Adirondack Health Institute

Collaboration • Catalyst • Community

"COPD Awareness"

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AHI Overview

- AHI is an independent, non-profit organization that partners with regional health care providers and community-based organizations to improve care, lower costs and realize a healthier future.
- We provide services through programs organized under Community Health Services and Health System Transformation.
- www.ahihealth.org

AHI Programs by County: Where We Are

700,000

Total Population

9

Counties

Clinton
Essex
Franklin
Fulton
Hamilton
Saratoga
St. Lawrence
Warren
Washington

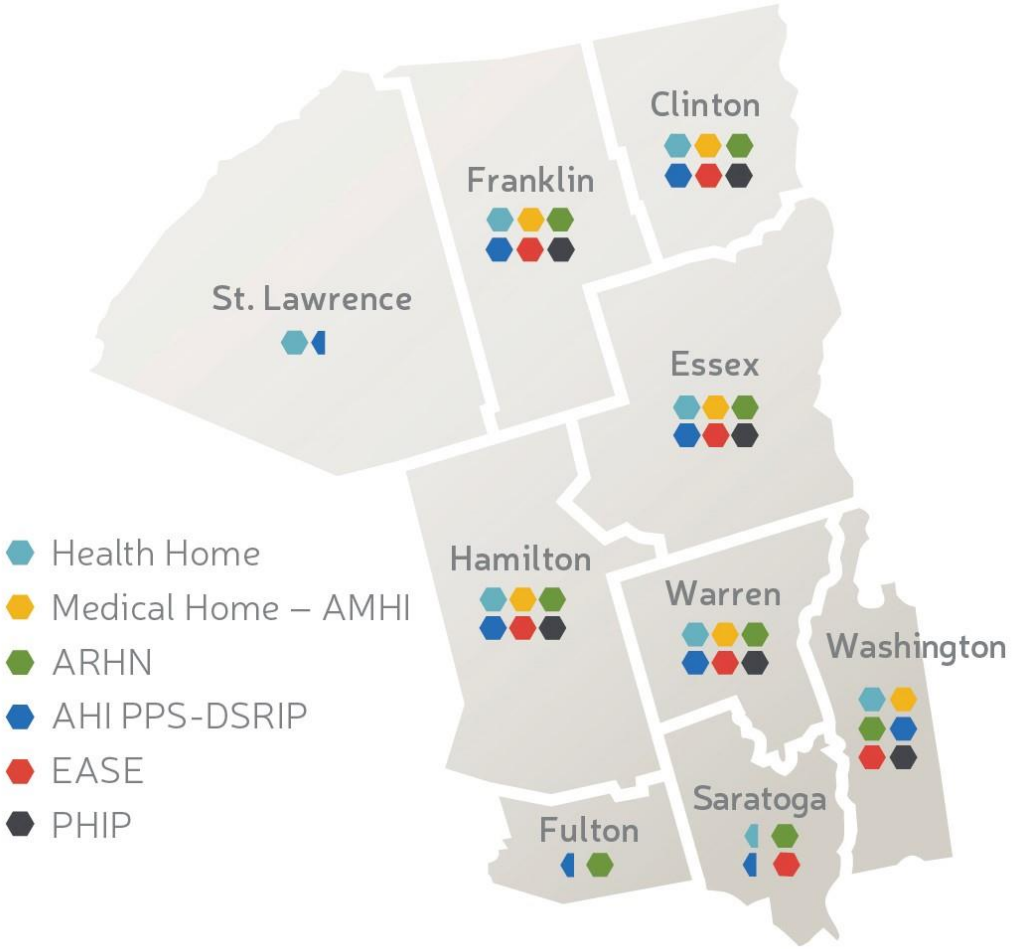
11,000

Square Miles

9

Payors

Medicare (FSS), Medicaid, BSNENY, CDPHP, Empire BCBS, Empire UHC, Excellus, Fidelis, MVP



DSRIP Project 4.b.ii

- 4.b.ii Increase Access to High Quality Chronic Disease Preventative Care and Management in Both Clinical and Community Settings-COPD
  - **Goal:** Improve access to high quality chronic disease preventive care and management in both clinical and community settings
  - **Project Description:** To increase the numbers of New Yorkers who receive evidence based preventive care and management for chronic diseases. Preventative care and chronic disease management to include screening tests, counseling, immunizations or medications used to prevent disease, detect health problems early, and prevent disease progression and complications.

DSRIP Project 4.b.ii

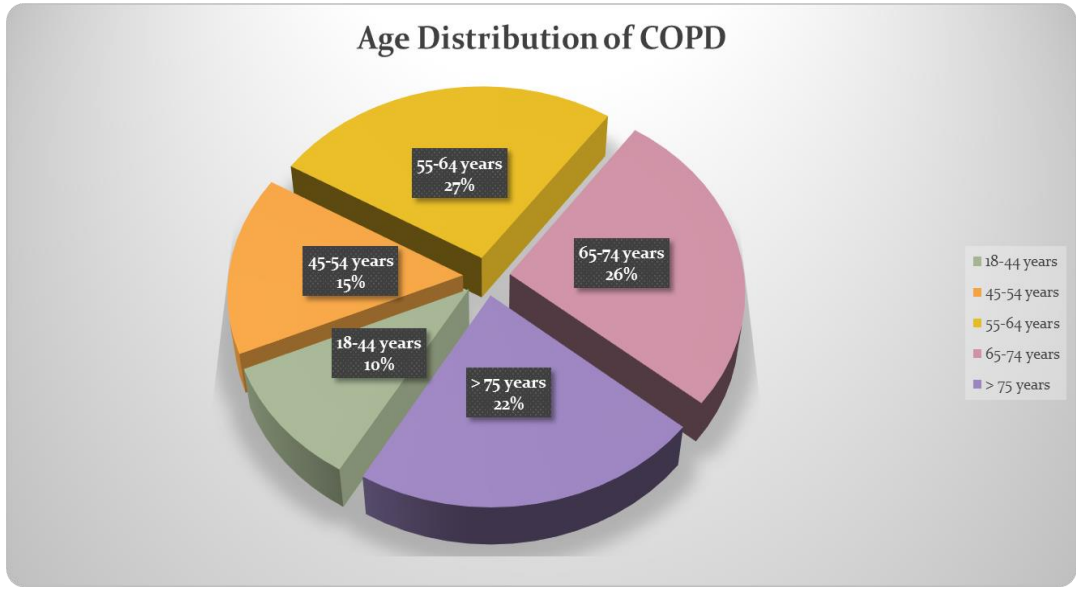
- Adoption of Evidence Based Guidelines for Primary Care Offices, Skilled Nursing Facilities and Home Care Agencies
  - Screening Tool and Spirometry
  - Implementation of the GOLD standards
  - Management (Action Plan)
  - Evidence Based Tobacco Treatment
- Providers who participate will receive incentives from project activities

COPD Overview

- American Thoracic Society
  - A preventable and treatable disease state characterized by airflow limitation that is not fully reversible;
  - Airflow limitation is usually progressive and is associated with an abnormal inflammatory response of the lungs to noxious particles or gases, primarily cause by cigarette smoking;
  - Although COPD affects the lungs, it also produces systemic consequences.
- GOLD (Global Initiative for Chronic Obstructive Lung Disease)
  - A common, preventable, and treatable disease;
  - Characterized by persistent airflow limitation that is usually progressive and associated with an enhanced chronic inflammatory response in the airways and the lungs to noxious particles and gases.

COPD Overview

- COPD Is Common and Largely Affects a Patient Population Younger Than Age 65
  - 6.3% of US Adults (15 million) have been told by a Health Care Provider that the have COPD
  - 51% of adults are younger than age 65



COPD Burden of Disease

Nationally

- The third leading cause of death
- Of the 26.8 million Americans who have air flow limitations- 45% remain undiagnosed
  - By the time COPD is diagnosed lung function can be reduced by 60%
  - Patients with GOLD 2 COPD have a steeper absolute rate of decline in FEV1 than those with later stages of COPD
- 50 Billion Dollars a year (4th highest cost burden for Cardiovascular, Lung and Blood Diseases)

COPD Burden of Disease

Nationally Cont.

- COPD was among the top 10 conditions with the most all-cause 30 day readmissions
- 23% of patients discharged with a diagnosis code for COPD are readmitted within 30 days

Locally (PPS region)

- Diseases And Disorders Of The Respiratory System was the 3rd leading cause for ER utilization
- COPD and Major Other Chronic Pulmonary Diagnoses was the 9th most prevalent condition among Medicaid patients.

New Era of Accountability and Performance Measurement

- New in 2015-The Centers for Medicare & Medicaid (CMS) will financially penalize providers with excessive 30-day hospital readmissions for COPD

- HHS will be tying payments to quality or value over fee-for-service

Diagnosis

- Key indicators for recommended Spirometry testing
  - Dyspnea
  - Chronic Cough
  - Chronic sputum production
  - History of exposure to risk factors (tobacco smoke, smoke from home cooking and heating fuels, occupational dusts and chemicals)
  - Family History of COPD

Adults who are current smokers (%)	Clinton-22.6	Essex-16.6	Franklin-27.0	Fulton-29.0	Hamilton-19.0	Saratoga-17.7	St. Lawerence-19.5	Warren-18.7	Washington -21.0

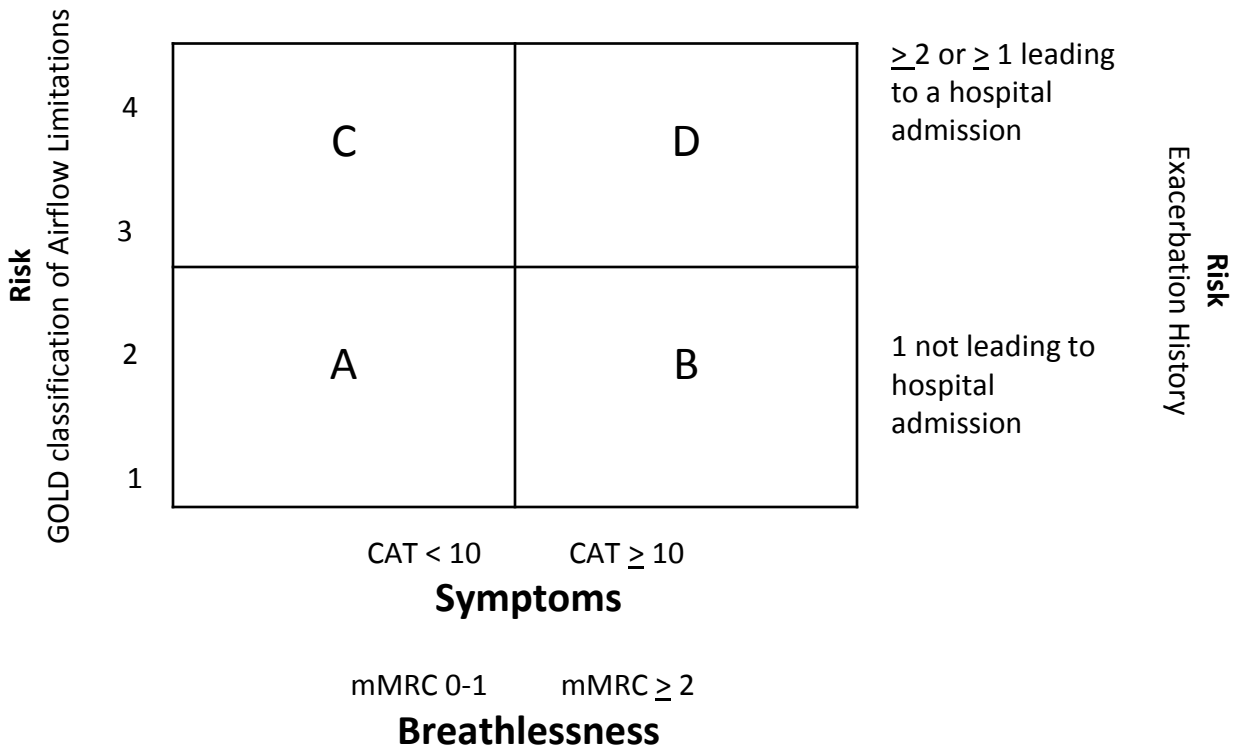
GOLD Standards

- Assessment of COPD-the goal is to determine the severity of the disease, impact on patients health and the risk of future events
  - Assess Symptoms: Validated questionnaire (COPD Population Screener)
  - Assess Degree of Airflow Limitation (using spirometry)
  - Assess Risk of Exacerbations
  - Assess Comorbidities

Combined Assessment of COPD

- An understanding of the impact of COPD on an individual patient combines
  - Symptomatic Assessment
    - Less Symptoms (mMRC 0-1 or CAT < 10) patient is A or C
    - More Symptoms (mMRC ≥ 2 or CAT ≥ 10) patient is B or D
  - Patient's spirometric classification
    - Low Risk (GOLD 1 or 2) patient is A or B
    - High Risk (GOLD 3 or 4) patients is C or D
  - Risk of exacerbation
    - Low risk ≤ 1 per year and no hospitalization for exacerbation-Patient is A or B
    - High Risk ≥ 2 per year or ≥ 1 with hospitalization-Patient is C or D

Combined Assessment of COPD



Note-When assessing risk, choose the highest risk according to GOLD grade or exacerbation history

Group A- Low risk, Less Symptoms
Group B-Low Risk, More Symptoms
Group C-High Risk, Less Symptoms
Group D-High Risk, More Symptoms

Non-Pharmacological Therapy

- Smoking Cessation-should be considered the most important intervention
- Rehabilitation-reduce symptoms, improve quality of life and increase physical and emotional participation in everyday activities
- Physical Activity

Non-Pharmacologic Management of COPD			
Patient Group	Essential	Recommended	Depending on Local Guidelines
A	Smoking Cessation (can include pharmacologic treatment)	Physical Activity	Flu vaccination Pneumococcal vaccination
B, C, D	Smoking Cessation (can include pharmacologic treatment) Pulmonary Rehabilitation	Physical Activity	Flu vaccination Pneumococcal vaccination

Pharmacologic Treatment

Pharmacologic Therapy for Stable COPD			
Patient Group	**Recommended First Choice**	**Alternative Choice**	**Other Possible treatments**
A	SA anticholinergic prn or SA beta2-agonist prn	LA anticholinergic or LA beta2-agonist or SA anticholinergic and SA beta2-agonist prn	Theophylline
B	LA anticholinergic or LA beta2-agonist	LA anticholinergic and LA beta2-agonist	SA anticholinergic and/or SA beta2-agonist Theophylline
C	ICS + LA beta2-agonist or LA anticholinergic	LA anticholinergic and LA beta2-agonist or LA anticholinergic and PDE-4 inhibitor or LA beta2-agonist and PDE-4 inhibitor	SA anticholinergic and/or SA beta2-agonist Theophylline
D	ICS + LA beta2-agonist and/or LA anticholinergic	ICS + LA beta2-agonist and LA anticholinergic or ICS + LA beta2-agonist and PDE-4 inhibitor or LA anticholinergic and LA beta2-agonist or LA anticholinergic and PDE-4 inhibitor	SA anticholinergic and/or SA beta2-agonist Theophylline N-acetylcysteine Carbocysteine

Management of Exacerbations

- An exacerbation of COPD is defined as an acute event characterized by a worsening of the patient's respiratory symptoms that is beyond normal day-to-day variations and leads to a change in medication.
- Asses the Severity of an exacerbation
  - Arterial blood gas measurements
  - Chest radiographs
  - ECG (to aid in the diagnosis of a cardiac problem)
- Treatment options
  - Oxygen
  - Bronchodilators
  - Systemic Corticosteroids
  - Antibiotics
  - Adjunct Therapies

Assessment of Symptoms

- The Dyspnea Scale
  - CAT scale or mMRC

The Dyspnea Scale

Grade	Dyspnea related to activity
0	Breathlessness only on strenuous exercise
1	Breathless when hurrying on the level or walking up a slight hill
2	Walks slower than other people of same age on the level due to shortness of breath or need to stop for breath when walking at own pace
3	Short of breath after walking few minutes on the level or about 100 yards (90 m)
4	Too breathless to leave the house, or breathless when dressing or undressing

Modified from The Medical Research Council Dyspnea scale (mMRC dyspnea scale)

eDucate™
www.educatehealth.ca

Your name:

Today's date:

CAT

How is your COPD? Take the COPD Assessment Test™ (CAT)

This questionnaire will help you and your healthcare professional measure the impact COPD (Chronic Obstructive Pulmonary Disease) is having on your wellbeing and daily life. Your answers, and test score, can be used by you and your healthcare professional to help improve the management of your COPD and get the greatest benefit from treatment.

For each item below, place a mark (X) in the box that best describes you currently. Be sure to only select one response for each question.

Example: I am very happy 0 X 2 3 4 5 I am very sad

			SCORE
I never cough	0 1 2 3 4 5	I cough all the time	
I have no phlegm (mucus) in my chest at all	0 1 2 3 4 5	My chest is completely full of phlegm (mucus)	
My chest does not feel tight at all	0 1 2 3 4 5	My chest feels very tight	
When I walk up a hill or one flight of stairs I am not breathless	0 1 2 3 4 5	When I walk up a hill or one flight of stairs I am very breathless	
I am not limited doing any activities at home	0 1 2 3 4 5	I am very limited doing activities at home	
I am confident leaving my home despite my lung condition	0 1 2 3 4 5	I am not at all confident leaving my home because of my lung condition	
I sleep soundly	0 1 2 3 4 5	I don't sleep soundly because of my lung condition	
I have lots of energy	0 1 2 3 4 5	I have no energy at all	
		TOTAL SCORE	

COPD Population Screener (COPD-PS)

- COPD Population Screener uses five clinical characteristics to identify patients at risk for airflow obstruction
- This tool may lead to:
  - Increased awareness of COPD
  - Use of Spirometry for accurate diagnosis
  - www.copdscreener.com

Spirometry

- Reasons for Spirometry
  - HEIDS measurements requires that spirometry be completed to confirm a diagnosis of COPD
  - Confirm the presence of airway obstruction
  - Provide an index of disease severity
  - Help differentiate Asthma from COPD
  - Detect COPD in individuals exposed to risk factors (tobacco smoke) with or without symptoms
  - Enable monitoring of disease progression
  - Help assess response to therapy
  - Aid in prediction of prognosis and long term survival
  - Exclude COPD and prevent inappropriate treatment if Spirometry is normal

Spirometry

- What is Spirometry
  - Spirometry is a technique that measures lung function
  - It measures the amount of air that is expelled from the lungs and the time it takes to breathe it out
  - It is performed by taking a deep breath and breathing out as hard and as fast as possible into the spirometer
  - Three reproducible spirometry tests are required to achieve accurate results
  - The FEV1/FEC ratio is what is used to diagnosis COPD
    - A post-bronchodilator ratio of <70% is consistent with COPD

Use of Spirometry to classify lung function

Normal

- FEV1 and FVC >80% predicted
- FEV1/FVC ratio > 0.70

Obstructive

- FEV1<80% predicted
- FVC can be normal or reduced, usually to a lesser degree than FEV1
- FEV1/FVC ratio <0.70

Restrictive

- FEV1 and FVC <80% predicted
- FEV1/FVC ratio normal at > 0.70

GOLD Guidelines	
Gold 1: Mild	FEV1/FVC <0.70 FEV1≥ 80% predicted
Gold 2: Moderate	FEV1/FVC <0.70 50% ≤ FEV1 < 80% predicted
GOLD 3: Severe	FEV1/FVC <0.70 30% ≤ FEV1 < 50% predicted
GOLD 4: Very Severe	FEV1/FVC <0.70 FEV1 < 30% predicted

COPD and Comorbidities

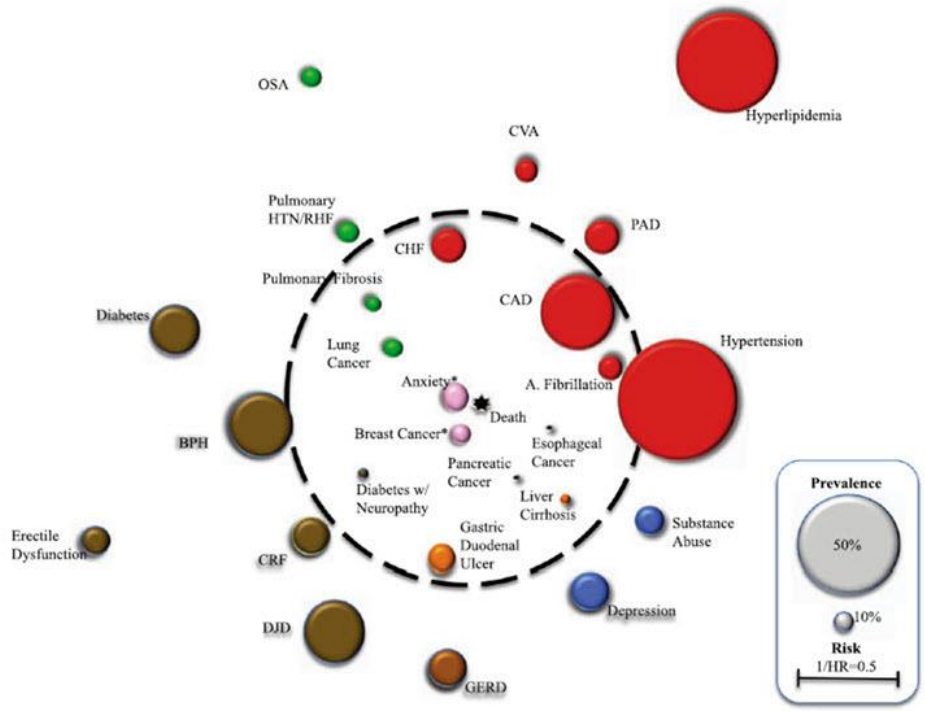


Figure 1. The Cormorbidome: A Graphic Expression of Comorbidities With More Than 10% Prevalence in the Entire Cohort[a]

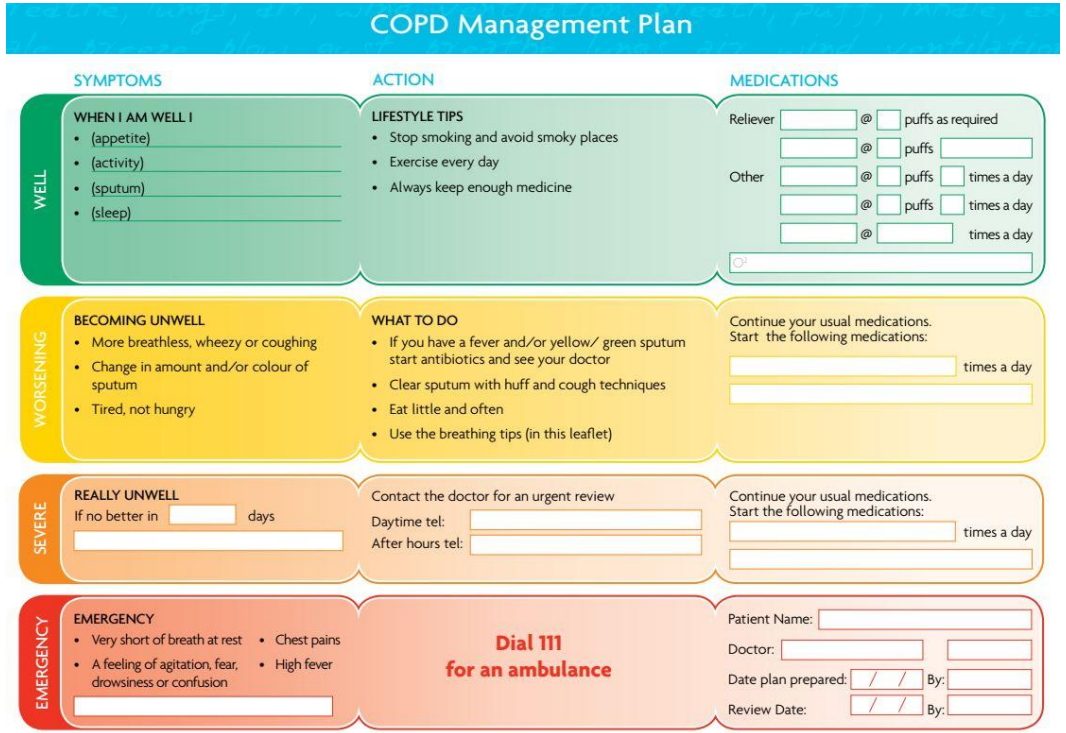
The *comorbidome* is a graphic expression of comorbidities with more than 10% prevalence in the entire cohort, and those comorbidities with the strongest association with mortality (hazard ratio [HR], .1; 95% confidence interval, .1; P < 0.05). The area of the circle relates to the prevalence of the disease. The proximity to the center (mortality) expresses the strength of the association between the disease and risk of death. This was scaled from the inverse of the HR (1/HR). All bubbles associated with a statistically significant increase in mortality are fully inside the dotted orbit (1/HR ,1). Bubble colors represent organ systems or disease clusters (cardiovascular = red, female-specific comorbidities = pink, pulmonary = green, psychiatric = blue, others = brown and orange).

[a]Reproduced with permission from *American Journal of Respiratory and Critical Care Medicine* [7]

- Cardiovascular diseases, osteoporosis, depression and anxiety, skeletal muscle dysfunction, metabolic syndrome and lung cancer among other diseases occur frequently in COPD patients.

Patient Education

- COPD Action Plan
- Disease awareness handouts with numbers
- Consistency between regions (hospital and community)
- Inhaler technique
- Collaborative checklist



COPD Management Plan

	SYMPTOMS	ACTION	MEDICATIONS
WELL	WHEN I AM WELL I • (appetite) • (activity) • (sputum) • (sleep)	LIFESTYLE TIPS • Stop smoking and avoid smoky places • Exercise every day • Always keep enough medicine	Reliever ___ @ ___ puffs as required ___ @ ___ puffs ___ Other ___ @ ___ puffs ___ times a day ___ @ ___ puffs ___ times a day ___ @ ___ times a day O^2
WORSENING	BECOMING UNWELL • More breathless, wheezy or coughing • Change in amount and/or colour of sputum • Tired, not hungry	WHAT TO DO • If you have a fever and/or yellow/ green sputum start antibiotics and see your doctor • Clear sputum with huff and cough techniques • Eat little and often • Use the breathing tips (in this leaflet)	Continue your usual medications. Start the following medications: ___ times a day ___
SEVERE	REALLY UNWELL If no better in ___ days ___	Contact the doctor for an urgent review Daytime tel: ___ After hours tel: ___	Continue your usual medications. Start the following medications: ___ times a day ___
EMERGENCY	EMERGENCY • Very short of breath at rest • Chest pains • A feeling of agitation, fear, drowsiness or confusion • High fever ___	Dial 111 for an ambulance	Patient Name: ___ Doctor: ___ ___ Date plan prepared: / / By: ___ Review Date: / / By: ___

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