

Public Health Strategic Framework for COPD Prevention



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Introduction

In the spring of 2010, the Centers for Disease Control and Prevention (CDC) and several partners embarked on an intensive process to examine the current state of knowledge regarding chronic obstructive pulmonary disease (COPD) prevention. The process included identifying public health gaps and generating a set of goals that would define the unique role and contributions of public health in the prevention and control of COPD. This workgroup represented other federal agencies, academia, the health care sector, national organizations, and other COPD stakeholders. The purpose of this report is to provide a framework that could be used by the public health community to address COPD as an important public health issue.

Background

Approximately, 12 million Americans have been diagnosed with COPD, but at least another 12 million Americans may be undiagnosed (1). COPD refers to a group of chronic diseases, including emphysema and chronic bronchitis, that impair the flow of air in the lungs and make breathing difficult. While COPD death rates are higher among men than women, over the past 20 years, the number of COPD deaths among U.S. women has increased much faster than those among men (1–3). COPD death rates are also higher among whites than among African Americans or persons of other races (1–3), and in some states, including Idaho and Indiana (3). In addition, women had more COPD hospitalizations than men and more emergency department visits (1,2,4).

Prevention

Approximately 75% of COPD cases are attributed to cigarette smoking (5). Occupation-related exposures may account for another 15% of COPD cases (6) and genetic factors, asthma, respiratory infections, and indoor and outdoor exposures to air pollutants also play a role (6,7). Thus, COPD largely can be prevented. Prevention of COPD begins with reducing and/or eliminating smoking initiation among teenagers and young adults and encouraging tobacco cessation among current smokers. More than 20 million workers in the United States have been exposed to gases, vapors, fumes, and dusts that may cause COPD (6). Public health programs and policies that focus on tobacco-use prevention and cessation, reducing occupational exposure to dusts and chemicals, and reducing other indoor and outdoor air pollutants are critically important. Early treatment and control of asthma may also prevent the development of COPD.

Diagnosis

Common symptoms of COPD include shortness of breath, cough, phlegm, and wheezing. As many as one-half of all persons with symptoms of COPD have not been diagnosed because these signs are often attributed to aging or “normal” smoker’s symptoms. A definitive diagnosis of COPD involves measuring lung function using spirometry, which is a noninvasive outpatient procedure.

Treatment

Once COPD has been diagnosed, goals of treatment and management include relieving symptoms; preventing and treating disease progression, complications, and exacerbations; improving exercise tolerance, daily activity, and health status; monitoring nutritional needs; and reducing premature mortality (8). Management should include smoking cessation and abstinence; limiting exposure to secondhand smoke, dusts, fumes, and gases; pharmacological treatment with bronchodilators and corticosteroids; supplemental oxygen therapy; pulmonary rehabilitation; collaborative self-management; and surgery (8). Clearly, efforts toward patient and professional education should continue to focus on promoting treatment modalities for persons with COPD as well as persons at risk for COPD.

Public Health Goals

The workgroup identified four goals that were grounded in the following public health areas: (1) surveillance and evaluation: improve collection, analysis, dissemination, and reporting of COPD-related public health data; (2) public health research and prevention strategies: improve understanding of COPD development, prevention, and treatment; (3) programs and policies: increase effective collaboration among stakeholders with COPD-related interests; and (4) communication: heighten awareness of COPD among a broad spectrum of stakeholders and decision makers (Table 1). To accomplish these goals, the workgroup proposed the following objectives, strategies, and actions based on a detailed, scientific rationale.

Goal 1: Surveillance and Evaluation

Improve collection, analysis, dissemination, and reporting of COPD-related public health data.

Objectives

- Adapt and expand current national population-based surveillance systems such as the Behavioral Risk Factor Surveillance System (BRFSS, state-based, self-reported data), National Health and Nutrition Examination Survey (NHANES, national data collection involving a combination of interviews, spirometry, and physical examinations), and the National Health Interview Survey (NHIS, national, self-reported data) to include more COPD-related information.
- Adapt and expand current national health care surveillance systems (health care system-based surveys) to include COPD-related information.
- Analyze and report COPD-relevant data from these surveys.

Rationale

Ongoing data collection is required to assess the nation's progress toward Healthy People 2020 COPD objectives which includes: (1) Reduce activity limitations among adults with chronic obstructive pulmonary disease (COPD); (2) Reduce deaths from chronic obstructive pulmonary disease (COPD) among adults; (3) Reduce hospitalizations for chronic obstructive pulmonary disease (COPD); and (4) (Developmental) Increase the proportion of adults with abnormal lung function whose underlying obstructive disease has been diagnosed. Current population-based surveys already capture some information related to COPD such as smoking prevalence, medical care utilization, and prevalence of chronic health conditions. However, COPD-related topics could be analyzed more extensively in current surveillance systems and new questions could be added to existing surveys. Due to the designs and periodic revisions of these surveys, adapting or adding new questions related to COPD to existing surveys would be more time- and cost-efficient than creating new surveillance systems specifically focused on COPD.

Strategy 1: Maximize use of currently available data.

Potential actions include:

- Analyzing currently available data relevant to COPD in existing surveys (BRFSS, NHANES, NHIS, etc.);
- Publishing high profile CDC reports on COPD-related topics;
- Developing a comprehensive report of information (e.g., surveillance summary) across surveys regarding COPD every 4 years;
- Presenting information on current COPD-related NHANES survey data addressing occupational risk factors.

Strategy 2: Develop and initiate new data collection within existing surveys.

Potential actions include:

- Adding new questions related to COPD to existing surveys;
- Developing and testing new questions for reliability and validity, as needed;
- Refining the definition of COPD in existing surveillance systems by adding the terms “COPD” and “chronic obstructive pulmonary disease” to the currently used “emphysema” and “chronic bronchitis” terms;
- Adding new questions on occupational and environmental exposures;
- Including new queries on genetics and family history;
- Inserting new questions related to asthma;
- Promoting collaborations between federal agencies to develop and implement standardized COPD-related questions.

Strategy 3: Improve the ability of federal agencies to collect, analyze, and report health care data from electronic health records (EHR).

Potential actions include:

- Supporting the development of uniform EHR definitions of COPD;
- Supporting collection of clinical measures and risk factors for COPD including occupation, family history, genetics, and smoking as part of EHRs;
- Developing templates for collection of clinical data;
- Developing standard COPD-related measurements (i.e., as determined by the National Committee for Quality Assurance’s Healthcare Effectiveness Data and Information Set and the National Quality Forum) in EHRs for the Centers for Medicare & Medicaid Services, Health Resources and Services Administration, Department of Veterans Affairs, and the U.S. Department of Defense;
- Developing partnerships with health care delivery systems for pilot projects using EHRs to collect COPD information (including large city, small town, and rural patient populations);
- Developing standards for accessing spirometry data through EHRs;
- Developing a standard format for reporting of spirometry results;
- Developing and testing quality-of-care measures, including spirometry, to confirm COPD diagnosis.

Strategy 4: Encourage the involvement of the appropriate organizations in the development of surveillance case definitions for COPD and to initiate COPD surveillance.

Potential actions include:

- Developing a consensus statement with the Council of State and Territorial Epidemiologists on surveillance case definitions;
- Developing surveillance templates for partner organizations.

Goal 2: Public Health Research and Prevention Strategies

Improve understanding of COPD development, prevention, and treatment.

Objective

- Support and conduct epidemiologic and applied prevention research that explores risk factors, prevention, and treatment of COPD.

Rationale

COPD, although preventable and treatable, is not currently curable. Thus, the primary prevention of COPD remains a critical action for public health. New investigations into COPD risk factors could explore occupational hazards, environmental exposures, genetics, family history, and co-morbid conditions such as asthma. Investigation of proper training and clinical use of spirometry and evidence-based treatment modalities is also warranted.

***Strategy 1:* Conduct assessment of COPD environmental risk factors in addition to smoking and occupational exposures.**

Potential actions include:

- Conducting epidemiologic investigations to track possible environmental causes and risk factors;
- Developing formal partnerships with the Environmental Protection Agency and other institutions to promote research on ambient air pollution as a COPD risk factor;
- Publishing analysis for risk factors of COPD.

Strategy 2: Assess current health care practices, including the proper use of spirometry, regarding the diagnosis and treatment of COPD and COPD’s relationship to asthma and other co-morbid conditions such as cardiovascular disease, stroke, depression, musculoskeletal disease, osteoporosis, and diabetes.

Potential actions include:

- Analyzing and publishing COPD-related health care practice and treatment data from national health care surveys and other available data sets;
- Identifying information gaps in the areas of the diagnosis and treatment of COPD.

Strategy 3: Identify specific public health research needs for COPD prevention.

Potential actions include:

- Convening a broad-based working group of key stakeholders to identify prevention research needs and priorities and to publish a report;
- Collaborating with public and private sector health care partners to encourage new prevention research activities.

Goal 3: Programs and Policies

Increase effective collaboration among stakeholders with COPD-related interests.

Objective

- Increase prevention- and policy-related collaboration among partner organizations interested in COPD-related concerns such as tobacco, asthma, and occupational health.

Rationale

Extensive programs for the public, health care professionals, and provider systems already exist to prevent and treat the consequences of tobacco use. However, tobacco control programs may not be aware of the latest statistics and treatments for specific tobacco-related illnesses, including COPD. In turn, COPD stakeholders, practitioners, and decision makers may not be aware of current public health efforts in tobacco control. There are also extensive networks of health care professionals, stakeholders, and other constituents for co-morbid diseases and conditions of COPD such as asthma, heart disease, stroke, and diabetes. Many states have conducted state COPD summits and formed COPD coalitions, and either have or are developing state COPD action plans.

***Strategy 1:* Enhance the collaboration between tobacco control programs and COPD-related programs at national, state, and local levels.**

Potential actions include:

- Encouraging tobacco control and COPD partners' interactions to address programmatic and policy issues related to both smoking and COPD;
- Identifying the number of states that have COPD action plans;
- Increasing the number of states that have action plans and providing connections to state tobacco control plans;
- Supporting collaboration between state tobacco control and COPD programs to develop best practices and build templates for COPD action plans, including implementation strategies;
- Establishing regular state tobacco control and COPD liaison activities;
- Conducting meetings among appropriate partners to explore opportunities for complementary activities between tobacco control and COPD programs;
- Identifying a COPD contact for each state health department;
- Identifying speakers on relevant COPD topics for tobacco-related conferences at the

national and state level; likewise, identifying speakers on relevant tobacco topics for COPD conferences.

Strategy 2: Develop a national COPD action plan.

Potential actions include:

- Analyzing existing state COPD action plans to identify best practices;
- Convening a meeting of a broad group of stakeholders to develop a national action plan;
- Preparing and circulating the draft action plan to relevant agencies and partners;
- Publishing and initiating the final action plan;
- Supporting a report on COPD from the Task Force on Community Preventive Services.

Strategy 3: Support workplace programs and policies that reduce the risk of COPD.

Potential actions include:

- Supporting the development of workplace policies regarding topics such as
 - » Indoor smoke-free policy;
 - » Campus (indoor/outdoor) smoke-free policy;
 - » Insurance coverage for evidenced-based smoking cessation treatments;
 - » Strong worker protection and respiratory protection programs, including surveillance;
 - » Workplace indoor air quality assurance policy;
 - » Resources for health risk appraisals with accompanying workplace coaching and treatment interventions;
 - » Resources for workplace screening programs for at-risk workers and families;
- Providing education and consultation to employers in various types of workplace locations.

Goal 4: Communication

Heighten awareness of COPD in the following groups: people with COPD and their families, people with COPD risk factors, health professionals (especially primary care providers), provider systems, media, decision makers, policy makers, and the public.

Objective

- Improve awareness of the warning signs for COPD, the risk factors for COPD, and the fact that COPD is preventable and treatable.

Rationale

Awareness of COPD prevention, treatment options, and the seriousness of its consequences remains low among most Americans.

***Strategy 1:* Collaborate with appropriate partners to develop educational resources for people with COPD, people with COPD risk factors, families, health professionals (especially primary care providers), provider systems, media, decision makers, policy makers, and the public.**

Potential actions include:

- Identifying and conducting meetings with appropriate partners to develop and promote targeted educational approaches for the audiences listed in the Communication goal;
- Identifying and evaluating existing programs;
- Preparing and pilot testing educational approaches in different audiences;
- Initiating education activities;
- Evaluating education activities using both process and outcome measures;
- Expanding partnerships to include additional advocates such as women's groups, seniors, unions, and faith-based organizations;
- Developing a phased plan to collaborate with partners on addressing the key audiences.

Strategy 2: Collaborate with professional health organizations to communicate current standards of diagnosis, including spirometry use, and treatment options for COPD.

Potential actions include:

- Assessing current educational activities and initiatives using evidence-based standards;
- Collaborating with public health and health profession partners to develop continuing education and training activities for professional audiences, especially primary care providers.

Conclusion

The four goals outlined in this COPD public health action plan should help with the ongoing and future development of health initiatives to prevent and control COPD. Additionally, the framework will increase the awareness of COPD as an important public health issue.

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Table 1. Primary Goals and Strategies for the Public Health Framework for COPD Prevention

Goal 1: Surveillance and Evaluation	
Improve collection, analysis, dissemination, and reporting of COPD-related data.	
Strategy 1	Maximize use of currently available data.
Strategy 2	Develop and initiate new data collection within existing surveys.
Strategy 3	Improve the ability of federal agencies to collect, analyze, and report health care data from electronic health records.
Strategy 4	Encourage the appropriate organizations to develop surveillance case definitions for COD and to initiate COPD surveillance.
Goal 2: Public Health Research and Prevention Strategies	
Improve understanding of COPD development, prevention and treatment.	
Strategy 1	Conduct assessment of COPD environmental risk factors in addition to smoking and occupational exposures.
Strategy 2	Assess current health care practices regarding the diagnosis and treatment of COPD and COPD's relationship to asthma and other co-morbid conditions such as cardiovascular disease, stroke, depression, musculoskeletal disease, osteoporosis, and diabetes.
Strategy 3	Identify specific public health research needs for COPD prevention.
Goal 3: Programs and Policies	
Increase effective collaboration among stakeholders with COPD-related interests.	
Strategy 1	Enhance the collaboration between tobacco control programs and COPD-related programs at national, state, and local levels.
Strategy 2	Develop a national COPD action plan.
Strategy 3	Support workplace programs and policies that reduce the risk of COPD.
Goal 4: Communication	
Heighten awareness of COPD in the following groups: people with COPD and their families, people with COPD risk factors, health professionals (especially primary care providers), provider systems, media, decision makers, policy makers, and the public.	
Strategy 1	Collaborate with appropriate partners to develop educational resources for people with COPD, people with COPD risk factors, families, health professionals, provider systems, media, decision makers, policy makers, and the public.
Strategy 2	Collaborate with professional health organizations to communicate current standards of diagnosis, including spirometry use, and treatment options for COPD.

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