in Latin America (8) and Europe (9). However, using some of the same data, the Global Health Epidemiology Reference Group concluded that the prevalence was much higher and estimated that approximately 384 million people globally had COPD in 2010 (10). Since reliable data on prevalence are not available for many LMIC there is an urgent need for

standardisation in data collection to allow the true burden to be calculated and to monitor changes (6).

COPD caused approximately 3.2 million deaths worldwide in 2017 (11) and there was a 17.5% increase in the number of deaths between 2007 and 2017. This is a much faster increase than predicted by the first GBD analysis (12). Over this period age-standardised mortality rates appear to have fallen in some countries, including LMICs but this may unfortunately only be temporary and probably mirrors the decreases observed in developed countries in the last century, when life expectancy improved because of better nutrition and treatment of infectious diseases. Over time, the positive trends are likely to be reversed as the negative consequences of tobacco use and other risk factors become more prevalent.

TIME TO TAKE COPD SERIOUSLY

COPD is currently diagnosed in mid-life or later. Individuals must therefore survive long enough to develop symptoms, and by this time they are already at risk of premature death. Until recently the mean life expectancy of the populations in many LMIC was so low that survival to an age when COPD manifests was unlikely. However, improvements in life expectancy in Latin America, Africa and South East Asia over the last 50 years, together with reductions in childhood mortality mean that COPD is rapidly becoming an even more significant health issue in these regions. In addition, the epidemic of tobacco smoking is at its height in middle income countries and is developing in low income countries, particularly in sub-Saharan African countries that are seen by tobacco companies as one of the last of

the ‘emerging markets’ left to be targeted aggressively (13). Without action, the global burden of COPD will grow enormously in the few next decades.

As part of a strategy to explore potential ways to improve the prevention, diagnosis and management of COPD we held a one-day Summit in September 2018 to consider information on the prevalence, causes, clinical presentation, mortality, resources and approaches for COPD provided by local experts in LMIC societies with high COPD burden (Halpin et al, forthcoming).

The information presented confirmed that the development of COPD in these settings is multifactorial. The Summit discussed the fact that there have been very few pathophysiological studies to understand differences between COPD caused by poor lung development versus adult exposures, and between COPD due to smoking tobacco and exposure to biomass smoke and pollution. This is particularly true in terms of symptom patterns, disease progression, long term outcomes, and response to treatments. Studies must be done to investigate these issues. The summit also concluded that there are major deficiencies in epidemiological data in many regions, particularly outside cities, and that there is little public awareness of COPD as a major health problem in LMIC. There is a need to raise awareness of COPD among health workers, to emphasise the importance of accurate diagnosis, to make spirometry easily available and to train health workers in its use. For example, the Summit heard that in Malawi, a country of 19.3 million people, there has been only one spirometer for clinical diagnostic purposes for many years. The BoD agreed that there is also a need to identify lung function abnormalities at an earlier age.

The Summit heard of the problems with access to effective pharmacological and non-pharmacological therapy in LMIC. There are wide disparities between countries in access to healthcare (14) but access to basic COPD medication shows much greater inequalities and spirometry for diagnosis is not widely available (15). The only long-acting bronchodilator in the WHO list of essential medications is formoterol, but it is only listed in combination with budesonide (16) and currently, no long-acting muscarinic antagonist bronchodilators are listed. Short acting beta agonist (SABA) do feature in the list as do inhaled corticosteroids (ICS) but ICS alone are not indicated in COPD. The Summit heard of the low availability and affordability of these inhaled therapies in most LMIC and contrasted this to the widespread availability of cigarettes. Much more must be done to ensure reliable supplies of medication at an affordable price in LMIC. Non-pharmacological interventions such as pulmonary rehabilitation and palliative care must also be made available.

Although the focus of the Summit was the burden of COPD in LMIC, we are also aware that the burden of COPD in upper-middle and high income countries, including China, remains high (17). There is substantial under-diagnosis in Europe and North America, evidence of inappropriate pharmacotherapy and limited access to non-pharmacological therapies. In high income countries COPD remains one of the major causes or morbidity and mortality and governments and health services in these countries also need to give COPD the priority that it deserves.

The Summit concluded that time is overdue for civil society, individual health services, Ministries of Health and NGOs and international agencies, including the WHO and UN, to take COPD seriously by recognizing the universal burden of COPD

and enacting policies and practices to address the impact of the disease, particularly in LMIC. Unless this happens, there will be needless suffering, increasing inequalities and substantial preventable direct and indirect costs from COPD. We are aware that collaborations such as the Global Alliance Against Respiratory Diseases (GARD) (https://www.who.int/gard/en/) launched by WHO in 2006 and the Forum of International Respiratory Societies (FIRS) (https://www.firsnet.org/) have been working for over a decade to raise awareness of chronic respiratory disease at a global level and GOLD is a partner in these alliances, but we are concerned that the breadth of these initiatives means that progress on improving outcomes for people with COPD is too slow. A number of excellent projects such as FRESH AIR aim to improve the prevention, diagnosis and treatment of chronic lung diseases in contexts with limited healthcare resources (18), but more needs to be done. Initiatives such as the Practical Approach to Care Kit (PACK) may hold the key to ensuring that effective COPD care can be delivered in LMICs through integrated primary care-focused guides, training strategies, health systems strengthening interventions and monitoring and evaluation kits (19) but governments in LMIC need to embrace such initiatives.

The GOLD BoD challenges all relevant parties to form a coalition with GOLD to achieve our ambition of reducing the impact of COPD worldwide. We must work together to prevent the development of COPD by reducing exposure to risk factors, to ensure the diagnosis is made as early as possible and to ensure all patients around the world receive effective therapy. We want to see a reduction in the number of people suffering and dying from COPD in all countries. The WHO and UN must do all they can to ensure Ministries of Health, supported by national and

international professional societies and the pharmaceutical industry, to commit to actions required to achieve these goals (Table 1) and monitor progress. We call for a whole system approach that moves COPD management up a ladder of quality, driven by action and political pressure led by these organisations and underpinned by the WHO (Figure 1). Contributors to the 2019 UN HLM on UHC must ensure that a minimum essential package of provisions for raising awareness of the disease, prevention, diagnosis and management is included in the Political Declaration and that they are backed up by sufficient financial resources and progress on implementation is monitored.

1790 words

Competing interests

David M.G. Halpin reports personal fees from AstraZeneca, personal fees and non-financial support from Boehringer Ingelheim, personal fees from Chiesi, personal fees from GlaxoSmithKline, personal fees and non-financial support from Novartis, personal fees from Pfizer, outside the submitted work. Bartolome R. Celli reports grants and other from Astra Zeneca, personal fees from GlaxoSmithKline, personal fees from Boehringer Ingelheim, personal fees from Novartis, personal fees from Sanofi-Aventis, personal fees from Menarini, outside the submitted work; .. Gerard J. Criner has nothing to disclose. Peter Frith reports personal fees from Boehringer Ingelheim, non-financial support from Global Initiative for Chronic Obstructive Lung Disease, personal fees from Menarini, personal fees from Novartis, non-financial support from Lung Foundation Australia, outside the submitted work. M.Victorina López Varela has nothing to disclose. Sundeep Salvi has nothing to disclose. Claus F. Vogelmeier reports personal fees from Almirall, grants and personal fees from AstraZeneca, grants and personal fees from Boehringer Ingelheim, grants and personal fees from Chiesi, grants and personal fees from GlaxoSmithKline, grants and personal fees from Grifols, grants and personal fees from Mundipharma, grants and personal fees from Novartis, grants and personal fees from Takeda, personal fees from Cipla, personal fees from Berlin Chemie/Menarini, personal fees from CSL Behring, personal fees from Teva, grants from German Federal Ministry of Education and Research (BMBF) Competence Network Asthma and COPD (ASCONET), grants from Bayer Schering Pharma AG, grants from MSD, grants from Pfizer, outside the submitted work. Ronchang Chen has nothing to disclose. Rebecca Decker has nothing to disclose. Kevin Mortimer reports personal fees from International Union Against TB and Lung Disease, outside the submitted work. Maria

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Montes de Oca has nothing to disclose. Zaurbek Aisanov has nothing to disclose. Daniel Obaseki has nothing to disclose. Alvar Agusti reports grants and personal fees from AstraZeneca, grants and personal fees from Menarini, personal fees from Chiesi, grants and personal fees from GSK, personal fees from Nuvaira, outside the submitted work.

Contributions

All authors meet criteria for authorship as recommended by the International Committee of Medical Journal Editors, take responsibility for the integrity of the work as a whole, contributed to the writing and reviewing of the manuscript, and have given final approval for the version to be published. David M.G. Halpin, Bartolome R. Celli, Gerard J. Criner, Peter Frith, M.Victorina López Varela, Sundeep Salvi, Claus F. Vogelmeier, Ronchang Chen, Rebecca Decker & Alvar Agusti are members of the Board of Directors of GOLD. Kevin Mortimer, Maria Montes de Oca, Zaurbek Aisanov & Daniel Obaseki contributed to the Summit.

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Table 1. Actions required to improve global management of COPD

- Increase awareness of COPD at all levels of society
- Prevent COPD
  - Improve maternal nutrition and promote healthy lifestyles (e.g., avoiding smoking during pregnancy)
  - Minimise childhood exposure to indoor and outdoor air pollution
  - Reduce adult smoking and encourage all countries to ratify the WHO Framework Convention on Tobacco Control.
- Diagnose COPD earlier
  - Promote use of simple questionnaires to identify subjects likely to have COPD
  - Improve the availability and access to spirometry
  - Use new technology to offer alternatives to conventional spirometry
  - Train community health workers in early COPD detection
  - Assess lung function at an early age
- Treat COPD effectively and earlier
  - Implement and promote smoking cessation programmes.
  - Decrease exposure to pollutants.
  - Ensure drugs with proven efficacy and safety are available
  - Promote awareness of evidence-based management guidelines
  - Train community health workers in basic COPD management
  - Make medicines available through access programmes

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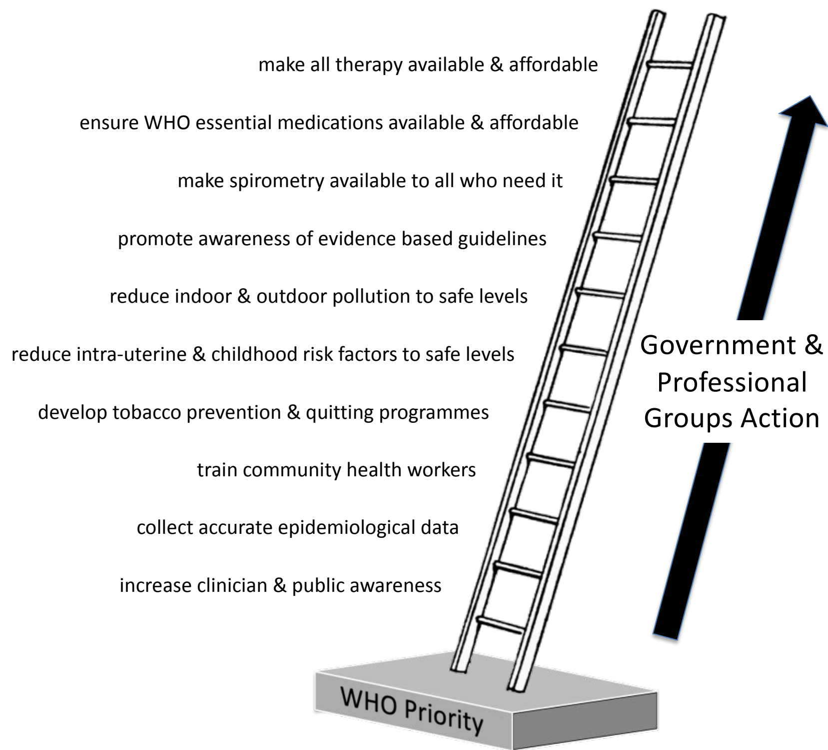

Figure 1. Whole system approach to taking COPD seriously.

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